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Validation Report

Project Title:

9.6 MW Wind Energy Project at
Jamvadi & Navagam & Kalavad,
Jamnagar, Gujarat, India of Rohit
Surfactants Pvt. Ltd.

Report No.: SQAS-CDM-ES12880008

Date : 7 September 2011

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Approved by: Parama Iswara Subramaniam	Project title : 9.6 MW Wind Energy Project at Jamvadi & Navagam & Kalavad, Jamnagar, Gujarat, India of Rohit Surfactants Pvt. Ltd
Client: M/s.Rohit Surfactants Pvt. Ltd	Organization unit: SIRIM QAS International Sdn Bhd
<p>Summary: SIRIM QAS Intl. has performed the validation of the project titled "9.6 MW Wind Energy Project at Jamvadi & Navagam & Kalavad, Jamnagar, Gujarat, India of Rohit Surfactants Pvt. Ltd." in India based on the Kyoto Protocol requirements, UNFCCC rules and associated interpretations and DNA requirements in the Host Country. The validation exercise was not meant to provide any consulting to the project participants. However, the stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.</p> <p>The validation consisted of three phases; i) a document review of the project design document and Preparation of validation protocol, ii) on-site visit to the project activity and interviews with the project developer and the project consultant, and Operation and Maintenance personnel, iii) resolution of outstanding issues and the issuance of final validation report and validation opinion.</p> <p>The project activity aims at reducing GHG by producing electricity through a renewable source of energy i.e. Wind. The project comprises of 12 WTGs with total installed capacity of 9.6 MW. The project activity supplies electricity to the NEWNE Grid (dominated by fossil fuel fired units) and displaces an equivalent amount of electricity generated by fossil fuel fired units in the Grid.</p> <p>The validation process, from contract review to the issuance of validation report and validation opinion was conducted in accordance with SIRIM QAS Intl.'s internal procedures. The first output of the validation process was a list of corrective action requests, clarification requests and forward action requests (CAR, CL and FAR) which is presented in Table 3 of Appendix A of this report. As a result of these findings, the PDD was revised by the client. In summary, it is the opinion of SIRIM QAS Intl. that the proposed CDM project activity has correctly applied the baseline and monitoring methodology for the project activity and meets the relevant UNFCCC requirements for the CDM and the relevant host country criteria.</p>	

Report No.: SQAS-CDM-ES12880008			Indexing terms		
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Work carried out by:			<input checked="" type="checkbox"/> No distribution without permission from the Client or responsible organization unit <input type="checkbox"/> Limited distribution <input type="checkbox"/> Unrestricted distribution		
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Technical Reviewer : Aminah Ang					
Work verified by: Parama Iswara Subramaniam					
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Abbreviations

AMS	Approved Methodology Small Scale
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CEF	Carbon Emission Factor
CER	Certified Emission Reductions
CL	Clarification Request
CO ₂	Carbon Dioxide
CO _{2e}	Carbon Dioxide Equivalent
DOE	Designated Operational Entity
DNA	Designated National Authority
DPR	Detailed Project Report
EB	Executive Board
FAR	Forward Action Request
GEDA	Gujarat Energy Development Authority
GERC	Gujarat Electricity Regulatory Commission
GHG	Greenhouse gas(ses)
GSP	Global Stakeholders Consultation Process
GSEB	Gujarat State Electricity Board
GUVNL	Gujarat Urja Vikas Nigam Limited
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
IRR	Internal Rate of Return
LoA	Letter of Approval
MoC	Modalities of Communication
MoV	Means of Verification
MOEF	Ministry of Environment and Forests
MP	Monitoring Plan
NEWNE	North East West North-East
NCDMA	National Clean Development Mechanism Authority
ODA	Official Development Assistance
PDD	Project Design Document
PGVCL	Paschim Gujarat Vij Company Ltd.
PLR	Prime Lending Rate
PO	Purchase Order
PPA	Power Purchase Agreement
QA/QC	Quality Assurance/Quality Control
SIRIM QAS Intl.	SIRIM QAS International Sdn Bhd
UNFCCC	United Nations Framework Convention on Climate Change
WACC	Weighted Average Cost of Capital
WTG	Wind Turbine Generator

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1.0 INTRODUCTION

M/s Rohit Surfactants Pvt. Ltd (here after referred to as project participant) had engaged SIRIM QAS Intl. to perform validation of the project titled "9.6 MW Wind Energy Project at Jamvadi & Navagam & Kalavad, Jamnagar, Gujarat, India of Rohit Surfactants Pvt. Ltd" in India (hereafter called the project activity). This report summarises the findings of the validation of the project, performed on the basis of UNFCCC criteria for CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to the Kyoto Protocol criteria, the CDM rules and modalities as agreed in the Bonn Agreement, the Marrakech Accords and the CDM Executive Board's decisions and VVM Version 1.2.

1.1 Objective

The purpose of a validation is to have an independent third party assess the project design. In particular, the project's baseline, the monitoring plan (MP), and the project's compliance with relevant UNFCCC and host country criteria are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria. Validation is a requirement for all CDM projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of certified emission reductions (CERs).

1.2 Scope

The scope of validation is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations.

SIRIM QAS Intl. has based on the recommendations in the Validation and Verification Manual version 1.2^{1/} employed a risk-based approach in the validation, focusing on the identification of significant risks for project implementation and the generation of CERs.

The validation is not meant to provide any consulting towards the client. However, the stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.

1.3 GHG Project Description

The project activity is a greenfield project involving installation and operation of 12 Wind Turbine Generators (WTG) of 0.8MW capacity each. The project activity is located in the villages of Jamvadi and Navagam, in Taluka Kalavad, in District of Jamnagar, State of Gujarat, India with a total installed capacity of 9.6 MW. The project is expected to generate and displace 19,493MWh of electricity annually from the power deficit, fossil fuel dominated NEWNE Grid of India, thereby contributing to GHG emission reduction of 179, 829 tCO₂e over a crediting period of 10 years and to climate change mitigation efforts.

1.4 Validation Team

The following validation team has been assigned to carry out the validation of the project.

Validation team leader: Mr. Ravi Shankar

Validation team member: Dr. D.Siddaramu

Mr. Ravishankar possesses a B.Tech Degree and P.G.Diploma in Industrial Safety and Environmental Management. He has more than 17 years of industrial experience of which the last five years have been in CDM consultancy and auditing, validation and verification of CDM projects. He has undergone extensive training on CDM validation and verification and is a qualified lead auditor for validation and verification in accordance with SIRIM QAS Intl.'s procedures.

Dr. D. Siddaramu possesses a Ph.D in Environmental Science and P.G. Diploma in Industrial Safety. He has about 8 years working experience in research & development, and conducting EIA studies of projects such as hydro power projects, mining and biomass assessment studies. He has experience in monitoring air and noise quality, conducting socio-economic surveys and data analysis. He has undergone extensive training on CDM validation and verification and is a qualified lead auditor for validation and verification in accordance with SIRIM QAS Intl.'s procedures.

2.0 METHODOLOGY

The SIRIM QAS Intl.'s validation process consists of the following phases:

- a document review of the project design documents and preparation of validation protocol;
- on-site visit to the project activity and interviews with project developer and project consultant; and
- resolution of outstanding issues and the issuance of final validation report and opinion

In order to ensure transparency, a validation protocol was customized for the project according to the Validation and Verification Manual. The protocol describes criteria (requirements), means of verification and the results from the validating the identified criteria, in a transparent manner. The validation protocol serves the following purposes :

- it organizes, details and clarifies the requirements that a CDM project is expected to meet;
- it ensures a transparent validation process where the validator will document how a particular requirement has been validated and the result of the validation.

The validation protocol consists of three tables. The different columns in these tables are described in Figure 1 below:

Validation Protocol Table 1 : Mandatory Requirements			
Requirement	Reference	Conclusion	Cross Reference / Comment
Mandatory requirements that the project must meet.	Gives reference to the legislation or agreement where the requirement is found	This is acceptable based on evidence provided (OK), a CAR where there is risk of non-compliance with stated requirements or a request for CL where further clarifications are needed.	Used to refer to the relevant checklists in Table 2 to show how the specific requirement is validated. This is to ensure a transparent validation process.

Validation Protocol Table 2 : Requirements Checklist			
Checklist question	Means of verification (MoV)	Comment	Draft and/or final conclusion
The various requirements in Table 2 are linked to checklist questions the project should meet. The checklist is organised in seven sections. Each section is further subdivided. The lowest level constitutes a checklist question.	Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.	The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.	This is either acceptable based on evidence provided (OK), or a CAR due to non-compliance with the checklist question or CL when the validation team has identified a need for further clarification.

Validation Protocol Table 3 : Resolution of Corrective Action and Clarification Requests			
Draft report clarifications and corrective action requests	Ref. to checklist question in table 2.	Summary of project owner response	Validation conclusion
If the conclusions from the draft Validation are either a CAR or CL, these should be listed in this section.	Reference to the checklist question number in table 2 where CAR or CL is explained.	The responses given by the project participants during the communications with the validation team should be summarized in this section.	This section should summarise the validation team's responses and final conclusions. The conclusions should also be included in table 2, under 'Final Conclusion'

Figure 1: Validation protocol tables

The completed validation protocol of this project activity is enclosed in Appendix A of this report.

Findings established during the validation were classified as non-fulfillment of validation protocol criteria or where risks to the fulfillment of project objectives were identified. Corrective Action Request (CAR) was issued, where:

- i) mistakes have been made that directly impact on the project results; or
- ii) validation protocol requirements have not been met; or
- iii) there was a risk that the project would not be accepted as a CDM project or that emission reductions will not be certified.

The validation team has also raised "Clarification" (CL), where additional information is needed to fully clarify an issue, and "Forward Action Request"(FAR) for issues related to project implementation that require review during the first verification of the project activity

2.1 Document review of PDD and other documents

The first PDD version 1^{/2/} submitted by the client and additional documents related to the project design and baseline were reviewed as an initial step of the validation process. The subsequent step involved the identification of corrective action requests, clarification requests and forward action requests (CAR, CL and FAR) which are presented in Table 3 of Appendix A of this report. As a result of these findings, the PDD was revised by the client two times version 2^{/3/} and version 2.1^{/4/}. The final version of the PDD was version 2.1^{/4/} on which the initial validation opinion was based. In response to EB queries, the PDD was revised to PDD version 2.2^{/4.1/} on which the final validation opinion is based.

A complete list of all documents and records reviewed is as attached in Section 6.0 of this report.

2.2 Follow-up interviews

SIRIM QAS Intl. had conducted visits to client's head office and project site from 11 to 13 January 2010, to confirm selected information and to resolve issues identified in the document review. The table below provides a list of all persons interviewed and the main topics covered.

Person Interviewed	Organization/Company Represented	Topics covered during the interview
Mr. Sunil Dixit	M/s Rohit Surfactants Pvt.Ltd	<ul style="list-style-type: none"> • General information about the Project. • Serious consideration of CDM. • Chronology of Events/ Implementation Cycle of the project activity. • Barriers faced/overcome in the processes (additionality) • Monitoring Practices • Local Stakeholder consultation processes • Operation and maintenance Procedures • Legal/ Statutory Clearances and Agreements Signed
1)Ms. Jayshree Jamliya 2)Mr. Kishore	M/s Ecolutions Carbon India Pvt Ltd.	<ul style="list-style-type: none"> • Baseline determination • Application of appropriate Methodology • Monitoring Methodology
1)Mr. Ishan Parikh 2)Mr. Sajil	M/s. Enercon India Pvt Ltd.	<ul style="list-style-type: none"> • Technical details of WTGs, equipment specifications • Identification of WTGs with respect to unique identification no. • Data monitoring and storage practices • Calibration and maintenance requirements of the equipment. • Training and technical competence of the O & M personnel.
Mr. Jitendra Kartotia	Local Villager from Jamnagar	<ul style="list-style-type: none"> • Stakeholders meeting agenda • Issues raised • Replies from PP

2.3 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the validation is to resolve the request for corrective actions and clarification and any other outstanding issues which needed to be clarified prior to SIRIM QAS Intl.'s positive conclusion on the project design. Six (6) Corrective Action Requests, seven (7) Clarification Requests and one (1) Forward Action Request raised by SIRIM QAS Intl. were resolved during communication between the client and SIRIM QAS Intl. validation team. In order to ensure the transparency of the validation process, the concerns raised and responses that have been given are summarized in Section 2 of this report and documented in more detail in the Table 3 of the validation protocol in Appendix A.

2.4 Internal quality control

SIRIM QAS Intl. has established an internal quality control process. A Technical Reviewer has been appointed to review the final draft validation report and the final validation report. The comments made by the Technical Reviewer have been taken into consideration and incorporated in the final report. The final report (after resolutions of all findings) is then submitted to the CDM Quality Manager for review and approval.

3.0 VALIDATION FINDINGS

This section summarises the main issues that were found during the validation process. A detailed listing of all findings is available in table 2 and 3 of the validation protocols (Appendix A of this report).

3.1 Participation requirements

M/s. Rohit Surfactants Pvt. Ltd is the project participant and the host country is India. India ratified the Kyoto Protocol on 26 August 2002 and meets the participation requirements of the CDM.

The DNA of India (i.e. National CDM Authority of India) has provided a written letter of approval (LoA) to the project activity. This has been confirmed through LoA from Ministry of Environment and Forests (MOEF) of Government of India (Reference No. 4/6/2009-CCC)^{/5/} dated 1 September 2009. The LoA was provided to the validation team by the PP. The authenticity of the LoA was verified by checking with the DNA website (Project ID 142209)

http://cdmindia.in/reports_list_details.php?id=&reporttype=&page=19

The LoA was reviewed and confirmed the following:

- India is a party to the Kyoto protocol
- CDM is a voluntary participation,
- the project under validation will assist in India's sustainable development,
- the project title is in line with the title mentioned under section A.1 of the PDD,
- M/s. Rohit Surfactants Pvt. Ltd is the project participant

The Participation requirements were validated based on confirmation of the following:

- The project participant listed in the tabular form in Section A.3 of PDD and the contact details provided in Annex 1 of the PDD is consistent and precise.
- Participation of the PP has been approved by the DNA of Host Party as per the LoA.
- No entities other than those approved as project participants are included in relevant sections of PDD

A statement of Modalities of Communication (MOC) with the EB and UNFCCC secretariat has been issued and signed by an authorized person of M/s. Rohit Surfactants Pvt. Ltd ^{/6/}. The MOC is found to be appropriate as it clearly defined the responsible party for communicating with EB and UNFCCC regarding the issuance of CER of the proposed CDM project.

3.2 Project Design

The project document uses the latest CDM-SSC-PDD template version 3 which is currently applicable and hence acceptable. The corresponding sections of the PDD were correctly filled and followed according to the guidelines specified (CDM-SSC-PDD version 5, dated 14 September 2007).

The project involves installation and operation of 12 WTGs of 800kW capacity each in the villages of Jamvadi and Navagam, in Taluka Kalavad, in District of Jamnagar, State of Gujarat. The total

installed capacity of the project is 9.6 MW. The project aims at reducing GHG emissions from NEWNE Grid by generating electricity from renewable energy source i.e. wind.

The WTG manufacturer and supplier is Enecon (India) Ltd. The technology employed for the turbine is gearless technology. The WTGs have a cut-in speed of 3 m/s and hub height of 75m. The technical specifications were verified with the PO^{/7/} and offer letter^{/8/} from Enercon. These were found to be correct and consistent.

The locations of the proposed project activity were physically verified during validation site visit. The geographical coordinates of the project activity as mentioned in the PDD were cross checked with globally accessible satellite based imagery data software and found consistent. During the on-site visit the following supporting documents were verified :

- The site details like land survey numbers were verified with land documents^{/9/} and found consistent.
- The commissioning certificates^{/10/} of all the WTGs was verified. Seven WTGs were commissioned on 18 March 2008 and five were commissioned on 26 March 2008.
- The project has obtained necessary statutory clearances^{/11/} from the Gujarat Energy Development Agency (GEDA) for installation and commissioning of the WTGs.

The project qualifies as a small scale project as the project capacity is 9.6 MW i.e. less than the threshold value of 15 MW specified for renewable energy projects. The project also qualifies for the applicability criteria of simplified baseline and monitoring methodologies for selected small-scale CDM project activity categories AMS I.D.version 16. Based on this criteria, the project fulfils the requirements defined in paragraph 6 (c) of decision 17/CP.7 on the modalities and procedures for CDM.

The start date of the project activity has been identified as 25 April 2007 (date of PO. for the WTGs)^{/7/}, since this is the earliest date of financial commitment by the PP to implement the project activity. The start date of the project activity is considered as the date on which PP had committed to expenditures related to project implementation. This is in line with the definition in the latest version of Glossary of CDM Terms.

The project activity was evaluated in accordance to EB 54 Annex 13 for debundled component of a larger project activity. It was observed that the project participant does not have any other small scale CDM project activity either in process of CDM registration or registered with UNFCCC. As such it was concluded that the project activity is not a debundled component of a larger project activity.

At the time of on-site visit all the WTGs were commissioned and functioning in proper manner and these WTGs were being maintained by authorized Operation and Maintenance personnel (i.e. Enercon).

The project activity has chosen a fixed crediting period of 10 years, starting on 1 July 2011 or the date of registration of the project activity with CDM EB, whichever is later. This was verified during

the discussion with the project participant, compared with the expected operational life time of project (i.e. 20 years) and was considered reasonable.

The project is financed by Equity and Debt. The Equity is funded by PP and Debt is funded from Indian Banks and this has been verified from Bank Sanction Letter^{/12/}. The project does not receive any grant hence it was concluded that it does not involve any diversion of ODA.

The Validation team based on the on-site visit and verification of supporting documents confirms that all information provided in PDD is accurate and complete.

In this Section two CLs were raised. Details are as follow :

CL 1 was raised as the details of project location provided in PDD and Detailed Project Report (DPR^{/13/}) were not consistent. The DPR mentioned the location to be Samana Site, while the PDD mentioned the location to be villages of Jamvadi & Navagam. In response to CL 1, PP clarified that larger wind farm site location details i.e. name of Samana Site was available at the time of DPR preparation (20 January 2007). Precise location details were only identified later after the time of placement of PO i.e. 25 April 2007. The response to the clarification was found to be acceptable and hence it was closed.

CL 6 was raised to clarify the basis of consideration of start date of crediting period to ascertain the date from when CERs would be claimed by PP. As per PPA^{/14/} the Joint Meter Reading (JMR) is taken on a specified date i.e. 1st day of every month. It was considered most unlikely for the date of registration of the project and as evident date 31 March 2011 to coincide with JMR date. Also, the description on procedures for dealing with possible monitoring data adjustments and uncertainties was not included in the PDD.

In response to CL 6, PP clarified that in the event the date of registration is after the JMR (e.g.15 June 2011) then no CERs would be claimed in the month of registration of project i.e. no CERs will be claimed in the first month of crediting period (i.e. June 2011) Similarly if the end of crediting period will be on 14th June 2021 and the last JMR date is 1st July 2021, then no CERs will be claimed for the last month of crediting period (i.e. June 2021).

The PDD Section B.7.2 was revised to include description on procedures for dealing with possible monitoring data adjustments and uncertainties, like in cases of

- any major difference between the readings of the Main meter (220 kV substation meter and the 33kV cluster at Enercon Substation)
- any failures such as might occur due to burning of meter; and
- billing for the failure period

These were verified and were found to be appropriate and acceptable. Hence CL 6 was closed.

3.3 Project Baseline

The project applies the baseline and monitoring methodology for small scale CDM project activities approved by the CDM Executive Board (i.e., AMS I.D - "Grid connected renewable electricity generation" version 16).

The project falls under the category I.D comprising wind-based renewable energy generation units, that supply electricity to and displace electricity from an electricity distribution system (NEWNE Grid) which is supplied and dominated by fossil fuel fired generating units. Grid connectivity was verified through the PPA^{/14/} and physical connection to the grid at site. The commissioning certificates^{/10/}, purchase orders^{/7/}, and site visit to the windmills indicate that the project activity is a greenfield wind power plant and complies with the applicability criteria of AMS I.D version 16 and the project activity is not expected to result in emissions other than those allowed by the methodology.

The project boundary encompasses the physical and geographical sites of the 9.6 MW wind power project. It includes the wind turbine installations, transformers, transmission lines, metering equipment and connected grid sub-stations. The project activity is a renewable energy project and hence there are no emissions resulted upon its implementation. The gases (CO₂) are associated to the emissions which are attributed to the electricity produced in the NEWNE grid.

The project baseline is the product of electrical energy baseline EG_{BL,y} expressed in kWh of electricity produced by the renewable generating unit multiplied by an emission factor. The baseline scenario represented is "electricity delivered to the grid by the project activity which would have otherwise been generated by the operation of grid-connected power plants" and by the addition of

new generation sources (fossil fuel intensive) as reflected in the combined margin. This represents a likely baseline scenario.

Baseline emission reductions have been estimated using *ex-ante* approach for combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in 'Tool to calculate the emission factor for an electricity system' version 2.1 (EB 60). In the proposed baseline, the NEWNE Grid of India is used as the reference for estimating the current generation mix. Data from the CO₂ Baseline Database^{/15/} has been used in the PDD. The Plant Load Factor (PLF) assumed for the project is 23.18% as provided in the Information memorandum document which was provided to bank during the loan application process. This is in line with Para 3 (a) of EB 48 Annex 11 and is conservative and appropriate as compared with the actual generation records.

The project complies with the baseline requirements. In determining the baseline, reliable assumptions were verified and found appropriately justified. The methodology (AMS I.D version 16) is correctly quoted and applied by comparing it with the actual text of the applicable version 16 of the methodology available on the UNFCCC CDM website.

In this section, two CARs were raised. CAR 4 was raised as the methodological choice/approach chosen for the calculation of EF (OM) and the applicability of Simple OM was not explained /provided in Section B.6.1 of PDD. The issue was adequately addressed, resolved and closed in revised PDD. The resolution of CAR is represented in Table 3: Resolution of Corrective Action and Clarification Requests.

CAR 5 was raised as the baseline evaluation was not in accordance with the requirements of paragraph 8 to 13 of the applied methodology. The explanation and justification for the applicability of paragraph 10 was not established. The value of emission factor calculated and applied in Section B.6.3 was incorrect and not conservative. The issues were adequately addressed, resolved and closed in revised PDD. The resolution of CAR is represented in Table 3: Resolution of Corrective Action and Clarification Requests.

3.4 Additionality

Section B.5 of the PDD has demonstrated that the project has applied a barrier analysis in accordance with "Attachment A to Appendix B of the simplified modalities and procedures for small-scale CDM project activities". The PP has chosen to demonstrate the additionality through investment barrier.

Prior Consideration of CDM

The start date of the project activity was taken as 25 April 2007. This date was following the date of issuing of purchase order (PO^{/17/}) for the WTGs to the equipment supplier (Enercon). The start date represents the date on which PP had first committed to expenditures related to the implementation of the project activity.

The start date is prior to the date of publication of the PDD for global stakeholder consultation and 2 August 2008 and accordingly the requirements of early CDM consideration, indicating real and continuous action by PP to secure CDM status in parallel with CDM implementation have been evaluated.

The prior consideration of CDM has been validated based on the Minutes of Meeting of the Board of Directors dated 10 March 2007^{/16/}. The document provided evidence that benefits from CDM were considered decisive in making the investments. Awareness of CDM prior to investment decision making was evidenced from PPs prior investment in another CDM project activity^{/17/} [6MW capacity WTGs (10 WTGs of 600kv) in another bundled CDM Project activity as participant in project managed by Enercon (India) Limited and Japan Carbon Finance, Ltd.

Real and Continuous Action

The chronology of events provides details of parallel and continuous action taken by PP to secure CDM status for the project. These were verified from the supporting documents provided below.

- Purchase Order issued by PP for supply of 12 WTGs to Enercon dated 25 April 2007^{/7/} (Start date of project)
- PP signed MOU with first CDM Consultant (Enercon India Pvt Ltd.) dated 30 July 2007^{/18/}
- MOU signed with CDM Consultant, Ecolutions Carbon India Pvt. Ltd. Dated 8 October 2008^{/19/}
- Local Stakeholders meeting on 23 December 2008 as evidenced by the Minutes of Stakeholders Meeting^{/20/}
- LoA dated 1 September 2009^{/5/}
- Agreement with DOE i.e. SIRIM QAS Int. for Validation Services dated 7 November 2009^{/21/}
- Webhosting of PDD dated 11 December 2009

The evidences for these events were validated including an assessment of authenticity of the evidences provided. It was found that there is less than 2 years of gap between two subsequent documented evidences. Hence, the validation team has concluded that continuous and real actions were taken to secure CDM status for the project activity and the project complies with the requirements of the latest version 3 of the "Guidelines on the Demonstration and Assessment of Prior Consideration" EB 49 Annex 22.

Demonstration of Investment Barrier

The project participant has chosen to demonstrate additionality through the existence of investment barrier.

Choice of approach

The project activity generates financial benefits (other than CDM related income) through the sale of electricity from the project. Hence, benchmark analysis is an appropriate method of analysis.

Choice of financial Indicator and benchmark:

The financial indicator suitable to the project activity is a Post-Tax Project IRR. The Post-Tax Benchmark appropriate to the project IRR is Weighted Average Cost of Capital (WACC). WACC has been considered as a suitable benchmark as it is not linked to subjective profitability expectation of the project participant while it is based on the standard market parameters and specific characteristics of project type.

Conservativeness of benchmark

The expected return of equity has been calculated as per Capital Asset Pricing Model (CAPM) considering beta values of power generating companies in India that were listed at the time of the investment decision. The project participant has calculated the value of beta from the BSE (Bombay Stock Exchange) Power Index and the market return has been arrived at from the BSE Sensex Index which was checked and found to be correct. The value of risk free return factor has been adopted from the figures given by the Reserve Bank of India (RBI) while the PLR has been sourced from RBI website. The relevant parameters have been explained and justified in the table below:

Parameter	Value	Source	Justification
Risk-free Rate of Return (Rf)	7.55%	http://rbi.org.in/scripts/BS_ViewBulletin.aspx?Id=8225	The value assumed is as per Central government dated securities with maturity period of 10 years. This data was verified from the Reserve Bank of India website which was found to be data available at the time of investment decision i.e. 10 March 2007 and found to be appropriate.
Expected Market return (Rm)	19.51%	http://www.bseindia.com/histdata/hindices.asp	The value is calculated as compounded annual growth rate of market portfolio. BSE Sensex index is considered appropriate as it has longest history and also covers all phases of the economy. A period of more than 27 years is considered to eliminate short term volatility in market. The detailed CAPM approach has been considered from textbook on Corporate Finance theory and Practise by Dr. Aswath Damodaran of New York University. The detailed calculations are provided in the financial calculation sheet which was found to be appropriate.
Market Risk Premium	11.96%	Rm – Rf	The value is calculated as difference between the expected market return and the risk-free rate. The value calculated is appropriate and correct.
Beta (B)	1.10	The Power Index from BSE which is available at the time of investment decision	Equity beta of six companies from power sector which were listed in BSE Sensex index at the time of investment decision was considered. The minimum value has been taken for time period from March 2003 to January 2007. This was found to be appropriate and conservative.
Cost of Debt	11.75%	Lowest Prime Lending Rate (PLR) from among 5 Banks	The cost of debt is considered appropriate based on the most appropriate and authentic web-links provided by PP. The considered rate was cross-checked with RBI data (http://www.rbi.org.in/scripts/WSSView.aspx?Id=10900) which was found to be in comparable range (11.50 % to 12.50 %). Hence the rate applied was considered reasonable.
Tax rate	11.33%	http://www.bpoindia.org/columns/budget-2007.shtml	The rate was verified from official website of Income Tax Department, Department of Revenue, Ministry of Finance, India (http://finmin.nic.in/reports/annualreport.asp). The loan tenure for power projects is for 10 years and tax holiday applicable to the power sector projects is for 10 consecutive years from the first 15 years. Therefore,

			power sector projects do not have to pay normal tax rate as a result of tax holiday and have to pay MAT. (http://www.livemint.com/2009/07/08143113/Tax-incentives-for-investment.html). Hence tax rate of 11.33% is considered appropriate and acceptable.
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The Benchmark has been calculated as per CAPM Model and the formula applied is as given below:

$$K_e = R_f + B \times (R_m - R_f) \text{-----(1)}$$

$$WACC = [E / (D+E)] \times [\text{Cost of Equity}] + [D / (D+E)] \times [\text{Cost of Debt}] \times (1 - T_c) \text{ ---- (2)}$$

where:

K_e = Rate of return on equity capital/cost of equity;

R_f = Risk-free rate of return;

B = Beta;

R_m = Market Return

$R_m - R_f$ = Market risk premium;

D - % of Debt Finance

E - % of Equity Finance

T_c - Corporate Tax rate

The WACC calculated based on the above parameters is 13.49%. The value was validated by the validation team in accordance with the Para 112 of VVM Version 1.2 and found to be appropriate and conservative.

CL 2 was raised to clarify the appropriateness of the applied Benchmark (PLR) to the type of IRR calculated (post – tax Project IRR) in the context of Para 12 of Guideline EB 51 Annex 58. The Financial calculations sheet^{/22/} was revised to include most appropriate benchmark i.e. post tax benchmark (WACC) for the project activity. This was found to be correct and appropriate. Hence CL 2 was closed.

In response to EB queries, the benchmark sheet^{/22.1/} is provided separately as part of the financial calculations.

Financial Indicator

The financial indicator suitable to the project activity is Project IRR. The assessment and evaluation of the input parameters used in the IRR calculations has been done in conformance with Para 111 of the VVM version 1.2. The input parameters applied in the calculation of Project IRR are tariff rate, PLF, O & M expenses and cost of the project, these were validated with reference to the date of the investment decision in accordance with the Para 6 of Guideline EB 51 Annex 58. The assumed values have been explained and justified in the table below

Parameter	Information in web-hosted PDD Version 1		Information in PDD Version 2.2		Justification
	Value	Source	Value	Source	
Project Costs	480 Million	Purchase	528 Million	Offer Letter provided by	

	INR	Order	INR	the WTG's supplier ^{/8/} dated 17 January 2007	<p>The total project cost sourced from offer letter^{/8/} provided by equipment supplier, valid and applicable at the time of investment decision and in line with paragraph 6 of Guideline EB 51 Annex 58 and hence considered appropriate.</p> <p>This was cross-checked with actual cost as per the Purchase Order^{/7/} and invoices^{/23/} which showed a decrease of 9.09%. However, this decrease is adequately covered in sensitivity analysis in proving additionality, hence considered acceptable.</p>
Tariff Rate	3.37 INR /kwh	GERC Order no. 2 dated 11 August 2006 ^{/24/}	3.37 INR /kWh	GERC Order no. 2 dated 11 August 2006 ^{/24/}	<p>The WTGs of the project activity were commissioned during March 2008. The electricity tariff rate considered is as per the GERC order (http://www.gercin.org/renewablepdf/en_1303213122.pdf) dated 11 August 2006, applicable to all wind projects commissioned up to 10 August 2009.</p> <p>The validation team concludes that the tariff rate of INR 3.37 per kWh applied in the IRR calculation is considered appropriate and in line with paragraph 6 of EB 51 Annex 58.</p> <p>The electricity tariff rate was cross-checked with power purchase agreement^{/14/} and invoices raised to GUVNL^{/25/} and found correctly implemented.</p>
Operation and Maintenance costs (O&M)	6 Million INR per year with escalation of 6% from 2 nd year onwards	O&M Contract	8.76 Million INR per year with escalation of 6% per year from 2 nd year onwards	Offer letter provided by the WTG supplier ^{/8/} dated 17 January 2007	<p>The O&M charges are sourced from offer letter provided by equipment supplier, valid and applicable at the time of investment decision and in line with paragraph 6 of Guideline EB 51 Annex 58 and hence considered appropriate.</p> <p>These charges were cross-checked with Maintenance Agreement^{/26/} and Contract for Operating the Wind Farm^{/27/} available subsequent to the investment decision which is mutually agreed by both the PP and</p>

			(inclusive of service tax of 12.36 %)		<p>Enercon and a decrease of 23.08 % was observed.</p> <p>The charges were further verified from the invoice raised by Enercon for Maintenance and Operation of the Wind farm^{/28/}. There was a further decrease of charges by 23.35% on comparison with the offer letter.</p> <p>To account for these variations, the sensitivity analysis has been extended to + /- 25% in proving additionality and hence considered acceptable.</p>
PLF	24.25%	No evidence provided	23.18 %	Information Memorandum document ^{/29/}	<p>The Information memorandum document (was provided to bank during the loan application process). The validation team also received a confirmation letter from the Bank^{/30/} stating that PLF value was available during the term loan application process. The value of PLF is appropriate and in line with the requirements of Para 3 (a) of "Guidelines on Reporting and Validation of Plant Load Factors" EB 48 Annex 11.</p> <p>The value was compared with the actual generation value (20.19%, - based on monthly generation data for a period of one year from commissioning) and was found to be conservative.</p> <p>Further to EB queries during request for registration stage, the actual achieved PLF was once again cross-verified (19.28%, based on monthly generation data for a period of three years from commissioning^{/31/}).</p>
Tax Rate	11.33% 33.99%	No evidence provided	11.33 % 33.99 %	IT Rules http://www.bpoindia.org/columns/budget-2007.shtml	<p>The IRR calculation presented for the project activity complies with the applicable Income Tax (IT) Rules. This was also independently cross-verified by the validation team from the letter provided by Chartered Accountant^{/32/}.</p>
IRR	9.74%	Initial financial calculation	11.44 %	financial calculation sheet ^{/22/}	<p>The IRR was 9.74% which was calculated as per actual values of input parameters, the IRR as per the revised calculations applying all input</p>

		ion sheets			<p>parameters as per Para 6 of EB 51 Annex 58 works out to be 11.44% which is appropriate.</p> <p>The validation team has also analyzed the actual project IRR considering the actual investment cost (INR.4800 lakhs), O&M charges (INR 67.41 lakhs/annum), tariff rate (INR 3.37 kWh) and the achieved PLF (19.28%). The actual project IRR thus computed was found to be 10.81%, which is still lower than the benchmark.</p>
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The IRR has been computed without CDM revenues for a period of 20 years. Based on the assumptions made the project IRR arrived is 11.44%, which is less than the benchmark. Details of the computation are provided in the financial sheet^{/22/}.

The project activity faces about 3.87% as transmission losses (i.e. transmission losses and percentage reactive power). This was verified from actual data available from the WTG supplier. As a conservative estimate, PP has excluded these losses in the IRR calculations.

The project IRR calculated with CDM revenues improves to 13.98% enabling the project to cross the benchmark. Thus it can be concluded that the project activity is additional and CDM revenue was considered imperative to bridge the gap between the returns and the benchmark.

In this section, two CARs and three CLs were raised. These were:

CAR 1 was raised as the value for parameter Profit before Depreciation Interests and Taxes (PBDIT) was rounded off to a lower value and value for Minimum Alternate Tax (MAT) calculated in Tax Calculation Sheet and applied in Cost of Generation Sheet was incorrect and not conservative. The Excel sheet was revised and the adjusted MAT and PBDIT values were found to be correct. Hence, CAR 1 was closed.

CAR 6 was raised as the evidences supporting assumed PLF was not in accordance to "Guidelines for the Reporting and Validation of Plant Load Factors" EB 48 Annex 11. In response to the CAR, PP had provided the Information Memorandum Document^{/29/} which was submitted to banks while applying for project financing to support the PLF value of 23.18%. This value estimated for PLF was validated by the validation team and was found to be in accordance with Para 3 (a) of the guidelines. The validation team compared this with the actual PLF and found it to be conservative. Hence, CAR 6 was closed.

CL 2 was raised to clarify the appropriateness of the applied Benchmark (PLR) to the type of IRR calculated (Project IRR) in the context of Para 12 of Guideline EB 51 Annex 58. The Financial Calculations sheet^{/22/} was revised to include most appropriate benchmark i.e. post tax benchmark for the project activity. This was found to be correct and appropriate. Hence CL 2 was closed.

CL 3 was raised to validate the appropriateness of input values applied with the timing of investment decision, and their application for further calculations. PP later clarified and changed some of the parameters to make them in line with the requirements of Para 6 of "Guidelines on Assessment of Investment Analysis" EB 51 Annex 58. These were verified by the validation team and found to be in accordance to the requirements of Guideline EB 51 Annex 58. Hence, CL 3 was closed.

CL 4 was raised to clarify the variation in the Debt Service Coverage Ratio (DSCR) in the Ratio Sheet and the formula applied in calculation of Profit before Depreciation and Tax (PBDT) (in P&L sheet). The PDD^{/3/} and financial calculations sheet^{/22/} were revised to include correct formulae for arriving at PBDT and DSCR was corrected to 1.14. This was validated and was found to be correct. Hence, CL 4 was closed.

Sensitivity analysis

In accordance with Para 17 of the investment guidance in EB 51 Annex 58, the project participant has conducted a sensitivity analysis on the financials by varying the parameters which have a bearing of 20% or more on either the project costs or the project revenues and has tabulated the results. Three variables; O&M, PLF and project cost were chosen for the sensitivity analysis. The project cost and O&M costs constitutes more than 20% of total project cost while the PLF constitutes more than 20% of total project revenues. These variables have been subjected to negative and positive variations of 10%. The IRR (%) at each variation is shown in the analysis below:

% Variation	IRR (%) at each variation		
	PLF	Project Costs	O&M Costs
+25%	NA	NA	10.62
+10 %	13.14	10.09	11.12
+ 5 %	12.31	10.74	11.28
- 5 %	10.53	12.18	11.60
- 10 %	9.58	12.98	11.75
-25%	NA	NA	12.21

The results of the analysis clearly demonstrate that in all scenarios (-10 % to + 10%), of PLF and Project costs the returns on the project activity is lower than the benchmark. (i.e. the project is unable to acquire returns equal to that of Benchmark).

The variation of O&M Costs was cross-checked with Maintenance Agreement^{/26/} and Contract for Operating the Wind Farm^{/27/} available subsequent to the investment decision which is mutually agreed by both the PP and Enercon and a decrease of 23.08 % was observed. The charges were further verified from the invoice raised by Enercon for Maintenance and Operation of the Wind farm^{/28/}. There was a further decrease of charges by 23.35% on comparison with the offer letter. To account for these variations, the sensitivity analysis has been extended to + /- 25% in the revised IRR sheet^{/33/} and the PDD^{/4.1/} in response to EB queries. The results of the analysis clearly demonstrate that returns of the project are lower than the benchmark.

These results were evaluated and were found to be correct. The results indicate conservativeness and robustness of the parameters used for the investment analysis. The revenues of project activity would be insufficient to justify the required investment and it is observed that with the benefits of CDM, the project is a favorable option to invest. Hence, the project is concluded to be additional and CDM revenue is considered imperative to bridge the gap between IRR and the Benchmark.

3.5 Monitoring Plan

The project uses approved monitoring methodology "Grid connected renewable electricity generation", AMS I.D. version 16. With respect to the project activity, only one parameter, i.e. the

amount of electricity supplied to the grid (EG_y in MWh) is continuously monitored and recorded on a monthly basis.

The generated electricity is continuously monitored and hourly recorded at Local Control System (LCS), stepped up twice, first to 33 kV and second to 220 kV. The electricity is sold (fed to grid) at 220 kV based on the main meter reading (joint meter reading) which is verified from check meter. The net electricity supplied to the grid at 220 kV metering point is apportioned to each WTG based on the LCS reading. The on-site visit confirmed that net electricity supplied to the grid is measured through the meter readings of the energy meters installed by electricity board which have facility to measure export and import of energy on an hourly basis.

Description of the monitoring plan

According to the methodology AMS I.D., there are only 2 variables that a windmill project needs to monitor. These are EG_y (Energy Generated) and $EF_{grid,CM,y}$ (Grid Emission Factor). $EF_{grid,CM,y}$ has been taken as *ex-ante* and remains constant throughout the crediting period. EG_y is monitored and measured as explained above.

The monitoring plan describes requirements for calibration of all the measurement equipment used for monitoring the project activity variables. The main and check meters are calibrated once annually as per Gujarat State Electricity Board (GSEB) practices. The same was confirmed from O & M personnel during on-site visit. The monitoring frequency for EG_y matches with that of the methodology, viz. hourly measurement and monthly recording.

PP has included a few other variables in the monitoring plan (total electricity imported and total electricity exported) to account for the uncertainty where the dates of the recorded data may not coincide with the verification period.

The PDD also describes additional procedures to deal with data uncertainty, to address the failure of measuring and monitoring equipments etc. The validation team therefore agrees that the project activity meets all the applicability conditions and all other stipulations of the selected approved methodology AMS I.D.

The validation team physically verified the metering system installed at the WTGs and at the substations of the project activity. The validation team confirmed that the description in the revised PDD represents the metering system available at the project activity site and the monitoring plan is in compliance with the methodology.

The generated electricity data will be directly used for calculation of baseline emissions after cross checking with the electronic records maintained by Enercon. PP has provided for electronic archiving of all the monitored data and its availability for 2 years after the end of the last crediting period. The validation team therefore concluded that the monitoring plan adequately described the collection and archiving of the data used for the calculation of the baseline emission.

Section B.7.2 of the PDD, clearly describes the roles and responsibilities for monitoring, measurement, reporting and archiving. The O & M services for the WTGs have been contracted to competent service personnel such as Enercon^{26/27} as evidenced from the respective O & M agreements.

In this section, two CARs and one FAR were raised.

CAR 2 was raised as the monitoring practices and procedures observed during the onsite visit were not in accordance with the applied methodology AMS I D version 15. The practices like net electricity supplied to the grid was calculated and not metered. Also the procedure and rationale for calculating net electricity, gross generation, total imports and line losses by each WTG was not explained in PDD. The impacts of errors/failure of monitoring equipment of generation was

In response to CAR 2, PP revised the PDD and applied the latest applicable version of the methodology i.e. AMS I D version 16. Section B.7 of PDD was revised to include details of monitoring practices and these were found to be in accordance with the methodology AMS I. D version 16. Hence, CAR 2 was closed.

CAR 3 was raised as details of period of storage and archiving of monitored data as per the requirements of "Tool for calculation of emission factor" was not evident in Section B.7.2. The PDD^{/3/} was revised to include these details which was in accordance with these requirements of the applied Tool. Hence, CAR 3 was closed.

FAR 1 was raised as the practice of calibration of the meters mentioned in PDD was once in a year while in PPA it was given as once in every six months. The practices carried out at the site were once in a year. In response PP explained that PPA followed an old preforma which mentions this frequency to be six months. However, the frequency of calibration of meters practiced are once a year by Paschim Gujarat Vij Company Ltd (PGVCL) which under the Gujarat Electricity Board. These government bodies have found these practices to be appropriate. The validation team confirmed the same based on interviews conducted with PP and the OEM personnel during the on-site visit, and also verified the calibration certificates^{/34/} these were in accordance with the requirements of Para 17c of "General Guidelines to SSC CDM methodologies" and this was found acceptable. Hence, reply to FAR 1 was accepted.

3.5.1 Parameters determined ex-ante

The following parameters were available during the validation and will remain fixed throughout the crediting period:

1. Grid emission factor (EF_{grid} , tCO_2/MWh)
2. Operating margin CO_2 emission factor ($EF_{grid\ OM, y}$ tCO_2/MWh)
3. Build margin CO_2 emission factor ($EF_{grid\ BM, y}$ tCO_2/MWh)
4. Plant load factor (PLF)

The grid emission factor (EF_{grid}) was calculated from the operating margin (OM) CO_2 emission factor (1.00050) and build margin (BM) CO_2 emission factor (0.6752), referenced from CEA (Central Electricity Authority) database version 05^{/15/}. The OM & BM values are correct and appropriate as these were sourced from document published by Ministry of Power, Government of India.

The weighting of operating margin emissions factor and weighting of build margin emissions factor are 0.75 and 0.25, respectively. The calculation of OM and BM is as per the latest version of "Tool to calculate emission factor for an electricity system". The grid emission factor (combined margin) calculated is 0.9225. This was verified and was found to be correct.

The PLF was evaluated based on the requirements of para 3 (a) of "Guidelines on Reporting and Validation of Plant Load Factors" EB 48 Annex 11. The value has been taken as 23.18% from Information Memorandum document as was provided to banks while applying for project financing. The value was compared with actual generation and was found to be appropriate and conservative.

The project activity leads to zero emissions ($PE_y=0$) and leakage is not considered as per the methodology. The project activity is expected to reduce emissions of 179,829 tCO_2e over a 10 years crediting period. The validation team confirmed that parameters, values chosen were appropriate, transparent and conservative.

3.5.2 Parameters determined ex-post

The parameters that are to be monitored ex-post are

- i) Net electricity supplied by project activity to the grid in year y (EGy, kWh)
- ii) Quantity of electricity exported to GUVNL facility $EG_{y, \text{Export}}$
- iii) Quantity of electricity imported from GUVNL facility $EG_{y, \text{Import}}$
- iv) Electricity generated by each WTG $EG_{y, \text{WEG}}$
- v) Electricity generated at the Cluster Meter (CM) EG_{CM}

The net electricity exported by the project activity to NEWNE Grid is a calculated parameter based on the measured values of import and export at common meter (connected to all WTGs in the wind farm) at Sub-station and controller meter at WTG. Export and import by individual WTGs are apportioned on the basis of individual WTG controller meter reading (export). The practises and procedures applied were found to be satisfactory and reasonable. The emission reduction calculations are done on the basis of calculated value of net electricity exported to the grid after deducting imports from the grid.

The GHG indicators, parameters, monitoring methods, frequencies and the measurement equipment were considered to be reasonable and appropriate. The parameter EGy will allow the calculation of the baseline emissions in a proper manner as there are no project emissions and leakage in the project activity.

3.6 Calculation of GHG Emissions

The values used in CER calculations sheet^{/35/} were verified and compared with values indicated in PDD^{/3/}. The validation team verified the formulae applied and these were found to be correctly applied in the spreadsheets. All assumptions and data used by PP are listed in PDD^{/3/} including their references and sources. The values are considered reasonable in the context of the proposed CDM project activity. All estimates of the baseline emissions can be replicated using the data and parameter values provided in the revised PDD.

Since most estimates of emissions reductions are derived from accepted National sources, it is reasonable to assume that they are accurate. The baseline methodology has been applied correctly to calculate project emissions, baseline emissions, leakage emissions and emission reductions. The validation team has verified the information in the PDD and the spreadsheets and found that the formulae used were correctly applied. These are evidenced in the details as provided in Section B.6.3 of the PDD. In conclusion, it can be stated that the project activity will lead to emission reductions of about 179829 tCO₂ over a crediting period of 10 years.

3.7 Environmental Impacts

According to the Ministry of Environment and Forests (MOEF) Notification, Govt. of India S.O 1533^{/36/}, wind energy projects are not among the projects that mandate an Environment Impact Assessment to be conducted. Wind energy projects are considered environmentally safe and will not involve any negative environmental impacts. Also the size of the project is a small scale CDM project. As such, the validation team considered that the project will not have adverse environmental impact.

3.8 Comments by Local Stakeholders

A local stakeholder's consultation meeting was conducted on 23 December 2008 at Jamvadi Village to invite comments from stakeholders on the project activity. A public notice (in English language) inviting the stakeholders to the meeting was published in "Gujarat Samachar" a local

newspaper on 5 December 2008^{/37/} and a public notice in local language (Gujarati) was displayed at major public places line Grampanchyat Office and Enercon Site Office. An Invitation letter was also circulated to the local villagers inviting them for the meeting.

The meeting was attended by about 19 people which included the local villagers, Sarpanch (democratically elected head of a village) and local leaders. They provided their comments on the project activity. These included the creation of positive impacts, like increase real estate price, and alleviation of the socio-economic conditions. No negative comments were received.

The validation team assessed and verified the related documents (Notice Inviting the Stakeholders, Attendance List^{/38/}, Minutes of Stakeholders Meeting^{/20/} and Questionnaire filled by Stakeholders^{/39/}) and also interviewed a stakeholder (Mr. Jitendra Kartotia) who was present in the meeting. The team confirms that local stakeholder consultation was performed adequately.

4.0 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

The PDD version 1^{/2/} dated 6 November 2009 was made available for Parties, Stakeholders and UNFCCC accredited NGOs to comment via UNFCCC website (<http://cdm.unfccc.int/Projects/Validation/DB/3NNG09BA8X7G25VH8FUSQT4FOZYM92/view.html>) from the period 11 December 2009 to 9 January 2010 for a period of 30 days.

One comment from was received during this period. The "Pariyavaran Mitra" commented on the PDD and this was raised as CL 7. The comment raised during GSCP was concerning issues such as the potential environmental impacts, details of clearances obtained from State government departments and the procedure on how the Local Stakeholder Consultation process was carried out. In response, the PP clarified and provided details relating to each of these queries. The validation team verified these responses and found them to be appropriate and acceptable. Hence, CL 7 was closed.

5.0 VALIDATION OPINION

SIRIM QAS Intl performed a validation of the proposed CDM project "9.6 MW Wind Energy Project at Jamvadi & Navagam & Kalavad, Jamnagar, Gujarat, India of Rohit Surfactants Pvt. Ltd" located at Jamnagar, Gujarat, India. The validation was performed on the basis of the UNFCCC criteria for the Clean Development Mechanism and the host country criteria, as well as

criteria given to provide for consistent project operations, monitoring and reporting. Using a risk based approach, the review of the project design documentation and the subsequent follow-up interviews provided SIRIM QAS Intl. with sufficient evidence to determine the fulfillment of the stated criteria.

The project participant is Rohit Surfactants Pvt. Ltd. The project participant involved meets the requirements to participate in CDM. The DNA of India has confirmed that the project assists in achieving sustainable development. The proposed CDM project is a small scale project with a total installed capacity of 9.6 MW. The project applies the baseline and monitoring methodology "Grid connected renewable electricity generation" AMS I D version 16. The project is eligible as a type I small-scale CDM project activity with total installed capacity of electricity generation less than 15 MW.

The project activity involves installation and operation of 12 WTGs in Jamnagar, Gujarat. The project will supply the electricity produced by renewable source (i.e. wind) to NEWNE Grid. The project will thereby displace the equivalent supply of electricity from fossil fuel fired power plants. The project will result in the reduction of greenhouse gas emissions that are real, measurable and give long term benefits to the mitigation of climate change.

It is demonstrated that the project faces an investment barrier that would prevent its implementation without the CDM. Without the CER revenue, the project IRR is 11.44% and with

the CER revenue the project IRR is 13.98%. Emissions reductions from the project are hence additional to any that would occur in the absence of the project activity.

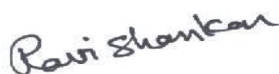
The GHG emission calculations are documented in a complete and transparent manner. The algorithms/ formulae and methodologies for accounting GHG emissions are appropriate and emission factors are deemed to be of sufficient accuracy.

The total emission reductions from the project are envisaged to be 179,829 tCO₂ equivalent during the crediting period of 10 years. The emission reductions forecast has been checked and it is deemed likely that the stated amount is achievable on the basis that the underlying assumptions do not change.

The monitoring plan is line with the approved monitoring methodology of AMS I D. The plan adequately addresses all necessary information for monitoring and reporting of emissions reductions due to the project activity. Responsibilities and authorities for project management, monitoring and reporting, and the data quality control and quality assurance procedures have been described in the PDD. These procedures will be implemented before the start of the crediting period.

In summary, it is SIRIM QAS Intl.'s opinion that the project titled "*9.6 MW Wind Energy Project at Jamvadi & Navagam & Kalavad, Jamnagar, Gujarat, India of Rohit Surfactants Pvt. Ltd*", as described in the PDD version 2.2 dated: 4 September 2011 meets all relevant UNFCCC requirements for the CDM, is eligible as Small scale CDM project activities and correctly applies the baseline and monitoring methodology specified in AMS I.D (version 16). As such, SIRIM QAS Intl. recommends the registration of the project as a CDM project activity.

Prepared by :



Ravishankar
(Validation Team Leader)

Approved by :



Parama Iswara Subramaniam
(DOE Representative)

6.0 REFERENCES

6.1 Information Reference List

Ref. No.	Document or Type of Information
/1/	Validation and Verification Manual version 1.2 (http://cdm.unfccc.int/Reference/Manuals/index.html)
/2/	PDD version 01, dated 6 November 2009
/3/	PDD version 02, dated 24 July 2010
/4/	Revised PDD version 02.1, dated 11 May 2011
/4.1/	Revised PDD version 02.2 dated 4 September 2011
/5/	LoA from NCDMA, dated 1 September 2009, Ref No: 4/6/2009-CCC
/6/	Modalities of Communication
/7/	Purchase order, dated 25 April 2007
/8/	Offer letter from Enercon, dated 17 January 2007
/9/	Land document, dated 12 March 2008
/10/	Commissioning certificates, dated 24 March 2008 and 2 April 2008
/11/	Statutory clearance certificate, dated 19 March 2008
/12/	Bank loan sanction document, dated 24 September 2007
/13/	DPR dated 20 January 2007
/14/	Power purchase agreement, dated 27 August 2008
/15/	CEA Database version 5
/16/	Minutes of Meeting of the Board of Directors Meeting dated 10 March 2007
/17/	http://cdm.unfccc.int/Projects/DB/SGS-UKL1186566570.26/view
/18/	MOU with CDM Consultant, dated 30 July 2007
/19/	MOU signed with Ecolutions Carbon India Pvt. Ltd, dated 8 October 2008
/20/	Minutes of local stakeholders meeting, dated 23 December 2008
/21/	Agreement with DOE i.e. SIRIM QAS Int. dated 7 th November 2009
/22/	Financial calculations sheet
/22.1/	Benchmark sheet
/23/	Invoices raised by the equipment supplier for Investment cost
/24/	GERC Order document, dated 11 August 2006
/25/	Invoices raised to GUVNL for sale of electricity
/26/	Maintenance Agreement dated 1 April 2009
/27/	Contract for Operating the Wind Farm dated 1 April 2009
/28/	Invoice raised by Enercon for Maintenance the Wind farm and Operating the Wind farm, dated 11 January 2011
/29/	Information Memorandum document
/30/	Bank confirmation letter, dated 21 April 2011
/31/	Actual PLF data
/32/	Letter from chartered accountant
/33/	Revised IRR Sheet
/34/	Calibration Certificates
/35/	CER Calculations Sheet
/36/	MOEF Notification, Govt. of India S.O 1533
/37/	Notice inviting the Stakeholders for Local Stakeholders Consultation meeting dated 5 December 2008
/38/	Attendance list of Stakeholders Meeting
/39/	Questionnaire filled by Stakeholders during Local Stakeholders Consultation meeting

6.2 Information web reference List

SI No.	Document or Type of Information
1	http://cdm.unfccc.int/Reference/Manuals/index.html
2	http://www.enerconindia.net/index.jsp
3	http://envfor.nic.in/legis/eia/so1533.pdf
4	http://www.banknetindia.com/banking/sbi_plra.htm
5	http://www.domain-b.com/finance/banks/punjab_national_bank/20070215_deposits.html
6	http://news.webindia123.com/news/ar_showdetails.asp?id=702170500&cat=&n_date=20070217
7	http://www.moneycontrol.com/mccode/news/article/news_article.php?autono=292699
8	http://www.thehindubusinessline.com/2007/04/08/stories/2007040804260100.htm
9	http://rbi.org.in/scripts/BS_ViewBulletin.aspx?Id=8225
10	http://www.bseindia.com/histdata/hindices.asp
11	http://www.rbi.org.in/scripts/WSSView.aspx?Id=10900
12	http://finmin.nic.in/reports/annualreport.asp
13	http://www.livemint.com/2009/07/08143113/Tax-incentives-for-investment.html
14	http://www.gercin.org/renewablepdf/en_1303213122.pdf
15	http://www.bpoindia.org/columns/budget-2007.shtml

APPENDIX A
VALIDATION PROTOCOL

Project No. SQAS-CDM-ES12880008

Table 1 Mandatory Requirement for Small Scale Clean Development Mechanism (CDM) Project Activities

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference/ Comment
1. The project shall assist Parties included in Annex I in achieving compliance with part of their emission reduction commitment under Art. 3	Kyoto Protocol Art. 12.2	OK	The project will reduce the GHG emissions in the Host Country. No Annex 1 party has been identified by the project participant.
2. The project shall assist non-Annex I Parties in achieving sustainable development and shall have obtained confirmation by the host country thereof	Kyoto Protocol Art. 12.2, Simplified Modalities and Procedures for Small Scale CDM Project Activities §23a	OK	The project activity is implemented in India (non-annex 1 party). The project assists in achieving the Sustainable Development in the Host Country.
3. The project shall assist non-Annex I Parties in contributing to the ultimate objective of the UNFCCC	Kyoto Protocol Art. 12.2.	OK	The project will assist Host party (India) which is a non-Annex 1 Party in achieving Sustainable Development goals. Also the project activity will lead to generation of quantified emission reductions thereby contributing to the ultimate objective of UNFCCC.

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference/ Comment
4. The project shall have written approval of voluntary participation from the designated national authorities of each party involved	Kyoto Protocol Art. 12.5a, Simplified Modalities and Procedures for Small Scale CDM Project Activities §23a	OK	The project activity has obtained the LoA (dated 1 September 2009) for voluntary participation in CDM from DNA of the Host Country.
5. The emission reductions should be real, measurable and give long-term benefits related to the mitigation of climate change	Kyoto Protocol Art. 12.5b	Depends on closure of CAR 2, CAR 3, CAR 4, CAR 5, CL 6, and FAR 1. OK	The emission reductions from the project activity are real, measurable and give long-term benefits related to the mitigation of climate change.
6. Reduction in GHG emissions must be additional to any that would occur in absence of the project activity, i.e. a CDM project activity is additional if anthropogenic emissions of greenhouse gases by sources are reduced below those that would have occurred in the absence of the registered CDM project activity	Kyoto Protocol Art. 12.5.c, Simplified Modalities and Procedures for Small Scale CDM Project Activities §26	Depends on closure of CAR1, CL 2, CL3 and CL 4 OK	The reduction in GHG emissions is additional to that which would occur in absence of the project activity.
7. Potential public funding for the project from Parties in Annex I shall not be a diversion of official development assistance	Marrakech Accords (Decision 17/CP.7)	OK	The project activity is funded by Equity from PP and Debt from Indian Banks. No public funding from parties in Annex 1 is considered for financing the Project.

8. Parties participating in the CDM shall designate a national authority for the CDM	Marrakesh Accords (CDM modalities§ 29)	OK	NCDMA is the National Authority in the Host Country (India) for the CDM.
9. The host country shall be a Party to the Kyoto Protocol	Marrakesh Accords (CDM modalities§ 30)	OK	The Host Country i.e. India is a Party to Kyoto Protocol. India ratified the protocol on 26 August 2002.
10. The proposed project activity shall meet the eligibility criteria for small scale CDM project activities set out in § 6 (c) of the Marrakesh Accords and shall not be a debundled component of a larger project activity	Simplified Modalities and Procedures for Small Scale CDM Project Activities §12a,c	OK	The project activity meets the eligibility criteria for Small Scale CDM Project activity. The project involves the installation of wind energy generators of overall capacity of 9.6 MW, which is less than 15 MW, capacity limit as per the paragraph 6 (c) Decision 17/CP.7 of Modalities and Procedures for CDM and the project is not a debundled component of a larger project activity.

11. The project design document shall conform with the Small Scale CDM Project Design Document format	Simplified Modalities and Procedures for Small Scale CDM Project Activities, Appendix A	OK	The project design document confirms with the latest version (version 3) of Small Scale CDM Project design document format.
12. The proposed project activity shall confirm to one of the project categories defined for small scale CDM project activities and uses the simplified baseline and monitoring methodology for that project category	Simplified Modalities and Procedures for Small Scale CDM Project Activities §22e	OK	The project activity confirms with the project category of I.D, "Grid connected renewable electricity generation." As per as per Appendix B to the Simplified Modalities and Procedures for Small Scale CDM projects.
13. Comments by local stakeholders are invited, and a summary of these provided	Simplified Modalities and Procedures for Small Scale CDM Project Activities §22b	OK	The comments by the Local Stakeholders were invited and a summary of these is provided. This has been confirmed by interview conducted with local stakeholders during the on-site visit.
14. If required by the host country, an analysis of the environmental impacts of the project activity is carried out and documented	Simplified Modalities and Procedures for Small Scale CDM Project Activities §22c	OK	In the Host Country for wind power projects there is no legislative requirement for analysis of

			environmental impacts. http://envfor.nic.in/legis/eia/so1533.pdf
15. Parties, stakeholders and UNFCCC accredited NGOs have been invited to comment on the validation requirements and comments have been made publicly available	Simplified Modalities and Procedures for Small Scale CDM Project Activities §23b,c,d	Depends on closure of CL7 OK	The Project Design Document was made publicly available for the comments from Parties, Stakeholders and UNFCCC accredited NGOs from 11 December 2009 to 9 January 2010. The comments made by the NGOs were made publically available on the UNFCCC website. http://cdm.unfccc.int/Projects/Validation/DB/3NNG09BA8X7G25VH8FUSQT4FOZYM92/view.html The comments were duly addressed by the PP.

Table 2 Requirements Checklist

CHECKLIST QUESTION	MoV*	COMMENTS	Draft Conch.	Final Concl.
A. Project Description The project design is assessed.				
A.1. Small scale project activity It is assess whether the project qualifies as small scale CDM project activity.				
A.1.1. Does the project qualify as a small scale CDM project activity as defined in paragraph 6 (c) of decision 17/CP.7 on the modalities and procedures for the CDM?	DR/ SV	Yes, the project qualifies as a Small Scale Project activity. The project involves the installation of wind energy generators of overall capacity of 9.6 MW, which is less than 15 MW, capacity limit as per the paragraph 6 (c) Decision 17/CP.7 of Modalities and Procedures for CDM.	OK	OK
A.1.2. The small scale project activity is not a debundled component of a larger project activity?	DR/ SV	Section A.4.5 of the PDD was evaluated based on the requirements of the Appendix C of the Simplified Modalities and Procedures for Small Scale CDM projects. The PP does not have any other Small Scale Project registered or in pipeline for registration. Based on the outcome of the evaluation it was concluded that, the project activity is not a debundled component of a larger project activity. The on-site visit has confirmed the same.	OK	OK

* MoV = Means of Verification, DR= Document Review, I= Interview

CHECKLIST QUESTION	MoV*	COMMENTS	Draft Conch.	Final Concl.
A.1.3. Does proposed project activity confirm to one of the project categories defined for small scale CDM project activities?	DR/ SV	Yes, as per Appendix B to the Simplified Modalities and Procedures for Small Scale CDM projects. The project activity falls under the category of I.D, “ <i>Grid connected renewable electricity generation.</i> ” The project activity confirms to the project category “I D as defined in section B.1 and demonstrated in Section B.2.	OK	OK
A.2. Project Design Validation of project design focuses on the choice of technology and the design documentation of the project.				
A.2.1. Are the project’s spatial (geographical) boundaries clearly defined?	DR/ SV	Yes, the spatial boundaries for the project are clearly defined as provided in Section A.4.1.4 of the PDD. These were confirmed during the on-site audit.	OK	OK
A.2.2. Are the project’s system (components and facilities used to mitigate GHG's) boundaries clearly defined?	DR/ SV	Yes, the projects system (components and facilities used to mitigate GHGs) boundaries are clearly defined in Section B.3. The boundary is “the physical, geographical site of the renewable generation source delineates the project boundary.” This is in accordance with the requirements of the applied methodology A.MS. I D.	OK	OK
A.2.3. Does the project design engineering reflect current good practices?	DR/ SV	The Project Design Engineering employed for the project activity has following salient features. 1. The blades of the WTGs have the technology which reduces load thereby increasing the lifetime and reducing the Noise level. 2. The project activity employs a multi-pole variable speed (Synchronous) generator. Due to this the Gear Box which steps up the speed to meet the speed of	OK	OK

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CHECKLIST QUESTION	MoV*	COMMENTS	Draft Conch.	Final Concl.
		<p>Induction Generator is eliminated resulting in reduced transmission losses, and elimination of wear and tear of the Gear Box.</p> <p>3. The Hub and Blades employed in the Project activity are designed such that the weight of the Hub Rotor is much lower hence; the initial moment of inertia is low. Due to this and pitch regulation feature the machine starts generating power at low wind speed i.e., 2.5 m/s, Thereby generating at lower wind speeds.</p> <p>An independent study of Wind Power Sectors/ Wind Power Equipment Manufactures was carried out to understand the practises followed in Project Design and Engineering.</p> <p>Based on the study findings it was concluded that the project design engineering reflects current good practises. And it is expected that the technology will not be replaced during crediting period.</p> <p>http://www.enerconindia.net/</p> <p>http://www.windpowerengineering.com</p>		
A.2.4. Will the project result in technology transfer to the host country?	DR/ SV	<p>The project was evaluated based on the criteria of the Host Country for the Technology Transfer. That is “<i>The CDM project activity should lead to transfer of environmentally safe and sound technologies that are comparable to best practices in order to assist in upgradation of the technological base. The transfer of technology can be within the country as well from other developing countries also.</i>”</p> <p>Based on the outcome of the evaluation it was concluded that there is technology transfer to within the host country.</p>	OK	OK

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CHECKLIST QUESTION	MoV*	COMMENTS	Draft Conch.	Final Concl.
A.2.5. Do the projects require extensive initial training and maintenance efforts in order to work as presumed during the project period? Does the project make provisions for meeting training and maintenance needs?	DR/ SV	The project requires extensive initial training for operation and maintenance of the project. The Operation and Maintenance Services have been outsourced to Enercon India Pvt. Ltd. (OEM) (Based on agreement dated 1 April 2009.)	OK	OK
A.2.6. Does the project include public funding from parties included in Annex I?	DR/ SV	No, the project does not include public funding from Annex 1 parties. The project is financed by equity and debt finance by State Bank of India.	OK	OK
A.2.7. Is the project description/technical specification in line with the DPR and the on-site findings?	DR/ SV/I	The location of the CDM Project activity does not confirm with the one as provided in the supporting documents (DPR). The DPR refers the location to be Samana.	CL-1	OK
A.3. Contribution to Sustainable Development The project's contribution to sustainable development is assessed				
A.3.1. Has the Host Country approved this project as a CDM project?	DR	Yes, the host country has approved the project as a CDM project. This has been confirmed by the Host Country Approval Letter dated 1 September 2009.	OK	OK
A.3.2. Will the project create other environmental or social benefits than GHG emission reductions?	DR/ SV	Yes, the project has created other social benefits like employment for skilled and unskilled manpower at the Project site during construction and operation phase. This has been confirmed from the on- site audit.	OK	OK
A.3.3. Will the project create any adverse environmental or social effects?	DR/ SV	The host country has considered that Wind power projects do not have considerable adverse environmental and social impacts. Hence EIA has been waived off by the Host Country.	OK	OK
A.3.4. Is the project in line with sustainable development policies of the host country?	DR/ SV	Yes, the project is in line with the sustainable development policies of the host country. It is confirmed	OK	OK

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CHECKLIST QUESTION	MoV*	COMMENTS	Draft Conch.	Final Concl.
		by the Host Country Approval Letter dated 1 September 2009 and Section A.2 of the PDD.		
A.3.5. Is the project in line with relevant legislation and plans in the host country?	DR/ SV	<p>The Power Ministry in the Host Country has set an ambitious plan of achieving capacity addition in power sector to 78,700MW for the Eleventh Five year plan (2007-2012). Through this national plan it encourages private sector to participate in creating/investing in capacity addition from Non-Conventional energy sources, mainly Wind, Small Hydro, and Bio-mass.</p> <p>To achieve the goal of energy security, along with Ministry of Power, the Ministry of New and Renewable Energy is actively involved in Research and Development, Production, and Application of New and Renewable energy technologies.</p> <p>http://www.powermin.nic.in/JSP_SERVLETS/internal.jsp http://mnes.nic.in/</p> <p>Based on the evaluation of the project with Legislation and Plans in the Host Country it was concluded that the project activity is in line with the Host Country's legislations and plans.</p>	OK	OK
B. Project Baseline The validation of the project baseline establishes whether the selected baseline methodology is appropriate and whether the selected baseline represents a likely baseline scenario.				
B.1. Baseline Methodology It is assessed whether the project applies an appropriate baseline methodology.				
B.1.1. Is the selected baseline methodology in	DR/	Yes, as provided in section B.1, the Selected Baseline	OK	OK

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CHECKLIST QUESTION	MoV*	COMMENTS	Draft Conch.	Final Concl.
line with the baseline methodologies provided for the relevant project category?	SV	Methodology AMS I.D version 15 “ <i>Grid Connected Renewable Electricity Generation</i> ” is in line with the baseline methodologies provided for the project category.		
B.1.2. Is the baseline methodology applicable to the project being considered?	DR/ SV	Yes, the applied baseline methodology is applicable to the project and the applicability demonstrated in section B.2 of the PDD.	OK	OK
B.2. Baseline Determination It is assessed whether the project activity itself is not a likely baseline scenario and whether the selected baseline represents a likely baseline scenario.				
B.2.1. Is it demonstrated that the project activity itself is not a likely baseline scenario due to the existence of one or more of the following barriers: investment barriers, technology barriers, barriers due to prevailing practice or other barriers?	DR/ SV	<p>The Financial Sheet indicates post tax Project IRR has been established whereas it is compared with (PLR) pre tax benchmark. Please Clarify, Justify in Context of EB 51 Annex 58.</p> <p>Please Clarify following points based on the Guidelines EB 51 Annex 58</p> <ul style="list-style-type: none"> i) Project cost as per GERC – is 4.65 Cr INR per MW. This is taken as Rs.5.00 cr. INR per MW. ii) PLF has been assumed as per the manufacturer’s offer letter @ 24.25 %. But the applicable PLF has to be in line with the guidelines of the EB 48 Annex11. Also provide evidence for derating. iii) As per GERC guidelines, O & M charges are prescribed @ 1.50 % and this includes all other expenses (manpower, consumables, spares, turbine and other electrical system maintenance, road maintenance, insurance, other statutory duties, 	<p>CL-2</p> <p>CL-3</p>	<p>OK</p> <p>OK</p>

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CHECKLIST QUESTION	MoV*	COMMENTS	Draft Conch.	Final Concl.
		<p>working capital and interest liability). In the IRR workings, this has been assumed Rs. INR 60 lakhs which works out to 1.25 %. Clarify the source in the context of the Guideline referred above.</p> <p>iv) As per GERC guidelines (as stated above), the 1.50 % is inclusive of insurance charges, whereas even after applying a rate of 0.125% a sum of Rs. 6 lakh has been added as insurance charges. Clarify the source in the context of the Guideline referred above.</p> <p>v) As per GERC guidelines and also on a common parlance any long term repayment would carry a repayment period of about 10 years whereas this is found to be 6 years here. Since this fact of 6 years repayment could have been known at the time of making the investment decision.</p> <p>vi) The benefits available u/s. 80 IA of the Indian Income tax Act have not been taken into account for arriving at the tax liability.</p> <p>vii) The Tax shield available to the company out of the accelerated depreciation available has not been reckoned.</p> <p>viii) Tem Loan rate of interest has been calculated @ 11 % (NO evidence provided) whereas its is @ 10 % as per GERC guidelines and @ 12.75 % as per RBI site as on the date of Investment decision. Clarify the source in the context of the Guideline referred above.</p> <p>ix) Pl. furnish the relevant authentic URLs / evidences for the following assumed data: Rs. 3.37 selling price of electricity 5.28 % of Depreciation rate (Companies Act) 80% of Depreciation rate (Income tax Act)</p>		

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CHECKLIST QUESTION	MoV*	COMMENTS	Draft Conch.	Final Concl.
		<p>MAT – 11.33%</p> <p>IT – 33.99%</p> <p>Interest rate – 11%</p> <p>x) It is seen that depreciation is calculated on the cost of land which is not normally a depreciable asset.</p> <p>xi) The PP has not performed a sensitivity analysis as per Guidelines EB 51 Annex 58. Only one Variable PLF has been included in this analysis.</p> <p>xii) The project is commissioned in March 2008, but the IRR workings (Ratio Sheet) shows that the electricity generation commence only from 01.04.2009. Kindly clarify.</p> <p>xiii) The tax component taken for calculation of WACC is 11.33%. Clarify/Explain.</p> <p>xiv) Benchmark selected is WACC, suitability of this benchmark in the project context needs to be justified.</p> <p>xv) Choice of BSE index used for calculating Market Return</p> <p>xvi) Provide detailed Calculation of Beta.</p> <p>xvii) Salvage value has not been considered in the revised IRR calculations submitted by the PP.</p>		
B.2.2. Is the application of the baseline methodology and the discussion and determination of the chosen baseline transparent and conservative?	DR/ SV	<p>The assumptions made and applied for the financial calculations sheet for calculation of important comparison parameters like IRR does not provide conservative value.</p> <p>i. Like In the cost of generation sheet value arrived for PBDIT is rounded off to a lower value. This does not</p>	CAR-4	OK

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CHECKLIST QUESTION	MoV*	COMMENTS	Draft Conch.	Final Concl.
	DR/ SV	<p>reflect the true IRR.</p> <p>ii. The Value of MAT as calculated in Tax Calculations Sheet and applied in Cost of Generation are incorrect and not conservative.</p> <p>Clarify the following points from the financial calculations workbook</p> <p>i. DSCR (Debt service coverage ratio in Ratio Sheet) varies from 0.65 to 0.74 from year 2009-10 to 2014-15. Clarify.</p> <p>The formula applied for calculation of PBDT (in P and L Sheet) is incorrect. It refers to cells which do not have any values.</p>	CL-4	OK
B.2.3. Are relevant national and/or sectoral policies and circumstances taken into account?	DR/ SV	<p>The Electricity Act, 2003 in the Host Country provides framework for accelerated and more efficient development of Power Sector. Based on the Act, the Central Government implements the National Electricity Policy and Tariff Orders from time to time.</p> <p>The National Electricity Policy aims at achieving the objective of access to electricity for all by 2012. It also encourages harnessing the power from non-conventional sources of energy like Wind, Hydro, and Biomass.</p> <p>http://policies.gov.in/</p> <p>The project activity was evaluated based on relevant and latest national policies i.e “National Electricity Policy”. And it was concluded that project activity has taken due cognizance of the prevailing national policies.</p>	OK	OK

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CHECKLIST QUESTION	MoV*	COMMENTS	Draft Conch.	Final Concl.
B.2.4. Is the baseline selection compatible with the available data?	DR/SV	Yes, the baseline selection is compatible with the available data (CEA database version 5, November 2009). This was confirmed from the data available from the official website of Central Electricity Authority. http://www.cea.nic.in/planning	OK	OK
B.2.5. Does the selected baseline represent the most likely scenario describing what would have occurred in absence of the project activity?	DR/SV	Refer CAR 5 in E.3.5	Refer to CAR 5	OK
B.2.6. Does the data/information in Events Chronology table confirm with the actual/real events supported by documented evidence that conclude real and continuous action in the CDM project activity?	DR/SV	Section B.5 of the PDD, under events chronology table, i) The Stakeholders Meeting was conducted during 23-24 Dec 2008. Records and documents pertaining to the meeting provide the detail for 23 December 2008. Please provide the details of the activities carried on 24 December 2008. ii) The date of Commissioning of the WTGs is 25 March 2008. While records and documents provide details of the Commissioning to be 18 March 2008 and 26 March 2008. Clarify.	CL-5	OK
B.2.7. Has the Project Participant considered benefits from CDM prior to the project investment decision ?	DR/SV/I	Yes, the PP has considered benefits from the CDM as evidenced from the date the Management took decision to invest in the project on 10 March 2007. Also as mentioned in the Section B.5, Chronology of events table, the PP has 6 MW capacity WTGs in a bundled CDM project located in the State of Karnataka, the project is under Request for Registration. http://cdm.unfccc.int/UserManagement/FileStorage/CE6EYN7KWO13MRE0Q3FLKEAGANOXMS . This was confirmed during the site visit and interview conducted with the PP.	OK	OK

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CHECKLIST QUESTION	MoV*	COMMENTS	Draft Conch.	Final Concl.
C. Duration of the Project / Crediting Period It is assessed whether the temporary boundaries of the project are clearly defined.				
C.1.1. Are the project's starting date and operational lifetime clearly defined?	DR/ SV	Yes, as mentioned in Section C.1.1, the start date of the project activity is taken as 25/04/2007, which is the date of Purchase Order placed by the PP to Enercon India Pvt Ltd for purchase of WTGs, i.e. first financial commitment made by the PP towards the project. The operational lifetime of the project activity is clearly defined as 20 years based on the manufacturers specifications which are in line with EB 50 Annex 15.	OK	OK
C.1.2. Is the crediting period clearly defined (seven years with two possible renewals or 10 years with no renewal)?	DR/ SV	Yes, as mentioned in Section C.2.2, fixed crediting period of 10 years has been chosen.	OK	OK

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CHECKLIST QUESTION	MoV*	COMMENTS	Draft Conch.	Final Concl.
D. Monitoring Plan The monitoring plan review aims to establish whether all relevant project aspects deemed necessary to monitor and report reliable emission reductions are properly addressed.				
D.1. Monitoring Methodology It is assessed whether the project applies an appropriate monitoring methodology.				
D.1.1. Is the selected monitoring methodology in line with the monitoring methodologies provided for the relevant project category?	DR/ SV	Yes, the selected monitoring methodology <i>“Indicative simplified baseline and monitoring methodologies for selected small-scale CDM Project CDM project activity categories”</i> i.e. AMS I.D. <i>“Grid connected renewable electricity generation”</i> is in line with the monitoring methodologies as demonstrated in the section B.2 and the applied in monitoring plan in section B.7.2 of the PDD. It is in line with the requirements of the monitoring methodologies provided for the relevant project category.	OK	OK
D.1.2. Is the monitoring methodology applicable to the project being considered?	DR/ SV	Yes, the monitoring methodology is applicable to the project. As explained in section B.2 of the PDD, and based on the monitoring plan as developed and provided in section B.7.2 of the PDD.	OK	OK
D.1.3. Is the application of the monitoring methodology transparent?	DR/ SV/I	I. Para 17 of applied methodology requires the metering of the net electricity supplied by the project activity to the grid. It was observed that the net electricity exported is calculated. This has not been discussed in the PDD.	CAR-2	OK

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CHECKLIST QUESTION	MoV*	COMMENTS	Draft Conch.	Final Concl.
		<p>II. The procedure and rationale for calculating the</p> <p>(a) net electricity, (b) gross generation (c) Total electricity Imported (d) total line losses</p> <p>by each WTG from the metered reading at 220kv (JMR) in a manner to enable a reader to reproduce the calculations is not explained/justified in the PDD.</p> <p>III. Also the impact of errors/ failure of monitoring equipments on measurement of Generation are not discussed/ clear.</p>		
D.1.4. Will the monitoring methodology give opportunity for real measurements of achieved emission reductions?	DR/ SV/I	Refer CAR 2 in D.1.3	Refer to CAR 2	OK
D.2. Monitoring of Project Emissions It is established whether the monitoring plan provides for reliable and complete project emission data over time.				
D.2.1. Are the choices of project emission indicators reasonable?	DR/ SV	In accordance with the applied methodology AMS I.D., project emission is not considered. The auxiliary consumption (Import from grid) has been deducted in the baseline.	OK	OK
D.2.2. Will it be possible to monitor / measure the specified project emission indicators?	DR/ SV	In accordance with the applied methodology AMS I.D., project emission is not considered. The auxiliary consumption (Import from grid) has been deducted in the baseline.	OK	OK

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CHECKLIST QUESTION	MoV*	COMMENTS	Draft Conch.	Final Concl.
D.2.3. Do the measuring technique and frequency comply with good monitoring practices?	DR/SV	In accordance with the applied methodology AMS I.D., project emission is not considered. The auxiliary consumption (Import from grid) has been deducted in the baseline.	OK	OK
D.2.4. Are the provisions made for archiving project emission data sufficient to enable later verification?	DR/SV	In accordance with the applied methodology AMS I.D., project emission is not considered. The auxiliary consumption (Import from grid) has been deducted in the baseline.	OK	OK
D.3. Monitoring of Leakage It is assessed whether the monitoring plan provides for reliable and complete leakage data over time.				
D.3.1. If applicable, are the choices of leakage indicators reasonable?	DR	As per para 20 of the applied methodology AMS ID, There is no transfer of energy generating equipment from another activity. Hence leakage is not considered.	OK	OK
D.3.2. If applicable, will it be possible to monitor / measure the specified leakage indicators?	DR	As per para 20 of the applied methodology AMS ID, There is no transfer of energy generating equipment from another activity. Hence leakage is not considered.	OK	OK
D.3.3. If applicable, do the measuring technique and frequency comply with good monitoring practices?	DR	As per para 20 of the applied methodology AMS ID, There is no transfer of energy generating equipment from another activity. Hence leakage is not considered.	OK	OK
D.3.4. If applicable, are the provisions made for archiving leakage data sufficient to enable later verification?	DR	As per para 20 of the applied methodology AMS ID, There is no transfer of energy generating equipment from another activity. Hence leakage is not considered.	OK	OK

* MoV = Means of Verification, DR= Document Review, I= Interview

CHECKLIST QUESTION	MoV*	COMMENTS	Draft Conch.	Final Concl.
D.4. Monitoring of Baseline Emissions It is established whether the monitoring plan provides for reliable and complete project emission data over time.				
D.4.1. Is the choice of baseline indicators, in particular for baseline emissions, reasonable?	DR/ SV	Yes, the baseline indicators chosen are ($EG_{BL,y}$ and EF_{CO_2}) $EG_{BL,y}$ Energy Baseline in year 'y'; KWh EF_{CO_2} CO ₂ Emission Factor in year 'y'; tCO ₂ e/k The choice of baseline indicators is reasonable and in accordance with the applied methodology AMS ID.	OK	OK
D.4.2. Will it be possible to monitor / measure the specified baseline emission indicators?	DR/ SV	Yes, it is possible to measure and monitor the Baseline Emission indicators i.e. $EG_{BL,y}$ and EF_{CO_2} . EF_{CO_2} is calculated based on the monitored data of all power plants connected to the Grid (as provided by CEA Database Version 5). $EG_{BL,y}$ is calculated based on the measured value of the Net Electricity supplied to the grid at 220kv station and apportioned based on 33kv metering.	OK	OK
D.4.3. Do the measuring technique and frequency comply with good monitoring practices?	DR/ SV/I	The practises adopted to measure and monitor baseline are in accordance with PPA and applied methodology AMS ID. That is $EG_{BL,y}$ (Net Electricity is continuously (hourly) measured and periodically (monthly) recorded. These practises comply with good monitoring practices.	OK	OK
D.4.4. Are the provisions made for archiving baseline emission data sufficient to enable later verification?	DR/ SV	The period of storage and archiving of monitored data to enable later verification is not evident from Section B.7.2 of the PDD. (Refer tool for Calculation of Emission Factor section III Monitoring Methodology).	CAR-3	OK

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CHECKLIST QUESTION	MoV*	COMMENTS	Draft Conch.	Final Concl.
D.5. Project Management Planning It is checked that project implementation is properly prepared for and that critical arrangements are addressed.				
D.5.1. Is the authority and responsibility for registration, monitoring measurement and reporting clearly described?	DR/ SV/I	Yes, the overall responsibility of the CDM project is with Mr. Bajpai, Company Secretary, as given in the Annex 1 of the PDD. This was confirmed after interview with Mr. Bajpai.	OK	OK
D.5.2. Are procedures identified for training of monitoring personnel?	DR/ SV/I	Yes, training procedures has been identified documented, established, adopted and implemented by Enercon India Pvt. Ltd. For monitoring personnels.	OK	OK
D.5.3. Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	DR/ SV/I	Yes, the emergency preparedness procedures for excecencies like Fire have been identified, implemented and practised by field personnel.	OK	OK
D.5.4. Are procedures identified for calibration of monitoring equipment?	DR/ SV/I	Yes, procedures are identified for calibration of monitoring equipment, However, according to PPA, Article 7, 7.2 iv, the main and check meters are required to be calibrated once in six months. But it was evidenced at site that the meters are calibrated once in a year.	FAR 4	OK
D.5.5. Are procedures identified for maintenance of monitoring equipment and installations?	DR/ SV/I	Yes, procedures have been identified for maintenance of monitoring equipment and installations; these responsibilities have been outsourced to the Operation and Maintenance team i.e. (Enercon India Pvt.Ltd). This was confirmed during the site visit.	OK	OK
D.5.6. Are procedures identified for monitoring, measurements and reporting?	DR/ SV/I	Yes, procedures are identified for monitoring measurements and reporting. However, the procedure for calculating the Net Electricity exported by each WTG is	Refer to CAR 2	OK

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CHECKLIST QUESTION	MoV*	COMMENTS	Draft Conch.	Final Concl.
		not clear.		
D.5.7. Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	DR/ SV/I	Refer CAR 3 in section D.4.4		OK
D.5.8. Are procedures identified for dealing with possible monitoring data adjustments and uncertainties?	DR/ SV	<p>In section C.2.2.1, the Start date of the Crediting period for the project is mentioned as 31/03/2010, or the date of registration whichever is later.</p> <p>I. The JMR is taken on a fixed date every month; it is most likely that the day of registration and JMR reading day may not coincide.</p> <p>II. Similarly, it is most likely that end date of the crediting period and JMR reading day may not coincide.</p> <p>The PDD does not identify and describe the procedures for dealing with possible monitoring data adjustments and uncertainties.</p>	CL-6	OK
D.5.9. Are procedures identified for internal audits of GHG project compliance with operational requirements as applicable?	DR/ SV	Yes, procedures for internal audits have been identified and they are in compliance with the operational requirements.	OK	OK
D.5.10. Are procedures identified for project performance reviews?	DR/ SV	Yes procedures have been identified and implemented for project performance reviews. This was confirmed during the on-site visit.	OK	OK
D.5.11. Are procedures identified for corrective actions?	DR/ SV	Yes procedures have been identified and implemented for preventive and corrective actions. This was confirmed during the on-site visit..	OK	OK

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CHECKLIST QUESTION	MoV*	COMMENTS	Draft Conch.	Final Concl.
E. Calculation of GHG emission It is assessed whether all material GHG emission sources are addressed and how sensitivities and data uncertainties have been addressed to arrive at conservative estimates of projected emission reductions.				
E.1. Project GHG Emissions The validation of predicted project GHG emissions focuses on transparency and completeness of calculations.				
E.1.1. Are all aspects related to direct and indirect project emissions captured in the project design?	DR	As per para 19 of the applied methodology AMS ID, project emission is considered to be zero. $PE_y = 0$.	OK	OK
E.1.2. Have all relevant greenhouse gases and sources been evaluated?	DR	As per para 19 of the applied methodology AMS ID, project emission is considered to be zero. $PE_y = 0$.	OK	OK
E.1.3. Do the methodologies for calculating project emissions comply with existing good practice?	DR	As per para 19 of the applied methodology AMS ID, project emission is considered to be zero. $PE_y = 0$.	OK	OK
E.1.4. Are the calculations documented in a complete and transparent manner?	DR	As per para 19 of the applied methodology AMS ID, project emission is considered to be zero. $PE_y = 0$.	OK	OK
E.1.5. Have conservative assumptions been used?	DR	As per para 19 of the applied methodology AMS ID, project emission is considered to be zero. $PE_y = 0$.	OK	OK
E.1.6. Are uncertainties in the project emissions estimates properly addressed?	DR	As per para 19 of the applied methodology AMS ID, project emission is considered to be zero. $PE_y = 0$.	OK	OK

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CHECKLIST QUESTION	MoV*	COMMENTS	Draft Conch.	Final Concl.
E.2. Leakage It is assessed whether there leakage effects, i.e. change of emissions which occurs outside the project boundary and which are measurable and attributable to the project, have been properly assessed.				
E.2.1. Are leakage calculation required for the selected project category and if yes, are the relevant leakage effects assessed?	DR	As per para 20 of the applied methodology AMS ID, There is no transfer of energy generating equipment from another activity. Hence leakage is not considered.	OK	OK
E.2.2. Are potential leakage effects properly accounted for in the calculations (if applicable)?	DR	As per para 20 of the applied methodology AMS ID, There is no transfer of energy generating equipment from another activity. Hence leakage is not considered.	OK	OK
E.2.3. Do the methodologies for calculating leakage comply with existing good practice (if applicable)?	DR	As per para 20 of the applied methodology AMS ID, There is no transfer of energy generating equipment from another activity. Hence leakage is not considered.	OK	OK
E.2.4. Are the calculations documented in a complete and transparent manner and (if applicable)?	DR	As per para 20 of the applied methodology AMS ID, There is no transfer of energy generating equipment from another activity. Hence leakage is not considered.	OK	OK
E.2.5. Have conservative assumptions been used (if applicable)?	DR	As per para 20 of the applied methodology AMS ID, There is no transfer of energy generating equipment from another activity. Hence leakage is not considered.	OK	OK
E.2.6. Are uncertainties in the leakage estimates properly addressed (if applicable)?	DR	As per para 20 of the applied methodology AMS ID, There is no transfer of energy generating equipment from another activity. Hence leakage is not considered.	OK	OK

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CHECKLIST QUESTION	MoV*	COMMENTS	Draft Conch.	Final Concl.
E.3. Baseline GHG Emissions The validation of predicted baseline GHG emissions focuses on transparency and completeness of calculations.				
E.3.1. Are the baseline emissions boundaries clearly defined and do they sufficiently cover sources for baseline emissions?	DR/ SV	Yes, the baseline emission boundary is clearly defined as in Meth “ <i>The boundary is the physical, geographical site of the renewable generation source delineates the project activity</i> ”. The boundary covers all sources for baseline emissions.	OK	OK
E.3.2. Are all aspects related to direct and indirect baseline emissions captured in the project design?	DR/ SV	Methodology identifies only CO ₂ as the source of emission within the project boundary. Emission from all power plant connected to grid has been considered and included in the baseline emission.	OK	OK
E.3.3. Have all relevant greenhouse gases and sources been evaluated?	DR/ SV	Yes, all relevant greenhouse gases and sources as per the applied methodology have been evaluated.	OK	OK
E.3.4. Do the methodologies for calculating baseline emissions comply with existing good practice?	DR/ SV	The Methodological choice/approach, chosen and indicated for calculation of Emission Factor in section B.6.1 of the PDD is not provided. Also it is not evident whether ex-ante or ex-post approach has been followed. (Refer CDM SCC PDD Guidelines).	CAR-4	OK
E.3.5. Are the calculations documented in a complete and transparent manner?	DR/ SV	I. In section B.4, the baseline is evaluated in accordance with the requirements of para 8 to 13 of the Meth. Accordingly the explanation and justification of applicability of para 10 has not been established. II. The value of emission factor calculated in section B.4 and applied in section B.6.3 is incorrect and	CAR-5	OK

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CHECKLIST QUESTION	MoV*	COMMENTS	Draft Conch.	Final Concl.
		not conservative. The calculations for Emission Factor are not provided in section B.6.3. (Refer CDM -SSC-PDD Guidelines).		
E.3.6. Have conservative assumptions been used?	DR/ SV/I	The supporting evidence for the assumed PLF value is not as per the guidelines EB 48 Annex 11.	CAR-6	OK
E.3.7. Are uncertainties in the baseline emissions estimates properly addressed?	DR/ SV/I	Refer CAR 2 in D.1.3	Refer to CAR 2	OK
E.4. Emission Reductions Validation of baseline GHG emissions will focus on methodology transparency and completeness in emission estimations.				
E.4.1. Will the project result in fewer GHG emissions than the baseline case?	DR/ SV	The project is a renewable energy power project and there will be no Project emissions as per para 14 of the applied methodology AMS ID. Also no leakage is considered as there is no transfer of energy generating equipment from another activity.	OK	OK
F. Environmental Impacts It is assessed whether environmental impacts of the project are sufficiently addressed.				
F.1.1. Does host country legislation require an analysis of the environmental impacts of the project activity?	DR/ SV	No, as mentioned in Section D.1 of PDD, for wind power projects there is no legislative requirement for analysis of environmental impacts. http://envfor.nic.in/legis/eia/so1533.pdf	OK	OK
F.1.2. Does the project comply with environmental legislation in the host	DR/ SV	Yes, as mentioned in Section D.1 of the PDD and referenced below. The project complies with	OK	OK

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CHECKLIST QUESTION	MoV*	COMMENTS	Draft Conch.	Final Concl.
country?		environmental legislation in the host country. http://envfor.nic.in/legis/eia/so1533.pdf		
F.1.3. Will the project create any adverse environmental effects?	DR/ SV	As mentioned in Notification referenced below, the wind power projects are exempted from EIA, as the impacts arising from the project are considered insignificant. http://envfor.nic.in/legis/eia/so1533.pdf	OK	OK
F.1.4. Have environmental impacts been identified and addressed in the PDD?	DR/ SV	Since the impacts are considered insignificant these have not been identified or addressed by the Host Country and the PDD.	OK	OK
G. Comments by Local Stakeholder Validation of the local stakeholder consultation process.				
G.1.1. Have relevant stakeholders been consulted?	DR/ SV/I	Yes, all relevant stakeholders were identified. They were local people, land owners and farmers. O&M, Consultants, Supplier and contractors. GOVT agencies, representatives of local bodies. This was evidenced from interview conducted with the Stakeholders during on-site audit.	OK	OK
G.1.2. Have appropriate media been used to invite comments by local stakeholders?	DR/ SV	Yes, notice inviting the stakeholders was published in local newspaper "Gujarat Samachar" on 5 th December 2008. All identified Stakeholders were invited and communicated by circulating and distributing the Notice.	OK	OK
G.1.3. Were the media used to invite the local stakeholders translated to local/regional language?	DR/ SV/I	Yes, the notice Inviting the Stakeholders for the Local Stakeholder Consultation process was also provided in vernacular language. This was evidenced from interview conducted with the Stakeholders during on-site audit.	OK	OK
G.1.4. If a stakeholder consultation process is required by regulations/laws in the host	DR/ SV	There are no specific/standard procedures identified for Conducting the Local Stakeholders Consultation by the	OK	OK

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CHECKLIST QUESTION	MoV*	COMMENTS	Draft Conch.	Final Concl.
country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?		DNA of the Host country. However the consultation process was carried out as per the requirements of the CDM.		
G.1.5. Is a summary of the comments received provided?	DR/ SV	Yes, a summary of the comments received are provided in section E.2 and Minutes of the Stakeholders Meeting as in Appendix 1 of the PDD.	OK	OK
G.1.6. Has due account been taken of any comments received?	DR/ SV/I	Yes, the comments received from Stakeholders Meeting were well received and addressed to. The project activity has contributed to enhancement in employment generation. This was confirmed by the interviewing Mr. Jitendra Kartotia. (Stakeholder who attended and participated in the Stakeholders Meeting).	OK	OK
H. Comments by Global Stakeholder Validation of the Global stakeholder consultation process.				
H.1.1. Are there any comments /queries raised by Parties, Stakeholders and UNFCCC accredited NGOs during the Global Stakeholder Consultation Processes?	UNF CCC web site	Yes, Paryavaran Mitra from Ahmedabad, Gujarat has raised comments on the project activity. The Contact details of are: Hiral Mehta/Mahesh Pandya Environmental Engineers Paryavaran Mitra 502, Raj Avenue, Bhaikakanagar road Thaltej, Ahmedabad – 380059, Gujarat, India Email - paryavaranmitra@yahoo.com	OK	OK
H.1.2. Are all comments sufficiently substantiated? If not, has the commented entity contacted to substantiate the comment?	UNF CCC web site	All comments are sufficiently substantiated.	OK	OK

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CHECKLIST QUESTION	MoV*	COMMENTS	Draft Conch.	Final Concl.
H.1.3. Is there any comment/ query that indicates that the project activity does not comply with the CDM requirements?	UNF CCC web site	<p>Please Clarify.</p> <p>I. In Section - D Environmental Impact- it is mentioned that "Thirty-eight categories of activity with a certain investment criteria are required to undertake an Environment Impact Assessment (EIA)". There are only 8 categories in the EIA Notification 2006. This shows that the project proponent is not aware about EIA Notification 2006.</p> <p>II. From which state departments NOC has been obtained for this project?</p> <p>III. Gujarat is facing land crisis and there is inadequate grazing land for cattle. Why detergent making company of Uttar Pradesh interested in wind based power plant in Gujarat without any prior experience or exposure?</p> <p>IV. For wind based power project, how land acquisition was done? If it is on temporary basis, for how many years lease has been signed? How compensation has been calculated and paid? What was type of land?</p> <p>V. Environment Impact Assessment for such projects is not required as per legal requirements. But what would be impact of negative environmental conditions on project? Whether assessment of environmental conditions on project has been carried out as it is in earthquake zone on seashore?</p> <p>VI. Please give details of stakeholders such as name, location etc.</p> <p>VII. Why only local people are considered as stakeholders? It should be from state departments and local self governments also.</p>	CL-7	OK

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CHECKLIST QUESTION	MoV*	COMMENTS	Draft Conch.	Final Concl.
		<p>VIII. As discussed during stakeholder meeting, proposed wind based power plant will not going to directly help power cuts of surrounding villages. It should be explained to stakeholders in details.</p> <p>IX. How many skilled/unskilled people from surrounding area were/are employed at this project during construction and operation?</p> <p>Whether local villagers would be beneficiary of CDM revenue earned by company? Any plan has been develop to earmark certain fund from CDM revenue for community welfare to improve social well being of local people?</p>		

Table 3 Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
CAR 1 The assumptions made and applied for the financial calculations sheet for calculation of important comparison parameters like IRR does not provide conservative value. <ul style="list-style-type: none"> i. Like in the cost of generation sheet value arrived for PBDIT is rounded off to a lower value. This does not reflect the true IRR. ii. The value of MAT as calculated in Tax Calculations Sheet and applied in Cost of Generation are incorrect and not conservative. 	B.2.2	<ul style="list-style-type: none"> i. Financial Calculation sheet is revised. ii. Financial Calculation sheet is revised 	The errors in the value of MAT and PBDIT in the Financial Calculation Sheets were corrected. These were evaluated and found to be correct. <u>Conclusion</u> : CAR 1 Closed
CAR 2 I. Para 17 of applied methodology requires the metering of the net electricity supplied by the project activity to the grid. It was observed that the net electricity exported is calculated. This has not been discussed in the PDD. II. The procedure and rationale for calculating the (a) net electricity,	D.1.3	<ul style="list-style-type: none"> I. Section B.7 has been modified accordingly in the PDD. At the time of DVR submission the most recent version (16) of Methodology is available which gives more clarity on these parameters. AMS –I D version 16 has been applied in the revised PDD. II. The procedure has been mentioned in the Section B.7 	I) The PDD ^{2.1/} is revised by applying the latest version of Methodology i.e. AMS I.D version 16. As per the methodology the net electricity export/supplied to the grid is the difference between the measured quantities of the grid electricity export and the import. Procedures for arriving at the value of net electricity export has been included in the PDD. This was found to be appropriate and acceptable. ii) The gross generation by the entire wind farm is measured at the Main

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
<p>(b) gross generation (c) Total electricity Imported (d) total line losses by each WTG from the metered reading at 220kv (JMR) in a manner to enable a reader to reproduce the calculations is not explained/justified in the PDD.</p> <p>III. Also the impact of errors/ failure of monitoring equipments on measurement of Generation are not discussed/ clear.</p>		<p>as per AMS I D version 16.</p> <p>III.Impact of errors/failure of monitoring equipments on measurement of generation is discussed in Section B.7 of the revised PDD.</p>	<p>Meter (Export and Import). The electricity metered at the Main Meter (Export and Import) are proportionally divided among the WTGs connected to the meter on the basis of the readings at the WTG (LCS) to arrive at net export of individual WTGs. Similar approach is adopted for import and it includes line losses. The rationale provided was found to be acceptable.</p> <p>III)The impacts of errors/ failure of monitoring equipment on measurement of Generation are discussed in a transparent manner.</p> <p><u>Conclusion :</u> CAR 2 Closed</p>
<p>CAR 3</p> <p>The period of storage and archiving of monitored data to enable later verification is not evident from Section B.7.2 of the PDD. (Refer tool for Calculation of Emission Factor section III Monitoring Methodology).</p>	D.4.4	<p>Section B.7.2 of the PDD has been updated. Data will be stored for two years after the end of the crediting period or the last issuance of CERs, whichever is later.</p>	<p>The period of storage and archiving of monitored data to enable later verification have been provided in Section B.7.2 of PDD^{2.1/}. This was in line with the requirements of the “Tool for calculation of Emission Factor” and was found to be appropriate.</p> <p><u>Conclusion :</u> CAR 3 Closed</p>
<p>CAR 4</p>	E.3.4		

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
<p>1. The Methodological choice/approach, chosen and indicated for calculation of Emission Factor (OM) in section B.4 of the PDD is not provided in B.6.1. Also it is not evident whether ex-ante or ex-post approach has been followed. (Refer CDM SCC PDD Guidelines).</p> <p>2. The applicability of Simple OM has not been explained/justified.</p>		<p>1) The Methodological choice/approach, chosen and indicated for calculation of Emission Factor (OM) has been provided in section B.6.1 of PDD. Section B.4 and Section B.6.1 are corrected accordingly. ex-ante approach has been followed in the PDD and same has been incorporated in section B.6.1</p> <p>2) The applicability of Simple OM has been explained /justified in section B.6.1</p>	<p>1) The methodological approach chosen and indicated for calculation of Emission Factor (OM) is provided in Section B.6.1 of revised PDD^{/2.1/}. The Emission factor is determined ex-ante.</p> <p>2) Applicability of simple OM has been explained in Section B.6.1 of PDD^{/2.1/}. The explanation provided is in line with the requirements of Methodology and Tool for calculation of Emission Factor. This was found to be appropriate.</p> <p><u>Conclusion</u> : CAR 4 Closed</p>
<p>CAR 5</p> <p>I. In section B.4, the baseline is evaluated in accordance with the requirements of Para 8 to 13 of the Meth. Accordingly the explanation and justification of applicability of Para 10 has not been established.</p> <p>II. The value of emission factor calculated in section B.4 and applied in section B.6.3 is incorrect and not conservative. The calculations for Emission Factor are not</p>	E.3.5	<p>I. Section B.4 of the PDD has been revised accordingly</p> <p>II. The value of emission</p>	<p>I. The PDD has been revised by applying the latest version of Methodology i.e. AMS I D version 16. The baseline has been evaluated based on the requirements of the applied methodology. The appropriateness and choice of para 11 has been demonstrated in PDD^{/2.1/}</p> <p>II.</p>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
provided in section B.6.3. (Refer CDM - SSC-PDD Guidelines).		factor has been calculated in Section B.6.1 and applied in section B.6.3. As per the foot note 3 applied value of emission factor is calculated in section B.6.1 and in Annexure 3 of the PDD.	The value of emission factor calculated in Section B.4, B.6.3 & Annex 3 is correct and conservative. These are now in line with the requirements as per CDM-SSC-PDD Guidelines. <u>Conclusion</u> : CAR 5 Closed
CAR 6 The supporting evidence for the assumed PLF value is not as per the guidelines EB 48 Annex 11.	E.3.6	Assumed PLF value has been taken from the information memorandum and offer letter (which was submitted to bank for term loan) as per the guidelines EB 48 Annex 11.	The assumed value of PLF (i.e. 23.18%) has been taken from Information Memorandum document which was provided to bank during loan application process. The assumed value of PLF is in line with the requirements of 3 (a) of EB 48 Annex 11 Guidelines. The value was compared with the actual generation values and was found to be conservative. <u>Conclusion</u> : CAR 6 Closed
CL 1 The location of the CDM project activity does not confirm with the one as provided in the supporting documents (DPR). The DPR refers the location to be Samana.	A.2.7	When the DPR was prepared, Enercon had identified its wind site (locally known as the Samana region) for project activity which lies within Jamnagar District. When the PO was placed, the	The exact location identified for the installation of WTGs was identified as Navagam and Jamvadi. While at the time of DPR preparation this was identified to be Samana region. The locations were confirmed in the on-site audit.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
		exact location was specified to be the Navagam & Jamvadi villages within Jamnagar District.	<u>Conclusion :</u> CL 1 Closed
CL 2 The Financial Sheet indicates post tax Project IRR has been established whereas it is compared with (PLR) pre tax benchmark. Please Clarify, Justify in Context of EB 51 Annex 58.	B.2.1	As per EB 51 , para 12 ,In cases where a benchmark approach is used the applied benchmark shall be appropriate to the type of IRR calculated. Local commercial lending rates or weighted average cost of capital (WACC) are appropriate benchmarks for a project IRR. For the post tax IRR, Weighted Average Cost of Capital is the most appropriate benchmark. PP has taken in to consideration the post tax benchmark and the post tax IRR. Revised financial sheet mentions the same	The Financial Indicator chosen is Project IRR. The Benchmark was recalculated and most suitable benchmark (Post Tax Benchmark.) in this project context is WACC. WACC has been taken as the benchmark. This has been revised in the excel sheet. <u>Conclusion :</u> CL 2 Closed
CL 3 Please Clarify following points based on the Guidelines EB 51 Annex 58 I. Project cost as per GERC – is 4.65 Cr INR per MW. This is taken as Rs.5.00 cr. INR per MW.	B.2.1	I. Project cost is taken as per the information memorandum/offer letter. Cost details in information memorandum have been taken from the offer letter submitted by wind manufacturer which has been submitted for verification.	I. The project cost is taken as per the information memorandum as available with the PP at the time of investment decision to invest in the project. The document was checked and this was found to be appropriate.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
<p>II. Has been assumed as per the manufacturer's offer letter @ 24.25 %. But the applicable PLF has to be in line with the guidelines of the EB 48. Also, kindly provide the evidence for derating.</p>		<p>II. PLF has been taken from the information memorandum /offer letter which had been submitted to bank as per the Guidelines of EB48. Financial sheet has been revised accordingly. PP has taken the data from the details provided by the manufacturer in offer</p>	<p>II. The PLF value assumed is as per the Information Memorandum document provided by Equipment Supplier which was provided to bank during loan application process. The assumed value of PLF is now in line with the requirements of 3 (a) of Guideline EB 48 Annex 11. The value was compared with the actual generation values and were found to be conservative. The evidence provided for consideration of derating was found to be acceptable.</p>
<p>III. As per GERC guidelines, O & M charges are prescribed @ 1.50 % and this includes all other expenses (manpower, consumables, spares, turbine and other electrical system maintenance, road maintenance, insurance, other statutory duties, working capital and interest liability). In the IRR workings, this has been assumed Rs. INR 60 lakhs which works out to 1.25 %. Clarify the source in the context of the Guideline referred above.</p>		<p>III. The Input values used in investment analysis (O & M Charges) have been taken as per Offer Letter from equipment supplier . This was available at the time of Investment decision making. This is in accordance with EB 51 Annex 58.</p>	<p>III. The O & M Charges of Rs. 6,50,000/- per annum per WTG with an escalation of 6% (from second year) is applied by PP. This has been taken from the Offer Letter which was available at the time of investment decision making. The document was verified and the value was found to be appropriate.</p>
<p>IV. As per GERC guidelines (as stated above), the O & M of 1.50 % is inclusive of insurance charges, whereas even after applying a rate of 0.125% a sum of Rs. 6</p>		<p>IV. The Insurance charges has been taken as per the Information memorandum document available at the</p>	<p>IV. The insurance charges as applied by the PP have been taken from the Information Memorandum document,</p>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
lakh has been added as insurance charges. Clarify the source in the context of the Guideline referred above.		time of Investment decision making. This is in accordance with EB 51 Annex 58.	this was as available at the time of investment decision making. The document was verified and the value was found to be appropriate.
V. As per GERC guidelines and also on a common parlance any long term repayment would carry a repayment period of about 10 years whereas this is found to be 6 years here. Since this fact of 6 years repayment could have been known at the time of making the investment decision.		V. The Loan repayment period has been now considered as 10 years which is in accordance with the GERC guidelines	V. The repayment period was taken as 6 years this has now been taken as per the GERC Guidelines dated 11 August 2006 i.e. 10 years, this was available at the time of investment decision making. The GERC Guidelines document and the excel sheets were verified and the repayment period taken was found to be appropriate.
VI. The benefits available u/s. 80 IA of the Indian Income tax Act have not been taken into account for arriving at the tax liability.		VI. The benefits available u/s. 80 IA of the Indian Income tax Act have been taken into account. Kindly refer to the revised financials.	VI. In excel sheets the benefits from 80 IA of Indian Income tax act have been taken into account to arrive at tax liability. The excel sheets were verified and these were found to be appropriate.
VII. The Tax shield available to the company out of the accelerated depreciation available has not been reckoned.		VII. Same has been considered.	VII. In excel sheet the tax shield available to the company out of accelerated depreciation have been taken into account. The excel sheets were verified and these were found to be appropriate
VIII. Tem Loan rate of interest has been calculated @ 11 % whereas its is @ 10		VIII. Interest rate can be taken according to the prevailing commercial interest rates	VIII. Interest Rate data of five commercial banks available at the time of

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
<p>% as per GERC guidelines and @ 12.75 % as per RBI site as on the date of Investment decision. Clarify the source in the context of the Guideline referred above</p>		<p>in the region. PP has taken data of 5 different banks for interest rate and conservatively minimum of that has been considered.</p>	<p>investment decision making were taken, and minimum of all (i.e. 11.75%) was applied in the calculations. The corresponding reference/ documents were verified and the value applied was found to be appropriate.</p>
<p>IX. Pl. furnish the relevant authentic URLs / evidences for the following assumed data:</p> <ul style="list-style-type: none"> i. Rs. 3.37 selling price of electricity / ii. 5.28 % of Depreciation rate (Companies Act) iii. 80% of Depreciation rate (Income tax Act) iv. MAT – 11.33% v. IT – 33.99% vi. Interest rate – 11% 		<p>IX. Below are URLs/Evidences</p> <ul style="list-style-type: none"> i. http://www.gercin.org/docs/Orders/Nonconv%20orders/Year%202006/wind%20enrrgy%20tariff.pdf5.28% ii. Depreciation rates www.fastfacts.co.in/resources/DepCoAct.rtf iii. 80% Depreciation rate http://www.scribd.com/doc/24559879/Depreciation-Rates-as-Per-Income-Tax-Act iv. MAT 11.33% http://www.bpoindia.org/columns/budget-2007.shtml v. IT-33.99% http://www.bpoindia.org/columns/budget-2007.shtml vi. Lowest interest rate from 	<p>IX. The reference links provided for the assumed data were verified and were found to be appropriate and acceptable. The assumed data is provided below:</p> <ul style="list-style-type: none"> i. Selling price assumed is 3.37 ii. Depreciation Rate = 4.75% has been considered as per Companies act 80% Depreciation Rate as per income tax act iii. MAT : 11.33% iv. IT : 33.99% v. Interest Rate of 11.75% is assumed as the lowest interest rate (out of 5 different Banks) from those that were available at the time of investment decision making.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
		the data of 5 different banks. Links have been provided in the financial sheet.	
X. It is seen that depreciation is calculated on the cost of land which is not normally a depreciable asset. Kindly clarify.		X.Depreciation on cost of Land is not included. Land has not been purchased but taken on lease basis. According to the sublease documents Rs.10,000 per hectare is to be paid per year and total area of land is 6.18 hectares (1.5+2.5 +2.18 hectares). The same has been Incorporated in the financial sheet raw no 91. Financial calculations and PDD are enclosed.	X.The Total project Cost does not include cost of Land. Hence depreciation has not been taken for Land.
XI. The PP has not performed a sensitivity analysis as per Guidelines EB 51 Annex 58. Only one Variable PLF has been included in this analysis.		XI.Sensitivity analysis has now been performed in the financial analysis variable considered are PLF, Project Costs and O & M Costs. A 10% variation has been considered in the analysis for variables PLF and Project Costs, and 25% for O&M costs.	XI.In the revised IRR sheet Sensitivity Analysis has been performed by considering a 10% (+ and -) variation for the variables i.e. PLF, Project costs and 25% (+ and -) variation for O & M Costs. These Variables constitute more than 20% of Project Costs and Revenues hence these variable considered are appropriate and in accordance with the Guideline EB 51 Annex 58. The project IRR for the variations in all these cases does not cross the benchmark. Hence the project is additional.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
XII. The project is commissioned in March 2008, but the IRR workings (Ratio Sheet) shows that the electricity generation commences only from 01.04.2009. Kindly clarify.		XII.The excel sheets has been revised and the electricity generation revenue starts from commissioning.	XII. The IRR workings have been revised. The electricity generation from commissioning onwards i.e. April 2008 has been considered in IRR workings
XIII. The tax component taken for calculation of WACC is 11.33%. Clarify/Explain.		XIII.The Cost of Debt has been considered as lowest value of interest rate during conceptualization i.e at the time of investment decision of the project activity. For the post tax cost of debt, the income tax will deductible at prevailing at the time of conceptualization of the project activity. Since for the first 13 years the project is incurring Minimum Alternative Tax (MAT) but not corporate tax, so it has to pay MAT under section 80 IA of Income tax act prevailing at the time of decision making. And hence Marginal tax rate has been taken @ 11.33%	XIII.The PP has paid the tax applicable to the project activity at the time of investment decision. The tax was MAT which was 11.33% at that time. Hence in the calculation of WACC. The most applicable corporate tax has been taken as 11.33%.
XIV. Benchmark selected is WACC, suitability of this benchmark in the project context needs to be justified.		XIV.Since it is a predominant investment decision in non core business, the management was particularly interested in the return of the investment. Hence project IRR was selected as the financial indicator to assess the	XIV. The Benchmark chosen is WACC. This is suitable to the type of the project activity as is not linked to subjective profitability expectation of the project participant while it is based on the standard market parameters and specific characteristics of project

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
		<p>attractiveness of the project. Project IRR, being nothing but the return earned by the project, has to be compared with a benchmark or cut-off rate to determine the adequacy of the return. PP has chosen WACC as the benchmark. WACC alone represents the weighted average of the costs of various sources of financing in the financial structure of the project. In other words, WACC represents the minimum rate of return which the project should earn to merit consideration, as failure to earn the minimum rate of return is indicative of the erosion in the value of investment. Therefore, no other benchmark is more suitable than WACC in cases where project IRR is used to demonstrate the Additionality.</p>	type.
XV. Choice of BSE index used for calculating Market Return		XV. Equity indices are an indicator of expected market return under CAPM Model, with a view to eliminating the unsystematic risk associated with the projects totally, BSE Sensex has been taken to represent the market return. A period starting since July 1997 to March 2007 has been	XV. The BSE Index chosen is BSE Sensex. As per CAPM Model, the indices considered are for the period starting from July 1997 to March 2007 i.e. for about 10 years, these represent the market return. This choice is considered reasonable.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
		considered to remove the impact of short term volatility. Selection of BSE SENSEX represents a more robust and efficient face of the market. Based on this, market return is estimated at 19.26% (calculations have been provided in the financials)	
XVI. Provide detailed Calculation of Beta.		XVI.This has been added in the excel sheet.	XVI. Beta has been calculated for 6 companies in Power sector and the lowest has been considered. The detailed calculation has been added in the excel sheet.
XVII. Salvage value has not been considered in the revised IRR calculations submitted by the PP.		XVII.Salvage value has been considered in the revised financial calculations.	XVII. .Salvage value has been considered in the excel sheet. <u>Conclusion</u> : CL 3 Closed

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
CL 4 Clarify the following points from the financial calculations workbook <ul style="list-style-type: none"> i. DSCR (Debt service coverage ratio in Ratio Sheet) varies from 0.65 to 0.74 from year 2009-10 to 2014-15. Clarify. ii. The formula applied for calculation of PBDT (in P and L Sheet) is incorrect. It refers to cells which do not have any values. 	B.2.2	<ul style="list-style-type: none"> i. Financial sheet has been revised. ii. Same has been corrected. 	The DSCR ratio in the revised calculations is 1.44. The formula applied for calculation of PBDT was correct in revised excel sheets. <u>Conclusion :</u> CL 4 Closed
CL 5 Section B.5 of the PDD, under events chronology table, <ul style="list-style-type: none"> I. The Stakeholders Meeting was conducted during 23-24 Dec 2008. Records and documents pertaining to the meeting provide the detail for 23 December 2008. Please provide the details of the activities carried on 24 December 2008. II. The date of Commissioning of the WTGs is 25 March 2008. While records and documents provide details of the Commissioning to be 18 March 2008 and 26 March 2008. Clarify. 	B.2.6	<ul style="list-style-type: none"> I. The stakeholders' meeting was conducted on 23rd December 2008 only. Dates mentioned in section B.5, under events chronology were a typing error. Same has been rectified. II. Same has been corrected. 	The PDD had some typological errors the same have been corrected in the PDD/ ^{2.1} /. i.e the Stakeholders meeting was conducted on 23 December 2008 & The date of Commissioning of WTGs are 18 th March 2008 and 26 th March 2008. <u>Conclusion :</u> CL 5 Closed
CL 6	D.5.8		

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
<p>In section C.2.2.1, the Start date of the Crediting period for the project is mentioned as 31/03/2010, or the date of registration whichever is later.</p> <p>I. The JMR is taken on a fixed date every month; it is most likely that the day of registration and JMR reading day may not coincide.</p> <p>II. Similarly, it is most likely that end date of the crediting period and JMR reading day may not coincide.</p> <p>The PDD does not identify and describe the procedures for dealing with possible monitoring data adjustments and uncertainties.</p>		<p>I. If the date of registration is after the date of JMR then no CERs will be claimed until the next JMR is undertaken.</p> <p>II. Similarly, no CERs will be claimed if end date of the crediting period and JMR reading day do not coincide.</p> <p>Revised PDD identifies and describes the procedures for dealing with possible monitoring data adjustments and uncertainties. Please refer section B.7.2</p>	<p>The clarification regarding the date of registration and JMR for ascertaining the date from which CERs would be claimed is provided. This is found to be acceptable.</p> <p>Procedures for dealing with possible monitoring data adjustments and uncertainties have been provided (like billing during periods of failure of equipment) in Section B.7.2 of the PDD^{2.1/}.</p> <p><u>Conclusion</u> : CL 6 Closed</p>
<p><u>CL 7</u></p> <p>Please Clarify</p> <p>I. In Section - D Environmental Impact- it is mentioned that "Thirty-eight categories of activity with a certain investment criteria are required to undertake an Environment Impact Assessment (EIA)". There are only 8 categories in the EIA Notification 2006. This shows that the project proponent is not aware about EIA Notification 2006.</p>	H.1.3	<p>I. Wind projects are not included in the list of projects that has to get prior Environmental Clearance (EC) either from state or central government Authorities as it is clean and green energy. Anyhow the other categories (38 categories) was a typing error in the PDD and same has been rectified.</p>	<p>I). In section D of the PDD there was a typological error with respect to the categories of activity with a certain investment criteria are required to undertake EIA. In PDD^{2.1/} this error has been removed.</p>
<p>II. From which state departments NOC has</p>		<p>II. NOC has been obtained from</p>	<p>II). NOC from the concerned state</p>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
been obtained for this project?		Gujarat Energy Development Agency.	departments has been obtained for the project activity. These documents were verified by the validation team.
<p>II. Gujarat is facing land crisis and there is inadequate grazing land for cattle. Why detergent making company of Uttar Pradesh interested in wind based power plant in Gujarat without any prior experience or exposure?</p>		<p>II. Wind projects are generally developed on barren land and there is no point of grazing land. Wind projects are developed on basis of wind availability at particular sites. The WEGs are sources from Enercon Engineering Ltd and they have good prior experience with this site.</p> <p>Further, each WTG covers an area more than of approximately 7DX5D (where D is diameter of the rotor); accordingly it covers roughly a minimum area of 2.5 to 3 Acres. There is no enclosure around the WTGs to obstruct cattle grazing (other than at transformer point). As this figure is very small it can be concluded that it does not affect overall grazing</p>	<p>III). The area occupied by the WTGs in the project is relatively less and does not disturb the cattle grazing.</p>
<p>IV. For wind based power project, how land acquisition was done? If it is on temporary basis, for how many</p>		<p>IV. Land has been acquired on lease basis. Land lease agreement had been signed</p>	<p>IV). The land documents have been verified by the validation team and the land is acquired on a lease basis for a</p>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
years lease has been signed? How compensation has been calculated and paid? What was type of land		for twenty years of period. Land lease documents are submitted to DOE .These have been approved by the Govt. Of Gujarat	period of 20 years. The Land rates have been calculated and paid on the basis of prevalent rates available.
III. Environment Impact Assessment for such projects is not required as per legal requirements. But what would be impact of negative environmental conditions on project? Whether assessment of environmental conditions on project has been carried out as it is in earthquake zone on seashore?		V. No negative environmental impacts have been considered. WEGs are insured against any environmental and technical risks. (An analysis of environmental impacts is assessed, if the analysis of the above warrants a detailed analysis then EIA is to be done. the PP and Govt Of India both have evaluated the impact and assessed that for WTG it is miniscule and EIA is not required. According to the Ministry of Environment and Forests (MoEF), Government of India (GoI) notification i.e. S.O. 1533 dated September 14, 2006 http://envfor.nic.in/legis/eia/so1533.pdf	V). The environmental impacts of the projects like wind energy projects are not considered significant by both host party and project participants as the risks associated are significantly less.
VI. Please give details of stakeholders such as name, location etc.		VI. Details of stakeholders	VI). The details of the local stakeholders were provided in a Attendance List Documents. This

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
		have been provided to DOE.	document provided details of Stakeholders such as name, village name and contact number etc. Also questionnaires filled by the stakeholders were verified the by Validation team.
IV. Why only local people are considered as stakeholders? It should be from state departments and local self governments also.		VII. Public Notice has been placed in local news paper Gujarat Samachar on 5 th December 08 inviting all relevant stakeholders like state departments and local self governments, anyone was free to participate and comment on the project.	VII). The stakeholder consultation meeting was carried out by PP by inviting all stakeholders (local villages, local self government representatives etc.) through a Public Notice. This was verified by the validation team during validation.
VIII. As discussed during stakeholder meeting, proposed wind based power plant will not going to directly help power cuts of surrounding villages. It should be explained to stakeholders in details.		V. The details of the project were transparently explained to all stakeholders, advantages and disadvantages of the projects were discussed during the stakeholders meeting. Anyhow wind mill project and other renewable projects will help in increasing the power generation capacity of the state and hence reduce the demand supply gap, even if indirectly.	VIII). The stakeholders meeting was conducted in a transparent manner and benefits from the projects were explained to the stakeholders.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
<p>VI. How many skilled/unskilled people from surrounding area were/are employed at this project during construction and operation?</p> <p>Whether local villagers would be beneficiary of CDM revenue earned by company? Any plan has been develop to earmark certain fund from CDM revenue for community welfare to improve social well being of local people?</p>		<p>IX. It is difficult to specify the exact number of persons involved during the construction/operation phase of the project but approximately 15 persons per machine were employed/ involved during the construction/operation phase.</p> <p>The primary purpose of the CDM Revenue is to bridge the viability gap of the project and make it viable. However the CDM Project will have direct and indirect effect on local economy and employment. Also the Wind farm developer (Enercon) through its CSR Wing looks into the community welfare and social well being. The project is a Small Scale project and complies with all requirements of NCDMA of India regarding the CER Revenue allocation for Sustainable Development.</p>	<p>IX). The installation and operation of the project has been beneficial to many local people. The validation team interviewed one villager and they mentioned about being employed/ benefited from the project activity</p> <p><u>Conclusion</u> : CL 7 Closed</p>
<p>FAR 1</p> <p>Procedures are identified for calibration of monitoring equipment, However, according to PPA,</p>	D.5.4	Standard Old Performa for PPA, signed is followed till date and accordingly it mentions the	The procedures identified for calibration as per PPA (signed between M/s. Rohit Surfactants and

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
Article 7, 7.2 iv, the main and check meters are required to be calibrated once in six months. But it was evidenced at site that the meters are calibrated once in a year.		frequency of calibration as 6 months. However, practise followed is once a year.	GUVNL) are once every 6 months. While the practised procedures for Calibration of monitoring equipment is once in a year and this is acceptable. <u>Conclusion :</u> FAR 1 closed.

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APPENDIX B
AUDITOR'S CERTIFICATE



Sijil Certificate

This is to certify that

RAVI SHANKAR

has been qualified as

**LEAD AUDITOR
FOR**

CDM VALIDATION AND VERIFICATION SCHEME

in accordance with the relevant provisions of SIRIM QAS International's CDM procedure

Sectoral Scopes No.

1 – Energy industries (renewable/non-renewable sources)

Parama Iswara Subramaniam

Chairman

Auditor Evaluation Panel

Management System Certification Department

SIRIM QAS International Sdn. Bhd.

Initial Qualification Date : **21 October 2009**



Sijil *Certificate*

This is to certify that

DR. D.SIDDARAMU

has been qualified as

**LEAD AUDITOR
FOR
CDM VALIDATION AND VERIFICATION SCHEME**

in accordance with the relevant provisions of SIRIM QAS International's CDM procedure

Parama Iswara Subramaniam
Chairman
Auditor Evaluation Panel
Management System Certification Department
SIRIM QAS International Sdn. Bhd.

Qualification Date : **28 July 2010**