
VALIDATION REPORT

Enercon (India) Ltd.

**BUNDLED WIND ENERGY POWER
PROJECTS (2004 POLICY) IN
RAJASTHAN**

SGS Climate Change Programme

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Summary

SGS India Pvt. Ltd. is an affiliate of SGS United Kingdom Ltd. SGS India Pvt. Ltd. has made a validation of the CDM project activity "Bundled wind energy power projects (2004 POLICY) in Rajasthan" at wind generating sites in Kita and BHU village, in Jaisalmer District of Rajasthan 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
CARE	Credit Analysis and Research Ltd.
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
MoU	Memorandum of Understanding
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
RERC	Rajasthan Electricity Regulatory Commission
RRVPN	Rajasthan Rajya Vidyut Prasaran Nigam Ltd
UNFCCC	United Nations Framework Convention for Climate Change
WTG	Wind Turbine Generator

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.....	5
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	9
3.4	Application of Monitoring methodology and Monitoring Plan.....	13
3.5	Project design.....	13
3.6	Environmental Impacts	14
3.7	Local stakeholder comments.....	14
4	Comments by Parties, Stakeholders and NGOs	16
4.1	Description of how and when the PDD was made publicly available	16
4.2	Compilation of all comments received.....	16
4.3	Explanation of how comments have been taken into account.....	16
5	Validation opinion	21
6	List of persons interviewed	22
7	Document references	23

Annex 1: Local assessment

Annex 2: Validation Protocol

Annex 3: Overview of findings

Annex 4: Statement of Competency of Validation Team Members

1 Introduction

1.1 Objective

Enercon (India) Ltd. has commissioned SGS to perform the validation of the project: “Enercon Bundled wind energy power projects (2004 policy) in Rajasthan” 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 Northern regional grid which is dominated by fossil fuel based power plants. The project activity is located in Kita and BHU village, in Jaisalmer District of Rajasthan state in India. The project activity has started on 24th November 2005; the date has been verified from the purchase order for wind generators submitted to the validator. The Project activity involves operation of 31 wind energy converters (WECs) of Enercon make; specifications of the same has 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 Northern 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 (Trainee)
Mr. Nikunj Agarwal	SGS India	Local Assessor

Statement of Competency of the 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 (1) was raised asking project proponent to submit the Letter of approval from Indian DNA. The project proponent provided the letter dated 3rd April 2007; issued by the Indian DNA (reference number 4/21/2006-CCC) has been provided by the client which was verified from the original copy.

Project Proponent has identified Japan as a Project Participant country and Japan has ratified the Kyoto protocol on 4th June 2002 and the letter of approval has not been submitted by the Japan DNA, CAR (1) was raised asking project proponent to submit the Letter of approval from DNA. The project proponent provided the letter dated 2nd March 2007; issued by the Japan DNA which was verified from the original copy.

Hence CAR (01) was closed out.

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". Electricity delivered to the grid by the project would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, As the Project does not modify or retrofit an existing generation facility, the baseline scenario is the emissions generated by the operation of grid-connected power plants and by the addition of new Generation sources.

The present CDM project activity will generate and feed the electricity to the Northern 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 Northern regional grid.

The project proponent has used tool for the demonstration and assessment of additionality version 2 to show the project is additional. This was accepted since the PDD uploaded on UNFCCC website for public comments uses the same version 02 of additionality tool and as per UNFCCC decision in Annex 2 of EB30 the project can be submitted for request for registration using the same version of the additionality tool within 8 months from the date when new version i.e. version 3 of the tool was made public. Thus use of version 2 of additionality tool was accepted by the DOE.

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 (05) was raised.

Project proponent has also entered into a memorandum of understanding (MoU) with Japan Carbon Finance Ltd.; a carbon credit buyer on 01/07/2005 prior to the start date of the project activity. This indicates that the project proponent has seriously considered CDM incentives prior to the project activity. A copy of MoU was submitted to the validator during the site visit and same was found acceptable after a discussion with the project proponent.

Benchmark calculation for the project activity – The project proponent therefore calculated the pre-tax project IRR and compared the same to the benchmark of Weighted Average Cost of Capital (WACC) applicable to power generation projects in India. The benchmark WACC was calculated by CARE ratings, a prime financial advisory firm for power sector in India. Accordingly, the WACC was calculated

by CARE considering the cost of debt and cost of equity applicable to all power generation companies in India.

The detailed study carried out by CARE was submitted to the DOE for substantiation. The DOE examined the CARE study and held discussions with the financial expert and project proponent for validating the WACC value for power generation companies in India. After the discussion and cross checking the WACC calculation procedure carried out by CARE; DOE confirmed and accepted the results presented in the study. The revised PDD after incorporating the CARE study findings, the revised validation report and the detailed benchmark study carried out by CARE was submitted to the EB in EB-41. Further to this in EB 41 CDM-EB had agreed to register the project activity if the WACC is recalculated applying:

(i) The actual cost of debt applicable to the project activity; and

(ii) A beta value from an independent third party source to determine the cost of equity

Therefore, in the current revised PDD, the Project Proponent has recalculated the WACC using the actual cost of debt applicable to the project activity and beta values from Bloomberg.com. The rest of the parameters of the WACC analysis remain the same as provided in the CARE note as the EB had requested corrections only in cost of debt and beta value. Detailed calculations pertaining to cost of debt, beta and cost of equity are discussed below. As can be seen, after making the revisions in cost of debt and beta (as directed by the EB) the benchmark for pre-tax project IRR works out to 13.45%. The detailed calculations are also provided in the attached excel sheet 'WACC benchmark analysis'. The DOE reviewed these calculations with the help of an independent financial expert and found that these can be accepted. Thus benchmark of 13.45% was accepted by DOE.

Actual Cost of debt for the project: There were 13 different project participants in this project activity and every project participant has got different financing structure. The same was reproduced below from PDD Appendix 4. This was cross checked with the independent project participant and a letter of undertaking was also taken from them in this regard.

Sr. No. (1)	Name of the Customer (2)	Project Capacity MW (3)	Project Cost Rs. Mio (4)	Debt % (5)	Loan Amount (6)	Interest Rate (7)
1	CEPCO	9.6	462.00	70.00%	323.40	9.00%
2	CEPCO	2.4	115.50	0.00%	-	0.00%
3	Ushdev International	2.4	120.00	0.00%	-	0.00%
4	Brindavan Agro Industries	1.6	78.00	70.51%	55.00	12.50%
5	Amrit Bottlers Ltd.	0.8	38.50	0.00%	-	0.00%
6	Deedee Enterprises	0.8	39.00	0.00%	-	0.00%
7	JN Investment	0.8	38.50	0.00%	-	0.00%
8	Metalfab Private Limited	0.8	38.50	50.13%	19.30	13.00%
9	SE Investment	0.8	38.50	70.00%	26.95	9.00%
10	Brindavan Bottlers Ltd.	0.8	35.00	60.00%	21.00	9.00%
11	Delta Enterprises	2.4	116.10	71.06%	82.50	9.50%
12	Sankalp International	0.8	39.00	0.00%	-	0.00%
13	Malani Impex Inc.	0.8	39.00	0.00%	-	0.00%
	TOTAL	24.8			528.15	

Initially project proponent used 16% as benchmark for the project investment and this was referred from the Central Electricity Regulatory Commission decision. In due course of time CDM EB asked

project proponent to use WACC as benchmark which considers actual cost of debt applicable to project activity and beta value from an independent third party source to determine the cost of equity. In response to this project proponent obtained actual cost of debt from each project participant which was further substantiated by the letter of undertaking from them. The DOE contacted to every project participant and also check the earlier submissions by project proponent to check the consistency in the information and found that it is correct and thus accepted. The actual cost of debt calculated using the actual interest rate and loan amount of each project participant. Thus weighted average of cost of debt comes as 9.59% (detailed calculations were provided in the attached excel sheet 'WACC benchmark analysis').

Beta value from a third party source: As per the EB's guidance, the beta value considered for the further calculation of WACC is referred from database available on web site www.bloomberg.com. Since to assess the data base on Bloomberg website one needs to pay the subscription charges and thus the required snap shots were provided by project proponent in the PDD under Appendix 5 and summary of the company-wise beta value is provided below;

S No.	Bloomberg Symbol	Company	Beta
1	BFUT in Equity	BF Utility	1.222
2	CESC in Equity	CESC Utility	1.600
3	GIP in Equity	GIP	1.317
4	NLC in Equity	Neyveli Lignite	1.439
5	NRELE in Equity	Reliance	1.000
6	TPWR in Equity	Tata	1.350
		Average Beta	1.32

Project proponent has considered the suitable market risk premium as 7.43% and cost of pre-tax equity was calculated as 22.5%. Based on this the WACC benchmark for the project activity was calculated as 13.45%. The detailed calculations were provided in the attached excel sheet 'WACC benchmark analysis'. The DOE reviewed theses calculations with the help of an independent financial expert and found that these can be accepted. Thus benchmark of 13.45% was accepted by DOE and this is less than the earlier benchmark and thus more conservative. This benchmark value is also conservative when compared with the one provided by CARE.

The additionality calculations were completed prior to the project start date and it was assumed that time that the funds for the project activity will be made available 30% from equity and 70% through bank finance. Based on this for the project cost of Rs. 1,178 Millions, the debt amount comes as Rs. 825 Millions at interest rate of 8.50% (which was prevailing at the project consideration time and this was checked with the Reserve Bank of India data base on Interest rate structure of Scheduled Commercial banks and found acceptable) with 6 months moratorium period and 10 years repayment period. Thus rest amount of Rs. 353 Millions for the project activity was raised through equity by the project proponent. Project proponent has submitted excel spreadsheet giving the detailed calculations for investment analysis and sensitivity analysis and also submitted assumptions and data used to calculate the IRR for project activity. Further, in line with EB's guidance on investment analysis (Paragraph 9), the cost of financing expenditures (i.e. loan repayments and interest) have not been included in the calculation of project IRR.

Project proponent has calculated pre tax project IRR subsequent to corrections requested from CDM-EB for the present project activity. The pre-tax project IRR was calculated with consideration of CDM revenue and without consideration of CDM revenue. The pre tax project IRR without CDM revenue works out to 10.85%. The financial analysis sheet given by the project proponent along with assumptions used for pre-tax project IRR and sensitivity analysis have been validated during validation

process. The same was accepted after satisfactory cross-checking the evidence against assumptions used for financial analysis. The project proponent has carried out a sensitivity analysis with PLF as varying factor. PLF of 22% was considered as base case PLF as the same was mentioned in the RERC order and in PPA signed with Rajasthan state electricity board for the project activity. Sensitivity analysis was carried out with lowest PLF value of 20% and highest PLF value of 23.97%. The sensitivity analysis indicates that pre tax project IRR without CDM funds with lower PLF value will be 9.24% and with higher PLF value it will be 12.38%; while pre tax project IRR with CDM funds with lower PLF value will be 9.96% and with higher PLF value it will be 13.21%. The financial figures given in the revised PDD are checked with excel spreadsheet figures and found correct.

Thus the above discussion clearly indicates that in no case pre-tax project IRR is crossing the WACC benchmark value of 13.45%. Also the pre-tax project IRR of 10.85% for the project activity was not crossing the PLR of 11.00% applicable at the time of project consideration (source: Reserve Bank of India - Statistical Database; the Prime Lending Rate (PLR) relates to five major banks; names of banks not disclosed by RBI) and thus it is demonstrated that the project activity without CDM funds is additional.

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

In support of common practice analysis the project proponent provided analysis which indicate to what extent wind energy projects have diffused in the electricity sector in Rajasthan. In 2005 – 06, electricity generation from wind sources was 417 GWh which is expected to increase to 512 GWh in 2006 – 07. This works out to 1.35% of total generation available to the state of Rajasthan in 2005 – 06 and 1.66% of total expected generation available to the state of Rajasthan in 2006 – 07. Clearly, electricity generation from wind is not a common practice in Rajasthan. The same has been verified by the Rajasthan Electricity Regulatory Commission (RERC) Report.

As on November 2005, there are 134.71 MW of wind projects in Rajasthan (at various stages) that are in the CDM pipeline (on the cdm.unfccc.int website) out of 279 MW and more projects are expected to come into the CDM pipeline.

With the revision of Policy 2004 (effective February 2006), the capacity additions during the three years are expected to be around 297 MW:

2005–06: 74 MW

2006-07: 36 MW

2007-08: 187 MW

The same has been verified by the Rajasthan Electricity Regulatory Commission (RERC) Report

Out of the 297 MW that is estimated to be installed up to 2008, this Project constitutes 24.8 MW. Enercon is further developing a 100 MW wind power project and another 60 MW as CDM project activities under the 2004 policy (amended).

Clearly, wind power project development in Rajasthan is insignificant when compared to the power sector of Rajasthan. The above data has been cross checked from CEA data, available on CEA web site. 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 (05) 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 Northern 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 along with the PDD. CAR (04) was raised and project proponent was asked to provide the excel spreadsheet for the same. During validation site visit project proponent submitted concern excel spreadsheets. By checking the excel spreadsheets 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 CAR (04) 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. 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 data used is found acceptable and hence CAR (04) was closed

The baseline emission calculations and emission reductions were found to be in order during the desk review and during the local assessments at the site. 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”

The PDD clearly mentions that leakage is not considered as per the methodology ACM0002 version 06 dated 19th May 2006, hence no leakage is considered for the project activity. This was acceptable to the validator.

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 (07) was raised. The project proponents in his response to CAR (07) explained the QA/QC procedure more clearly in the revised PDD and provide the responsibility flow chart more elaborately in the revised PDD version 02. Hence CAR (07) was closed out.

NIR (08) was raised as the Project Management planning was not described in the PDD version01; the project management planning such as responsibility of project management, authority and responsibility for registration, monitoring, measurement and reporting, procedures identified for training of monitoring personnel, emergency preparedness for cases where emergencies can cause unintended emissions, calibration of monitoring equipment, maintenance of monitoring equipment and installations, day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation), dealing with possible monitoring data adjustments and uncertainties are incorporated in the revised PDD, so the NIR (08) was closed out.

CAR (14) 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 in the revised PDD, which was verified during site visit, hence the CAR (14) was closed out.

3.5 Project design

The Project Design Document (PDD) was designed as per version 03.1 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 24th November 2005 as project activity starting date; but evidence for the same was not provided. CAR (15) 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 24th November 2005. The same was cross checked during site visit and the date 24th November 2005 was accepted hence CAR (15) was closed out.

The project boundary given in version 01 of the PDD was not clear on the components included in the project boundary so CAR (03) was raised; the project proponent rephrased the project boundary in the revised version of the PDD. This was cross-checked during site visit and found acceptable, so CAR (03) 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 (13) 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 (13) was closed out.

Project proponent in the PDD mentioned that project activity has not received any public funding from parties listed in Annex 1. This was cross-checked during the discussion with the project proponent and found acceptable.

3.6 Environmental Impacts

In state of Rajasthan RRVPN 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 RRVPN requirement or not, DOE has checked the commissioning certificate and PPA signed by RRVPN as a proof that RRVPN 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 (09) was raised, the project proponent submitted the EIA and the same were checked for Environmental Impacts on various parameters like Air quality, Water, Land, Noise generation and ecology as mentioned in table under section D.1 of the PDD. This NIR was closed out.

3.7 Local stakeholder comments

The project activity involves setting up of 24.8 MW wind energy based power project for electricity generation and exporting the same to Northern regional grid, the project proponent identified local administrative body, local population as local stakeholders for the project activity. CAR (10) 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 (10) project proponent clarifies that RRVPN 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 (10) 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 (11) 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 (11) 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. Thus CAR (11) was closed out.

The summary of local stakeholders' comments was not provided in version 01 of the PDD so the NIR (12) was raised for the same. The project proponent then incorporates the summary in the revised PDD which was cross-checked during the local stakeholder consultation process during site visit. It was found during site visit that the summary provided in the PDD is correct and hence was acceptable to the validator. 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 (12) 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=166> from 21st November 2006 to 20th 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	Name: Peter Smith City: London Country: United kingdom Organisation: P.S.Associates	1.1. The IRR has to crossover 16% to make the CDM revenues necessary for the project to reach the benchmark. This is not the case in the calculations shown in the PDD. DOE to clarify. 1.2. The CER rate that has been considered has not been mentioned 1.3. 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. 1.4. 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.

4.3 Explanation of how comments have been taken into account

Date: 30/11/06

Raised by: Peter Smith

Comment	Issue	Ref
1.1	The IRR has to crossover 16% to make the CDM revenues necessary for the project to reach the benchmark. This is not the case in the calculations shown in the PDD. DOE to clarify.	3.2

Date: 20th April 2007

[Response from project developer]

This comment is addressed to DOE. However, Enercon would like to clarify while it is desirable from project proponent's point of view that CDM revenues assist in crossing the threshold, the requirement is to establish in a transparent manner that the project activity without CDM revenues were not sufficient to cross the established threshold/benchmark and expected CDM revenues would "significantly" assist in improving the project returns. In other words, CDM should be one of the "significant" parameters in making an investment decision and not the "sole" parameter in making the investment decision.

Date: 2nd May 2007[Nikunj Agarwal]

According to the project proponent CDM is one of the significant parameters and not the sole parameters in making the investment decision. Other parameters apart from CDM are:

- ✓ Harness out the wind potential available and reduce the dependency of coal based power plant.

We have checked it and find that CDM is improving the IRR from x to y, although it is not crossing the benchmark and the IRR is improving from 11.5% to 13% by giving the project proponent hope that he is harnessing the green energy and wind potential.

The comment raised can be closed.

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

Date: 30/11/06

Raised by: Peter Smith

Comment	Issue	Ref
1.2	The CER rate that has been considered has not been mentioned.	3.2

Date: 20th April 2007

[Response from project developer]

The rate used for the purpose of analysis is an illustrative rate of \$6.5 per CER.

Date: 2nd May 2007 [Nikunj Agarwal]

OK; the comment raised can be closed.

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

Date: 30/11/06

Raised by: Peter Smith

Comment	Issue	Ref
1.3	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	3.2

Date: 20th April 2007

[Response from project developer]

Enercon has conducted location-specific EIAs for each of its projects and the copy of the EIA reports are made available to the validator. The project is located in different villages but they all fall in the same District and the EIA covers the entire District. As the EIA in question covers all the sites (villages) located in Jaisalmer district is therefore applicable for Enercon wind farm Hindustan pvt. Limited in Rajasthan

Date: 2nd May 2007 [Nikunj Agarwal]

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 two bundled projects in Rajasthan and they are both located in Jaisalmer district. The projects are located in different villages but they all fall in the same District and the EIA covers the entire District. As the EIA in question covers all the sites (villages) located in Jaisalmer district is therefore applicable for both the bundled projects in Rajasthan.

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

Date: 30/11/06

Raised by: Peter Smith

Comment	Issue	Ref
1.4	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.	3.2

Date: 20th April 2007

[Response from project developer]

In 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 Rajasthan 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 Rajasthan. 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, approvals, 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 wind farm installation related works internal lines, protection equipment and other grid interface arrangements. In parallel, it approaches the state utility, namely the state Transmission / Distribution company that is RRVPNL / relevant Discom for signing of the Power Purchase Agreements on behalf of the investors. Enercon also carries out the Operation & Maintenance of 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.

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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,

Date: 2nd May 2007 [Nikunj Agarwal]

The present project activity uses tool of additionality version 2 and under this project proponent has provided all the necessary information like Investment analysis, sensitivity analysis for the project activity and it has been shown that the CDM funds were improving IRR of the project activity and benchmark value was just crossing with the help of CDM funds. Thus CDM funds will really make project happening.

Also the explanation given by the project proponent regarding Enercon's role in developing this project as a CDM project was satisfactory and in India there is no policy or regulation that can restrict Enercon or any other wind turbine manufacturer from developing the wind parks and making aware their clients regarding the green energy and CDM funds.

Evidence has been provided by the project proponent regarding barriers mentioned and same were found correct when information given in PDD cross-checked for the information then contain. The DOE has done a desk review and after that DOE come to a conclusion that the project is an additional project to the baseline and it is not a baseline scenario.

The comment raised can be closed.

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

5 Validation opinion

SGS has performed a validation of the project: "Bundled wind energy power projects (2004 policy) in Rajasthan". 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 northern grid. The estimated amount of emission reductions from the project activity is 41,766 tCO₂ emissions per year.

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

Date	Name	Position	Short description of subject discussed
19/12/2006	Mr. Neeraj Gupta	Project Proponent	About the description of the project, additionality
19/12/2006	Mr. Dilip Sharma	Project Proponent	About the technology of the project activity and operation and monitoring.
20/12/2006	Mr. Rahim Singh	Local Resident	Local Stake Holder Consultation
20/12/2006	Mr. Punam Singh	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/ PDD version 1 dated 15th November 2006
- /2/ PDD version 2 dated 12th February 2007
- /3/ PDD version 3 dated 30th March 2007
- /4/ PDD version 4 dated 30th September 2007
- /5/ PDD version 5 dated 24th March 2008
- /6/ PDD version 6 dated 23rd October 2008
- /7/ Calculation spread sheet for IRR and Emission Reduction.
- /8/ WACC benchmark analysis sheet

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 RRVN
- /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 for individual project participants
- /8/ Copy of MoU between the project proponent and Japan Carbon Finance Ltd. (carbon credit buyer)

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 has not been submitted by the project proponent.	Pending	Not closed
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/S V	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

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
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 the land, water, air etc. during the site visit. This was found acceptable.	Y	Y
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 Host Country (India) Designated National Authority (DNA) to be submitted by the project proponent	CAR 1	Y
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
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	PDD	DR	The project activity is to generate 24.8 MW power by installing Wind Farm	Y	Y

REQUIREMENT	Ref	MoV	Comment	Draft finding	Concl
baseline; and the project can be reasonably shown to be different from the baseline scenario			Project, and results in reduction of the GHG by replacing the grid based electricity which uses non 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 21st November 2006 to 20th December 2006.</p> <p>http://cdm.unfccc.int/Projects/Validation/DB/3KTKZVNJ1N859T3S5F0KQ711Z5QXZX/view.html</p> <p>which is linked to SGS climate change website.</p> <p>http://www.sgsqualitynetwork.com/tradeassurance/ccp/projects/project.php?id=166</p> <p>Number of comments received - 1</p>	Pending	Y
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
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	Not Applicable

REQUIREMENT	Ref	MoV	Comment	Draft finding	Concl
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	Not applicable
1.10 Is the current version of the PDD complete and does it clearly reflect all the information presented during the validation assessment?	PDD	DR	The version of PDD used by project proponent present all the information, except pending closure of some CARs/ NIRs.	Pending	Y
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 not consistent with the approved consolidated monitoring methodology. Para 3 of section B.3 says that Grid connected power plants are included in project boundary while the table below shows a contrast with the statement. Please clarify the same.	CAR3	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.	NIR4	Y
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
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 NIR4	Pending	Y

Table 3 Additionality (Ref: PDD Section B 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 RRVPN, Jodhpur Discom.</p> <p>A copy of IRR sheet and loan document.</p> <p>Claims made on grid related problems.</p> <p>Sensitivity analysis 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>	CAR5 CAR6	Y
3.3 Does the selected baseline represent the most likely scenario among other possible and/or discussed scenarios?	PDD	DR	<p>The alternatives of the project activity was the setting up of comparable utility scale fossil fuel fired or hydro power projects that supply to the Rajasthan grid under a PPA.</p> <p>As the Project does not modify or retrofit an existing generation facility, the baseline scenario is the emissions generated by the</p>	Y	Y

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			operation of grid connected power plants and by the addition of new generation sources.		
3.4 Is it demonstrated/justified that the project activity itself is not a likely baseline scenario?	PDD	DR	As per the PDD project activity is not a likely baseline scenario.	Pending	Y

Table 4 Monitoring methodology (PDD Section B 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.	CAR7	Y

Table 5 Monitoring plan (PDD Section B and 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	Not Applicable
5.1.2 Is the choice of indicators for sustainability development (social, environmental, economic) reasonable?	PDD	DR	Not Applicable	Not Applicable	Not Applicable
5.1.3 Will it be possible to monitor the specified sustainable development indicators?	PDD	DR	Not Applicable	Not Applicable	Not Applicable
5.1.4 Are the sustainable development indicators in line with stated national priorities in the Host Country?	PDD	DR	Pending CAR1	Pending	Y
5.2 Project Management Planning			The project management planning was not described in the PDD.	NIR8	Y
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 NIR8	Y
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 NIR8	Y
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 NIR8	Y

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
5.2.4 Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	PDD	DR	No specific procedure for emergency preparedness is identified in the monitoring plan given in the PDD.	Pending NIR8	Y
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 NIR8	Y
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 NIR8	Y
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 NIR8	Y
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 NIR8	Y
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 NIR8	Y
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 NIR8	Y
5.2.11 Are procedures identified for internal	PDD	DR	No specific procedure is identified for internal	Pending	Y

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
audits of GHG project compliance with operational requirements where applicable?			audits of GHG project compliance with operational requirements where applicable.	NIR8	
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 NIR8	Y
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 NIR8	Y

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.	NIR9	Y
6.3 Will the project create any adverse environmental effects?	PDD	DR	Pending NIR9	Pending NIR9	Y
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 NIR9	Pending NIR9	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.	Pending NIR9	Y

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 10	Y
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 news paper for inviting the local stakeholder comments. Supporting document need to be provided by the project proponent.	CAR 11	Y
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 12	Y
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
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	Proof for the same has to be submitted by the project proponent.	CAR 13	Y
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 14	Y
8.3 Duration of the Project/ Crediting Period					
8.3.1 Are the project's starting date and operational lifetime clearly	PDD	DR	Project activity starting date is mentioned as 24-	CAR 15	Y

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
defined and reasonable?			11-2005 in the PDD section C.1.1. Evidence for the same is required to be submitted.		
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
8.2.3 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: Overview of Findings

Date: 12th December 2006

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: [Nikunj Agarwal] [Comments from Local Assessor] HCA from Indian DNA is not submitted by the project proponent.			
[Acceptance and close out] CAR is open, Sanjeev Kumar (12 th March 2007)			
Date: The letter from Indian DNA is enclosed.			
Date: 2007-05-02 [Nikunj Agarwal] [Comments from Local Assessor] HCA from Indian DNA (reference number 4/21/2006-CCC) dated 3 rd April 2007 has been received and checked with the original copy and found satisfactorily, LOA from Japan DNA is not submitted by the project proponent.			
[Acceptance and close out] CAR is open [Sanjeev Kumar]			
Date: The letter from Japan DNA is enclosed.			
Date: 2007-05-10 [Nikunj Agarwal] [Comments from Local Assessor] HCA from Japan DNA has been submitted by the project proponent, hence the CAR01 can be closed.			
[Acceptance and close out] CAR is closed [Sanjeev Kumar]			

Date: 12th December 2006

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: 12 th March 2007 [Nikunj Agarwal] [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. CAR can be closed.			
[Acceptance and close out] OK, Sanjeev Kumar (12 th March 2007)			

Date: 12th December 2006

Raised by: Sanjeev Kumar/ Vikrant Badve

No.	Type	Issue	Ref
3	CAR	Project boundary is not consistent with the approved consolidated monitoring methodology. Para 3 of section B.3 says that Grid connected power plants are included	2.2

		in project boundary while the table below shows a contrast with the statement. Please clarify the same.	
Date: The first line in the PDD "The project boundary encompasses the physical, geographical site of the Project sited at the Project Location. It would include the wind turbine installations and sub-station up to the Metering Point." will be removed in the revised PDD. This will make the project boundary definition in para 3 of Section B.3 consistent with ACM0002.			
Date: 12 th March 2007 [Nikunj Agarwal] [Comments from Local Assessor] The correction made by the project proponent in revised version of PDD has been found acceptable. CAR can be closed.			
[Acceptance and close out] OK, Sanjeev Kumar (12 th March 2007)			

Date: 12th December 2006

Raised by: Sanjeev Kumar/ Vikrant Badve

No.	Type	Issue	Ref
4	NIR	Excel spreadsheet for the calculation of baseline emissions to be provided by the Project Proponent.	2.3
Date: This has been provided.			
Date: 12 th March 2007 [Nikunj Agarwal] [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] NIR is open, Sanjeev Kumar (12 th March 2007)			
Date: The Baseline has been revised to values as given by the CEA (Central Electricity Authority of India). The CEA baseline can visited at the following Link: www.cea.nic.in . The difference in the amount of the CERs estimated in the latest version of PDD is on the account of change of the baseline emission factor to CEA values. The PLF considered for the wind power project located in Rajasthan is derived from the RERC order (Rajasthan Electricity Regulatory Commission) dated 29/09/2006.			
Date: 2007-05-02[Nikunj Agarwal] [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: 12th December 2006

Raised by: Sanjeev Kumar/ Vikrant Badve

No.	Type	Issue	Ref
5	CAR	The discussion on additionality is needs to be supported with proper evidences like; A copy of PPA between Project proponent and RRVPN, Jodhpur Discom. A copy of IRR sheet and loan document. Claims made on grid related problems. Sensitivity analysis sheet giving the information used in PDD.	3.2

Date: These have been provided.
Date: [Nikunj Agarwal] [Comments from Local Assessor] The documents like PPA, IRR excel spreadsheet has been submitted by the project proponent and found satisfactory after cross-checking the same with the information provided in the PDD. However no sensitivity analysis sheet was provided.
[Acceptance and close out] CAR is open, Sanjeev Kumar (12 th March 2007)
Date: These have been provided.
Date: 2007-05-02[Nikunj Agarwal] [Comments from Local Assessor] The same has been received and found satisfactorily; hence the CAR was closed out. [Acceptance and close out]OK, Closed Out[Sanjeev Kumar]

Date: 12 th December 2006		Raised by: Sanjeev Kumar/ Vikrant Badve	
No.	Type	Issue	Ref
6	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: 12 th March 2007 [Nikunj Agarwal] [Comments from Local Assessor] The explanation given by the project proponent is satisfactory and accepted. CAR can be closed.			
[Acceptance and close out] OK, Sanjeev Kumar (12 th March 2007)			

Date: 12 th December 2006		Raised by: Sanjeev Kumar/ Vikrant Badve	
No.	Type	Issue	Ref
7	CAR	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.	4.5
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: 12 th March 2007 [Nikunj Agarwal] [Comments from Local Assessor] Annex 4 of the rephrased PDD was checked for the monitoring information and QA/QC procedure for data monitoring. The same was found acceptable. CAR can be closed.			

[Acceptance and close out] OK, Sanjeev Kumar (12th March 2007)

Date: 12th December 2006

Raised by: Sanjeev Kumar/ Vikrant Badve

No.	Type	Issue	Ref
8	NIR	The project management planning was not described in the PDD.	5.2

Date: [The Project has been implemented.](#)

Date: [Nikunj Agarwal] [Comments from Local Assessor]

It was observed during the site visit that the project has already been implemented. NIR can be closed.

[Acceptance and close out] OK, Sanjeev Kumar (12th March 2007)

Date: 12th December 2006

Raised by: Sanjeev Kumar/ Vikrant Badve

No.	Type	Issue	Ref
9	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: 12th March 2007 [Nikunj Agarwal] [Comments from Local Assessor]

EIA report for the project activity was not submitted for the project activity.

[Acceptance and close out] NIR is open, Sanjeev Kumar (12th March 2007)

Date: [The EIA report has been provided.](#)

Date: 2007-05-02 [Nikunj Agarwal] [Comments from Local Assessor]

EIA report for the project activity has been submitted received and the same has been checked for the effect of water, air etc on the project activity. So this NIR can be closed.

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

Date: 12th December 2006

Raised by: Sanjeev Kumar/ Vikrant Badve

No.	Type	Issue	Ref
10	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.](#)

Date: 12th March 2007 [Nikunj Agarwal] [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, Sanjeev Kumar (12th March 2007)

Date: 12th December 2006

Raised by: Sanjeev Kumar/ Vikrant Badve

No.	Type	Issue	Ref
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11	CAR	Evidence needs to be provided by the project proponent regarding how local stakeholders are informed about the project activity.	7.2
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Date: [Enercon invited suggestions by disseminating the information to the gram sarpanch. The copy of the letter has been provided.](#)

Date: 12th March 2007 [Nikunj Agarwal] [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 project proponent. Same has been cross-checked during local stakeholder consultation at site visit and found acceptable.

[Acceptance and close out] OK, Sanjeev Kumar (12th March 2007)

Date: 12th December 2006

Raised by: Sanjeev Kumar/ Vikrant Badve

No.	Type	Issue	Ref
12	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: 12th March 2007 [Nikunj Agarwal] [Comments from Local Assessor]
The rephrased version of PDD was checked and it was found that summary of stakeholder comments on the project activity has been provided and same is acceptable. NIR can be closed.

[Acceptance and close out] OK, Sanjeev Kumar (12th March 2007)

Date: 12th December 2006

Raised by: Sanjeev Kumar/ Vikrant Badve

No.	Type	Issue	Ref
13	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: 12th March 2007 [Nikunj Agarwal] [Comments from Local Assessor]
The letter of undertaking was submitted by the project proponent and same accepted. CAR can be closed.

[Acceptance and close out] OK, Sanjeev Kumar (12th March 2007)

Date: 12th December 2006

Raised by: Sanjeev Kumar/ Vikrant Badve

No.	Type	Issue	Ref
14	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: 12th March 2007 [Nikunj Agarwal] [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, Sanjeev Kumar (12th March 2007)

Date: 12th December 2006

Raised by: Sanjeev Kumar/ Vikrant Badve

No.	Type	Issue	Ref
15	CAR	Project activity starting date is mentioned as 24-11-2005 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: [Nikunj Agarwal] [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 24 th November 2005. Hence same can be accepted as project activity start date. CAR can be closed.			
[Acceptance and close out] OK, Sanjeev Kumar (12 th March 2007)			

Annex 4

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) ☒
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 ☐

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

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 Siddharth Yadav Date: 09/07/2007

Statement of Competence

Name: Nikunj Agarwal

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 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 Marco van der Linden

Date: 03-04-07