
VALIDATION REPORT

Enercon (India) Ltd.

**ENERCON WIND FARMS IN
KARNATAKA BUNDLED PROJECT –
30.40 MW**

Date of issue:	Project No.:
01/06/2007	CDM.Val0866
Project title	Organisational unit:
Enercon Wind Farms in Karnataka Bundled Project – 30.40 MW	SGS Climate Change Programme
Revision number	Client:
2.0 03/09/2007	Enercon (India) Ltd.

Summary

SGS India Pvt. Ltd., an affiliate of SGS United Kingdom Ltd. has made a validation of the CDM project activity “Enercon Wind Farms in Karnataka Bundled Project – 30.40 MW” at Chitradurga and Gadag District of Karnataka state in India, on the basis of UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM rules and modalities and the subsequent decisions by the CDM Executive Board, as well as the host country criteria. The project falls under large scale category and scope 1. Energy Industries (Renewable/ Non-renewable sources).

The scope of validation is the independent and objective review of the project design document, baseline study and monitoring plan and other relevant document of the project. The information in this document is reviewed against the criteria defined in the Marrakech Accords (Decision 17) and the Kyoto Protocol (Article 12) and subsequent guidance from the CDM Executive Board.

The overall validation process, from Contract Review to Validation Report & Opinion, was conducted using internal procedures (UK.PP.12 issue 3 dated 19/01/2007).

The first output of the validation process is a list of Corrective Actions Requests and New Information Requests (CARs and NIRs), presented in Annex 3 of this document. Taking into account this output, the project proponent revised its project design document.

In summary, it is SGS's opinion that the proposed CDM project activity correctly applies the baseline and monitoring methodology as mentioned in approved methodology adopted for the proposed project activity and meets the relevant UNFCCC requirements for the CDM and the relevant host country criteria.

Subject:		
CDM validation		Indexing terms
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Abbreviations

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CEA	Central Electricity Authority
CER	Certified Emission Reductions
CERC	Central Electricity Regulatory Authority
CFE	Consent for Establishment
CFO	Consent for Operation
CO ₂	Carbon Dioxide
COP/MOP	Conference of parties serving as the meeting of parties to Kyoto Protocol
DNA	Designated National Authority
DOE	Designated Operational Entity
DR	Document Review
EIA	Environment Impact Assessment
GHG	Green House Gas(es)
GWh	Giga watt hour
I	Interview
IPCC	Intergovernmental Panel on Climate Change
ISHC	International Stakeholder Consultation
kWh	Kilo watt hour
MNES	Ministry of Non Conventional Energy Sources
MoEF	Ministry of Environment and Forest
MoV	Means of Verification
MP	Monitoring Plan
MW	Mega watt
MT	Metric Tonne
NIR	New Information Request
NGO	Non Government Organisation
NOC	No Objection Certificate
PDD	Project Design Document
PPA	Power Purchase Agreement
UNFCCC	United Nations Framework Convention for Climate Change
WEC	Wind Energy Converter
KPTCL	Karnataka Power Transmission Company Ltd.

Table of Content

1	Introduction.....	5
1.1	Objective	5
1.2	Scope	5
1.3	GHG Project Description	5
1.4	The names and roles of the validation team members.....	6
2	Methodology.....	7
2.1	Review of CDM-PDD and additional documentation	7
2.2	Use of the validation protocol	7
2.3	Findings	7
2.4	Internal quality control	8
3	Determination Findings	9
3.1	Participation requirements.....	9
3.2	Baseline selection and additionality	9
3.3	Application of Baseline methodology and calculation of emission factors	10
3.4	Application of Monitoring methodology and Monitoring Plan.....	11
3.5	Project design.....	11
3.6	Environmental Impacts	12
3.7	Local stakeholder comments.....	12
4	Comments by Parties, Stakeholders and NGOs	13
4.1	Description of how and when the PDD was made publicly available	13
4.2	Compilation of all comments received.....	14
4.3	Explanation of how comments have been taken into account.....	15
5	Validation opinion	20
6	List of persons interviewed	21
7	Document references	22

Annex 1: Local assessment

Annex 2: Validation Protocol

Annex 3: Overview of findings

Annex 4: Statement of Competence of Validation Team

1 Introduction

1.1 Objective

Enercon (India) Ltd. has commissioned SGS to perform the validation of the project: “Enercon Wind Farms in Karnataka Bundled Project – 30.40 MW” with regard to the relevant requirements for CDM project activities. The purpose of a validation is to have an independent third party assess the project design. In particular, the project's baseline, the Monitoring Plan (MP) and the project's compliance with relevant UNFCCC and host country criteria are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria. Validation is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of Certified Emission Reduction (CER). UNFCCC criteria refer to the Kyoto Protocol criteria and the CDM rules and modalities and related decisions by the COP/MOP and the CDM Executive Board.

1.2 Scope

The scope of the validation is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations. SGS has employed a risk-based approach in the validation, focusing on the identification of significant risks for project implementation and the generation of CERs.

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

1.3 GHG Project Description

The proposed CDM project activity is an electricity generation project through wind turbines and exporting the same to the grid. The project will result in replacing exported amount of electricity from Southern regional grid which is dominated by fossil fuel based power plants. The project activity is located in Chitradurga and Gadag Districts of Karnataka state in India. The project activity has been started on 17th August 2005; the date has been verified from the purchase order for wind generators submitted to the validator. The Project activity involves operation of 38 Wind Energy Converters (WECs) of Enercon make; specifications of the same have been provided in the PDD and same has been cross-checked with the purchase orders.

Baseline Scenario:

Under the baseline scenario, there would have been more direct off-site emissions through burning of fossil fuel in the coal based power plant for meeting electrical energy requirements.

With Project Scenario:

The project activity will generate and export the electricity to the Southern regional grid. Thus project activity replaces electrical energy from fossil fuel based power plants and contributes to conservation of fossil fuel, a non-renewable natural resource and consequently reduces GHG emissions.

Leakage:

As per the methodology ACM0002 Version 6.0 dated 19th May 2006; applicable for the project activity, no leakage is to be considered for the project activity.

Environmental & Social Impacts:

There are no negative environmental and social impacts expected with the project activity, the same has been cross-checked during local stakeholder consultation process by the local assessor during the validation site visit.

1.4 The names and roles of the validation team members

Name	Supplier	Role
Mr. Sanjeev Kumar	SGS India	Team Leader / Lead Auditor
Mr. Vikrant Badve	SGS India	Assessor
Mr. Nikunj Agarwal	SGS India	Local Assessor
Mr. Jimmy Sah	SGS India	Local Assessor

Statement of Competence of team members are attached at Annex IV.

2 Methodology

2.1 Review of CDM-PDD and additional documentation

The validation is performed primarily as a document review of the publicly available project documents. The assessment is performed by trained assessors using a validation protocol.

A site visit is usually required to verify assumptions in the baseline. Additional information can be required to complete the validation, which may be obtained from public sources or through telephone and face-to-face interviews with key stakeholders (including the project developers and Government and NGO representatives in the host country). These may be undertaken by the local SGS affiliate. The results of this local assessment are summarized in Annex 1 to this report.

2.2 Use of the validation protocol

The validation protocol used for the assessment is partly based on the templates of the IETA / World Bank Validation and Verification Manual and partly on the experience of SGS with the validation of CDM projects. It serves the following purposes:

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

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

Checklist Question	Means of verification (MoV)	Comment	Draft and/or Final Conclusion
<i>The various requirements are linked to checklist questions the project should meet.</i>	<i>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.</i>	<i>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.</i>	<i>This is either acceptable based on evidence provided (Y), or a Corrective Action Request (CAR) due to non-compliance with the checklist question (See below). New Information Request (NIR) is used when the validation team has identified a need for further clarification.</i>

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

2.3 Findings

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

In general, where insufficient or inaccurate information is available and clarification or new information is required the Assessor shall raise a **New Information Request (NIR)** specifying what additional information is required.

Where a non-conformance arises the Assessor shall raise a **Corrective Action Request (CAR)**. A CAR is issued, where:

- I. mistakes have been made with a direct influence on project results;
- II. validation protocol requirements have not been met; or

III. there is a risk that the project would not be accepted as a CDM project or that emission reductions will not be verified.

The validation process may be halted until this information has been made available to the assessors' satisfaction. Failure to address a NIR may result in a CAR. Information or clarifications provided as a result of an NIR may also lead to a CAR.

Observations may be raised which are for the benefit of future projects and future verification or validation actors. These have no impact upon the completion of the validation or verification activity.

Corrective Action Requests and New Information Requests are raised in the draft validation protocol and detailed in a separate form (Annex 3). In this form, the Project Developer is given the opportunity to "close" outstanding CARs and respond to NIRs and Observations.

2.4 Internal quality control

Following the completion of the assessment process and a recommendation by the Assessment team, all documentation will be forwarded to a Technical Reviewer. The task of the Technical Reviewer is to check that all procedures have been followed and all conclusions are justified. The Technical Reviewer will either accept or reject the recommendation made by the assessment team.

3 Determination Findings

3.1 Participation requirements

The host Party for this project is India. India has ratified the Kyoto protocol on 26th Aug 2002. A Letter of Approval from DNA was not submitted by the project proponent. CAR (01) was raised asking project proponent to submit the Letter of approval from DNA. Project proponent has received the Host country approval for the present project activity on 04th June 2007 issued by the Indian DNA (reference number 4/23/2006-CCC). This letter was checked for the project activity name and the same indicated in the HCA and in section A.1 of the PDD was found same.

Project Proponent has identified Japan as Annex 1 Participant country. The Letter of Approval from the Japanese DNA was received on 2nd March 2007, the Letter of Approval has been submitted along with the English translation of the same, which was checked for the project activity name and found acceptable. Thus CAR (01) was closed.

3.2 Baseline selection and additionality

The project has applied baseline as mentioned in the large scale methodology ACM0002 version 06 dated 19th May 2006 for "Consolidated baseline methodology for grid-connected electricity generation from renewable sources". The project activity generates electricity from wind and thus replaces electricity from fossil fuel based power plant, and contributes to conservation of fossil fuel, and fall under the category ACM0002.

The present CDM project activity will generate and feed the electricity to the Southern regional grid. The emission reductions achieved because of the project activity will be direct function of the net electricity feed to the grid and grid emission factor for the Southern regional grid.

The project proponent has adopted version 02 of additionality tool for showing the additionality of the present project activity. The project proponent has adopted the Investment analysis as main barrier to justify the additionality of the project. Also project proponent has described Common Practice Analysis. In order to get all the related documents on the basis of which the project was shown additional, CAR (04) was raised.

There are a total of 38 Wind Energy Converters (WECs) of 0.8 MW capacity involved in the project activity. While considering the financial analysis of the total project activity, the project proponent has submitted an IRR calculation sheets which mentions the IRR values for each individual project proponent both with and without consideration of CDM benefits. The project activity is involving 18 independent project proponents. While discussing the additionality of the project; project proponent has discussed a sample case of Panama Infrastructure in the PDD giving the details regarding the financial investment for the particular project. As there were certain limitations like difference in percentage of loan amount and equity amount, difference in the interest rate and difference in loan repayment structure which makes IRR calculations more difficult to mention as a consolidated IRR for the total project capacity. Hence project proponent mentioned equity IRR for individual project participants and then compares the individual IRRs with the benchmark equity IRR of 16%. The data regarding the investment for all the project participant was checked during the validation site visit and same was included in the Investment analysis sheet and in Appendix 3 of the PDD.

A sample case of Panama Infrastructure was considered which was having the highest equity IRR i.e. 11.56% without considering CDM contribution among the project participants. But not crossing the benchmark equity IRR of 16%. The IRR with CDM contribution for this project participant improves to 15.07%; reducing the gap between the benchmark IRR and expected IRR.

Project proponent has submitted excel spreadsheet giving the detailed calculations for investment analysis and sensitivity analysis for all the sub-bundles. The Assumptions and calculations for IRR values of all the sub-bundles were checked and the values for IRR for each sub-bundle was cross-checked with the values mentioned under Appendix 3 of the PDD. The IRR values were found satisfactory. It was further checked from the excel spreadsheet that no other individual project participant was crossing the benchmark equity IRR and hence the project is a financially additional project.

The Project proponent also submitted the commissioning certificate and PPA signed by KPTCL as a proof that KPTCL allows the operation of the project activity and commissioning is done as per their procedures.

In support of common practice analysis the project proponent mentioned that they analyze the extent to which wind energy projects have diffused in the electricity sector in Karnataka. In 2004 – 05, wind electricity generation was 485.57 GWh and the total electricity availability at bus-bar in the state of Karnataka was 33523.92 GWh (Source: CEA General Review 2006). This works out to 1.45%, showing that wind energy power generation is insignificant as compared to other power project generation sources in Karnataka.

Installed capacity of wind energy generation sources stood at 276 MW as of 31 March 2005 (Source: CEA General Review 2006). There are approximately 201 MW wind energy projects in Karnataka that are currently in the CDM pipeline (UNFCCC website) and more are expected to follow.

Clearly, wind power project development in Karnataka is insignificant when compared to the power sector of Karnataka. Further, wind power project development is substantially dependent on CDM mechanism and thus is not common practice. The same was acceptable to the DOE and hence CAR (04) was closed out.

3.3 Application of Baseline methodology and calculation of emission factors

The present project activity is generating wind power and supplying it to Southern grid. The project has applied baseline methodology as mentioned in the large scale methodology ACM0002 version 06 dated 19th May 2006 for “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”

Project proponent has not provided excel spreadsheet for calculation of baseline emission as well as project emissions for the project activity. Also it was found that grid emission factor calculated for the project activity was on higher side when compared with the CEA database version 1.1 dated 21st December 2006 for grid emission factor; which uses a conservative approach. NIR (03) was raised and project proponent was asked to provide the excel spreadsheet for calculating the baseline emissions along with a clarification for the grid emission factor. It was found that grid emission factor calculated for the project activity was on higher side when compared with the CEA database version 1.1 dated 21st December 2006 for grid emission factor; which uses a conservative approach. Project proponent was asked to clarify this. In response to NIR (03) Project proponent agreed that CEA value for grid emission factor is calculated on a conservative approach and same will be used for the project activity and this value of grid emission factor will be fixed for the entire crediting period the corrections were provided in the revised PDD. Local assessor has cross-checked the grid emission factor value used by the project proponent from CEA website and checked the data used for calculation purpose. The revised PDD mentions the CEA value and is acceptable and hence NIR (03) was closed.

During the review of the PDD version 01, the alternatives for the project activity mentioned under section B.5 were not clear and CAR (05) was raised asking the project proponent to clarify the same. In response the project proponent mentioned the alternatives which are the project not undertaken as

CDM project activity, continuation of the current situation and utility scale fossil fuel fired/hydro projects. The alternatives mentioned by the project proponent are credible alternatives which are acceptable and hence CAR (05) was closed.

The baseline emission calculations and emission reductions were as per the Methodology ACM0002 version 06 dated 19th May 2006. The emission reduction figures would further be checked during verification. As per methodology ACM0002 version 06 dated 19th May 2006, no leakage is to be considered.

3.4 Application of Monitoring methodology and Monitoring Plan

The present CDM project activity uses monitoring methodology ACM0002 version 06 dated 19th May for "Consolidated baseline methodology for grid-connected electricity generation from renewable sources"

During review of version 1 of the PDD it was found that project proponent was not clear on QA/QC procedure as required in the monitoring methodology. Also the responsibility flow chart given in PDD section B.7.2 was not correct; So CAR (06) was raised. The project proponents in his response to CAR (06) explained the QA/QC procedure more clearly in the revised PDD and provide the responsibility flow chart more elaborately in the revised PDD. Hence CAR (06) was closed out.

NIR (07) was raised as the Project Management planning was not described in the PDD version 01. In response the project proponent mentioned the Roles and responsibility along with the management structure which included various issues like monitoring, measurement and reporting, archiving of data etc. During the site visit it was observed that the site office had necessary emergency protocols which included first aid kit, fire extinguishers and instructions for the same had been maintained. The responsibility for carrying out internal audits for the project activity is mentioned in the PDD which includes all issues related to project management planning. Thus, NIR (07) was closed out.

CAR (13) was raised as there was no information regarding training and maintenance efforts for the project activity in the PDD, in response of the CAR the project proponent then added the information about training and maintenance under section B.7.2 in the revised PDD, which was cross-checked during site visit and the personnel involved in monitoring and maintenance were found be aware of the procedures, hence the CAR (13) was closed out.

3.5 Project design

The Project Design Document (PDD) was designed as per version 3.1 of guidelines laid for preparing PDD of large scale CDM project activity hence the format of the present PDD was checked against it.

It was found that section C.1.1 of version 01 of the PDD indicated 17th August 2005 as project activity starting date; but evidence for the same was not provided. CAR (14) was raised asking project proponent to provide an evidence for the starting date of the project activity. In response project proponent provide the purchase order for the wind energy generators dated 17th August 2005. The same was cross checked during site visit and the date 17th August 2005 was accepted as the start date for the project activity hence CAR (14) was closed out.

Operational lifetime of the project activity was mentioned as 20 years which was found acceptable after reviewing the project technology details mentioned in the purchase order of the project activity component. CAR (12) was raised asking project proponent to provide any documentary evidence that the present project technology will not be substituted or replaced by the more efficient technologies during the crediting period. Project proponent has assured that project technology will not be substituted or replaced by more efficient technology during the crediting period and the letter of undertaking for the same has also been obtained from the project proponent. This was accepted and CAR (12) was closed out.

Project proponent in the PDD mentioned that project activity has not received any public funding from parties listed in Annex 1. CAR (02) was raised and the project proponent was asked to provide any documentary evidence for supporting the same. In response the project proponent submitted an undertaking which states that no ODA was used for the project activity. This was acceptable and hence, CAR (02) was closed.

3.6 Environmental Impacts

In state of Karnataka KPTCL is authorized government agency to keep an eye on wind mill projects. In order to check whether the project commissioning has been done as per KPTCL requirement or not, DOE has checked the commissioning certificate and PPA signed by KPTCL as a proof that KPTCL allows the operation of the project activity and commissioning is done as per their procedures.

EIA report was not submitted to the DOE, so NIR (08) was raised, the project proponent submitted the EIA report and the same were checked for Environmental Impacts on various parameters like Air quality, Water, Land, Noise generation and ecology as mentioned under section D.1 of the PDD. Hence NIR (08) was closed out.

3.7 Local stakeholder comments

The project activity involves setting up of 30.40 MW wind energy based power project for electricity generation and exporting the same to Southern regional grid, the project proponent identified local administrative body, local population as local stakeholders for the project activity. CAR (09) was raised asking project proponent to clarify which government departments they have considered as a local stakeholder for the project activity as version 01 of the PDD remains silent on this issue. In their response to CAR (09) project proponent clarifies that KPTCL and local village panchayat are the concern government departments project proponent has considered; this was verified during local stakeholder consultation during site visit and accepted, hence CAR (09) was closed out.

Project proponent in version 01 of the PDD mentions that comments from local stakeholders have been invited through advertisements in news paper. CAR (10) was raised and project proponent was asked to provide a copy of advertisement in news paper for seeking the comments. Project proponent in response to CAR (10) provided copy of the news paper in local language (same translated in English to the validator) and the same was verified by crosschecking with original news paper. It was also cross-checked during the discussions with the local stakeholders and found acceptable. Thus CAR (10) was closed out.

The summary of local stakeholders' comments was not provided in version 01 of the PDD so the NIR (11) was raised for the same. In response the project proponent incorporated the summary in the revised PDD; the comments were cross-checked during the local stakeholder consultation process during site visit and were found acceptable. It was also found that no public complain was registered with the concern government department and no negative comment has been received on the project activity. So NIR (11) was closed out.

4 Comments by Parties, Stakeholders and NGOs

In accordance with sub-paragraphs 40 (b) and (c) of the CDM modalities and procedures, the project design document of a proposed CDM project activity shall be made publicly available and the DOE shall invite comments on the validation requirements from Parties, stakeholders and UNFCCC accredited non-governmental organizations and make them publicly available. This chapter describes this process for this project.

4.1 Description of how and when the PDD was made publicly available

The PDD and the monitoring plan for this project were made available on the SGS website <http://www.sgsqualitynetwork.com/tradeassurance/ccp/projects/project.php?id=172> from 28th November 2006 to 27th December 2006 and Comments were invited through the UNFCCC CDM homepage.

4.2 Compilation of all comments received

The project was up loaded for International stakeholder consultation (ISHC) for a period of 30 days and received one comment.

Comment number	Date received	Submitter	Comment
1	30/11/06	<p>Name: Peter Smith</p> <p>City: London Country: United kingdom</p> <p>Organisation: P.S.Associates</p>	<p>1.1 The project has individual project promoters and Enercon as a part of the bundle. How can the additionality be the same in these cases? How can it be proved that Enercon actually needed CDM to make the turbines viable? Enercon as a manufacturer sets up the machines for sale later or for its own use. But there is no additionality that can be established. The complete analysis is erroneous.</p> <p>1.2 The reference given for 14% and 16% is false. Maharashtra projects in 2004 come under Group 3 and the post tax equity IRR is 14%. The details are incorrect. Further, respective State Orders or Central Orders must be taken into consideration to ascertain benchmarks. A Rajasthan Order cannot be quoted for a Project in Karnataka. A more pertinent State Order must be referred.</p> <p>1.3 Why has the investment analysis calculation been shown only for the Enercon wind turbines? It is hardly representative of the entire bundle because as mentioned above, the basis for additionality is completely different.</p> <p>1.4 The CER rate that has been considered has not been mentioned.</p> <p>1.5 EIAs for different sites are different as they are based on site specific characteristics. How can the same information be provided for all the three Enercon PDDs that have posted on the web together in November 2006.</p>

4.3 Explanation of how comments have been taken into account

Date: 30/11/06

Raised by: Peter Smith

Comment	Issue	Ref
1.1	The project has individual project promoters and Enercon as a part of the bundle. How can the additionality be the same in these cases? How can it be proved that Enercon actually needed CDM to make the turbines viable? Enercon as a manufacturer sets up the machines for sale later or for its own use. But there is no additionality that can be established. The complete analysis is erroneous.	4.2

Date: 20th April 2007 [Response from project developer]

India the wind turbine manufacturers also carry out the role of a wind farm developer. Thus the role of Enercon is not restricted to manufacturing as understood by the Stake holder. Enercon as a developer develops wind power projects which are developed on Built and Transfer basis. Thus the identification and development of the Project is first done by Enercon as the developer considering all the financial aspects and other risks before the investors come into the project investment. Some of the projects in the bundle are also owned by Special Purpose Vehicle Companies formed by Enercon. Enercon has followed the approach of bundling the CDM projects which are developed under the same policy/regulatory regime (thus tariffs and other benefits are similar across all the projects in a bundle), located in the same site/region (thus the wind profile and the plant load factor are similar across all the projects in bundle) having the same technology i.e., primarily Enercon Wind Electric Converters and have been implemented roughly at the same time (thus key project parameters, e.g., capital cost per MW, interest rate and financing terms in case of debt financed projects and tax regime are similar across all the projects in a bundle). The Tools for determination of additionality provide for a 5-step process. Enercon understands that this query relates to the Step 2 Investment Analysis part of the Tools for determination of additionality. In evaluating the additionality using Investment Analysis, the assumptions relating to policy/regulatory regime, costs, wind profiles, etc. are similar across the bundle and each of these assumptions have a basis (through publicly available information in the form of various orders of regulatory commissions and through documentation available with Enercon). The choice of project for demonstrating additionality as Enercon IPPs is because these are executed through special purpose vehicles raising project financing with high debt:equity ratio and competitive interest rates which, inter alia, optimize equity returns. On the other hand, a project being financed fully through equity, as is the case with several of the other customer projects in the bundle will, ceteris paribus, have lower equity returns.

(ii) The CDM project is developing and setting of wind farms (as explained in paragraph one above), which, being renewable energy source, lead to emission reductions. The CDM project does not cover the wind turbine/equipment manufacturing facility of Enercon.

(iii) It is important to explain the process of wind farm project development in India in general and in the context of development of wind farm in the State of Karnataka for instance. The process of development of wind power projects in India is very different from setting up conventional or other non-conventional power projects. Enercon as a Developer of wind farms first obtains the rights to develop wind power projects under the prevailing policies of Government of Karnataka. The rights to develop wind power projects included project approval, acquiring lease hold / free hold project land, obtaining evacuation approval from the state electricity utility and constructing the evacuation facility, approval of construction drawings from CEIG, etc. Enercon as a Developer then proceeds with site development activities including survey and selection of potential sites, site analysis, micro-siting, wind measurement, etc. Having identified the project site, Enercon gains the possession of the land on a 30-year lease from the state government or the nodal agency or purchase free hold land by paying consideration at market rate and proceeds to develop the potential sites including surface preparation, approach roads, setting up of buildings including control rooms/office rooms, etc. Simultaneously along with the development of site, Enercon starts scouting for investors to invest in these wind projects. As investor orders are firmed up, it commences the construction of the foundation and other windfarm installation related works internal lines, protection equipment and other grid interface arrangements. In parallel, it approaches the Karnataka Power Transmission Corporation Ltd / relevant Discom for signing of the Power Purchase Agreements on behalf of the investors. Enercon is also the exclusive O&M contractor to the wind projects in the wind farms developed by it.

The investors in the wind farm are private/public sector firms who are generally passive financial investors who own small capacities in a wind farm.

Therefore, there are two levels of investment decisions that are involved in setting up wind projects in India. At the first level, Enercon has decided to proceed with the investments in wind farm over a 3 – 4 year period of setting up utility sized wind power project. At the second level, individual investors take decisions about participating in the wind farm by buying smaller capacities.

While only Step 2 Investment Analysis is used to demonstrate additionality because it clearly shows that the projects are additional, there are a number of barriers to investment that Enercon faces in development of the wind farms which have not been detailed in the PDD. These barriers have been foreseen by Enercon at the time of development of the wind farm project as a Developer. Enercon has considered the CDM benefits in order to mitigate the impact of these barriers as it developed these wind farm projects. These include:

a) There are frequent changes to the Government policy on wind power projects which, inter alia, reduce tariffs payable to wind farms, levy additional charges for development, transmission and evacuation facilities and set limits to the amount of capacity beyond which the state utility (KPTCL) can refuse to contract for purchase of power. These have resulted in delays and extra investments from Enercon.

b) With respect to the economics of wind power project, the tariff for the wind power is based on single part tariff structure, without any deemed generation benefits. The investors will not be entitled to get any revenue in case of any transmission constraints or backing down instruction by State Transmission Company, even if the wind project is fully available to generate. This is unlike other utility scale fossil fired or hydro power projects where two part tariff structure is available which mitigates the investment risks from dispatch (actual generation), i.e., if the power projects are available for dispatch but are not dispatched due to transmission constraints or backing down by the state utility, they are entitled to fixed charges recovery for being available for generation.

During the monsoon period when the water level (and therefore hydro generation) in the state is comfortable, KPTCL has backed down the wind power projects resulting in a significant loss to wind power projects. This issue is compounded by the fact that during the monsoon season, the wind speed is very high and backing down of wind turbines during this period has a major impact on the revenue of the wind farm.

Date: 2nd May 2007 [Nikunj Agarwal/Jimmy Sah] [Comments from Local Assessor]
Project proponent's response to the comment was found to be self explanatory. The IRR calculation sheet for all the sub bundles has been provided along with the sensitivity analysis to support the additionality; the calculations were checked and found acceptable.

[Acceptance and close out] OK, closed out.[Sanjeev Kumar/Vikrant Badve]

Date: 30/11/06

Raised by: Peter Smith

Comment	Issue	Ref
1.2	The reference given for 14% and 16% is false. Maharashtra projects in 2004 come under Group 3 and the post tax equity IRR is 14%. The details are incorrect. Further, respective State Orders or Central Orders must be taken into consideration to ascertain benchmarks. A Rajasthan Order cannot be quoted for a Project in Karnataka. A more pertinent State Order must be referred.	4.2

Date: 20th April 2007 [Response from project developer]

First, we would like to clarify that the Maharashtra Group 3 projects have return on equity component of 16% post tax and not 14% as commented by the stakeholder. We would like to draw the attention of the stakeholder to the relevant MERC Order dated 24 November 2003 Page 46 – 48 where it deliberates on the issue of return on equity and states "Therefore, the Commission has decided to follow the declared policy of the Government of India for private sector participation in the power sector, which mandates 16% ROE to investors."

Second, we would like to clarify that various state electricity regulatory commissions have considered different levels of equity returns in framing the electricity tariffs for wind power projects. Among the factors that have been considered include the rate of return set by Central Electricity

Regulatory Commission for conventional fossil fuel plants under two part tariff, historical level of equity returns that the state electricity regulatory commissions have allowed for their conventional fossil fuel plants under two part tariff, what other regulatory commissions have allowed and last but not the least, balancing the interests of the generators and the consumers.

It is important to note that the equity return used for computation of tariff is what the state electricity regulatory commission considers "reasonable" and different state electricity regulatory commissions have taken different views on what is "reasonable". It is also important to note that the Karnataka Electricity Regulatory Commission (relevant KERC Order dated 18th January 2005, Page 5) has considered 16% post tax as the equity return in computing the tariffs.

Date: 2nd May 2007 [Nikunj Agarwal/Jimmy Sah] [Comments from Local Assessor]

Project proponent has considered KERC order as mentioned in the response above and indicated a reference of other state electricity regulatory commission's orders on the same subject. This was accepted.

[Acceptance and close out] OK, closed out.[Sanjeev Kumar/Vikrant Badve]

Date: 30/11/06

Raised by: Peter Smith

Comment	Issue	Ref
1.3	Why has the investment analysis calculation been shown only for the Enercon wind turbines? It is hardly representative of the entire bundle because as mentioned above, the basis for additionality is completely different.	4.2
Date: 20 th April 2007 [Response from project developer] Please see response (1) above.		
Date: 2 nd May 2007 [Nikunj Agarwal/Jimmy Sah] [Comments from Local Assessor] IRR calculations for all the sub-bundles have been provided, the PDD under appendix 3 mentions the IRR values with and without CDM benefits for all the sub-bundles. The calculations and assumptions were checked and are acceptable.		
[Acceptance and close out] OK, Closed Out[Sanjeev Kumar/Vikrant Badve]		

Date: 30/11/06

Raised by: Peter Smith

Comment	Issue	Ref
1.4	The CER rate that has been considered has not been mentioned.	4.2
Date: 20 th April 2007 [Response from project developer] The rate used for the purpose of analysis is an illustrative rate of \$6.5 per CER.		
Date: 2 nd May 2007 [Nikunj Agarwal/Jimmy Sah] [Comments from Local Assessor] OK; the comment raised can be closed.		
[Acceptance and close out] OK, closed out.[Sanjeev Kumar/Vikrant Badve]		

Date: 30/11/06

Raised by: Peter Smith

Comment	Issue	Ref
1.5	EIAs for different sites are different as they are based on site specific characteristics. How can the same information be provided for all the three Enercon PDDs that have posted on the web together in November 2006	4.2
<p>Date: 20th April 2007 [Response from project developer]</p> <p>Enercon has conducted location-specific EIAs for each of its projects and the copy of the EIA reports are made available to the validator. In the context of the query, there are three bundled projects in Karnataka spread across two districts and separate EIA were conducted for both the districts. The EIAs in question covers all the sites (villages) located in the District Chitradurga and all the sites (villages) Gadag district and is therefore applicable for the bundled project (Enercon Wind Farms in Karnataka Bundled Project – 30.40 MW) in Karnataka.</p>		
<p>Date: 2nd May 2007 [Nikunj Agarwal/Jimmy Sah] [Comments from Local Assessor]</p> <p>Separate EIA reports for Chitradurga and Gadag site has been submitted by the client and information provided in the PDD was checked against these reports and same was found satisfactory.</p>		
[Acceptance and close out] OK, closed out.[Sanjeev Kumar/Vikrant Badve]		

5 Validation opinion

SGS has performed a validation of the project: “Enercon Wind Farms in Karnataka Bundled Project – 30.40 MW”. The Validation was performed on the basis of the UNFCCC criteria and 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 have provided SGS with sufficient evidence to determine the fulfilment of the stated criteria. In our opinion, the project meets all relevant UNFCCC requirements for the CDM and all relevant host country criteria. The project will hence be recommended by SGS for registration with the UNFCCC.

By installing wind power plant the project activity will lead to displacement of carbon-intensive electricity by the electricity from a renewable source and thus the project results in reductions of greenhouse gas emissions that are real, measurable and give long-term benefits to the mitigation of climate change. A review of the investment analysis, common practice analysis, associated with project activity demonstrates that the proposed project activity was not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. The project is already commissioned and is exporting the electricity to southern grid. The project is likely to achieve the estimated yearly average emission reduction of 65,774 tCO₂e.

The validation is based on the information made available to SGS and the engagement conditions detailed in the report. The validation has been performed using a risk based approach as described above. The only purpose of this report is its use during the registration process as part of the CDM project cycle. Hence SGS can not be held liable by any party for decisions made or not made based on the validation opinion, which will go beyond that purpose.

6 List of persons interviewed

<i>Date</i>	<i>Name</i>	<i>Position</i>	<i>Short description of subject discussed</i>
11/01/2007	Mr. Vivek Sen	Project Proponent	About the description of the project, additionality
11/01/2007	Mr. Naveen Kumar	Project Proponent	About the technology of the project activity and operation and monitoring.
11/01/2007	Mr. Shashikant Pandya	Local Resident	Local Stake Holder Consultation

7 Document references

Category 1 Documents (documents provided by the Client that relate directly to the GHG components of the project, (i.e. the CDM Project Design Document, confirmation by the host Party on contribution to sustainable development and written approval of voluntary participation from the designated national authority):

- /1/ Host country approval from Indian DNA
- /2/ Letter of Approval from Japanese DNA
- /3/ PDD version 1 dated 15th November 2006
- /4/ PDD version 2 dated 06th July 2007
- /5/ PDD version 3 dated 31st July 2007
- /6/ PDD version 4 dated 3rd September 2007
- /7/ Calculation spread sheet for IRR and Emission Reduction.
- /8/ Modalities of Communication

Category 2 Documents (background documents used to check project assumptions and confirm the validity of information given in the Category 1 documents and in validation interviews):

- /1/ Purchase Order for present project activity
- /2/ A copy of PPA & commissioning certificates between Project Proponent and KPTCL.
- /3/ Training Certificates
- /4/ Letter regarding no-use of ODA
- /5/ Local Stakeholders Comments
- /6/ Assumptions and Data used for IRR calculation
- /7/ Bank Loan documents
- /8/ Undertaking for No change in Technology
- /9/ Authorization Letter for Enercon from all the project proponents

Annex 1: Local Assessment

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
1. To get copy Host Country Approval (HCA) letter from Project Proponent.	PDD	DR	The host country Letter of Approval has been submitted by the project proponent.	Pending	Y
2. No ODA has been used for this project and to be confirmed during site visit.	PDD Annex 2	DR/I	Project proponent has submitted letter of undertaking regarding no use of ODA funds for the project.	Y	Y
3. Invitation for LSC meeting was sent to participate and communicate suggestions regarding the project activity. Documents are required to verify the same.	PDD	DR/I	The comments from the Local stakeholders were invited through the advertisement given in the local news paper. A copy of the same was submitted by the project proponent to the validator. The same was obtained to verify the transparency in consultation process. The document was verified during local stakeholder consultation.	Y	Y
4. Local stakeholders' comments are required to be verified for any adverse comment. Due account of stakeholder comments received required to be verified..	PDD	DR/SV	There were no adverse comments found in the MoM of the local stakeholders submitted by project proponent and the same was cross checked during site visit during local stakeholder consultation process.	Y	Y
5. Project design engineering documents from the technology supplier are required to be checked. Copy of offer made/ specifications given by technology supplier.	PDD	DR	Purchase specifications for Project activity were obtained and verified for the project capacity.	Y	Y
6. EIA report for the project activity.	PDD	Web site	EIA report for the project activity was submitted by the project proponent and the same was checked and verified for the impact of the project activity on	Y	Y

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			the land, water, air etc. during the site visit. This was found acceptable.		
7. The monitoring plan required to be checked.	PDD	DR/ SV	The monitoring plan for the project activity was checked during site visit and found satisfactory. Although during verification it will be checked again.	Y	Y
8. Quality Assurance (QA) and Quality Control (QC) procedures for data monitoring.	PDD	DR/ SV	QA and QC procedures for data monitoring were verified during site visit. It was found satisfactory and same will be again cross-checked during verification of the project activity.	Y	Y
9. Financial analysis for the project activity.	PDD	DR	The financial analysis spreadsheet for the project activity was submitted by project proponent and verified for IRR calculations. The document is attached in 'Project Doc' folder.	Y	Y
10. Calculation spreadsheet for baseline and project emission reductions during project crediting period.	PDD	DR	The excel spreadsheet for emission reduction calculation was obtained and the calculations were verified and same is found satisfactory. The document was attached in 'Project doc' folder.	Y	Y
11. Documentary evidence that the employees of the company undergone training programme related to project activity.	PDD	DR	The document was obtained; verified during local stakeholder consultation.	Y	Y

Annex 2: Validation Protocol

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

REQUIREMENT	Ref	MoV	Comment	Draft finding	Concl
1.1 The project shall assist Parties included in Annex I in achieving compliance with part of their emission reduction commitment under Art. 3 and be entered into voluntarily.	PDD	DR	The project activity is likely to contribute to sustainable development. Letter of approval from Japanese Designated National Authority (DNA) to be submitted by the project proponent	CAR 1	Y CAR 01 closed
1.2 The project shall assist non-Annex I Parties in achieving sustainable development and shall have obtained confirmation by the host country thereof, and be entered into voluntarily	PDD	DR	The project activity is likely to contribute to sustainable development. Letter of approval from Host Country (India) Designated National Authority (DNA) to be submitted by the project proponent	CAR 1	Y CAR 01 closed
1.3 All Parties (listed in Section A3 of the PDD) have ratified the Kyoto protocol and are allowed to participate in CDM projects	PDD	DR	Project is bilateral and India has ratified the protocol on 26 th August 2002 and is allowed to participate. http://unfccc.int/parties_and_observers/parties/items/2109.php Japan has ratified the protocol on 4 th June 2002 and is allowed to participate. http://maindb.unfccc.int/public/country.pl?country=JP	Y	Y
1.4 The project results in reductions of GHG emissions or increases in sequestration when compared to the baseline; and the project can be reasonably shown to be different from the baseline scenario	PDD	DR	The project activity is to generate 30.40 MW power by installing Wind Farm Project, and results in reduction of the GHG by replacing the grid based electricity which uses non	Y	Y

REQUIREMENT	Ref	MoV	Comment	Draft finding	Concl
			sustainable fuel like coal etc.		
1.5 Parties, stakeholders and UNFCCC accredited NGOs shall have been invited to comment on the validation requirements for minimum 30 days (45 days for AR projects), and the project design document and comments have been made publicly available	PDD	DR/ UNFCCC Web-site	<p>Yes, the project is listed on UNFCCC website from 28th November 2006 to 27th December 2006.</p> <p>http://cdm.unfccc.int/Projects/Validation/DB/MH9SPL9SLQ3PLRD9E7VA3OQPA6HKPH/view.html</p> <p>which is linked to SGS climate change website.</p> <p>http://www.sgsqualitynetwork.com/tradeassurance/ccp/projects/project.php?id=172</p> <p>Number of comments received – 1</p>	Pending	Y All comments closed
1.6 The project has correctly completed a Project Design Document, using the current version and exactly following the guidance	PDD	DR	Project has used version 03.1 of PDD and followed the guidelines, except pending closure of some CARs/ NIRs.	Pending	Y
1.7 The project shall not make use of Official Development Assistance (ODA), nor result in the diversion of such ODA	PDD	DR	<p>No ODA has identified in PDD.</p> <p>Annex 2 of PDD does not give any information on ODA.</p> <p>Records to be checked during Site visit.</p>	CAR2	Y CAR 02 closed
1.8 For AR projects, the host country shall have issued a communication providing a single definition of minimum tree cover, minimum land area value and minimum tree height. Has such a letter been issued and are the definitions consistently applied throughout the PDD?	PDD	DR	Not relevant as the project is not an AR project.	Not Applicable	Y
1.9 Does the project meet the additional requirements detailed in: Table 9 for SSC projects Table 10 for AR projects Table 11 for AR SSC projects	PDD	DR	Not applicable	Not applicable	Y
1.10 Is the current version of the PDD	PDD	DR	The version of PDD used	Pending	Y

REQUIREMENT	Ref	MoV	Comment	Draft finding	Concl
complete and does it clearly reflect all the information presented during the validation assessment?			by project proponent present all the information, except pending closure of some CARs/ NIRs.	g	
1.11 Does the PDD use accurate and reliable information that can be verified in an objective manner?	PDD	DR	The PDD uses reliable information and can be verified in an objective manner.	Pending Site visit clarification	Y

Table 2 Baseline methodology(ies) (Ref: PDD Section B and Annex 3 and AM)

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
2.1 Does the project meet all the applicability criteria listed in the methodology?	PDD	DR	Project meets all applicability criteria as per the approved consolidated baseline methodology ACM0002 version 6.0 dated 19 th May 2006.	Y	Y
2.2 Is the project boundary consistent with the approved methodology?	PDD	DR	Project boundary is consistent with the approved consolidated monitoring methodology.	Y	Y
2.3 Are the baseline emissions determined in accordance with the methodology described?	PDD	DR	Excel spreadsheet for the calculation of baseline emissions to be provided by the Project Proponent. The grid emission factor provided in the PDD is seems to be higher when compared with the grid emission factor given by CEA. The data was available on CEA's web-site. Please Clarify	NIR3	Y NIR 03 close d
2.4 Are the project emissions determined in accordance with the methodology described?	PDD	DR	The project emissions are taken as zero and this is in accordance with ACM0002 version 6.0 dated 19 th May 2006.	Y	Y
2.5 Is the leakage of the project activity determined in accordance with the methodology described?	PDD	DR	It is mentioned in PDD that there is no leakage due to present project activity and it is in line with the ACM 0002 version 6.0 dated 19 th May 2006.	Site visit	Y Evide nce provid ed
2.6 Are the emission reductions determined in accordance with the methodology described?	PDD	DR	Calculations are to be checked from the excel sheet. Pending NIR3	Pendi ng	Y

Table 3Additionality (Ref: PDD Section B5 and AM)

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
3.1 Does the PDD follow all the steps required in the methodology to determine the additionality?	PDD	DR	All steps are followed according to the Tools for the demonstration and assessment of additionality (version 2) 28 th November 2005 for determining the additionality of the present project activity.	Y	Y
3.2 Is the discussion on the additionality clear and have all assumptions been supported by transparent and documented evidence?	PDD	DR	<p>The discussion on additionality is needs to be supported with proper evidences like;</p> <p>A copy of PPA between Project proponent and KPTCL.</p> <p>A copy of IRR sheet and loan document for the present CDM project activity.</p> <p>Claims made on grid related problems.</p> <p>Sensitivity analysis for present CDM project activity sheet giving the information used in PDD.</p> <p>Please explain the alternatives given in step 1 of Section B.5 of PDD in short.</p>	<p>CAR4</p> <p>CAR5</p>	<p>Y CAR 04 closed</p> <p>CAR 05 closed</p>
3.3 Does the selected baseline represent the most likely scenario among other possible and/or discussed scenarios?	PDD	DR	The baseline may be the most likely scenario.	Y	Y
3.4 Is it demonstrated/justified that the project activity itself is not a likely baseline scenario?	PDD	DR	Pending closure of CARs & NIRs.	Pending	Y

Table 4 Monitoring methodology (PDD Section B.7 and AM)

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
4.1 Does the project meet all the applicability criteria listed in the monitoring methodology	PDD	DR	Project meet all the applicability criteria listed in the monitoring methodology ACM0002 version 6.0 dated 19 th May 2006.	Y	Y
4.2 Does the PDD provide for the monitoring of the baseline emissions as required in the monitoring methodology?	PDD	DR	Yes the PDD provide the monitoring of the baseline emissions as required in the monitoring methodology ACM0002 version 6.0 dated 19 th May 2006.	Y	Y
4.3 Does the PDD provide for the monitoring of the project emissions as required in the monitoring methodology?	PDD	DR	As per ACM0002 version 6.0 dated 19 th May 2006 the Project Emission for the present project activity is zero, so no need to monitor the project emission.	Y	Y
4.4 Does the PDD provide for the monitoring of the leakage as required in the monitoring methodology?	PDD	DR	As per ACM0002 version 6.0 dated 19 th May 2006 no leakage is to be considered for the present project activity.	Y	Y
4.5 Does the PDD provide for Quality Control (QC) and Quality Assurance (QA) Procedures as required in the monitoring methodology?	PDD	DR	PDD does not provide relevant information on Quality Control (QC) and Quality Assurance (QA) Procedures as required in the monitoring methodology. The responsibility flow chart given in PDD section B.7.2 is not correct.	CAR6	Y CAR 06 close d

Table 5 Monitoring plan (PDD Annex 4)

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
5.1 Monitoring of Sustainable Development Indicators/ Environmental Impacts	PDD	DR	Pending CAR1	Pending	Y
5.1.1 Does the monitoring plan provide the collection and archiving of relevant data concerning environmental, social and economic impacts?	PDD	DR	Not Applicable	Not Applicable	Y
5.1.2 Is the choice of indicators for sustainability development (social, environmental, economic) reasonable?	PDD	DR	Not Applicable	Not Applicable	Y
5.1.3 Will it be possible to monitor the specified sustainable development indicators?	PDD	DR	Not Applicable	Not Applicable	Y
5.1.4 Are the sustainable development indicators in line with stated national priorities in the Host Country?	PDD	DR	Pending CAR1	Pending	Y CAR 01 closed
5.2 Project Management Planning			The project management planning was not described in the PDD.	NIR7	NIR 07 closed
5.2.1 Is the authority and responsibility of project management clearly described?	PDD	DR	The authority and responsibility of project management is not described in the PDD.	Pending NIR7	Y NIR 07 closed
5.2.2 Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	PDD	DR	The authority and responsibility for registration, monitoring, measurement and reporting is not described in the PDD.	Pending NIR7	Y NIR 07 closed
5.2.3 Are procedures identified for training of monitoring personnel?	PDD	DR	Procedure identified for training of monitoring personnel is not mentioned in the PDD.	Pending NIR7	Y NIR 07 closed
5.2.4 Are procedures	PDD	DR	No specific procedure for	Pending	Y

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
identified for emergency preparedness for cases where emergencies can cause unintended emissions?			emergency preparedness is identified in the monitoring plan given in the PDD.	ng NIR7	NIR 07 closed
5.2.5 Are procedures identified for calibration of monitoring equipment?	PDD	DR	No specific procedure is identified for calibration of monitoring equipment in the monitoring plan given in the PDD.	Pending NIR7	Y NIR 07 closed
5.2.6 Are procedures identified for maintenance of monitoring equipment and installations?	PDD	DR	No specific procedure is identified for maintenance of monitoring equipment and installations in the monitoring plan given in the PDD.	Pending NIR7	Y NIR 07 closed
5.2.7 Are procedures identified for monitoring, measurements and reporting?	PDD	DR	No specific procedure is identified for monitoring, measurements and reporting in the monitoring plan given in the PDD.	Pending NIR7	Y NIR 07 closed
5.2.8 Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	PDD	DR	No specific performance evaluation procedure is identified in the monitoring plan given in the PDD.	Pending NIR7	Y NIR 07 closed
5.2.9 Are procedures identified for dealing with possible monitoring data adjustments and uncertainties?	PDD	DR	No specific procedure is identified for dealing with possible monitoring data adjustments and uncertainties in the monitoring plan given in the PDD.	Pending NIR7	Y NIR 07 closed
5.2.10 Are procedures identified for review of reported results/data?	PDD	DR	No specific procedure is identified to review reported results/ data in the monitoring plan given in the PDD.	Pending NIR7	Y NIR 07 closed
5.2.11 Are procedures identified for internal audits of GHG project compliance with operational requirements where applicable?	PDD	DR	No specific procedure is identified for internal audits of GHG project compliance with operational requirements where applicable.	Pending NIR7	Y NIR 07 closed

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
5.2.12 Are procedures identified for project performance reviews before data is submitted for verification, internally or externally?	PDD	DR	No specific procedure is identified for project performance reviews before data is submitted for verification, internally or externally in the monitoring plan given in the PDD.	Pending NIR7	Y NIR 07 closed
5.2.13 Are procedures identified for corrective actions in order to provide for more accurate future monitoring and reporting?	PDD	DR	No specific procedure is identified in the monitoring plan given in the PDD.	Pending NIR7	Y NIR 07 closed

Table 6 Environmental Impacts (Ref PDD Section D and relevant local legislation)

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
6.1 Has an analysis of the environmental impacts of the project activity been sufficiently described?	PDD	DR	Yes, PDD contain sufficient information.	Y	Y
6.2 Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	PDD	DR	Project has completed Rapid EIA and EIA Report is required to be obtained by the project proponent. The findings from Rapid EIA are required to be mentioned in the PDD.	NIR8	Y NIR 08 close d
6.3 Will the project create any adverse environmental effects?	PDD	DR	Pending NIR8	Pendi ng NIR8	Y NIR 08 close d
6.4 Are transboundary environmental impacts considered in the analysis?	PDD	DR	No transboundary environmental impact identified from project activity. To be verified during site visit.	Site visit	Y
6.5 Have identified environmental impacts been addressed in the project design?	PDD	DR	Pending NIR8	Pendi ng NIR8	Y
6.6 Does the project comply with environmental legislation in the host country?	PDD	DR	The project activity is complied with all environmental legislation in the host country India.	Pendi ng NIR8	Y NIR 08 close d

Table 7 Comments by local stakeholders (Ref PDD Section E)

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
7.1 Have relevant stakeholders been consulted?	PDD	DR	No, the list of relevant stakeholders consulted is not complete. Please clarify which governmental and non-governmental parties are consulted for project activity.	CAR 9	Y CAR 09 closed
7.2 Have appropriate media been used to invite comments by local stakeholders?	PDD	DR	According to the PDD the Project Proponent placed advertisement in local newspaper for inviting the local stakeholder comments. Supporting document need to be provided by the project proponent.	CAR 10	Y CAR 10 closed
7.3 If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	PDD	DR	The project participant has consulted the local stakeholders as a requirement for CDM project. MoM of the meeting is also given in Appendix 2 of the PDD. Documentary evidence needs to be checked.	Site Visit	Y
7.4 Is a summary of the stakeholder comments received provided?	PDD	DR	The summary of the stakeholder comments is not provided in the PDD.	NIR 11	Y NIR 11 closed
7.5 Has due account been taken of any stakeholder comments received?	PDD	DR	Due account taken of stakeholder comments received is mentioned in the PDD	Y	Y

Table 8 Other requirements

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
8.1 Project Design Document					
8.1.1 Editorial issues: does the project correctly apply the PDD template and has the document been completed without modifying/adding headings or logo, format or font.	PDD	DR	The PDD template for version 03.1 has been applied correctly.	Y	Y
8.1.2 Substantive issues: does the PDD address all the specific requirements under each header. If requirements are not applicable / not relevant, this must be stated and justified	PDD	DR	Pending CARs and NIRs	Pending	Y All CARs/ NIRs closed
8.2 Technology to be employed					
8.2.1 Does the project design engineering reflect current good practices?	PDD	DR	The project reflects current good practice for project design engineering.	Site visit	Y
8.2.2 Does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country?	PDD	DR	The project does not use state of the art technology as per technology details given in section A.4.3 of the PDD. Technical specifications of the Wind Energy Turbines need to be checked during site visit.	Site visit	Y
8.2.3 Is the project technology likely to be substituted by other or more efficient technologies within the project period?	PDD	DR	Evidence for the same has to be submitted by the project proponent.	CAR 12	Y CAR 12 closed
8.2.4 Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period?	PDD	DR	No information was found regarding training and maintenance efforts for project activity in the PDD.	CAR 13	Y CAR 13 closed
8.3 Duration of the Project/ Crediting Period					
8.3.1 Are the project's starting date and operational lifetime clearly defined and reasonable?	PDD	DR	Project activity starting date is mentioned as 17/08/2005 in the PDD section C.1.1. Evidence for the same is required to be submitted.	CAR 14	Y CAR 14 closed

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
8.3.2 Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max. two x 7 years or fixed crediting period of max. 10 years)?	PDD	DR	Fixed crediting period of 10 years is selected for the project activity and it is reasonable.	Y	Y
8.3.3 Does the project's operational lifetime exceed the crediting period	PDD	DR	The project's operational life time is expected to be 20 years which exceeds the crediting period of 10 years.	Y	Y

Annex 3: FINDINGS OVERVIEW

Date: 2nd January 2007

Raised by: Sanjeev Kumar/Vikrant Badve

No.	Type	Issue	Ref
1	CAR	Project proponent is required to submit the Letter of Approval for the present project activity from Host country.	1.2
Date: The letter from Indian DNA is enclosed.			
Date: 2007-07-09 [Nikunj Agarwal/Jimmy Sah][Comments from Local Assessor] The Host country approval from both Indian DNA and Japan DNA along with a translation in English has been submitted, the Letter of Approval was checked and the name of the project mentioned in the Approval is the same as mentioned under section A.1 of the PDD, this is acceptable, CAR can be closed. [Acceptance and close out] OK, Closed Out[Sanjeev Kumar]			

Date: 2nd January 2007

Raised by: Sanjeev Kumar/Vikrant Badve

No.	Type	Issue	Ref
2	CAR	No ODA has identified in PDD as per section A.4.5. Annex 2 of PDD does not give any information on ODA. Please correct the same.	1.7
Date: Letter of undertaking from Enercon has been provided. The Annex 2 of the PDD has been revised.			
Date: 2007-03-16 [Nikunj Agarwal/Jimmy Sah] [Comments from Local Assessor] Letter of undertaking from project proponent has been submitted same has been cross-checked with Annex 2 of rephrased PDD; which gives information on no ODA use in the project activity. This is found acceptable. Hence CAR 2 can be closed [Acceptance and close out] OK, Closed Out[Sanjeev Kumar]			

Date: 2nd January 2007

Raised by: Sanjeev Kumar/Vikrant Badve

No.	Type	Issue	Ref
3	NIR	Excel spreadsheet for the calculation of baseline emissions to be provided by the Project Proponent.	2.3
Date: The excel spreadsheet for calculation of emission reductions has been provided.			
Date: 2007-03-16 [Nikunj Agarwal/Jimmy Sah] [Comments from Local Assessor] CEA has developed a database for Grid emission factor values and it is available on their web-site www.cea.nic.in . This database is specially prepared for CDM related projects. Please explain why CEA data for grid emission factor has not been used by the project proponent. [Acceptance and close out]Open			
16-March-2007 (Enercon India Ltd) The PDD has been revised using the Baseline Emission values provided by CEA. The Baseline Emission Values used for calculation of emission reductions by the project activity are in accordance with the Baseline Emission Values provided by CEA in its latest notification regarding grid emission factors dated 21-December-2006. Details regarding the same can be accessed at www.cea.nic.in .			
Date: 2007-05-31[Nikunj Agarwal/Jimmy Sah] [Comments from Local Assessor] The grid emission factor has now been taken as per CEA data and same has been accepted. So			

the CAR can be closed.

[Acceptance and close out]OK, Closed Out[Sanjeev Kumar]

Date: 2nd January 2007

Raised by: Sanjeev Kumar/Vikrant Badve

No.	Type	Issue	Ref
4	CAR	<p>The discussion on additionality is needs to be supported with proper evidences like;</p> <p>A copy of PPA between Project proponent and KPTCL.</p> <p>A copy of IRR sheet and loan document for the CDM project activity.</p> <p>Claims made on grid related problems.</p> <p>Sensitivity analysis sheet giving the information used in PDD.</p>	3.2

Date: [These have been provided.](#)

Date: 2007-03-16 [Nikunj Agarwal/Jimmy Sah] [Comments from Local Assessor]

[The documents like PPA and loan document submitted by the project proponent and found satisfactory after cross-checking the same. However no IRR sheet along with sensitivity analysis sheet was provided.](#)

[Acceptance and close out]Open

[16-March-2007 \(Enercon India Ltd\)](#)

[The IRR spreadsheets showing the sensitivity analysis are being enclosed.](#)

Date: 2007-07-09 [Nikunj Agarwal/Jimmy Sah] [Comments from Local Assessor]

The IRR calculation sheet for all the sub-bundles has been received and found satisfactorily; hence this CAR can be closed out.

[Acceptance and close out]OK, Closed Out[Sanjeev Kumar]

Date: 2nd January 2007

Raised by: Sanjeev Kumar/Vikrant Badve

No.	Type	Issue	Ref
5	CAR	Please explain the alternatives given in step 1 of Section B.5 of PDD in short.	3.2

[Date: The alternatives mentioned in Step 1 of Section B.5 in the PDD include the project not undertaken as CDM project activity, continuation of the current situation and utility scale fossil fuel fired/hydro projects. Enercon understands that the query relates to explain the last set of alternatives, i.e., utility scale fossil fuel fired/hydro projects. The utility scale fossil fuel fired/hydro projects imply large coal-fired, gas-fired, diesel-fired and hydro projects, as these are alternatives available to similar project developers. These are realistic alternatives as similar project developers are developing several such projects. These are credible alternatives as the scope of project development, size of investments and time scale for development for the wind farms developed by Enercon are similar to that for utility scale fossil fuel fired/hydro projects.](#)

Date: 2007-03-16 [Nikunj Agarwal/Jimmy Sah] [Comments from Local Assessor]

[The explanation by Project proponent has been found satisfactorily, so this CAR can be closed.](#)

[Acceptance and close out]OK, Closed Out[Sanjeev Kumar]

Date: 2nd January 2007

Raised by: Sanjeev Kumar/Vikrant Badve

No.	Type	Issue	Ref
6	CAR	PDD does not provide relevant information on Quality Control (QC) and Quality Assurance (QA) Procedures as required in the monitoring methodology.	4.5

		The responsibility flow chart given in PDD section B.7.2 is not correct.	
Date: The QA/QC procedures for monitoring the electricity supplied to the grid (the only parameter to be monitored) are governed by the power purchase agreements and relevant electricity sector regulations. Section B.7.1 states this and the relevant QA/QC procedures are set out under Annex 4. The responsibility flow chart in PDD section B.7.2 has been corrected.			
Date: 2007-03-16 [Nikunj Agarwal/Jimmy Sah] [Comments from Local Assessor] The same has been incorporated in the revised PDD, Annex 4 of the rephrased PDD was checked for the monitoring information and QA/QC procedure for data monitoring, so this CAR can be closed. [Acceptance and close out]OK, Closed Out[Sanjeev Kumar]			

Date: 2nd January 2007

Raised by: Sanjeev Kumar/Vikrant Badve

No.	Type	Issue	Ref
7	NIR	The project management planning was not described in the PDD.	5.2
Date: The Project has been implemented.			
Date: 2007-03-16 [Nikunj Agarwal/Jimmy Sah] [Comments from Local Assessor] The Project Management planning has been discussed during site visit, the roles and responsibility has been described in the PDD, the responsibility of internal audits has been mentioned which includes all the issues related to the management for the project activity, thus NIR can be closed. [Acceptance and close out]OK, Closed Out[Sanjeev Kumar]			

Date: 2nd January 2007

Raised by: Sanjeev Kumar/Vikrant Badve

No.	Type	Issue	Ref
8	NIR	Project has completed Rapid EIA and EIA Report is required to be obtained by the project proponent. The findings from Rapid EIA are required to be mentioned in the PDD.	6.2
Date: The EIA report has been provided. The findings of the EIA are set out in the section D.1 of PDD.			
Date: 2007-03-16 [Nikunj Agarwal/Jimmy Sah] [Comments from Local Assessor] EIA Report has been received and checked, the same was found satisfactorily, so this NIR can be closed. [Acceptance and close out]OK, Closed Out[Sanjeev Kumar]			

Date: 2nd January 2007

Raised by: Sanjeev Kumar/Vikrant Badve

No.	Type	Issue	Ref
9	CAR	Please clarify which governmental and non-governmental parties are consulted for project activity.	7.1
Date: The procedure for inviting local stakeholders for the meeting and the minutes of meetings are provided in the PDD. Enercon does not understand the specific requirement for consulting governmental and non-governmental parties for local stakeholder consultation.			
Date: 2007-03-16 [Nikunj Agarwal/Jimmy Sah] [Comments from Local Assessor] The documents regarding local stakeholder consultation and MoM of meeting are provided by the project proponent and found acceptable. CAR can be closed. [Acceptance and close out]OK, Closed Out[Sanjeev Kumar]			

Date: 2nd January 2007

Raised by: Sanjeev Kumar/Vikrant Badve

No.	Type	Issue	Ref
10	CAR	Evidence needs to be provided by the project proponent regarding how local stakeholders are informed about the project activity.	7.2
Date: Enercon invited suggestions by giving public notice in the newspaper. The copy of the public notice has been provided.			
Date: 2007-03-16 [Nikunj Agarwal/Jimmy Sah] [Comments from Local Assessor] Letter written to Gram Sarpanch regarding the project activity and seeking their comments on the same has been provided to the validator. Same has been cross-checked during local stakeholder consultation at site visit and found acceptable. [Acceptance and close out]OK, Closed Out[Sanjeev Kumar]			

Date: 2nd January 2007

Raised by Sanjeev Kumar/Vikrant Badve

No.	Type	Issue	Ref
11	NIR	The summary of the stakeholder comments is not provided in the PDD.	7.4
Date: A revised summary is provided in the revised PDD in section E.2.			
Date: 2007-03-16 [Nikunj Agarwal/Jimmy Sah] [Comments from Local Assessor] The same has been incorporated in the rephrased version of PDD, so this NIR can be closed. [Acceptance and close out]OK, Closed Out[Sanjeev Kumar]			

Date: 2nd January 2007

Raised by: Sanjeev Kumar/Vikrant Badve

No.	Type	Issue	Ref
12	CAR	A letter from project proponent is required to be submitted mentioning that the present project technology will not be substituted or replaced by more efficient technologies with in the crediting period.	8.2.3
Date: Letter of undertaking from Enercon has been provided.			
Date: 2007-03-16 [Nikunj Agarwal/Jimmy Sah] [Comments from Local Assessor] The letter of undertaking was submitted by the project proponent and same was accepted to the validator, so this CAR can be closed. [Acceptance and close out]OK, Closed Out[Sanjeev Kumar]			

Date: 2nd January 2007

Raised by: Sanjeev Kumar/Vikrant Badve

No.	Type	Issue	Ref
13	CAR	No information was found regarding training and maintenance efforts for project activity in the PDD.	8.2.4
Date: The information regarding training and maintenance is added to the revised PDD Section B.7.2.			
Date: 2007-03-16 [Nikunj Agarwal/Jimmy Sah] [Comments from Local Assessor] The revised version of PDD was cross-checked for the information under section B.7.2 and same was found acceptable. CAR can be closed. [Acceptance and close out]OK, Closed Out[Sanjeev Kumar]			

Date: 2nd January 2007

Raised by: Sanjeev Kumar/Vikrant Badve

No.	Type	Issue	Ref
14	CAR	Project activity starting date is mentioned as 04-05-2004 in the PDD section C.1.1. Evidence for the same is required to be submitted.	8.3.1
Date: The evidence (purchase order) has been provided.			
Date: 2007-03-16 [Nikunj Agarwal/Jimmy Sah] [Comments from Local Assessor]			

A copy of purchase orders for the project activity was submitted by the project proponent. It was cross-checked from that the first purchase order under this project was raised on 17th August 2005. Hence the same can be accepted as the evidence for the start date of the project activity, so this CAR can be closed.

[Acceptance and close out]OK, Closed Out[Sanjeev Kumar]

Annex 4: Statement of Competence of Validation Team

Statement of Competence

Name: Sanjeev Kumar

SGS Affiliate: SGS India Pvt. Ltd.

Status

- Product Co-ordinator ☐
- Operations Co-ordinator ☐
- Technical Reviewer ☐
- Expert ☒

Validation

Verification

- Local Assessor ☒
- Lead Assessor ☒
- Assessor ☐
- /Trainee Lead Assessor ☐

Scopes of Expertise

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

Approved Member of Staff by Siddharth Yadav Date: 16th May 2007

Statement of Competence

Name: Vikrant Badve

SGS Affiliate: SGS India Pvt. Ltd.

Status

- Product Co-ordinator ☐
- Operations Co-ordinator ☐
- Technical Reviewer ☐
- Expert ☒

Validation

Verification

- Local Assessor ☒
- Lead Assessor ☐
- Assessor ☐
- / Trainee Lead Assessor

Scopes of Expertise

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

Approved Member of Staff by Marco van der Linden

Date: 29-12-06

Statement of Competence

Name:Nikunj Agarwal

SGS Affiliate:SGS India

Status

- | | | |
|---------------------------|-------------------------------------|--------------------------|
| - Product Co-ordinator | <input type="checkbox"/> | |
| - Operations Co-ordinator | | <input type="checkbox"/> |
| - Technical Reviewer | <input type="checkbox"/> | |
| - Expert | <input checked="" type="checkbox"/> | |

Validation

Verification

- | | | |
|-------------------------|-------------------------------------|-------------------------------------|
| - Local Assessor | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| - Lead Assessor | <input type="checkbox"/> | <input type="checkbox"/> |
| - Assessor | <input type="checkbox"/> | <input type="checkbox"/> |
| / Trainee Lead Assessor | | |

Scopes of Expertise

- | | |
|--|-------------------------------------|
| 1. Energy Industries (renewable / non-renewable) | <input checked="" type="checkbox"/> |
| 2. Energy Distribution | <input type="checkbox"/> |
| 3. Energy Demand | <input checked="" type="checkbox"/> |
| 4. Manufacturing | <input checked="" type="checkbox"/> |
| 16. Chemical Industry | <input type="checkbox"/> |
| 17. Construction | <input type="checkbox"/> |
| 18. Transport | <input type="checkbox"/> |
| 19. Mining/Mineral Production | <input type="checkbox"/> |
| 20. Metal Production | <input type="checkbox"/> |
| 21. Fugitive Emissions from Fuels (solid,oil and gas) | <input type="checkbox"/> |
| 22. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride | <input type="checkbox"/> |
| 23. Solvent Use | <input type="checkbox"/> |
| 24. Waste Handling and Disposal | <input type="checkbox"/> |
| 25. Afforestation and Reforestation | <input type="checkbox"/> |
| 26. Agriculture | <input type="checkbox"/> |

Approved Member of Staff by Marco van der Linden

Date: 03-04-2007

Statement of Competence

Name: Jimmy Sah

SGS Affiliate: SGS India Pvt. Ltd.

Status

- Product Co-ordinator ☐
- Operations Co-ordinator ☐
- Technical Reviewer ☐
- Expert ☒

Validation

Verification

- Local Assessor ☒
- Lead Assessor ☐
- Assessor ☐
- / Trainee Lead Assessor

Scopes of Expertise

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

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Approved Member of Staff by Siddharth Yadav Date: 23-05-07