



VALIDATION REPORT

M/S.GENERACION EOLICA INDIA LIMITED

GEI WIND POWER PROJECT IN KARNATAKA,
INDIA

Report No: 53602009 – 09-99

Date: 2011-03-09

TÜV NORD CERT GmbH
JI/CDM Certification Program
Langemarckstraße, 20
45141 Essen, Germany
Phone: +49-201-825-3335
Fax: +49-201-825-3290
www.tuev-nord.de
www.global-warming.de



Date of first issue: 2010-10-29	Project No.: 53602009 – 09/99
Final Approval by: Mr. Eric Krupp	Organisational unit: TÜV NORD JI/CDM Certification Program
Client: M/s Generacion Eolica India Limited	Client ref.: Mr. Ignacio Moreno Hernandez
Summary:	<input checked="" type="checkbox"/> positive validation opinion <input type="checkbox"/> negative validation opinion
<p>M/s. Generacion Eolica India Limited has commissioned the TÜV NORD JI/CDM Certification Program to validate the project: "GEI Wind power Project in Karnataka, India", with regard to the relevant requirements of the UNFCCC for CDM project activities, as well as criteria for consistent project operations, monitoring and reporting. UNFCCC criteria include article 12 of the Kyoto Protocol, the modalities and procedures for CDM (Marrakech Accords), and the relevant decisions by COP/MOP and CDM Executive Board.</p> <p>The purpose of this project activity is to generate electricity using renewable sources (wind) and export to respective southern grid, thereby displacing the grid generated electricity. In the course of the validation 12 Corrective Action Requests (CARs), 14 Clarification Requests (CLs) were raised and successfully closed. The review of the project design documentation and additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up interviews and review of comments by parties, stakeholders and NGOs have provided TÜV NORD JI/CDM CP with sufficient evidence to validate the fulfillment of the stated criteria.</p> <p>In detail the conclusions can be summarized as follows:</p> <ul style="list-style-type: none"> - The project is in line with all relevant host country criteria (India) and all relevant UNFCCC requirements for CDM project activity. Approval has been obtained from National CDM Authority (DNA) of India vide Letter of Approval (HCA) No.4/7/2008-CCC, dated 2008-10-03. - The project additionality is sufficiently justified in the PDD. - The monitoring plan is transparent and adequate. - The calculation of the project emission reductions is carried out in a transparent and conservative manner, so that the calculated emission reductions of 640,950 tCO₂e is most likely to be achieved within the 10 years (fixed) crediting period. <p>The conclusions of this report show, that the project, as it was described in the project documentation, is in line with all criteria applicable for the validation.</p>	

Report No.: 53602009-09/99	Subject Group: Climate Protection	
Report title: <i>GEI WIND POWER PROJECT IN KARNATAKA, INDIA</i>		
Work carried out by: Mr. Ma Paa Puratchikkanal Mr. K V Sudarshan Ms. Indumathi Mr. Shailendra Kewat		
Final technical review by:	Local technical review by	
Ingo Klein		
Date of this revision:	Rev. No.:	Number of pages:
09.03.2011	0	213

Indexing terms

Climate protection
Kyoto Protocol
CDM
Validation

☒ No distribution without permission from the client or responsible organisational unit

☐ Limited distribution

☐ Unrestricted distribution



Abbreviations

BAU	Business as usual
BM	Build Margin
BSE	Bombay Stock Exchange
CA	Corrective Action / Clarification Action
CAPM	Capital Asset Pricing Model
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CEA	Central Electricity Authority
CER	Certified Emission Reduction
CL	Clarification Request
CM	Combined Margin
CO₂	Carbon dioxide
CO_{2e}	Carbon dioxide equivalent
CP	Certification Program
CPCB	Central Pollution Control Board
C-WET	Centre for Wind Energy Testing
DNA	Designated National Authority
DPR	Detailed Project Report
EB	CDM Executive Board
EIA	Environmental Impact Assessment
FAR	Forward Action Request
GEI	Generacion Eolica India
GHG	Greenhouse gas(es)
Govt.	Government
HESCOM	Hubli Electricity Supply Company
IETA	International Emissions Trading Association
INR	Indian Rupees
IPCC	Intergovernmental Panel on Climate Change
IRR	Internal Rate of Return
ISO	International Standards Organisation
IWPA	Indian Wind Power Association
JMR	Joint Meter Reading
KERC	Karnataka Electricity Regulatory Commission
KPTCL	Karnataka Power Transmission Power Corporation Limited.
Kg	Kilogram



kW	Kilowatt
kWh	Kilowatt hour
m	Meter
MNRE	Ministry of New and Renewable Energy, Government of India
MoEF	Ministry of Environment and Forest, Government of India
MoV	Means of Verification
MT	Metric Tonne
MU	Million Units (of electricity)
OM	Operating Margin
PDD	Project Design Document
PP	Project Proponent
PPA	Power Purchase Agreement
QC/QA	Quality control/Quality assurance
RBI	Reserve Bank of India
UNFCCC	United Nations Framework Convention on Climate Change
WACC	Weighted Average Capital Cost
WEC	Wind Energy Convertors
WTG	Wind Turbine Generator
w.r.t.	With respect to



Table of Contents	Page
1 OBJECTIVE / SCOPE.....	6
2 GHG PROJECT DESCRIPTION.....	7
2.1 Project Characteristics	7
2.2 Involved Parties and Project Participants	7
2.3 Project Location	7
2.4 Technical Project Description	9
3 METHODOLOGY AND VALIDATION SEQUENCE	10
3.1 Validation Steps	10
3.2 Contract review	11
3.3 Appointment of team members and technical reviewers	11
3.4 Consideration of Public Stakeholder Comments	13
3.5 Validation Protocol	13
3.6 Review of Documents	14
3.7 Follow-up Interviews	14
3.8 Project comparison	15
3.9 Resolution of Clarification and Corrective Action Requests	15
3.9.1 Definition	15
3.9.2 Draft Validation	15
3.9.3 Final Validation	15
3.10 Technical review	16
3.11 Final approval	16
4 VALIDATION FINDINGS.....	17
5 VALIDATION ASSESSMENT SUMMARY	62
6 VALIDATION OPINION.....	62
7 REFERENCES	83
ANNEX 1: VALIDATION PROTOCOL.....	92
ANNEX 2: ASSESSMENT OF BASELINE IDENTIFICATION.....	193
ANNEX 3: ASSESSMENT OF FINANCIAL PARAMETERS.....	195
ANNEX 4: ASSESSMENT OF BARRIER ANALYSIS	206
ANNEX 5: OUTCOME OF THE GSCP.....	207
ANNEX 6: APPOINTMENT CERTIFICATES OF TEAM MEMBERS.....	208



1 OBJECTIVE / SCOPE

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

- the requirements of Article 12 of the Kyoto Protocol;
- the CDM modalities and procedures as agreed in the Marrakech Accords under decision 3/CMP.1;
- the annex to the decision;
- subsequent decisions made by COP/MOP & CDM Executive Board and
- other relevant rules, including the host country legislation and sustainability 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 on the quality of the project and its intended generation of certified emission reductions (CERs).

The validation scope is given as a thorough independent and objective assessment of the project design including especially: the correct application of the methodology, the project's baseline study, additionality justification, local stakeholder commenting process, environmental impacts and monitoring plan, which are included in the PDD and other relevant supporting documents, to ensure that the proposed CDM project activity meets all relevant and applicable CDM criteria.

The information included in the PDD and the supporting documents were reviewed against the requirements as set out by the UNFCCC. The validation team has, based on the requirements in the Validation and Verification Manual^{VVM}, carried out a full assessment of all evidences to assess the compliance of the project with the key areas as outlined in section V.E. and V.F. of the VVM (version 1.1, EB 51).

The validation is based on the information made available to TÜV NORD JI/CDM CP and on the contract conditions. TÜV NORD JI/CDM CP cannot be held liable by any entity for making its validation opinion based on any false or misleading information supplied to it during the course of validation.

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



2 GHG PROJECT DESCRIPTION

2.1 Project Characteristics

Essential data of the project is presented in the following Table 2-1.

Table 2-1: Project Characteristics

Item	Data
Project title	GEI Wind power Project in Karnataka, India
Project size	<input checked="" type="checkbox"/> Large Scale <input type="checkbox"/> Small Scale
Project Scope (according to UNFCCC sectoral scope numbers for CDM)	<input checked="" type="checkbox"/> 1 Energy Industries (renewable- /non-renewable sources)
	<input type="checkbox"/> 2 Energy distribution
	<input type="checkbox"/> 3 Energy demand
	<input type="checkbox"/> 4 Manufacturing industries
	<input 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 hexafluoride
	<input type="checkbox"/> 12 Solvents use
	<input type="checkbox"/> 13 Waste handling and disposal
	<input type="checkbox"/> 14 Afforestation and Reforestation
	<input type="checkbox"/> 15 Agriculture
Applied Methodology	"Consolidated baseline methodology for grid -connected electricity generation renewable sources" ACM0002; (Version 11: EB 52)
Crediting period	<input type="checkbox"/> Renewable Crediting Period (7 y) <input checked="" type="checkbox"/> Fixed Crediting Period (10 y)
Start of crediting period ¹	2011-04-01 or from the date of registration with UNFCCC

2.2 Involved Parties and Project Participants

The following parties to the Kyoto Protocol and project participants are involved in this project activity (Table 2-2).

Table 2-2: Project Parties and project participants

Characteristic	Party	Project Participant
Host party	India	M/s. Generacion Eolica India Limited
Other involved party/ies	---	---

2.3 Project Location

The details of the project location are given in table 2-3:

¹ As per the published PDD (version 3)

Table 2-3: Project Location

Sr.nos.	Loc.Nos.	No. of Machines	Commissioning Date	Village	Longitude	Latitude
1	170a	4	17/12/2007	Harthi	15°20'53"	75°34'29.2"
2	170			Harthi	15°20'59 "	75°34'27.5"
3	171			Harthi	15°21'5.8 "	75°34'26.1"
4	236			Harthi	15°21'14.3 "	75°34'38.8"
5	229	6	17/03/2008	Malasamudra	15°21'59.9 "	75°34'23"
6	181			Malasamudra	15°22'16.6"	75°33'57.8"
7	180			Malasamudra	15°22'10.4"	75°34'0.9"
8	163			Kurthkoti	15°22'8.3 "	75°33'44.8"
9	226			Malasamudra	15°22'19.2 "	75°34'13.5"
10	230			Malasamudra	15°21'52.7"	75°34'23.9 "
11	173	8	25/06/2008	Harthi	15°21'19.4"	75°34'19.9"
12	231			Malasamudra	15°21'46.8"	75°34'27.7"
13	174			Harthi	15°21'31.5"	75°34'15.5"
14	233			Harthi	15°21'33.3"	75°34'30.6"
15	232			Harthi	15°21'39.6"	75°34'28.6"
16	234			Harthi	15°21'27.8"	75°34'33.5"
17	169A			Harthi	15°21'20"	75°34'3.7"
18	237			Harthi	15°21'8.1"	75°34'41.3"
19	168	10	7/7/2008	Kurthkoti	15°21'35.7"	75°33'56.8"
20	169			Harthi	15°21'29.5"	75°34'1.5"
21	235			Harthi	15°21'21.3"	75°34'39.2"
22	136			Harthi	15°20'26.5"	75°34'5.7"
23	137			Harthi	15°20'32.6"	75°34'4.6"
24	138			Harthi	15°20'39.9"	75°34'4.9"
25	139			Harthi	15°20'44.8"	75°33'57.3"
26	140			Harthi	15°20'50.9"	75°33'57.3"
27	141			Harthi	15°20'59.2"	75°33'56.9"
28	179			Malasamudra	15°22'3.6"	75°34'2.6"
29	228	4	11/9/2008	Malasamudra	15°22'6.2"	75°34'18.1"
30	172			Harthi	15°21'11"	75°34'22.3"
31	227			Malasamudra	15°22'15.2"	75°34'25.2"
32	239			Harthi	15°20'52.8"	75°34'41.2"
33	167	4	29/09/2008	Kurthkoti	15°21'42.8"	75°33'54.3"
34	176			Harthi	15°21'44.5"	75°34'9.5"
35	178			Kurthkoti	15°21'58.1"	75°34'5.6"
36	164			Kurthkoti	15°22'2.8"	75°33'48.1"



Sr.nos.	Loc.Nos.	No. of Machines	Commissioning Date	Village	Longitude	Latitude
37	165	3	10/10/2008	Kurthkoti	15°21'55.3"	75°33'50.5"
38	166			Kurthkoti	15°21'49.3"	75°33'51.3"
39	177			Malasamudra	15°21'51.4"	75°34'8.1"
	Total:-	39				

2.4 Technical Project Description

The technical key data are provided below:

The Project involves 39 wind energy converters (WECs) of Enercon make (800 kW E-53 with internal electrical lines connecting the Project with local evacuation facility. The WECs generates 3-phase power at 400V, which is stepped up to 33 KV at the Project site and further stepped up to 220 KV at the Receiving substation at Nagavi village, Gadag in the close vicinity of the existing 220 KV DC line between Hubli and Lingapur by line in line out (LILO) of both 220 KV circuits, for the purpose of interconnection with the KPTCL/HESCOM grid at the sub-station of the KPTCL/HESCOM. The technical details of the WTGs (Wind Turbine Generators of type E-53) are as follows:

Parameter	Unit	Value
Rated power	KW	800
Rotor diameter	m	53
Hub height	m	75
Cut in wind speed	m/s	2.5
Rated wind speed	m/s	12
Cut out Wind speed	m/s	28-34
Extreme Wind Speed	m/s	59.5
Rated rotational speed	rpm	32
Operating range rot. speed	rpm	12-29
No of Blades	-	3
Output Voltage	V	400
Tower	m	74

3 METHODOLOGY AND VALIDATION SEQUENCE

3.1 Validation Steps

The validation of the project consisted of the following steps:

- Contract review
- Appointment of team members and technical reviewers
- Publication of the project design document (PDD)
- A desk review of the PDD^{/PDD/} submitted by the client and additional supporting documents with the use of customised validation protocol^{/CPM/} according to the Validation and Verification Manual^{/VVM/},
- Validation planning
- On-Site assessment
- Background investigation and follow-up interviews with personnel of the project developer and its contractors,
- Draft validation reporting
- Resolution of corrective actions (if any)
- Final validation reporting
- Technical review
- Final approval of the validation.

The sequence of the validation is given in the table 3.1 below:

Table 3.1: Validation sequence

Topic	Time
Assignment of validation	20 March 2009
Submission of PDD for global stakeholder commenting process	04 April 2009
On-site visit	16-17 July 2009
Draft reporting finalised	23 July 2009
Technical review on draft reporting finalised	28 August 2009
Final reporting finalised	29 October 2010
Technical review on final reporting finalised	29 October 2010

3.2 Contract review

To assure that

- the project falls within the scopes for which accreditation is held
- the necessary competences to carry out the verification can be provided
- Impartiality issues are clear and in line with the CDM accreditation requirements

a contract review was carried out before the contract was signed.

3.3 Appointment of team members and technical reviewers

On the basis of a competence analysis and individual availabilities a verification team, consistent of one team leader and 3 additional team members, were appointed. Furthermore also the personnel for the technical review and the final approval were determined.

The list of involved personnel, the tasks assigned and the qualification status are summarized in the table 3-2 below.



Table 3-2: Involved Personnel

Required area of technical expertise: T

	Name	Company	Function ¹⁾	Qualification Status ²⁾	Scheme competence	Technical competence ⁴⁾	Host country Competence	Team Leading competence
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Ma. Paa. Puratchikk anal	TUV India Private Limited	TL	SA	<input checked="" type="checkbox"/>	T	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	K V Sudarshan	TUV India Private Limited	TM	A	<input checked="" type="checkbox"/>	-	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Mr. <input checked="" type="checkbox"/> Ms.	C. Indumathi	TUV India Private Limited	TM	E	<input checked="" type="checkbox"/>	T	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Shailendra Kewat	TUV India Private Limited	TM	E	<input checked="" type="checkbox"/>	T	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Ingo Klein	TN CERT GmbH	TR ³⁾	A	<input checked="" type="checkbox"/>	T	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Eric Krupp	TN CERT GmbH	FA ³⁾	SA	<input checked="" type="checkbox"/>	-	<input type="checkbox"/>	<input checked="" type="checkbox"/>

¹⁾ TL: Team Leader; TM: Team Member, TR: Technical review; FA: Final approval

²⁾ GHG Auditor Status: A: Assessor; E: Expert; SA: Senior Assessor; T: Trainee; TE: Technical Expert

³⁾ No team member

⁴⁾ As per S01-MU03 or S01-VA070 A2 (such as A, B, C.....)

Certificates of appointment for the above mentioned team members are enclosed in annex 6 of this report.



3.4 Consideration of Public Stakeholder Comments

Acc. to the modalities and procedures the draft PDD, as received from the project participants, has been made publicly available on the dedicated UNFCCC CDM website prior to the validation activity commenced. Stakeholders have been invited to comment on the PDD within the 30 days public commenting period.

In case comments were received, they are taken into account during the validation process. The comments and the discussion of the same are documented in annex 5 of this report.

3.5 Validation Protocol

In order to ensure consideration of all relevant assessment criteria, a validation protocol is used. The protocol shows, in a transparent manner, criteria and requirements, means of validation and the results from pre-validating the identified criteria. The validation protocol reflects the generic CDM requirements each CDM project has to meet as well as project specific issues as applicable. The validation protocol serves the following purposes:

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

The validation protocol as described in Figure 1.

Validation Protocol Table A-1: Requirement checklist				
Checklist Item	Validation Team Comment	Reference	Draft Conclusion	Final Conclusion
<i>The checklist items in Table A-1 are linked to the various requirements the project should meet. The checklist is organised in various sections. Each section is then further subdivided as per the requirements of the topic and the individual project activity.</i>	<i>The section is used to elaborate and discuss the checklist item in detail. It includes the assessment of the validation team and how the assessment was carried out. The reporting requirements of the VVM shall be covered in this section.</i>	<i>Gives reference to the information source on which the assessment is based on</i>	<i>Assessment based on evidence provided if the criterion is fulfilled (OK), or a CAR, CL or FAR (see below) is raised. The assessment refers to the draft validation stage.</i>	<i>In case a corrective action or a clarification the final assessment at the final validation stage is given.</i>

Figure 1: Validation protocol tables

The completed validation protocol is enclosed in Annex 1 to this report.



3.6 Review of Documents

The published PDD (version 1) and supporting background documents related to the project design and baseline were reviewed.

Furthermore, the validation team used additional documentation by third parties like host party legislation, technical reports referring to the project design or to the basic conditions and technical data.

3.7 Follow-up Interviews

The validation team has carried out interviews in order to assess the information included in the project documentation and to gain additional information regarding the compliance of the project with the relevant criteria applicable for CDM.

During validation the validation team has performed interviews to confirm selected information and to resolve issues identified in the document review. The main topics of the interviews are summarized in table 3-3.

Table 3-3: Interviewed persons and interview topics

Interviewed Persons / Entities	Interview topics
Project proponent representatives / IM01/ Mr. Ignacio Moreno Hernandez M/s. Generacion Eolica India Limited	<ul style="list-style-type: none"> - General aspects of the project - Project boundary - Technical details of the project realisation - Approval procedures and status - Environmental Policy - Quality and Environmental Management System - Involved personnel and responsibilities - Additionality - Monitoring and measurement equipment - Baseline study assumptions - Environmental impacts - Socio economic impacts on the local population - Details of emissions reduction calculation - Operational data - License, operation & maintenance authority and responsibility - Monitoring and measurement control and QA/QC procedure - Legal aspects of the project - Technology
Consultant /IM02/ Mr. Saujanya Kumar Enercon (India) Limited	<ul style="list-style-type: none"> - Editorial aspects of PDD - Methodology selection aspects - Base line study, leakage and additionality - Details of emission reduction calculation



A comprehensive list of all interviewed persons is part of section 7 'References'.

3.8 Project comparison

The validation team has compared the proposed CDM project activity with similar projects or technology that have similar or comparable characteristics and with similar projects in the host country in order to achieve additional information esp. regarding:

- Project technology
- Additionality issues
- Reasons for reviews, requests for reviews and rejections within the CDM registration process.

3.9 Resolution of Clarification and Corrective Action Requests

3.9.1 Definition

A **Corrective Action Request (CAR)** will be established where:

- mistakes have been made in assumptions, application of the methodology or the project documentation which will have a direct influence the project results,
- the requirements deemed relevant for validation of the project with certain characteristics have not been met or
- there is a risk that the project would not be registered by the UNFCCC or that emission reductions would not be able to be verified and certified.

A **Clarification Request (CL)** will be issued where information is insufficient, unclear or not transparent enough to establish whether a requirement is met.

A **Forward Action Request (FAR)** will be issued when certain issues related to project implementation should be reviewed during the first verification.

3.9.2 Draft Validation

After reviewing all relevant documents and taken all other relevant information into account, the validation team issues all findings in the course of a draft validation report and hands this report over to the project proponent in order to respond on the issues raised and to revise the project documentation accordingly.

3.9.3 Final Validation

The final validation starts after issuance of the proposed corrective action (CA) of the CARs, CLs and FARs by the project proponent. The project proponent has to reply on those and the requests are "closed out" by the validation team in case the response is assessed as sufficient. In case of raised FARs the project proponent has



to respond on this, identifying the necessary actions to ensure that the topics raised in this finding are likely to be resolved at the latest during the first verification. The validation team has to assess whether the proposed action is adequate or not.

In case the findings from CARs and CLs cannot be resolved by the project proponent or the proposed action related to the FARs raised cannot be assessed as adequate, no positive validation opinion can be issued by the validation team.

The CAR(s) / CL(s) / FAR(s) are documented in chapter 4.

3.10 Technical review

Before submission of the final validation report a technical review of the whole validation procedure is carried out. The technical reviewer is a competent GHG auditor being appointed for the scope this project falls under. The technical reviewer is not considered to be part of the verification team and thus not involved in the decision making process up to the technical review.

As a result of the technical review process the validation opinion and the topic specific assessments as prepared by the validation team leader may be confirmed or revised. Furthermore reporting improvements might be achieved.

3.11 Final approval

After successful technical review of the final report an overall (esp. procedural) assessment of the complete validation will be carried out by a senior assessor located in the accredited premises of TÜV NORD.

Only after this step the request for registration can be started (in case of a positive validation opinion).

4 VALIDATION FINDINGS

In the following table the findings from the desk review of the published PDD, visits, interviews and supporting documents are summarised:

Table 4-1: Summary of CARs, CLs and FARs issued

Validation topic ¹⁾	No. of CAR	No. of CL	No. of FAR
General description of project activity (A) - Project specification - Technical project description - Participation - Contribution to sustainable development - PDD editorial aspects - Technology to be employed	1	-	-
Project Baseline, Additionality and Monitoring Plan (B) - Application of the Methodology - Project Boundary - Baseline identification - Calculation of GHG emission reductions Project emissions Baseline emissions Leakage - Additionality determination - Monitoring Methodology - Monitoring Plan - Project management planning	11	10	-
Duration of the Project / Crediting Period (C)	-	2	-
Environmental impacts (D)	-	1	-
Stakeholder Comments (E)	-	1	-
SUM	12	14	-

¹⁾ The letters in brackets refer to the validation protocol

The following tables include all raised CARs, CLs and FARs. For an in depth evaluation of all validation items it should be referred to the validation protocols (see Annex 1).

The findings of validation process are summarized in the tables below.



General	CAR A1		
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	Letter of approval from the Designated National Authority, MoEF, Government of India, is to be submitted for verification.		
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	Host Country Approval for the project from the National Clean Development Authority, Ministry of Environment and Forests (MoEF), Government of India has been submitted.		
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>Letter of Approval bearing number 4/7/2008-CCC dated 2008-10-03 from the Ministry of Environment and Forests, DNA, Government of India, the Host Country ^{/HCA/}, has been checked. The approval confirms that:</p> <ol style="list-style-type: none"> 1. India is ratified to the Kyoto Protocol on 26 August 2002. 2. The participation of proposed CDM Project is voluntary 3. Project contributes to Sustainable Development of India <p>Hence the project activity is found to meet all the sustainable development criteria requirements of the host country (India). Moreover, the precise project title and the name of the PP mentioned in the letter of approval were checked to tally with the project title and PP's name mentioned in the PDD.</p> <p>CAR A1 is closed.</p>		
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements		

General	CAR B1		
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	Section B.5 does not contain any information on the serious consideration of CDM benefits and how the project activity conforms to the stipulations made by EB vide Annex 22 of EB 49		



General	CAR B1																																																																																				
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<p>CDM was the driving factor for the decision to invest into the project. The board of GEI Spain has taken the decision to invest in the project after considering seriously the ensuing CDM benefits. The board resolution clearly mentions that the project is not worthwhile without CDM. A copy of the board resolution is being provided to the DOE. The chronology of events took place for serious consideration of CDM has been listed in the revised PDD as</p> <table><tr><th>S.No.</th><th>Activity</th><th>Date</th></tr><tr><td>1</td><td>Board Resolution with serious consideration of CDM benefits and finalization of EPC Contractors</td><td>23-Aug-06</td></tr><tr><td>2</td><td>Purchase Order</td><td>24 -Aug -06</td></tr><tr><td>3</td><td>Revised DPR submitted by Enercon to GEI</td><td>01-Feb-07</td></tr><tr><td>4</td><td>Board Resolution based on DPR dated 01 Feb 2007</td><td>5-Feb-07</td></tr><tr><td>5</td><td>Purchase Order- Amendment</td><td>15-Mar-07</td></tr><tr><td>6</td><td>CDM Mandate</td><td>26-Mar-07</td></tr><tr><td>7</td><td>Loan Sanction Letter</td><td>5-Jul-07</td></tr><tr><td>8</td><td>Transfer of Capacity to GEI by nodal agency</td><td>1-Sep-07</td></tr><tr><td>9</td><td>PPA (Power Purchase Agreement)</td><td>22-Nov-07</td></tr><tr><td>10</td><td>Stakeholder Consultation</td><td>23-Nov-07</td></tr><tr><td>11</td><td>Commissioning of first WEC</td><td>17- Dec- 07</td></tr><tr><td>12</td><td>Loan Agreement</td><td>29-Jan-08</td></tr><tr><td>13</td><td>PDD Preparation</td><td>Jan-08 to Feb-08</td></tr><tr><td>14</td><td>HCA(Host Country Approval) Submission</td><td>10-Mar-08</td></tr><tr><td>15</td><td>HCA Meeting</td><td>25-Apr-08</td></tr><tr><td>16</td><td>EB Rejected the benchmark of CERC</td><td>17-Jun-08</td></tr><tr><td>17</td><td>Approach DoE (TUV-Nord)</td><td>16-Jul-08</td></tr><tr><td>18</td><td>Additionality tool version 5.2</td><td>16-May-08</td></tr><tr><td>19</td><td>DNA Approval</td><td>3-Oct-08</td></tr><tr><td>20</td><td>Commissioning of last WEC</td><td>10 Oct- 08</td></tr><tr><td>21</td><td>First wind power project to be registered with WACC in India</td><td>27-Oct-08</td></tr><tr><td>22</td><td>ACM0002 was revised to version 08</td><td>28-Nov-08</td></tr><tr><td>23</td><td>Revised PDD preparation based on version 08 of ACM0002</td><td>Nov-08 to Dec-08</td></tr><tr><td>24</td><td>ACM0002 was revised to version 09</td><td>13-Feb-09</td></tr><tr><td>25</td><td>Revised PDD preparation based on version 09 of ACM0002</td><td>19-Feb-09</td></tr><tr><td>26</td><td>Appointment of DoE</td><td>20-Feb-09</td></tr><tr><td>27</td><td>PDD Webhosting</td><td>04-Apr-09 to 03-May-09</td></tr></table>	S.No.	Activity	Date	1	Board Resolution with serious consideration of CDM benefits and finalization of EPC Contractors	23-Aug-06	2	Purchase Order	24 -Aug -06	3	Revised DPR submitted by Enercon to GEI	01-Feb-07	4	Board Resolution based on DPR dated 01 Feb 2007	5-Feb-07	5	Purchase Order- Amendment	15-Mar-07	6	CDM Mandate	26-Mar-07	7	Loan Sanction Letter	5-Jul-07	8	Transfer of Capacity to GEI by nodal agency	1-Sep-07	9	PPA (Power Purchase Agreement)	22-Nov-07	10	Stakeholder Consultation	23-Nov-07	11	Commissioning of first WEC	17- Dec- 07	12	Loan Agreement	29-Jan-08	13	PDD Preparation	Jan-08 to Feb-08	14	HCA(Host Country Approval) Submission	10-Mar-08	15	HCA Meeting	25-Apr-08	16	EB Rejected the benchmark of CERC	17-Jun-08	17	Approach DoE (TUV-Nord)	16-Jul-08	18	Additionality tool version 5.2	16-May-08	19	DNA Approval	3-Oct-08	20	Commissioning of last WEC	10 Oct- 08	21	First wind power project to be registered with WACC in India	27-Oct-08	22	ACM0002 was revised to version 08	28-Nov-08	23	Revised PDD preparation based on version 08 of ACM0002	Nov-08 to Dec-08	24	ACM0002 was revised to version 09	13-Feb-09	25	Revised PDD preparation based on version 09 of ACM0002	19-Feb-09	26	Appointment of DoE	20-Feb-09	27	PDD Webhosting	04-Apr-09 to 03-May-09
S.No.	Activity	Date																																																																																			
1	Board Resolution with serious consideration of CDM benefits and finalization of EPC Contractors	23-Aug-06																																																																																			
2	Purchase Order	24 -Aug -06																																																																																			
3	Revised DPR submitted by Enercon to GEI	01-Feb-07																																																																																			
4	Board Resolution based on DPR dated 01 Feb 2007	5-Feb-07																																																																																			
5	Purchase Order- Amendment	15-Mar-07																																																																																			
6	CDM Mandate	26-Mar-07																																																																																			
7	Loan Sanction Letter	5-Jul-07																																																																																			
8	Transfer of Capacity to GEI by nodal agency	1-Sep-07																																																																																			
9	PPA (Power Purchase Agreement)	22-Nov-07																																																																																			
10	Stakeholder Consultation	23-Nov-07																																																																																			
11	Commissioning of first WEC	17- Dec- 07																																																																																			
12	Loan Agreement	29-Jan-08																																																																																			
13	PDD Preparation	Jan-08 to Feb-08																																																																																			
14	HCA(Host Country Approval) Submission	10-Mar-08																																																																																			
15	HCA Meeting	25-Apr-08																																																																																			
16	EB Rejected the benchmark of CERC	17-Jun-08																																																																																			
17	Approach DoE (TUV-Nord)	16-Jul-08																																																																																			
18	Additionality tool version 5.2	16-May-08																																																																																			
19	DNA Approval	3-Oct-08																																																																																			
20	Commissioning of last WEC	10 Oct- 08																																																																																			
21	First wind power project to be registered with WACC in India	27-Oct-08																																																																																			
22	ACM0002 was revised to version 08	28-Nov-08																																																																																			
23	Revised PDD preparation based on version 08 of ACM0002	Nov-08 to Dec-08																																																																																			
24	ACM0002 was revised to version 09	13-Feb-09																																																																																			
25	Revised PDD preparation based on version 09 of ACM0002	19-Feb-09																																																																																			
26	Appointment of DoE	20-Feb-09																																																																																			
27	PDD Webhosting	04-Apr-09 to 03-May-09																																																																																			



General	CAR B1
<p>DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<p>The list of activities mentioned under chronology of events have been verified from</p> <ul style="list-style-type: none"> • Minutes of Management decision by M/s Generacion Eolica India Limited with serious consideration of CDM benefits and finalization of EPC Contractors on 2006-08-23 ^{/BoD1/} • Purchase Order No. GEI/2006-2007/EIL-101 dated 24/08/2006 issued to M/s. Enercon (India) Ltd, Mumbai for the supply, Installation and commissioning of 39 nos of 800kW Wind Turbine Generator(s) by M/s Generacion Eolica India Limited ^{/PO /} • Revised Detailed Project Report prepared by Enercon (India) Limited and submitted to Generacion Eolica India Limited dated 2007-02-01 ^{/RDPR/} • Minutes of Management decision by M/s Generacion Eolica India Limited with serious consideration of CDM benefits and committing investment into the Project dated 2007-02-05 ^{/BoD 2/} • Amendment to purchase Order Ref No. GEI/2006-2007/EIL-101 dated 24/08/2006 issued to M/s. Enercon (India) Ltd, Mumbai for the supply, Installation and commissioning of 39 nos of 800kW Wind Turbine Generator(s) by M/s Generacion Eolica India Limited dated 2007-03-15 ^{/PO-AD/} • Loan Sanction Letter of Term Loan dated 2007-07-05 from IREDA ^{/LOAN/} • Government Approval for transfer of 31.2 MW wind power capacity in favour of M/s Generacion Eolica India Limited dated 2007-09-01 ^{/KA/} • Power purchase agreement ^{/PPA/} for all WTGS dated 2007-11-22 • Stakeholder consultation documents like minutes of meeting and attendance sheets dated 2007-11-23 ^{/SHC/.} • Commissioning certificates of first set of windmills from Karnataka Power Transmission Corporation Ltd dated 2007-12-17 ^{/CC/} . • Loan Agreement between Generacion Eolica India Limited and Indian Renewable Energy Development Agency Limited dated 2008-01-29 ^{/LA/} <p>Moreover,</p>



General	CAR B1
	<ul style="list-style-type: none"> • PDD preparation period has been verified from Consultants /IM02/ • Mail communication for the approach of DOE dated 2008-07-16 has been verified. • EB-39, Annex-10, May 2008 was checked from the we blink http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v5.2.pdf /EB1/ was checked for change in additionality tool version • Host Country Approval (HCA) from Ministry of Environment & Forests, Govt of India, No. 4/7/2008-CCC dated 2008-10-03 /HCA/ has been verified. • Commissioning certificates of first set of windmills from Karnataka Power Transmission Corporation Ltd dated 2008-10-10 /CC/. • First wind power project to be registered with WACC in India dated 2008- 10-27 which was checked from the web link: http://cdm.unfccc.int/Projects/DB/DNVCUK1185356859.49/view / • ACM0002 was revised to version 08 dated 2008-10-28 was checked from UNFCCC website • Revised PDD preparation from Nov-08 to Dec-08 which was confirmed with consultants /IM02/. • ACM0002 was revised to version 09 from 13-Feb-09 which was verified from the web link Weblink:http://cdm.unfccc.int/EB/045/eb45_repan10.pdf /EB 2/ • Appointment of DoE on 20-Feb-09 was verified from the work order/^{WO/} placed with TUV. • PDD Web hosting period has been checked from UNFCCC website and found to be 04-Apr-09 to 03-May-09. <p>Thus from verification of above supporting documents and events, it has been acceptable that benefits of the CDM were a decisive factor in the decision to proceed with the project. Moreover reliable evidences show that continuing and real actions were taken to secure CDM status for the project in parallel with its implementation.</p>



General	CAR B1
	<p>As the Project activity being an existing one with the start date before 2nd August 2008, the demonstration of serious consideration of CDM benefits were found to be in line with Para 6 a and 6b of EB 49 annex 22.</p> <p>From the chronology of events it has been noted that the PP had initiated all possible efforts to ensure CDM registration of the project, however the process has been delayed because of external factors like Land clearances, DNA approvals, EB decisions and changes in the CDM procedures which are found to be deemed acceptable.</p> <p>More over it has been verified that there is less than 2 years of gap between the documented evidence thus DOE concludes that continuing and real actions were taken to secure CDM status for the project activity</p> <p>CAR B1 is closed.</p>
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

General	CAR B2
Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	Provide basis of proof for the PLF.
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<p>Enercon offered PLF of 25.47% works out to net exportable PLF of 23.71% after adjusting for grid availability and transmission loss.</p> <p>In addition, C-WET (Third Party) was engaged for carrying out a wind resource assessment for the project site. C-WET has reported that the following PLF values for the project site.</p> <ul style="list-style-type: none"> Estimated PLF – 25.3% Min PLF – 22.7% Max PLF – 27.8% <p>Therefore, the investment analysis has been carried out considering the PLF values reported by C-WET. This is conservative.</p>



General	CAR B2
<p>DOE Assessment #1</p> <p><i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<p>Enercon offer was 17.85 lakh units, which works out to 25.47% and after adjusting for grid availability and transmission loss the effective PLF works out to be 23.71%.. This was known while submitting the PDD for webhosting as well as while furnishing the worksheet to DOE. But, both in the web hosted PDD and the worksheet submitted to DOE, it has been considered a PLF of 26.5%. Once the worksheet is submitted to DOE and the CARs/CLs have been raised, no assumptions should be changed unless requisitioned by DOE. Moreover, changing the PLF after it has been web hosted is not acceptable. CAR is open.</p>
<p>Corrective Action #2</p>	<p>We will like to draw the reference of the DoE towards the EB 48, Annex 11 on “<i>Guidance for reporting and validation of Plant Load Factors</i>“ which is applicable to approved consolidated methodology ACM0002 applied for the project activity. The guidance has specifically designed to gauge the PLF for the specific project activity. The guidance on PLF was issued by EB in meeting EB 48 held from 17-19 July 2009 where as PDD for the project activity was webhosted on 04 April 2009. The estimated PLF given by the supplier is at WTG controller where as the tariff applicable to the project activity is applicable to the generation that is available at the sub-station. Therefore to arrive at the effective PLF at the substation, the PLF at WTG controller shall be subjected to adjustment in transmission loss, transformation loss at the transformer and grid availability. In the webhosted PDD, we have used the PLF from KERC order that is no longer applicable to the project activity as per EB 48 annex 11.</p> <p>Subsequently, the project proponent has got the plant load factor validated by C-WET (Center for Wind Energy Testing; third party) for estimation of generation from the project activity. C-WET has reported that the following PLF values for the project site.</p> <ul style="list-style-type: none"> • Estimated PLF – 25.3% • Min PLF – 22.7% • Max PLF – 27.8% <p>Therefore, the investment analysis has been carried out considering the PLF values reported by C-WET. Clearly the effective PLF for the project activity estimated by C-WET is on the higher side when compared to the effective PLF (23.71%) as per the first DPR and is selected for evaluation of additionality. The estimated PLF is in accordance with the Annex 11 of EB 48 and hence we deem it appropriate to use the same for additionality.</p> <p>We must also point out that the PLF considered for Investment Analysis i.e. 25.3% is higher than the PLF considered for Investment decision making i.e. 23.71% based on first DPR.</p>



General	CAR B2												
DOE Assessment #2	<p>The PLF used in the web hosted PDD has been derived from KERC order which is no longer applicable to the project activity as per EB 48 annex 11, hence changing the PLF in accordance to latest EB guidelines is deemed acceptable. More over C-WET Report ^{/C-WET/} for PLF estimation has been verified. Estimation of PLF by third party organization like C-WET conforms to section 3a) of the guidelines for the reporting and validation of Plant Load Factors i.e.; The plant load factor determined by a third party contracted by the project participants. As C-WET was contracted for estimating the generation of proposed wind farm at Kurtkoti Village of Gadag District which is the project site, the estimated PLF of 25.3% which has been applied in the project activity is deemed acceptable.</p> <p>Moreover, TUV NORD compared the estimated PLFs of the project activity which were available before the investment decision of the project activity with the C- WET assessed PLF of 25.3% (available after investment decision) and derived a conclusion:</p> <table><tr><th>Estimated PLFs before investment decision</th><th>Source</th><th>Observation</th></tr><tr><td>26.5%</td><td>KERC dated 2005-01-18</td><td>4.7% increase in PLF sourced from KERC order when compared to the C-WET PLF analysis.</td></tr><tr><td>25.47%</td><td>Supplier's offer dated 2006-07-25</td><td>0.6% increase in PLF sourced from Supplier's offer dated 2006 when compared to the C-WET PLF analysis.</td></tr><tr><td>23.71%</td><td>Effective PLF (after adjusting for grid availability and transmission loss) based on DPR dated 2006-07-28</td><td>6.7% decrease in PLF sourced from DPR dated 2006-07-28 when compared to the C-WET PLF analysis</td></tr></table>	Estimated PLFs before investment decision	Source	Observation	26.5%	KERC dated 2005-01-18	4.7% increase in PLF sourced from KERC order when compared to the C-WET PLF analysis.	25.47%	Supplier's offer dated 2006-07-25	0.6% increase in PLF sourced from Supplier's offer dated 2006 when compared to the C-WET PLF analysis.	23.71%	Effective PLF (after adjusting for grid availability and transmission loss) based on DPR dated 2006-07-28	6.7% decrease in PLF sourced from DPR dated 2006-07-28 when compared to the C-WET PLF analysis
Estimated PLFs before investment decision	Source	Observation											
26.5%	KERC dated 2005-01-18	4.7% increase in PLF sourced from KERC order when compared to the C-WET PLF analysis.											
25.47%	Supplier's offer dated 2006-07-25	0.6% increase in PLF sourced from Supplier's offer dated 2006 when compared to the C-WET PLF analysis.											
23.71%	Effective PLF (after adjusting for grid availability and transmission loss) based on DPR dated 2006-07-28	6.7% decrease in PLF sourced from DPR dated 2006-07-28 when compared to the C-WET PLF analysis											

Page 24 of 213



General	CAR B2
	<p>Further the validation team noted that even with 10 % increase in PLF, the project IRR is less than the benchmark. As the above mentioned PLFs are already covered under sensitivity analysis, the validation team concluded that the additionality of the project would not be affected with 0.6% increase in PLF (25.47%) and also with 4.7% increase in PLF (26.5%) (even e.g. with a PLF of 32,5% the project is still additional). In fact, the investment analysis with the third party estimated PLF (25.3%) is found to be more conservative when compared with effective PLF (23.7%) sourced from first DPR which was prevailing during investment decision.</p> <p>Hence, the validation team accepted the selection of the PLF of the project activity of 25.3%, which a) has been estimated by third party company, b) is used in the financial analysis are reasonable and in line with “ guidelines for the reporting and validation of plant load factor”.</p> <p>CAR B2 is closed.</p>
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

General	CAR B3
Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>Sensitivity analysis does not conform to guidance given by EB vide Annex 45 of EB 41 as the sensitivity variation for PLF has not done for +10% &-10%. Moreover please clarify why other parameters except PLF are not subjected to variation.</p>



General	CAR B3
<p>Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i></p>	<p>The following sensitivity analysis has been carried out, as per guidance given by EB vide Annex 51, EB 58</p> <ul style="list-style-type: none"> • +/-10% increase in PLF • +/- 10% variation in capital cost • +/-Tariff <p>PLF: C-WET (Third Party) was engaged for carrying out a wind resource assessment for the project site. C-WET has reported that the following PLF values for the project site.</p> <ul style="list-style-type: none"> • Estimated PLF – 25.3% (base case) • Min PLF – 22.7% (-10%)_ • Max PLF – 27.8% (+10%) <p>Therefore sensitivity on PLF is considered as per maximum and minimum values provided by CWET.</p> <p>Capital Cost:</p> <p>In accordance with the investment guidance, the additionality for the project activity is demonstrated at the time of decision making. The supplier's offer was provided to the project proponent in June 2006 and the preliminary purchase order was placed in August 2006 to lock the price. We have included sensitivity with 10% variation in capital cost as a variation above this is not reasonable or realistic.</p> <p>Tariff:</p> <p>Tariff for the project is fixed for the first 10 year period and is not subject to any variations. Tariff for the next 10 years is determined based on tariff principles followed by the KERC, in order to be conservative we have carried out a sensitivity of the IRR by considering tariff of Rs.3.40 beyond the 10th year.</p>
<p>DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<p>It has been verified that the variables which constitute more than 20% of total project revenues like PLF, tariff and project cost have been subjected to reasonable variation of -10% to +10%. Even with 10% increase in generation and 10% decrease in project cost, the project IRR does not cross the benchmark of 13.47%. The project IRR considering tariff of Rs. 3.40 per unit after 10 years is 10.66% which is again lower than the benchmark.</p> <p>Thus the sensitivity analysis now conforms to Annex 45 of EB 41 and annex 58 of EB 51.</p> <p>CAR B3 is closed.</p>



General	CAR B3
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

General	CAR B4
Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>Common practice analysis section does not appear to be in conformity with Step 4 of Additionality Tool. Since it is a large scale project, the discussion should be strictly in conformity with the requirements of additionality tool.</p> <p>The PP is requested to clarify the usage of “a single project proponent” in respect to common practice analysis mentioned in the PDD.</p>
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<p>The common practice section has been incorporated in the revised PDD. All the wind power projects that are of comparable scale and that are implemented in the same investment climate are included in the analysis.</p> <p>We wish to clarify that for carrying out the common practice analysis we have considered all wind projects set up by individual investors and not single project proponent that are of 15 MW capacity or higher. Hence the term “single project proponent” is revised to avoid confusion.</p> <p>The Wind power Directory of India provides information on all wind power projects in India, which has been provided to DOE for reference during validation. Since CDM has provision for bundling of smaller projects by individual investors, there are bundles with capacity greater than 15 MW in Karnataka, which in any case have been pursued under CDM as the concept of bundling is relevant only in context of CDM. We once again clarify that we have not ignored any wind projects of more than 15 MW in the state of Karnataka.</p>
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>The Directory of Indian Wind Power referred to was published in 2008 and this publication would not be available at the time of decision making in 2006. Moreover, this publication is not available in the web. Soft copy of relevant pages may be furnished. CAR is open.</p>



General	CAR B4
<p>Corrective Action #2</p>	<p>The publication for the wind power directory is available on request from the publisher only in hard format. Also, we will like to submit that we have made the complete analysis for all the project activities that are being developed by the private entities till 31 March 2008 even though the cutoff date for the project activity was earlier.</p> <p>The analysis presented essentially proves that all the wind power projects that have capacities greater than 15 MW are in CDM pipeline. We would like to submit to the DOE that the objective of common practice is to demonstrate that projects that are of similar nature and are implemented in the similar investment climate are not implemented without CDM.</p> <p>We would also like to submit the use of available data at the time of decision making is limited to input parameters used in investment analysis and not extended to common practice.</p> <p>The DOE would agree that the installed capacity of 2008 is higher than that of 2006 and therefore considering 2008 data for common practice is conservative.</p>



General	CAR B4
DOE Assessment #2	<p>Analysis of wind power generation project activities developed by Private entities in the state of Karnataka proving that the capacities greater than 15 MW are in CDM pipeline are acceptable. UNFCCC website ^{/unfccc/} was checked in respect to these projects under CDM and found to be correct.</p> <p>As the analysis of wind mill installations have been done in the region of Karnataka, it has been concluded that the common practice analysis has been done in a defined scope i.e. (specified region - Karnataka). More over analysis proves that the wind power installations developed in this region are mostly under CDM. So it has been concluded that, the wind power installations without being undertaken as CDM Project activity in the defined region is not a common practice. Thus the common practice analysis with respect to WTG installations is in line with step 4a of the additionality tool version 5.2.</p> <p>More over from the verification of the website², it has been noted that the installed capacity of WEGs in Karnataka during 2006 was 264.750 MW and during 2008-09 it was 322.350 MW. Hence it is acceptable that the installed capacity of WEGs in 2008 is higher than that of 2006 and therefore considering 2008 data from "The Directory of Indian Wind Power" ^{/IWP/} is found to be conservative and the argument is accepted.</p> <p>The validation team could assess that the individual investors mentioned now in the PDD is not one proponent nor a single company. The consideration here has been for all the investors who have invested in scale of projects more than 15 MW.</p> <p>Bundled large scale projects are not compared for the analysis which was accepted by the validation team as the bundled large scale projects are in fact just an aggregation of multiple project activities that are bundled together for the sake of ease in CDM development (Consultancy, validation and verification charges and ease in co-ordination with single point of contact) and do not necessarily represent large scale projects investments. Each of the aggregated activities are independent project activities on their own, therefore unless these smaller activities are more than 15 MW (comparable size), they do not represent investments of similar scale.</p> <p>As this project activity was under taken only by an individual investor GEI, this implied the investment was made by GEI alone. Thus the comparison with individual investors (who have invested in project capacity of more than 15 MW) is comparable and acceptable by TÜV NORD.</p> <p>Hence, identification of similar projects developed by individual project proponents in the same geographical region (Karnataka) for the common practice analysis was assessed to be appropriate by the validation team. Thus the common practice analysis with respect to WTG installations is in line with step 4a of the additionality tool version 5.2.</p>

² <http://www.windpowerindia.com/statyear.html#top>



General	CAR B4
	<p>As per VVM 1.2 para 120, based on the local and sectoral expertise, to further substantiate that wind power generation is not the common practice in Karnataka, TÜV-NORD assessed the following information:</p> <p>It was also noticed that against an assessed wind potential of 7470.165 MW, the state had installed wind capacity of 910.635 MW till 2007-2008 ^{/kredl/} i.e., before commissioning of wind turbines of the project activity. This shows that until 2007-08 , the installed capacity of wind energy in Karnataka was about 12% of its potential.</p> <p>It has been analysed the extent to which the wind energy projects have diffused in electricity sector in Karnataka in terms of power generated (based on 2004-05 latest available data) and found that the wind electricity generation in Karnataka was 489.53 GWh ^{/psr 1/} and the total electricity availability at bus-bar in the state of Karnataka was 33,523.92 GWh ^{/psr 2/} . This works out to 1.46%, showing that wind energy generation is insignificant as compared to other power generation sources in Karnataka. Please note that this wind generation is for all wind projects (including CDM projects). If one were to remove the CDM wind generation from the above data, the percentage would be still lower.</p> <p>Thus it has been confirmed through official sources and local and industry expertise, what extent similar and operational projects other than CDM project activities have been undertaken in the defined region and concluded that the project activity without CDM benefits is not a common practice in the region (Karnataka).</p> <p>The above discussion under step 4a of the additionality tool shows that in Karnataka all the similar projects (more than 15 MW) are CDM projects which are seeking CDM benefits for their projects. This proves that similar activities are not widely observed or commonly carried out and hence substep 4 b) is not required. Thus the validation team is in opinion that the proposed CDM project activity is not a common practice in the defined region (Karnataka).</p> <p>Thus CAR B4 is closed.</p>
<p>Conclusion <i>Tick the appropriate checkbox</i></p>	<p><input type="checkbox"/> To be checked during the first periodic verification</p> <p><input checked="" type="checkbox"/> Appropriate action was taken</p> <p><input checked="" type="checkbox"/> Project documentation was corrected correspondingly</p> <p><input type="checkbox"/> Additional action should be taken</p> <p><input checked="" type="checkbox"/> The project complies with the requirements</p>



General	CAR B5		
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<ol style="list-style-type: none"> 1. KERC Order provides for only two months bills as working capital. Hence 30 days O&M cost provided as working capital is not acceptable. Please clarify? 2. The first year of projection should be 2007-08 as the windmills are reported to have commenced generation in that year. Adding one extra day to 2008-09 is not acceptable. The generation, revenue and cost of 2007-08 should be pro rata to the date from which the WEGs commenced generation. 		
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<ol style="list-style-type: none"> 1. We agree with the DOE's observation that the KERC order provides for only two months receivables are working capital. We would, however, like to submit that in addition we are required to pay the O&M expenses in advance to the O&M service provider. The DOE would agree that this has additional financial implications on the project and hence needs to be considered in the investment analysis. 2. We have made the necessary corrections in the financial calculations. The first year of projection now is 2007-08. 		
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<ol style="list-style-type: none"> 1. There is no denial of financial implication. But the issue here is conformity with KERC Order. Assumptions should be based on evidence and the evidence does not support provisioning of working capital for O&M cost. CAR is open. 2. The worksheet has no connection to the data given in PDD. As per PDD, wind mills commenced on different dates, whereas the worksheet assumes uniform commencement of 31.3.2008. This affects the profitability of the project. CAR is open 		



General	CAR B5
<p>Corrective Action #2</p>	<ol style="list-style-type: none"> 1. We will again like to emphasize the fact that we have used tariff from the KERC order applicable to the project activity. The assumptions such as Capital cost, debt equity ratio, loan tenure and Plant load factor assumed by KERC order are in deviation from the input parameters that are applicable to the project activity. In line with the investment guidance the parameters that are applicable to the project activity and are available to the project proponent shall be applied to evaluate the project. Therefore in line with the investment guidance; we have used the parameters from the supplier's offer letter for capital cost, O&M cost and provision of advances etc. that are specific to the project activity and were available to the project proponent at the time to decision making. The operation and maintenance expenses are payable in advance to the operation and maintenance contractor (Equipment Supplier in this case). The provision for working capital is incorporated from the offer from the equipment supplier who is also managing operation and maintenance for the project activity. The offer from the supplier has been provided to the DoE for verification. 2. We wish to clarify that 31 March 2008 was the expected date of commissioning for the project; this is as per the detailed project report used for evaluation of the project. Actual commissioning is an event that happens after the investment decision, the information about which cannot be known at the time of investment decision. Therefore it is not appropriate to use the actual dates of commissioning for investment analysis. Further, we will like to submit that in accordance with the investment guidance; the input parameters that are available to the project proponent at the time of investment decision shall be used. Therefore we have considered the same.



General	CAR B5
DOE Assessment #2	<p>1. The offer from Supplier^{/SOP/} has been checked and thus the provision for working capital incorporated from this offer has been verified to be OK. Moreover, working capital is an imperative component of the costs incurred by the project proponent, therefore assumption of working capital during investment decision based on Supplier's offer is deemed acceptable.</p> <p>2. As per Supplier's offer^{/SOP/} the expected date of commissioning has been verified to be 31-March 2008. More over Detailed Project Report^{/DPR/} was verified and thus the expected date of commissioning is acceptable as 2008-03-31 as the DPR was released before investment decision.</p> <p>CAR B5 is closed.</p>
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

General	CAR B6
Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>Tariff assumed from 2018-19 is not acceptable unless it is backed by evidence of such a policy already having been implemented in the case of other windmills. In the absence of such evidence, tariff of Rs.3.40 /kWh should be continued.</p>
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<p>We wish to clarify that the tariff after 10th year is based on the principles of cost plus tariff calculation.</p> <p>Under the cost plus tariff principle the tariff is determined in a manner that allows the generator to recover the cost of generation and a return on equity. The KERC order clearly mentions the details of costs that have been considered for calculating the tariff applicable. The DOE would note that one of these costs is the Interest on loan, which will not be there after the 10th year (the loan having been repaid). Therefore if a tariff of Rs.3.40 is assumed beyond 10th year, it would mean that the consumer is being asked to bear a cost that no longer exists. This cannot be the case as the Electricity Act has mandated that the tariff be set in a manner that protects the interests of the consumers. Also this contradicts the very basis of cost plus tariff principles.</p> <p>We have carried out a sensitivity of the IRR considering tariff at Rs.3.40 and have included the same in the PDD</p>



General	CAR B6
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>Nowhere it is stated in the Order that the tariff from 11th year onwards will be on cost plus basis. If this is accepted, it means that different projects would receive different tariff, which does not seem to be realistic. Hence, tariff less than Rs.3.40/kWh is not acceptable. CAR is open</p>
Corrective Action #2	<p>We would like to submit that the tariff for our project is governed by a legally binding Power Purchase Agreement (PPA) signed between the project developer and the off-taker. The fixed tariff of Rs. 3.40 is applicable for the PPA tenure which is 10 years. For tariff beyond 10th year, the PPA states that [Source: Section on Rates and Charges]: "From 11th year onwards, from the date of signing of the agreement the corporation shall pay to the company for the energy delivered at the metering point at a rate based on operating costs and incentives to be agreed upon by mutual negotiations"</p> <p>As can be seen, the PPA very clearly states that only "operating costs" and "incentives" to be agreed upon by mutual negotiation will determine the tariffs from 11th year to the 20th year. You will notice in the financial model that the tariffs from the 11th to 20th year have accordingly been considered – operating costs plus the 16% return on equity that KERC considers for setting wind power tariff. The reason why the tariff number comes down substantially after the 10th year is because the largest component of tariff being the debt service (principal repayment and interest payments) is over by the 10th year of operations and these have already been factored in while determining the regulated tariff for the first 10 years.</p> <p>In fact KERC, while working out the tariff schedule for wind energy projects for the first 10 years, has noted that the reduction in tariff from year to year is mainly on account of repayment of debts and also that there are no running costs other than O&M costs which increases only marginally from year to year. Please refer Page 19 third line of KERC order dated 18th January 2005 which is applicable to project activity³.).</p>

³ [http://www.kerc.org/order2005/Order%20on%20NCE%20Tariff%20\(FINAL\).doc](http://www.kerc.org/order2005/Order%20on%20NCE%20Tariff%20(FINAL).doc)



General	CAR B6
	<p>It is therefore clear that the tariff for the project activity beyond the initial PPA period would be lower. This is bound to happen in any regulated tariff structure and several instances are available in the cost plus tariff regulated power projects (both in case of non conventional as well as conventional coal-fired power projects) where the tariff comes down significantly after the debt service is over.</p> <p>For example, in case of Maharashtra wind power projects, the MERC order provides a clear understanding of the approach to be followed for tariff setting beyond the initial PPA period⁴.</p> <p><i>“The Commission notes that in Cost Plus Approach, which the Commission has adopted for tariff proposal, rate per unit charged by such projects during initial period of 10 years is bound to be higher as during this period the project has various debt related obligations. However, it is essential that the consumer is able to enjoy the benefit of cheaper power once all debt related obligations are paid off and project has virtually no variable costs”.</i></p> <p>This can be further corroborated from the table 3 on page 69 of MERC order⁵) that beyond the 11th year the cost of electricity only comprises O & M cost and return of equity for tariff calculation.</p> <p>Also in case of projects in other states, like Maharashtra, that are approaching the end of the term for the PPA, the state utilities have applied for the petition for revision in tariff which is much lower than the tariff for the term of the PPA. The state utility in the state of Maharashtra has approached commission for revision in tariff after the period of 13 years of the PPA (MERC has provided PPA term for the period of 13 years for wind power projects) at the rate of INR 1.17 per kWh [Source: MERC order dated 20 November 2007, para 2(a)] which is much lower than the tariff [INR 3.50 per kWh with escalation of INR 0.15 per year for the first 13 years of operation] approved by the Maharashtra electricity regulatory commission for the first 13 years under PPA. As you would note from the above, the regulatory framework for tariff setting in India do not allow us to obtain a fixed tariff throughout the lifetime of the project activity</p>

⁴ http://www.mercindia.org.in/pdf/Detail_Wind_Energy_Order.pdf

⁵ http://www.mercindia.org.in/pdf/Detail_Wind_Energy_Order.pdf



General	CAR B6
	<p>Therefore, for carrying out the investment analysis, we have considered the tariff in accordance with the terms of the Power Purchase Agreement that governs the sale of electricity for the first 10 years and have adopted the approach considered by the commission for computing the tariff beyond the term of PPA.</p> <p>Moreover, as indicated by the DoE that the commission is unlikely to determine the tariff investor wise after the term of PPA, we will like to submit that the all the critical input parameters considered by the commission such as capital cost (lower than the project cost), O&M cost (Lower than the project cost), PLF (Higher than the project cost) etc will result in the tariff lower than what is assumed by the PP for financial analysis for substantiating additionality. The tariff after the term of PPA is calculated using the input parameters of the project activity which is based on higher capital cost than assumed by the commission, higher O&M cost than assumed by the commission and lower PLF than assumed by the commission and therefore is conservative.</p> <p>Therefore we would like to submit that it is unrealistic to assume that the project will be able to obtain the same constant tariff beyond the PPA tenure. We have carried out sensitivity analysis considering a reasonable escalation in tariff of 10% (as per EB Guidance para 17, Annex 45 of EB 41). As can be seen, with reasonable variations in tariff the IRR remains below the benchmark. However, it is unrealistic to assume constant tariff for the period beyond the term of PPA, we have still presented the IRR based on constant tariff of INR 3.40 per kWh for the entire project life in the sensitivity for tariff.</p>



General	CAR B6
DOE Assessment #2	<p>KERC order dated 2005-01-18 ^{/KERC/} was checked and the argument stated while working out the tariff schedule for wind energy projects for the first 10 years, it has been noted that the reduction in tariff from year to year is mainly on account of repayment of debts and also that there are no running costs other than O&M costs which increases only marginally from year to year is acceptable as it is a real fact and scenario for determining tariff for WTGs in all states.</p> <p>More over "In the matter of determination of tariff in respect of renewable sources of Energy" KERC Order [/] dated 2005-01-18 ^{/KERC/} /that is applicable to the project activity was verified and noted that in the tariff determination for old and new projects, KERC has ruled that the same tariff cannot be applied for projects that have completed 10 years of operational life since these projects has completed their loan repayment obligations. Thus from these arguments it is acceptable that tariff rate after 10th year comes down substantially as the largest component of tariff being the debt service is over by the 10th year of operations and these have already been factored in while determining the regulated tariff for the first 10 years.</p> <p>More over Power purchase agreement was verified and noted that "From 11th year onwards, from the date of signing of the agreement the corporation shall pay to the company for the energy delivered at the metering point at a rate based on operating costs and incentives to be agreed upon by mutual negotiations". Hence from the above statement it is clear that tariff is subjected to variation after 10 years.</p> <p>Therefore from verification of KERC order and PPA it is deemed acceptable that there will be reduction in tariff rate from 11th year (2018-19) onwards. Hence the tariff assumed from 2018-19 is acceptable.</p> <p>CAR B6 is closed.</p>
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

General	CAR B7		
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR



General	CAR B7
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<ol style="list-style-type: none"> 1. Providing for O&M cost right from first year is not valid as machinery suppliers provide at least one year warranty. 2. Insurance premium and O&M cost provided in the worksheet are not in conformity with the documentary evidence provided. 3. Even assuming the loan was disbursed in March 2008 – just before the commencement of generation, with one year moratorium, the first installment will fall due in April 2009, i.e., first quarter of 2009-10, whereas repayment is shown from 2nd quarter. This does not appear to be correct. Further, interest at 10.25% for full year on Rs.1186.50 laths cannot be Rs.119.95 laths. This needs to be checked. Moreover, interest computation should be in conformity with loan sanction letter.
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<ol style="list-style-type: none"> 1. We have made the corrections in the PDD. No O&M expenses are considered for the warranty period. 2. Operation and Maintenance cost per WTG is 0.44 Million per WTG as per supplier's offer. This works out to be 1.104% of the capital cost. Also, O&M cost is payable in advance each quarter and service tax payable is to the account of the PP as per offer provided by the equipment supplier (Equipment supplier is also the O&M contractor in this case). Insurance is however not explicitly mentioned in the Supplier's offer but is applicable by payable by the PP. The insurance is taken at normative level of 0.18% of the capital cost by the PP for financial analysis in the detailed project report that was considered by the board for final decision. Same has been considered by the PP as input to the financial analysis for substantiating financial additionality of the project activity. 3. We have made the corrections in the financial calculations. Repayments are shown from 1st quarter of 2009-10. The applicable interest rate is 10.25% and same has been assumed in the financial workings.



General	CAR B7
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<ol style="list-style-type: none"> O& M expenses have been considered from 2nd year onwards which is found to be in accordance with O&M contract ^{/OMP/} and OK. Supplier's offer ^{/SOP/} has been verified and the applied O&M cost is found to be correct. More over DPR dated 2006-07-28 ^{/DPR /} has been checked and the assumed percentage of 0.18% of total project cost as insurance cost is verified to be OK. As per the sanction letter (now submitted), loan repayment is scheduled to commence from September 2008 and if one year moratorium from the commencement date of WEG is taken into account (as provided in the sanction letter), it should be December 2008. However, in the interest calculation, repayment is shown to commence from April 2008. This is not in conformity with sanction letter. CAR is open
Corrective Action #2	<ol style="list-style-type: none"> The requisite correction has been made in the worksheet. The repayment schedule has been set to begin in December 2008.
DOE Assessment #2	<ol style="list-style-type: none"> Loan repayment schedule has been corrected which is verified to be in accordance with loan sanction letter ^{/LOAN/} and found to be OK. <p>All the 3 point shave been successfully addressed. CAR B7 is closed.</p>
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

General	CAR B8
Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<ol style="list-style-type: none"> Providing accelerated depreciation on all assets does not seem to be in conformity with IT Act. Income tax computation does not appear to be correct. Please make necessary corrections made.



General	CAR B8
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<ol style="list-style-type: none"> 1. In case of wind projects, a depreciation rate of 80% is applied on all assets except for land. 2. Income tax calculations have been corrected in the revised workings.
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<ol style="list-style-type: none"> 1. Clarify whether this statement is this evidenced by IT Act or rulings given. If so relevant extracts may be furnished. CAR is open 2. Income tax corrected. CAR is closed
Corrective Action #2	<ol style="list-style-type: none"> 1. The accelerated depreciation is applicable to renewable energy devices "Wind mills and any specially designed devices which run on wind mills" [Section-III (Plant and Machinery), subsection-III (Renewable Energy Devices), Item "L"]. The extracts of the document has been provided to the DoE (source: www.fastfacts.co.in/resources/DeplIncomeTax.rtf)
DOE Assessment #2	<ol style="list-style-type: none"> 1. Table of rates at which depreciation is applicable⁶ has been verified and thus for "Wind mills and any specially designed devices which run on wind mills", the applied depreciation rate of 80% is found to be correct. <p>Above 2 points have been acceptable. CAR B8 is closed.</p>
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

General	CAR B9
Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>Cash flow statement (for IRR calculation) does not include first year cash generation separately (and merged with 2008-09). Moreover, cash flow does not include salvage value and tax shield. Further, cash flow has been adjusted to current assets, which is not acceptable as IRR is concerned only with cash generation and not cash balance.</p>

⁶ www.fastfacts.co.in/resources/DeplIncomeTax.rtf



General	CAR B9
<p>Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i></p>	<p>Corrections have been in regard to the following:</p> <ul style="list-style-type: none"> • First year cash flows • Salvage value <p>Tax shield: Tax shield is not applicable in this case as wind power generation is the only business of company.</p> <p>Current Assets: Increase in current assets is a funds outlay and hence has been shown accordingly.</p>
<p>DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<p>First year cash flow has been added and salvage value has been provided. As per the POs now furnished and revised PDD, entire investment had not taken place in 2007-08.</p> <p>Adjustments of current assets are not acceptable as IRR is concerned only with cash generation and not cash balance. Since cash generation takes place in the same years as cash outflow takes place, the cash flow should be netted out. CAR is open</p>
<p>Corrective Action #2</p>	<p>Netting out the cash flow for the same years and assumption for Capital cost: Use if XIRR Function for evaluating project returns</p> <p>As we have used XIRR function for evaluating the cash flow, the netting off of the revenues will not impact returns from the project activity as XIRR function takes to consideration the timing of the cash flow.</p> <p>Adjustment of Current Assets</p> <p>There are two types of accruals embedded in the net profit. The Current accruals result in changes in firms current assets (such as trade receivables and prepaid expenses) and current liabilities (trade payables and current provisions). The second type of accruals includes depreciation, deferred taxes etc. To derive cash flow from the operations from net profit, adjustments have to be made for both these types of accruals. [source: <i>Business Analysis and Valuation</i> by Krishna G. Palepu, Erik Peek and Victor Bernard, page 218 and 219; http://books.google.com/books?id=DPK43Sku2PsC&pg=PA219&lp g=PA219&dq=adjustment+of+current+assets+krishna&source=bl&ots=YX7n9YGjRg&sig=npIFIHuMfdR5CyTnSmzbPYcGcSI&hl=en&ei=KH3hSpyLJZSMtgfG9-y7AQ&sa=X&oi=book_result&ct=result&resnum=1&ved=0CAwQ6AEwAA#v=onepage&q=&f=true].</p>



General	CAR B9
DOE Assessment #2	As XIRR function takes to consideration the timing of the cash flow, the netting off of the revenues in first year cash flow is deemed acceptable. More over. the book on " <i>Business Analysis and Valuation by Krishna G. Palepu, Erik Peek and Victor Bernard</i> " /ba/, was verified and noted that to derive cash flow from the operations from net profit, adjustments have to be made for both current accruals and 2 nd accrual including depreciation and deferred tax. Thus the Adjustments of current assets are found to be OK. CAR B9 is closed.
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

General	CAR B10
Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>Please clarify the following in Benchmark computation:</p> <ul style="list-style-type: none"> a) Use of BSE Sensex (as proxy for Rm) does not seem to represent a fully diversified portfolio, one of the pre-requisites of CAPM; b) Use of interest rate on Central and State Government securities presupposes the feasibility of investor purchasing the securities at par, which does not seem to be correct c) Beta value of all power generating companies do not seem to have been considered d) Using unlevered equity beta of the company not only implies that the leverage of listed companies and the project activity is the same (which does not appear to be true), but is also not conservative. e) Giving equal weightage to all the companies to arrive at the proxy beta suffers from the disadvantages associated with arithmetic mean and is not conservative either f) Computation of Index based on the weighted average interest rates of G-Sec though not used in the CAPM (as it inherently assumes that the investor would be able to invest in the basket on year-to-year basis, which is questionable on theoretical platform as well as practical application to the project scenario, where the investment is made once with benefits flowing therefrom year after year).



General	CAR B10
	g) Market return is upto February 2007; risk free rate and average risk free return is upto March 2006; beta value is upto December 2006. Thus, the resultant figure is an amalgam of data pertaining to various periods, which does not appear to have been recommended by any standard text book.



General	CAR B10
<p>Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i></p>	<p>Corrections have been in regard to the following:</p> <p>a) We agree with the DOE's observations, we have now calculated the Rm based on the BSE-200 index.</p> <p>b) Rf is now taken from Yield rates published by RBI for 2005-06 i.e. latest available annual data at time of decision making date 23 Aug 2006.</p> <p>c) At the time of the investment decision, the following power generating companies were listed and had a sufficient history (greater than or equal to 5 years) of share prices to arrive at reliable beta values. Therefore, the beta values of these companies only have been considered.</p> <p>d) We agree with the DOE's observation; however the leverage of our project is higher than the leverage in the power generating companies considered. Un-levering and re-levering the beta for a higher leverage would result in a higher beta value than what has been considered now. Therefore, in order to be conservative we taken the beta value as it is.</p> <p>e) For arriving at the appropriate beta values, higher weightage is given to companies that have a closer resemblance to the project activity or the business. In case all the companies (considered in the beta group) are similar, then equal weighting is appropriate. In our case all are power generating companies and therefore equal weight has been applied to arrive at the applicable beta value.</p> <p>f) We have made the corrections in the calculations. Index based G-sec rates have been removed from the calculations</p> <p>g) Govt yield rates are published only annually, we have considered the best available data for calculations. We have made the necessary corrections, the parameters considered now are as follows:</p> <ul style="list-style-type: none"> • Risk free rate - for 2005-06 • Market return – June 2006 • Beta value-June 2006



General	CAR B10
<p>DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<p>a. BSE 200 index also does not seem to represent a fully diversified portfolio. Moreover, the cut off period is up to June 2006 while the investment decision was taken on 2006-08-23. CAR is open</p> <p>b. The YTM pertains to the period 2005-06, i.e., up to March 2006, while the investment decision was taken on 2006-08-23. Could this data be available at the time of decision making is an issue to be sorted out. CAR is open</p> <p>c. The beta does not include NTPC, JP Hydro to name a few. Screen shots have not been furnished. The duration, return interval and the independent variable used for regression are not known. Moreover, the basis for taking 5 year period for beta computation is also not known. CAR is open.</p> <p>d. Neither the use of equity beta nor the relevered beta conforms to the requirements of Additionality Tool read with VVM. CAR is open.</p> <p>e. Equal weight has been applied to arrive at the applicable beta value Average is accepted. CAR is closed</p> <p>f. The index has been dispensed with. CAR is closed</p> <p>g. Please clarify the statement. There are publications which provide YTM on monthly and even weekly basis. Since the decision was taken on 2006-08-23, considering the data up to June 2006 is a fallacy of principle. CAR is open</p>
<p>Corrective Action #2</p>	<p>a. We have analyzed the following indices:</p> <ul style="list-style-type: none"> • BSE-Sensex • BSE-200 • BSE-500 <p>We have used BSE-sensex as the market return calculated from the BSE-sensex was most conservative.</p> <p>b. The yield rate is replaced for year 2005-06; the data available at the time of decision making.</p>



General	CAR B10
<p>Corrective Action #2</p>	<p>c. Beta values of the companies that are listed and have data for the last five years from the date of investment decision are considered. NTPC and JP hydro indicated by the DoE were listed on 05-Nov-2004 and 18-April-2005 and both the stocks do not have data for the five years from the date of investment decision and therefore not considered. The companies that have data more than 5 years (CESC, Tata Power, Reliance Infra, Neyveli Lignite and Gujarat Industries) at the time of decision making are considered for average beta. The data on the power sector companies is taken from BSE 500⁷.</p> <p>d. We draw DOE's attention to the Guidance on Investment Analysis (EB 51, Annex 58) which states that WACC can be considered as appropriate benchmark for Project IRR. The WACC by definition is calculated as the weighted average of cost of equity and cost of debt.</p> <p>Cost of equity has been calculated using the CAPM which is widely used accepted and has been considered acceptable by the CDM EB on previous instances. The CAPM uses the applicable Beta value, risk free rate and market rate of return to arrive at the cost of equity. Applicable Beta value for the project is based on beta values of companies engaged in power generation and has been sourced from Bloomberg.</p> <p>In regard to the use to raw beta, re-levered beta or asset beta (un-levered beta), we would like to present the following clarifications for using the raw beta in calculating the cost of equity.</p> <p>The Beta Value represents two types of risk:</p> <ul style="list-style-type: none"> (1) Financial Risk (2) Business Risk <p>Beta values provided by Bloomberg include these two risk components. It is important to note here that while the business of the company can be similar to that of the project, the debt equity mix employed by the company can be different than that of the project. In such a case, while the business risk component of the beta for the project would be same as that of the component, the financial risk component would be different. To account for such differences in leverage (debt equity gearing), beta values of reference companies are first unlevered and re-levered using the applicable debt : equity mix for the Project</p> <p>In the case of our project, the debt: equity ratio is 75:25 which is higher than the debt: equity ratio of the power companies whose betas are considered. This means that re-levering will result in a higher beta value and higher benchmark cost of capital.</p>

⁷ <http://www.bseindia.com/downloads/abindices/file/Indices.zip>



General	CAR B10
<p>Corrective Action #2</p>	<p><i>For example: Raw beta for the Tata Power and Reliance is 1.279 and 0.873 Respectively. The debt equity ratio of Tata power and Reliance is 0.50, and 0.55 for the last financial statement (2005-06) available at the time of decision making and un-levering and re-levering of the beta will result in beta of 2.98 and 1.98 for Tata power and Reliance respectively considering the data for the last five years from the investment decision date.</i></p> <p>Therefore using the raw beta, as is without making any adjustments, is conservative.</p> <p>Likewise, if an asset beta is considered, it only captures the business risk and ignores the financial risk that is inherent in the project since the project uses a 75:25 gearing. Hence it is not appropriate to consider the unlevered beta for benchmark calculations.</p> <p>Also, we have removed BF utilities from the beta computation as BF utility has very minor component as a power business. The annual report for the same is provided as proof to the validator. Hence it is not appropriate to use BF Utilities in the analysis.</p> <p><u>g.</u> We have made the necessary corrections, the parameters considered now are as follows:</p> <ul style="list-style-type: none"> a) Risk free rate - for 2005-2006 b) Market return – June 2006 c) Beta value – June 2006 for five years. <p>(Note: As per estimating of risk parameters by Aswath Damodaran; <i>page 10</i>, monthly returns should provide sufficient observations for firms listed for more than five years; <i>Page 9</i>, Risk and return models are silent on how long a time period one needs to use to estimate betas. Services use periods ranging from two years to five years for beta estimates, with varying results).</p> <p>The yield rates that are published in the statistical suppliment are for 91 Days TB (Treasuru Bills), 182 Days TB and 364 Days TB which is short term risk free rate. In accordance with the WACC approach, the long term risk free rate is applicable for computation of WACC which are published annually. Therefore latest available data for risk free rate that is available at the time of decision making is for year 2005-06 which is used by the PP for computation of WACC.</p>



General	CAR B10
DOE Assessment #2	<p>a. The analysis of following indices BSE-Sensex, BSE-200 and BSE- 500 have been verified from Benchmark calculation sheet ^{/Bench/}. Market return calculated from BSE sensex is found to be less when compared to the market returns from BSE-500 and BSE-200. On conservative point of view, market return calculated on BSE-sensex is deemed acceptable.</p> <p>b. The Source RBI⁸: has been checked and thus the yield rate replaced for year 2005-06 is corresponds to investment decision and found to be OK.</p> <p>c. It has been verified that NTPC and JP hydro were listed on 05-Nov-2004 and 18-April-2005 and both the stocks do not have data for the five years from the date of investment decision and therefore not considering NTPC and JP hydro is acceptable.</p> <p>d. Bloomberg snapshots ^{/BS/} were checked. Thus applicable Beta value for the project is based on beta values of companies engaged in power generation and verified to be OK. More over the clarification given in respect to usage of raw beta value in calculating cost of equity is deemed acceptable.</p> <p>g. The usage of latest available data for risk free rate that is available at the time of decision making for computation of WACC is found to be in accordance with Estimation of risk factors by Aswath Damodran ^{/RF/} and found to be deemed acceptable.</p> <p>All the 7 points have been successfully addressed. CAR B10 is closed.</p>
Conclusion <i>Tick the appropriate checkbox</i>	<p><input type="checkbox"/> To be checked during the first periodic verification</p> <p><input checked="" type="checkbox"/> Appropriate action was taken</p> <p><input checked="" type="checkbox"/> Project documentation was corrected correspondingly</p> <p><input type="checkbox"/> Additional action should be taken</p> <p><input checked="" type="checkbox"/> The project complies with the requirements</p>

⁸ <http://rbidocs.rbi.org.in/rdocs/Publications/PDFs/87456.pdf>



General	CAR B11		
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	Section B.7.2, Monitoring plan does not state about QA&AC procedures, details on metering equipments, monitoring frequency and calibration details. More over details regarding data management and storage are not included.		
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	QA&QC procedures are included in the revised PDD.		
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The QA & QC procedures mention under section B.7.2 and annex 4 of the PDD have been verified and are found to meet the requirements. All necessary parameters, that are clearly described in the monitoring plan complies with the requirements of the methodology. CAR B11 is closed.		
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements		

General	CL B1		
Classification	<input type="checkbox"/> CAR	<input checked="" type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	In section B.5, the web site address and the page number of "Southern Region Power Sector Profile, January 2007, Ministry of Power" cited as source for the data given vide page 11 of PDD may be furnished as footnote		
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The web-reference is included in the revised PDD.		
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	Web site address has not been provided. CL is open		
Corrective Action #2 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The Southern region power sector profile published by MoP (Ministry of Power) has been provided to the Validator		



General	CL B1
DOE Assessment #2 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	Page No: 4 of The Power sector profile by Ministry of power / PS/ showing the Karnataka Power Profile has been verified and noted that the Karnataka had energy (MU) shortages of 0.7% and peak (MW) shortages of 9.8% in 2005-06. CL B1 is closed.
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

General	CL B2
Classification	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	It may be clarified how for a project funded by a debt equity ratio of 75:25, equity IRR has been considered as most suitable financial indicator to demonstrate the additionality.
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	We agree with DOE's observation that since the project is funded with a mix of debt and equity, the project IRR is the appropriate benchmark. We have therefore calculated the project IRR and have compared the same with the WACC benchmark since as per Investment Guidance; WACC is the appropriate benchmark for Project IRR.
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	As project IRR has been used to demonstrate additionality, comparison of project IRR with WACC as benchmark is found to be appropriate as it is in line with the guidelines of investment analysis EB 51 annex 58. CL B2 is closed.
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

General	CL B3
Classification	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	It may be clarified how an expected return of 20% on equity be considered as conservative compared to 16% recommended by KERC(though not acceptable to EB) for wind power projects



General	CL B3
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<p>We have now used the WACC since the project IRR is the appropriate parameter and WACC is the right benchmark in case of project IRR. We have incorporated these changes in the PDD.</p>
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>Even in the WACC, for the equity component, the ROE assumed is more than 20%. The CL is open</p>
Corrective Action #2	<p>The KERC has assumed the benchmark of post equity benchmark of 16%. The benchmark adopted by KERC has already been deemed inappropriate by the CDM EB vide its decision in EB-38. Therefore, it is not appropriate to compare the KERC rate with the applicable cost of equity.</p> <p>Moreover, the computation for cost of equity is based on Beta, Market return and Risk free rate that were available at the time of decision making as per additionality tool and investment guidance. The conservativeness of the approach is explained in the worksheet for computation of the each of the input parameters that are used for computing WACC.</p>
DOE Assessment #2	<p>The explanation given by PP is deemed acceptable as the computation for cost of equity is based on Beta, Market return and Risk free rate that were available at the time of decision making. The Benchmark calculations ^{/BM/} has been verified and the expected return on equity is found to be conservative. CL B3 is closed.</p>
Conclusion <i>Tick the appropriate checkbox</i>	<p> <input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements </p>

General	CL B4
Classification	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>Confirm that all the 39 windmills commenced generation on 31st March 2008 as claimed in the PDD and support the confirmation with commencement of generation certificate</p>



General	CL B4
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<p>We wish to clarify that 31 March 2008 was the expected date of commissioning for the project; this is as per the detailed project report used for evaluation of the project.</p> <p>The guidance to investment analysis states that data available at the time of investment decision only needs to be considered. Accordingly the investment analysis has been carried out on the basis of scheduled commissioning date.</p> <p>Actual commissioning is an event that happens after the investment decision, the information about which cannot be known at the time of investment decision. Therefore, we have not considered the same.</p>
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>The DPR dated 2006-07-28 ^{/DPR/} has been verified. As all the inputs for financial calculations have been taken based on investment decision, the commissioning date of 2008-03-31 as per DPR released during investment decision is deemed acceptable.</p> <p>CL B4 is closed.</p>
Conclusion <i>Tick the appropriate checkbox</i>	<p><input type="checkbox"/> To be checked during the first periodic verification</p> <p><input checked="" type="checkbox"/> Appropriate action was taken</p> <p><input checked="" type="checkbox"/> Project documentation was corrected correspondingly</p> <p><input type="checkbox"/> Additional action should be taken</p> <p><input checked="" type="checkbox"/> The project complies with the requirements</p>

General	CL B5
Classification	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>Clarify whether MAT is applicable to the project activity as per IT Act</p>
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<p>MAT is applicable to the project activity as per IT Act section 115JB.</p>
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>The applied MAT rate has been verified to be in line with IT Act section 115 JB and found to be OK.</p> <p>CL B5 is closed.</p>
Conclusion <i>Tick the appropriate checkbox</i>	<p><input type="checkbox"/> To be checked during the first periodic verification</p> <p><input checked="" type="checkbox"/> Appropriate action was taken</p> <p><input checked="" type="checkbox"/> Project documentation was corrected correspondingly</p> <p><input type="checkbox"/> Additional action should be taken</p> <p><input checked="" type="checkbox"/> The project complies with the requirements</p>



General	CL B6		
Classification	<input type="checkbox"/> CAR	<input checked="" type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>Since there is a significant gap between the start date of the project activity and the commencement of validation (the project commenced generation in March 2008 and the DOE was appointed in mid 2009), PP may explain how it was possible for the project participant to commit funds to the project in advance of receiving a positive validation opinion.</p>		
Corrective Action #1	<p>We would like to clarify that funds were committed to the project in view of the anticipated revenues from CDM registration. The DOE would note that the PP has initiated efforts towards securing CDM status of the project immediately after issuing the amendment to Purchase Order.</p> <p>CDM consultants for the project were appointed within 15 days from the issue of the amended Purchase Order. The PPA for the project was signed on 22 November 2007 and the loan sanction was completed on 29 January 2008. As a result the PDD for the project could only be completed by end of February 2008. Here we draw attention of the DOE to the fact that the PPA and loan sanction letters were required to be submitted to the DOE as evidence for assumptions.</p> <p>The Investment guidance that clarified that values can be considered based on assumptions taken at the time of investment decision, was published only in August 2008.</p> <p>The DNA filing for the project was done in March 2008 and the DNA meeting was held in April 2008. However, our project was held up in DNA because of want of land clearances. The land clearances were approved only in September 2008 and DNA approval was granted in October 2008.</p> <p>In the meantime in July 2008, process was initiated for appointment of the DOE, however in June 2008 itself the EB deemed that the CERC and SERC benchmarks, that was being used by Indian projects, was no longer appropriate. In the absence of clarity on the benchmark, the development of the PP was stagnant. Eight projects belonging to the CDM consultant i.e. Enercon India Limited were held up in the Register with Corrections stage because of this issue.</p>		



General	CL B6
Corrective Action #1	<p>The matter was only resolved on 27 October 2008, when EB approved an Enercon project using WACC as the alternative benchmark, the DOE may note that this was the first project to have been registered with WACC benchmark after the June 2008 EB verdict.</p> <p>Also during this period, the Additionality tool, the tool to calculate emission factors, ACM0002 methodology version and the PDD template was revised by EB. The revised PDD after incorporating all these changes and the alternative benchmark was completed in February 2009 for webhosted PDD and the DOE was appointed soon thereafter.</p> <p>As the DOE would note, the PP had initiated all possible efforts to ensure CDM registration of the project, however the process has been delayed because of external factors like Land clearances, DNA approvals, EB decisions and changes in the CDM procedures. The detailed timeline showing the steps taken by the project proponent to secure CDM status is provided in the PDD.</p>
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>From the verification of chronology of events took place for serious consideration of CDM benefits it is deemed acceptable that the funds were committed to the project in view of the anticipated revenues from CDM registration.</p> <p>The factors like Land clearances, DNA approvals and changes in the CDM procedures have been acceptable to be the causes for reasonable delay in this project activity</p> <p>CL B6 is closed.</p>
Conclusion <i>Tick the appropriate checkbox</i>	<p><input type="checkbox"/> To be checked during the first periodic verification</p> <p><input type="checkbox"/> Appropriate action was taken</p> <p><input checked="" type="checkbox"/> Project documentation was corrected correspondingly</p> <p><input type="checkbox"/> Additional action should be taken</p> <p><input checked="" type="checkbox"/> The project complies with the requirements</p>

General	CL B7
Classification	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>It may be clarified how the CDM revenues were considered essential to overcome the investment barrier to this project activity, in particular that the benchmark represents a rate below which the investment could not be made.</p>



General	CL B7
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<p>We wish to clarify that we have not used any barrier analysis, also the CDM guidance says that CDM should alleviate the barrier (and not remove it). The project IRR is significantly lower than the benchmark and hence the CDM revenues are essential for the project.</p>
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>As the project IRR is lower than the benchmark, it has been proved that the Project is additional. Moreover, clarification given by PP stating that the CDM benefits have been used to alleviate barrier is acceptable.</p> <p>CL B7 is closed.</p>
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

General	CL B8
Classification	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>Under section B.5, in the common practices analysis section, the tariff that would be applicable to the project under the different regulatory policy regimes have been analysed. Clarify whether such an analysis is required as per Step 4 of Additionality Tool. If it is not in conformity with Step 4 of Additionality Tool, it may be removed.</p>
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<p>The analysis based on the tariff applicability is removed from the PDD. The common practice is revised in accordance with step 4 of the additionality tool version 5.2 in the PDD. All large scale wind projects, (greater than 15 MW) set up by a single project proponent in the state of Karnataka, have been analyzed and represented in the PDD.</p>
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>Common practice analysis has been revised and it is found to be in accordance with step 4 of additionality tool. CL B8 is closed.</p>
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements



General	CLB9		
Classification	<input type="checkbox"/> CAR	<input checked="" type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	Furnish following documents/ documentary evidences a. Project cost details b. Quotations/Purchase Orders for each Wind Mill. c. O&M cost and escalation therein d. Insurance premium receipts e. Board resolution on serious consideration of CDM f. Modalities of Communication g. A copy of Electrical Inspectorate from state government h. meter test reports i. Land sale deed and land acquisition documents.		
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The following documents are being submitted to the DOE as a proof of the assumptions. a) Project cost details: Enercon offer b) Purchase Order c) O&M details: O&M agreement d) Insurance : Insurance premium receipts e) Certified true copy of Board Resolution f) MOC g) Commissioning Certificates h) Meter test Reports i) Land deed documents		



General	CLB9
<p>DOE Assessment #1</p> <p><i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<p>a. The Enercon offer dated 2006-07-25 ^{/SOP/} has been verified in respect to the project cost and found to be OK.</p> <p>b. Purchase Order No. GEI/2006-2007/EIL-101 dated 24/08/2006 issued to M/s. Enercon (India) Ltd, Mumbai for the supply, Installation and commissioning of 39 nos of 800kW Wind Turbine Generator(s) by M/s Generacion Eolica India Limited ^{/PO/} and Amendment to purchase Order Ref No. GEI/2006-2007/EIL-101 dated 24/08/2006 issued to M/s. Enercon (India) Ltd, Mumbai for the supply, Installation and commissioning of 39 nos of 800kW Wind Turbine Generator(s) by M/s Generacion Eolica India Limited dated 2007-03-15 ^{/PO- AD/} have been verified and found to be OK.</p> <p>c. Operation & Maintenance Contract / Procedure-For starting 10Years contract between M/s Enercon (India) Ltd and M/s Generacion Eolica India Limited dated 2008-07-04 for 39 WTGs ^{/OMP/} have been verified and found to be OK.</p> <p>d. Insurance premium receipts from Royal Sundaram Alliance Insurance Company Limited ^{/INS/} have been verified and found to be OK.</p> <p>e. Management decision by M/s Generacion Eolica India Limited with serious consideration of CDM benefits and finalization of EPC Contractors on 2006-08-23 ^{/BoD 1/} and Management decision by M/s Generacion Eolica India Limited with serious consideration of CDM benefits and committing investment into the Project dated 2007-02-05 ^{/BoD 2/} have been verified and found to be OK.</p> <p>f. MOC has been verified. The contact details mentioned in MOC is in line with those details mentioned in PDD ^{/PDD 4/}</p> <p>g. Commissioning certificates of all 39 wind turbines from Karnataka Power Transmission Corporation Ltd ^{/CC/} have been verified.</p> <p>h. Sample meter test report dated 2009-02-27 ^{/TC/} has been verified and found to be OK.</p> <p>i. Land deed documents were verified and found to meet the requirements.</p> <p>Thus all documents have been checked and found to be OK. CL B9 is closed.</p>



General	CLB9
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

General	CL B10
Classification	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	In section B.3, a pictorial representation showing the project boundary is missing.
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	A flow diagram showing project boundary has been added in the PDD.
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The project boundary diagram was checked and found to have represented as per the realistic scenario prevailing at the site. The same was cross checked during the site visit and found to have correctly represented. The project boundary description is in line with the methodology ACM0002 version 11. Hence CL B10 is closed.
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

General	CL C1
Classification	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	In section C.1, the start date of the Project activity should be mentioned as per glossary of CDM terms.
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The start date of the project activity has been revised to 2006-08-23, the date of purchase order.
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	Start date of the Project activity has been given as the date of purchase order of WTGs thus conforms to definition of starting date of Project activity under "Glossary of CDM terms". CL C1 is closed.



General	CL C1
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

General	CL C2
Classification	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	In section C.2, the realistic date for start of the crediting period shall be incorporated in the PDD.
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The start date of the crediting period is changed to 2011-04-01.
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The revised start date of the crediting period is found to be realistic. Hence CL C2 is closed.
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

General	CL D1
Classification	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	Under Section D.1, provide details regarding the EIA study conducted for the Project activity.



General	CL D1
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	Environmental Impact Assessment (EIA) of this project is not an essential regulatory requirement, as it is not covered under the categories as described in EIA Notification of 1994 or the Amended Notification of 2006. However, GEI conducted the EIA to study impacts on the environment resulting from the project activity. The EIA report has been submitted to the validator.
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	From verification of the website ⁹ it has been concluded that EIA is not required for this type of Project activity as per host Country requirements. CL D1 is closed.
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

General	CL E1
Classification	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	The supporting documents like invitation notice and attendance sheets need to be submitted with regard to the stake holder's meeting conducted.
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The supporting documents in respect to stake holder's meeting have been submitted.

⁹ <http://www.envfor.nic.in/divisions/iass/notif/eia.htm>,



General	CL E1
<p>DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<p>The stakeholder's invitation letter dated 2007-11-03 sent to Village Panchayat was verified and found to be OK. The attendance sheets with signature of the Village People who all attended the Stakeholders meeting were checked.</p> <p>More over the minutes of Stakeholder meeting was verified. The comments received in respect to the project activity and the responses by PP to address all the comments were checked. The stakeholders comments listed in PDD were cross verified during interview with local stakeholders at the time of site visit and thus the listed comments provided in the PDD are complete. The comments addressed by the PP were found to be realistic and acceptable.</p> <p>Thus the local stakeholders consultation process was found to be adequate.</p> <p>CL E1 is closed.</p>
<p>Conclusion <i>Tick the appropriate checkbox</i></p>	<p> <input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements </p>



5 VALIDATION ASSESSMENT SUMMARY

5.1 General Description of the Project Activity

5.1.1 Participation

LOA

The National Clean Development Authority, Ministry of Environment and Forests (MoEF), Government of India, is the DNA. Letter of Approval bearing number 4/7/2008-CCC dated 2008-10-03 from the Ministry of Environment and Forests, DNA, Government of India, the Host Country, has approved the “GEI Wind Power Project in Karnataka , India “ by M/s. Generacion Eolica India Limited to participate voluntarily in the CDM activity from host country India. The project is a renewable energy project activity and meets the host country requirements of sustainable development criteria. CAR A1 was raised during the course of validation and finally closed.

Project Participants

The Project Participant name is consistent in the PDD and the Letter of Approval provided by DNA of India. M/s Generacion Eolica India Limited is the Project Participant for the “GEI Wind Power Project in Karnataka, India” CDM project activity.

5.1.2 Contribution to Sustainable Development

Letter of Approval bearing number 4/7/2008-CCC dated 2008-10-03 from the Ministry of Environment and Forests, DNA, Government of India, the Host Country, has approved the “GEI Wind Power Project in Karnataka, India“ by M/s. Generacion Eolica India Limited stating that the project complies to the host country sustainable development criteria.

5.1.3 PDD editorial Aspects

The PDD has been prepared in the approved format (CDM - PDD) Version 03 in effect as on 28th July 2006.

Yes, the PDD has been duly filled in accordance with the “Guidelines Project Design Document (CDM-PDD) and the Proposed new baseline and monitoring methodologies (CDM-NM)”, Version 07,(EB 41 annex 12)¹⁰

¹⁰ http://cdm.unfccc.int/Reference/Guidclarif/pdd/PDD_guid04.pdf



5.1.4 Technology to be employed

The project activity involves installation and operation of 31.2 MW wind power project ("Project") in the state of Karnataka, India. The project activity is to install and operate 39 wind energy converters, with each machine having a capacity of 800 kW. The technical description mentioned in the PDD was cross checked with the technical specifications given by the Supplier and hence it is verified to be complete and accurate. The generated electricity is supplied to the Southern Grid of India. The installed WTGs are expected to generate about 69147.9 MWh of energy per annum. The WTGs belong to this bundled project activity is supplied by M/s. Enercon (India) Limited. The Project is located at Harthi, Kurtakoti & Malasamudra villages in Gadag district of Karnataka state in India. The project does not involve alteration of any existing installation. The technology adopted by the project is on par with the current industrial practices and are deemed environmentally safe.

5.1.5 Small Scale Projects

The project activity qualifies as a large scale CDM project activity. The total capacity of the project activity is about 31.2 MW which is more than 15 MW (limit for small scale project) as per Appendix B of the simplified modalities and procedures for small-scale CDM project activities. The project applies large scale methodology i.e., ACM0002 "Consolidated methodology for grid-connected electricity generation from renewable sources --- Version 11 and "Tool for the demonstration and assessment of additionality" version 5.2 and also "Tool to calculate the emission factor for an electricity system" for baseline calculation version 2. The tools referred for this project activity are of latest version and the version of the methodology is still applicable as the requests for registration with this version can be submitted until 17 May 2011.

5.2 Project Baseline, Additionality and Monitoring Plan

5.2.1 Application of the Methodology

The project falls under Type I: Renewable Energy Projects and rightly applies the approved methodology ACM0002, Consolidated methodology for grid-connected electricity generation from renewable sources --- Version 11. The methodology also refers to the latest version (2.0) of "Tool to calculate the emission factor for an electricity system". The version 11 of the methodology applied is identical to the version available on the UNFCCC website.. All criteria for applicability of selected methodology are fulfilled. The project is a grid connected project and is confirmed from the Power Purchase Agreement, commissioning certificate and Government of Karnataka approval for setting-up the wind mill. The project is a Greenfield project activity and there will not be any significant emissions related to project and leakage.

5.2.2 Project Boundary

The project boundary includes the 39 nos of WTGs, the power generation unit, transformer yard, substation, transmission lines and southern grid and also all power stations connected physically to the southern grid. This was verified during site visit and also from central electricity authority website¹¹. No other source than the above mentioned will impact the project boundary. The project boundary is applied as per the methodology ACM0002 version 11. CL B10 was raised during the course of validation and successfully closed.

5.2.3 Baseline Identification

The project activity is grid connected renewable wind energy generation project. The project activity displaces equivalent amount of electricity in the regional grid which is predominantly fossil fuel based. The baseline for the project activity is the southern grid. In the absence of the project activity, equivalent amount of power would have been drawn from the grid with existing power plants connected to the system or future capacity additions. Calculations are based on data from the Central Electricity Authority (CEA), an autonomous body under the Ministry of Power, Government of India. The CEA has published on its website (<http://www.cea.org>). The value of emission coefficients for each regional grid arrived at by considering conservative values.

The operating margin emission factor of the southern grid is taken as 0.99815 tCO₂e/MWh and build margin emission factor of the southern grid is taken 0.71332 tCO₂e/MWh and thus the combined margin baseline emission factor of the southern grid has been calculated as 0.92694 tCO₂e/MWh. The value has been checked to have applied correctly. The baseline under the adopted methodology ACM0002 is calculated by multiplying the grid emission factor (kgCO₂/kWh) and the net electricity supplied (in kWh) by this project activity consisting 31.2 MW of 39 WTGs to the southern grid.

5.2.4 Calculation of GHG Emission Reductions

As per the monitoring procedure mentioned in ACM0002 methodology the data/parameters are rightly monitored. The significant parameters are the energy generated and the grid emission factor. The energy generation values are recorded from the Joint Meter Reading (JMR), recorded in the presence of KPTCL/HESCOM officials and PP representative. The Net electricity supplied to the grid is recorded by taking a monthly Joint Meter Reading (JMR) in the presence of Parties (Officials from off-taking Utility (HESCOM) and Enercon). The Joint meter reading contains the value of energy imported and exported and the net electricity supplied to the grid during the recording period. This Joint meter reading is certified by the Executive engineer of the off-taking utility and by Enercon Officials.

¹¹ <http://www.cea.nic.in/>



These certified readings are then used by the off-taking Utility (HESCOM) to prepare the tariff invoices. The project activity is the net electricity supplied to the grid as mentioned in the JMR which can be crosschecked with the value mentioned in the invoices.

The Grid Emission Factor based on combined margin approach remains fixed throughout the crediting period. This value has been sourced from the published values of Central Electricity Authority¹², CDM CO2 database, Version 4. All the values taken for GHG Emission Reduction calculations are transparent and conservative. The value taken for OM is 0.99815 tCO2e/MWh and BM is 0.71332 tCO2e/MWh. After applying weightage of 0.75 to OM and weightage 0.25 to BM., the combined margin value is calculated (0.92694 tCO2e/MWh) and is fixed ex-ante for the entire crediting period. The estimated emission mostly likely to be achieved during the fixed crediting period of 10 years is 640,950 tCO2e.

The estimated emissions are calculated by multiplication of the combined margin emission factor and expected net electricity supplied to the grid during the crediting period. The combined margin emission factor is calculated using the "Tool to calculate the emission factor for an electricity system" version 2.0 and the net electricity supplied to the grid is taken based on the PLF reported by the independent third party. The emission factor is fixed ex-ante and the net electricity supplied to the grid can be taken from JMR (Joint Meter Reading) and can cross checked from the invoices raised on state utility. Therefore the estimation ^{/ER/} of the emission reductions is verified to be conservative.

5.2.5 Additionality Determination

Consideration of CDM in decision making

The project start date is given as 2006.08.24 which is the date of placement of Purchase order for the project activity. Copy of the PO has been verified. As this document signifies the commitment of the PP to meet a major project related expenditure, considering this as the start date is in accordance with the CDM glossary of terms. So the project start date is before the commencing of validation.

As per Annex 22 of EB 49 the serious consideration of CDM is mentioned in the PDD. The documents verified regarding serious consideration of CDM are as follows;

Activity	Date
Board Resolution with serious consideration of CDM benefits and finalization of EPC Contractors	2006-08-23
Purchase Order	2006-8-24
Revised DPR submitted by Enercon to GEI	2007-02-01
Board Resolution	2007-02-05
Purchase Order - Amendment	2007-03-15
CDM Mandate	2007-03-26

¹² www.cea.nic.in.



Activity	Date
Loan Sanction Letter	2007-07-05
Transfer of Capacity to GEI by nodal agency	2007-09-01
PPA	2007-11-22
Stakeholder Consultation	2007-11-23
Commissioning of First WTG	2007-12-17
Loan Agreement	2008-01-29
PDD Preparation	2008-01-08 to 2008-02-08
HGA Submission	2008-03-10
HGA Meeting	2008-04-25
EB Rejected the benchmark of CERC	2007-06-17
Approach DoE	2008-07-16
Additionality tool version 5.2	2008-05-16
DNA Approval	2008-10-03
Commissioning of last WTG	2008-10-10
First wind power project to be registered with WACC in India	2008-10-27
ACM0002 was revised to version 08	2008-11-28
Revised PDD preparation	Nov-08 to Dec-08
ACM0002 was revised to version 09	2009-02-13
Appointment of DoE	2009-02-20
PDD Webhosting	2009-04-04 to 2009-05-03

From the chronology of events it has been noted that the PP had initiated all possible efforts to ensure CDM registration of the project, however the process has been delayed because of external factors like Land clearances, DNA approvals, EB decisions and changes in the CDM procedures which are found to be deemed acceptable.

Since the gap between documented evidence is not greater than 1 year TÜV-NORD assessed all above mentioned documents as a proof for continuing and real actions were taken to secure CDM status for the project activity. Thus as per EB 49, Annex 22, point number 8 the project activity is seriously considered to secure CDM status.

All the above mentioned documents are submitted by the project proponent to prove that the serious consideration was exercised to take the project as a CDM project activity. Thus it is confirmed that all the submitted documents are valid and appropriate for serious consideration of CDM as per Annex 22 of EB 49.

During the course of validation, CAR B1 and CL B6 were raised and successfully closed.

Application of methodology / methodological tools

Additionality justifications have followed the requirements of the additionality tool.

As per the tool for demonstration of additionality version 5.2, the project activity has demonstrated additionality based on

Step1: Identification of alternatives to the project activity consistent with current laws and regulations

Step 2: Investment analysis

Step 3: Barrier Analysis (No barrier analysis is considered for this project activity, therefore this step was not considered).

Step 4: common practice analysis.

Step1:

Alternatives The PDD contains a full list of all realistic alternatives to the project scenario. The alternatives selected by the PP are (1) The Project is not undertaken as a CDM project activity and (2) Setting up of comparable utility scale fossil fuel fired (gas or coal), biomass or hydro power projects that supply to the Karnataka grid under a PPA. Both the alternatives are in compliance with mandatory laws and regulations taking into account the enforcement in the region or country and EB decision on national and sectoral policies. Hence both the alternatives cited are credible and plausible. The third alternative scenario identified was 3) Continuation of the current situation. Analysing the power deficit situation in the state of Karnataka ^{/PS/}, it is not reasonable to assume that no other projects would be taken up in the absence of project activity. Hence the continuation of current situation is not a plausible alternative.

Thus the identification of alternatives is found to be in line with step 1a and step 1b of additionality tool.

Step 2:

Investment analysis

Project developer has demonstrated that the project is financially unattractive and would continue to remain financially unattractive even under optimistic assumptions, while it would become highly unattractive under pessimistic assumptions.

Validation Team adopted following strategy to ascertain the veracity of the conclusion drawn by the project developer,



a. Determining the suitability of the benchmark applied for the type of financial indicator presented;

The PP has chosen project IRR to demonstrate the additionality of the project. Additionality Tool (Ver. 05.2) permits the use of financial indicator, viz., IRR, for demonstrating the additionality using benchmark analysis. Considering the fact that the project is funded by debt and equity in the ratio of 75:25, and that the banks and project developers more often use project IRR to make investment decision, the selection of project IRR as financial indicator to demonstrate the additionality of the project is appropriate conforms to the Additionality Tool.

Additionality tool (ver. 05.2) states that the discount rates and benchmarks shall be derived from "Government/official approved benchmark where such benchmarks are used for investment decisions" among others. However, it is imperative that the benchmark selected should be *suitable* for the *type* of financial indicator presented. Guidance on the Assessment of Investment Analysis (Ver 02) states, "*Local commercial lending rates or weighted average costs of capital (WACC) are appropriate*".

The PP has chosen the weighted average cost of capital as a benchmark for comparison with Project IRR. In accordance with the investment guidance version 3, para 12, the weighted average cost of capital is appropriate benchmark for project IRR. Therefore weighted average cost of capital (WACC) was accepted as benchmark.

b) Parameters and assumptions used; cross checking of the parameters and Assessment of correctness of computation

Since, the board on 2006-08-23 has resolved to go ahead with CDM, TÜV NORD has validated the input parameters that were available at the time of investment decision, which have been sourced from the supplier's offer letter and the DPR dated 2006.

Though, due to subsequent addition of contingent cost to the total project cost offered by Enercon in its offer letter, the DPR has been revised on 2007-02-01 and also the board based on the second DPR has again resolved on date 2007-02-05 to proceed with the CDM, however, the validation team considered the first board resolution date as the investment decision date as the PP had already decided to invest in the project activity with CDM benefits in August 2006 itself.

TÜV NORD in its validation had considered only the first DPR values and not the second DPR values because the project IRR provided in the first DPR is found to be 8.38% whereas the project IRR provided in the second / revised DPR is 8.06%. The correctness of the presented/calculated IRRs in the DPRS was checked during validation by the validation team and found to be ok. Hence the overall project IRR with input values sourced from first DPR is more conservative than with the input values sourced from second DPR (after some conservative adaptations during validation e.g. using higher PLF based on EB 48 guidelines the project IRR works out to 9.35%).



Hence, referring to EB 51, Annex 58, Paragraph 6 of “Guidance of Assessment of Investment Analysis” TÜV NORD is able to confirm that the input values sourced from the supplier’s offer (2006-07-25) and DPR (2006-07-28) were agreeable for investment analysis, as all the input parameters sourced from these documents were prevailing during the investment decision time (2006-08-23) and are apart from that also more conservative than the values from the second DPR.

In the course of validating the parameters used in the IRR calculation supporting documents provided by the PP have been utilized and relevant background information such as public available sources are taken into account as well. After closure of respective CARs / CLs the validation team arrived at the conclusion that the assumptions and computations in the IRR spreadsheet are in line with the supporting documents provided by the PP. Thus, the validity of IRR calculation can be confirmed. The calculation of the financial indicator (project IRR) reflecting the project’s feasibility in financial terms has demonstrated its additionality when comparing the IRR with the benchmark value – Weighted average costs of capital (WACC) of 13.47%. The detailed assessment on financial parameters used in investment analysis is provided below and in Annex 3:

Project Cost: Project cost of Rs. 1554.15 Million is taken from the supplier’s offer letter for the project activity. The supplier’s offer letter was checked for the values applied in the financial additionality by the PP and found correct. To cross check the values, the purchase order placed by PP on the supplier was checked. The values in the purchase order were equal to the values provided in the offer letter. The project cost was also consistent with the values provided in the detailed project report dated 2006-07-28 based on which the PP has taken the decision dated 2006-08-23 to place purchase order on Enercon dated 200-08-24. The offer letter and detailed project report were available with PP on the decision making date and hence in accordance with the para 6 of guidance on investment analysis version 3 on input values, the project cost was accepted.

Plant Load Factor: The project proponent has provided the plant load factor estimated by C-WET (Center for Wind Energy Technology; the independent third party report dated May 2007) for estimation of generation from the project activity. The independent third party has provided the probable Minimum, Average and Maximum PLF values for the project site. In accordance with Annex 11, EB 48, the PLF provided by independent third party can be used for assessment of additionality. Therefore plant load factor of 25.30% provided by independent third party is accepted. Moreover, TÜV NORD compared the estimated PLFs of the project activity which were available before the investment decision of the project activity with the C-WET assessed PLF of 25.3% (available after investment decision) and derived a conclusion:

Estimated before decision	PLFs investment	Source	Observation
---------------------------------	--------------------	--------	-------------



26.5%	KERC dated 2005-01-18	4.7% increase in PLF sourced from KERC order when compared to the C-WET PLF analysis.
25.47%	Supplier's offer dated 2006-07-25	0.6% increase in PLF sourced from Supplier's offer dated 2006 when compared to the C-WET PLF analysis.
23.71%	Effective PLF (after adjusting for grid availability and transmission loss) based on DPR dated 2006-07-28	6.7% decrease in PLF sourced from DPR dated 2006-07-28 when compared to the C-WET PLF analysis

Further, the validation team concluded that the additionality of the project would not be affected with 0.6% increase in PLF (25.47%) and also with 4.7% increase in PLF (26.5%) . (even e.g. with a PLF of 32,5% the project is still additional. Infact, the investment analysis with the third party estimated PLF (25.3%) is found to be more conservative when compared with effective PLF (23.7%) sourced from first DPR which was prevailing during investment decision.

Tariff: Tariff is based on KERC order dated 2005-01-18 which was available at the time of decision making. The tariff of the project is governed by a legally binding Power Purchase Agreement (PPA) signed between the project developer and the off-taker. The fixed tariff of Rs. 3.40 is applicable for the PPA tenure which is 10 years. The KERC order dated 2005-01-18 states that: *"From 11th year onwards, from the date of signing of the agreement the corporation shall pay to the company for the energy delivered at the metering point at a rate based on operating costs and incentives to be agreed upon by mutual negotiations"*

In fact KERC, while working out the tariff schedule for wind energy projects for the first 10 years, has noted that the reduction in tariff from year to year is mainly on account of repayment of debts and also that there are no running costs other than O&M costs which increases only marginally from year to year. Page 19 of KERC order dated 18th January 2005¹³ is applicable to project activity was checked.

Therefore the project will not be able to obtain the same constant tariff beyond the PPA tenure. The tariff beyond the term of PPA is therefore determined as per KERC principle of cost plus 16% return on equity which is deemed acceptable.

Loan Tenure: The term loan of 10 years was considered by the PP in the detailed project report dated 2006-07-28 based on which the PP has taken its decision to invest in the project via its board resolution dated 23 Aug 2006. Further PP has

¹³ [http://www.kerc.org/order2005/Order%20on%20NCE%20Tariff%20\(FINAL\).doc](http://www.kerc.org/order2005/Order%20on%20NCE%20Tariff%20(FINAL).doc)



provided the KERC (Karnataka Electricity Regulatory Commission) order dated 18 Jan 2005 which provides for the provision of 10 year term loan.

Interest Rate: The rate of interest is applied from the data published by Reserve Bank of India in its weekly supplement dated 30 June 2006. All the data and parameters used in the financial analysis are based on DPR. The DPR was prepared in July 2006 and was based on the data available as of June 2006. The prime lending rate published by RBI is in range of 10.75% to 11.25% (source: <http://rbidocs.rbi.org.in/rdocs/Wss/PDFs/71184.pdf>) in its weekly supplement dated 30 June 2006. Therefore the applied average interest rate of 11% prevailing during June 2006 is acceptable.

Operation and Maintenance Cost: Operation and Maintenance cost is taken from the supplier's offer letter and this has been cross checked from the DPR dated 2006-07-28. The cost in the offer letter is equal to cost in DPR for operation and maintenance cost and hence is accepted.

Operation and Maintenance Cost Escalation: Escalation of 5% on Operation and Maintenance cost year on year is taken from the supplier's offer letter and this has been cross checked from the DPR. The escalation in the offer letter is equal to escalation in DPR dated 2006-07-28 for operation and maintenance cost and hence is accepted. However, on checking the operation and maintenance contract it was found that O&M contract is applicable for 10 years. PP was requested to clarify the same. The PP clarified that O&M cost for the project is expected to be lowest at the start of the project activity as the equipment is new and raise steadily as equipment grows older. The O&M cost therefore conservatively taken at escalation of 5% throughout the operational life of the project activity for demonstrating additionality.

Income Tax depreciation (Accelerated depreciation): The income tax depreciation rate is in conformity of the Appendix 1 of IT rules which allows the accelerated depreciation at a rate of 80%¹⁴ on renewable energy equipment. The spreadsheet has applied the accelerated depreciation as per IT rules and is accepted.

Income Tax rate: The income tax for the project activity confirms to the income tax rate applicable to the corporates in India. The income tax rate for year 2006-07 was 30% with surcharge of 10% and cess of 2% i.e. effective rate of 33.66%¹⁵. The spreadsheet was checked for application of income tax rate and was found acceptable.

Minimum alternative Tax: The income tax for the project activity confirms to application of minimum income tax rate in India. The Minimum alternative income tax rate for year 2006-07 was 10% with surcharge of 10% and cess of 2% i.e. effective rate of 11.22%¹⁶. The spreadsheet was checked for application of income tax rate and was found acceptable.

Tax Holiday: The energy companies in India are allowed the tax holiday for 10 consecutive years from the first 15 years¹⁷ on the income resulting from the energy

¹⁴ www.fastfacts.co.in/resources/DepIncomeTax.rtf

¹⁵ <http://exim.indiamart.com/budget-2006-07/>

¹⁶ <http://exim.indiamart.com/budget-2006-07/>

¹⁷ <http://exim.indiamart.com/budget-2006-07/>



business of the project activity in case of which Minimum alternative tax rate of 10% will apply instead of normal corporate tax rate of 30%.

Insurance: Insurance charge is taken from the DPR dated 2006-07-28 and is deemed appropriate. The insurance is also checked from the other wind power projects that are under CDM pipeline and was found acceptable.

Benchmark Analysis

The detailed assessment of assumptions used in calculation of WACC is provided below:

Market Return: The market return of BSE-Sensex, BSE-200 and BSE-500 (source: <http://www.bseindia.com/histdata/hindices.asp>) was checked for the period up to June 2006 i.e. for the data available at the time of decision making. Benchmark for the project was calculated based upon the data available during June 2006 and was considered by board for decision making on July 2006. Hence the applied market return values up to June 2006 are acceptable.

The market return for the BSE-Sensex was found to be the lowest and is chosen by for computing WACC. The approach used by PP is conservative and hence acceptable.

Beta: The beta values that are used by the PP for computation of WACC are taken from the Bloomberg. The PP has provided the list of the power companies are listed at BSE. Further PP has provided the beta snapshots for the period from 2001-07-31 to 2006-06-30 for the companies that have available data for such a period. The average beta for the selected companies that are listed and having data for the period of five years from the date of decision making was 1.18. The beta snapshots were checked and accepted.

Yield Rate: The yield rate used by PP is taken from Reserve Bank of India (RBI) for the latest financial year i.e. 2005-06. The upper and lower values that are published by RBI are 7.08% and 7.85%¹⁸. The average yield rate of 7.47% for the latest financial year 2005-06 was therefore accepted.

Interest Rate: The rate of interest is applied from the data published by Reserve Bank of India in its weekly supplement dated 30 June 2006. The prime lending rate published by RBI is in range of 10.75% to 11.25%¹⁹ in its weekly supplement dated 30 June 2006. Therefore the average interest rate of 11% is accepted.

Marginal Tax Rate: The loan tenure for the power projects is for the period of 10 years and tax holiday that is applicable to the power sector projects is for 10 consecutive years from the first 15 years. Therefore for the power a sector project that does not have to pay normal tax rate as a result of tax holiday have to pay

¹⁸ <http://rbidocs.rbi.org.in/rdocs/Publications/PDFs/87456.pdf>

¹⁹ <http://rbidocs.rbi.org.in/rdocs/Wss/PDFs/71184.pdf>



alternative marginal tax rate of 11.22%²⁰. Therefore marginal tax rate of 11.22% is accepted for computation of WACC.

Based on the above, the project IRR works out to 9.35% in contrast to the benchmark of 13.47%. In the above background, the Validation Team is convinced that the project is additional and not a business-as-usual scenario.

The project faces capital or investment return constraints that can be overcome by the additional revenues associated with the generation of CERs as described in the PDD and backed up by supporting documents.

TÜV-NORD considers the benchmark chosen is appropriate for the project activity as it is derived from values which are standard in the market and do reflect the investment in terms of expected revenues and risks associated with the investment in the project activity.

The validity of calculation results has been further substantiated applying a sensitivity analysis to variable parameters, i.e. PLF, tariff and project cost. It was verified that in this project activity, only the 3 parameters - capital cost, tariff and PLF constitute more than 20% of the project cost and revenues thus having material impact on project cost and revenues. Hence the selected parameters for sensitivity analysis are appropriate and found to be in line with EB 51 annex 58. The results of the same are as follows and substantiate the robustness of the benchmark analysis. The calculation has been reviewed and it is concluded that the project activity has IRRs less than the benchmark value, clearly indicating that the project is financially not feasible without carbon benefits.

Sensitivity Analysis

Capital cost

Capital Cost [In Million]	1398.74 (-10% over base case)	1554.15 (BASE CASE)	1709.57 (+10% over base case)
Post tax Project IRR without CER revenues	10.81%	9.35 %	7.70%

In accordance with the guidance on investment analysis, the PP has taken the project cost from the offer letter provided by the supplier. The project cost is also cross checked from the purchase order. The project cost in the offer letter provided by Enercon is same as the project cost in the purchase order placed by the PP on Enercon. The actual cost is equal to the cost provided in the detailed project report. The actual data was not available to PP at the time of decision making; therefore

²⁰ <http://exim.indiamart.com/budget-2006-07>



robustness of the project cost was checked at the variation of +/-10% which is deemed appropriate as the negotiation in capital cost beyond 10% is not reasonable.

Plant Load Factor

PLF	22.77% (-10% over base case)	25.3% (BASE CASE)	27.83% (+10% over base case)
Post tax Project IRR without CER revenues	7.81%	9.35 %	10.42%

The project proponent has provided the plant load factor estimated by C-WET (Center for Wind Energy Testing; the independent third party). The independent third party has provided the probable Minimum, Average and Maximum PLF values for the project site. The PLF report provides the following estimates:

- Estimated PLF – 25.3%
- Min PLF – 22.7%
- Max PLF – 27.8%

The above estimates provided by the independent third party have been considered to check the robustness of the financial additionality.

Tariff

Tariff for the project is fixed for the first 10 year period and is not subject to any variations. Tariff for the next 10 years is determined based on tariff principles followed by the KERC as a base case. The base case tariff for the period beyond the term of PPA works out to be Rs. 2.44 per unit. At a reasonable escalation in tariff of 10% (as per EB Guidance para 17, Annex 58 of EB 51), the tariff for the period beyond the term of PPA works out to be Rs. 2.68 per unit. However, not realistic but still in order to be conservative we have carried out a sensitivity of the IRR by considering tariff of Rs.3.40 beyond the 10th year. The project IRR considering tariff of Rs. 3.40 per unit for the period beyond the term of PPA is 10.66% which is lower than the benchmark.

The Project IRR does not cross the benchmark of 13.47% even with sensitivity analysis on all the parameters discussed above. Thus, the established investment Analysis has been assessed to be appropriate and sufficient in order to comply with relevant requirements such as EB 51, Annex 58. The arguments with supporting spreadsheets^{/IRR/} provide proof for the non-viability of the project.

In summary the validation team concluded that the project activity complies with all relevant additionality requirements and deemed that the investment barrier to be significant in order to prevent the project activity from being implemented without additional revenues from CERs.



During the course of validation CAR B2, CAR B3, CAR B6, CAR B8, CAR B9, CAR B10, CL B1, CL B2, CLB3, CL B5, CL B7, CL B9 were raised and successfully closed.

Step 3:

Barrier analysis

Investment analysis is identified for this wind project activity to prove additionality. No other barrier analysis is considered for this project activity.

Step 4:

Common practice analysis

All large scale wind projects, (greater than 15 MW) set up by individual investors in the state of Karnataka, have been analysed. The individual investors mentioned is not one proponent nor a single company. The consideration here has been for all the Project proponents who have invested in scale of projects more than 15 MW.

In India there are 95 individual investors who have wind installations greater than 15 MW which has been verified from the website²¹ and found to be correct. Out of these, there are 8 investors who have wind installations greater than 15 MW in the state of Karnataka which was subsequently checked from Directory of Indian Wind Power 2008^{/ IWP/} and found to have correctly applied. All private investors in the state of Karnataka with installations greater than 15 MW have developed their projects as CDM projects. As the analysis of wind mill installations have been done in the region of Karnataka, it has been concluded that the common practice analysis has been done in a defined scope i.e. (specified region - Karnataka). More over it proves that the wind power installations developed in this region are by the private investors and that have capacity greater than 15 MW are under CDM. So it has been concluded that the wind power installations without CDM activity in the defined region is not a common practice. Thus the common practice analysis with respect to WTG installations is in line with step 4a of the additionality tool version 5.2.

The wind tariff and other regulations concerning installations are governed by different state regulatory commissions in India. The project activity is located in the state of Karnataka and exports power to the state grid and wind mills in this region /state has been considered for common practice analysis. Since the policies and tariff regime is consistent throughout the state of Karnataka, TÜV NORD considers the selection of the region is appropriate. Thus through local and sectoral expertise, it has been found that the geographical scope of common practice analysis is appropriate for the assessment of common practice related to project activity's technology.

²¹ <http://www.windpowerindia.com/statpriv.html>



Bundled large scale projects are not compared for the analysis which was accepted by the validation team as the bundled large scale projects are in fact just an aggregation of multiple project activities that are bundled together for the sake of ease in CDM development (Consultancy, validation and verification charges and ease in co-ordination with single point of contact) and do not necessarily represent large scale projects investments. Each of the aggregated activities are independent project activities on their own, therefore unless these smaller activities are more than 15 MW (comparable size), they do not represent investments of similar scale.

As this project activity was under taken only by an individual investor GEI, this implied the investment was made by GEI alone. Thus the comparison with individual investors (who have invested in project capacity of more than 15 MW) is comparable and acceptable by TÜV NORD.

Hence, identification of similar projects developed by individual investors in the same geographical region (Karnataka) for the common practice analysis was assessed to be appropriate by the validation team.

As per VVM 1.2 para 120, based on the local and sectoral expertise, to further substantiate that wind power generation is not the common practice in Karnataka, TÜV NORD assessed the following information:

It was also noticed that against an assessed wind potential of 7470.165 MW, the state had installed wind capacity of 910.635 MW till 2007-2008 ^{/kredl/} i.e., before commissioning of wind turbines of the project activity. This shows that until 2007-08 , the installed capacity of wind energy in Karnataka was about 12% of its potential. Thus it has been confirmed through official sources and local and industry expertise, what extent similar and operational projects other than CDM project activities have been undertaken in the defined region and concluded that the project activity without CDM benefits is not a common practice.

It has been analysed the extent to which the wind energy projects have diffused in electricity sector in Karnataka in terms of power generated (based on 2004-05 latest available data) and found that the wind electricity generation in Karnataka was 489.53 GWh ^{/psr1/} and the total electricity availability at bus-bar in the state of Karnataka was 33,523.92 GWh ^{/psr 2/}. This works out to 1.46%, showing that wind energy generation is insignificant as compared to other power generation sources in Karnataka. Please note that this wind generation is for all wind projects (including CDM projects). If one were to remove the CDM wind generation from the above data, the percentage would be still lower.

Thus it has been confirmed through official sources and local and industry expertise, what extent similar and operational projects other than CDM project activities have been undertaken in the defined region and concluded that the project activity without CDM benefits is not a common practice in the region (Karnataka).



As there are no similar activities taking into account the fact that all the wind projects greater than 15 MW have considered CDM, step 4b is not required.

The common practice analysis is in line with tool for demonstration of additionality. During the course of validation, CAR B4, CL B4 and CL B8 were raised and successfully closed.

Summary

The procedure to justify the additionality of the project activity derived from the methodology or required by methodological tools has been applied correctly and is transparently and sufficiently documented in the PDD. The validation team verified the data, rationales, assumptions, justifications and documentations provided by PP to support the demonstration of additionality. Thus the project is found to be additional and the additionality is carried out as per the requirement of ACM0002. In this context refer CAR B2 to CAR B10 and CL B2 to CL B9

Considering all statements above, it is confirmed that the project activity is additional because anthropogenic emissions of greenhouse gases by sources are reduced below those that would have occurred in the absence of the project activity.

For an in depth evaluation of these topics, please refer to section 4 and section B4 of Annex 1. This section also contains the CARs, CLs and FARs related to this topic.

5.2.6 Monitoring Methodology

According to the methodology ACM0002, version 11, the applicable parameter to be monitored in respect to the grid connected wind power project activity is "Quantity of net electricity generation supplied by the project plant/unit to the grid in year y". Thus the Monitoring plan of the PDD has included "Net electricity supplied to the grid by the Project (EGy)" as one of the monitoring parameters of the project activity. The source of data, measurement procedures, monitoring frequency and QA/QC procedures in respect to the above monitoring parameter are found to be in compliance with the methodology requirement.

.In addition to the above parameter, the other parameters included under monitoring are:

- Electricity Export recorded at the meter(s) connected 39 machines of the project activity (GPe)
- Electricity Import recorded at the meter(s) connected 39 machines of the project activity (GPi)
- Transmission loss between the metering point for the project activity feeding the pooling substation of Enercon and the metering point at EB Substation (Li)



Net electricity supplied to the grid can be cross checked from the tariff invoices raised on KPTCL/HESCOM.

Electricity export, electricity import and Transmission loss between the metering point for the project activity feeding the pooling substation of Enercon and the metering point at EB Substation values can be directly taken from the joint meter report.

Thus the parameters to be monitored and the monitoring plan are in line with the methodology ACM0002 version 11.

5.2.7 Monitoring Plan

The monitoring plan covers the monitoring parameters as per the applied methodology ACM0002 version 11. All these parameters such as electricity export to the grid, electricity import to the grid and Net electricity supplied to the grid and transmission loss have been monitored with respect to project boundary. Each WTG is equipped with energy meter to measure the generated electricity. The energy meter is owned by KPTCL. The class of accuracy of the meter is 0.2. All meter are sealed and it is kept under the control of KPTCL. All these meters are calibrated once in a year as per the industrial standards.

The reading will be taken by the representatives of Enercon and the State utility at the meter(s) for the project activity connecting 39 turbines at the project site and feeding the pooling substation. This reading is recorded in the form of JMR (Form B) and is signed by the representatives of Enercon and State Utility. The electricity export and import will be metered at this metering point. Transmission loss between metering point feeding the pooling substation and the metering point at the EB Substation is applied to the meter reading taken at the feeder connecting 39 turbines of the project activity and feeding the pooling substation.

Transmission loss given in the JMR will be directly applied to the meter readings taken at the metering point of the project activity and feeding to pooling substation of Enercon. Net Electricity exported to the grid is calculated by applying transmission loss to the meter reading taken at the metering point of the project activity connecting 39 turbines and feeding to pooling substation of Enercon.

The Joint meter reading contains the following data:-

1. Electricity Export
2. Electricity Import
3. Transmission Loss (Between the metering point feeding the pooling substation and the EB substation)
4. Net Electricity supplied to the Grid [Electricity Export-Electricity Import-Transmission Loss]

The daily records for parameters such as power generation, frequency and voltage of the individual machines are noted by the SCADA system. These records are maintained by Enercon India Limited (the O&M contractor) and the PP.



Calculation of Data to be monitored:

$$EG_y = G_p - L_i$$

EG_y: Net Electricity supplied to grid by the project activity

G_p: Generation of electricity by the project activity recorded at the feeder connected to 39 turbines of the project activity [export (G_{pe}) – 115% *Import (G_{pi})]

L_i: Transmission loss

Transmission loss is certified by the state utility in JMR:

$$L = \sum_j G_j - N$$

$\sum_j G_j$: Summation of electricity generation data measured at all the feeders connected to pooling substation (Export)

N : Electricity generation data measured at Substation from the feeders emanating from the pooling substation (Export)

L : Total transmission loss

$$L_i = G_p * (L / \sum_j G_j)$$

Joint Meter reading is signed by the representatives of Enercon and the state utility. The meter readings (both export and import), transmission loss and net electricity supplied to the grid are noted in the JMR. Hence all these values can be reproduced from the JMR at the time of verification. The copies of the joint meter reports archive will be kept for the period up to two years after the completion of the crediting period.

The QA/QC procedures implemented to monitor and record the data are verified to be sufficient.

Thus the monitoring plan contains list of parameters to be monitored and means of monitoring which are found to be in line with the methodology.

By means of review of documented procedures, interviews with monitoring personnel and on –site visit verification, TÜV NORD concludes that the monitoring arrangements described in the monitoring plan are feasible. The data management and QA/QC procedures are sufficient to ensure that the Emission reductions achieved from the project activity can be verified.

5.2.8 Project Management Planning

The Project is operated and managed by GEI. The operational and maintenance contract for the project is with Enercon who provides the data of all monitored parameters to GEI for review. Enercon is an ISO 9001:2000 certified Quality Management system from Germanischer Lloyd. Enercon follows the documentation practices to ensure the reliability and availability of the data for all the activities related to Operation and maintenance. The project management planning is checked



to be sufficient to monitor and record the required parameters. This was cross verified during on-site visit. Crediting Period

5.2.9 Crediting Period

The crediting period mentioned in the PDD is the fixed crediting period of 10 years. The lifetime of the project activity is 20 years which is confirmed from the letter from the WTG Manufacturer and Supplier^{/LT/}. The operational lifetime considered, therefore, is in conformity with paragraph II (a) of Annex 15, EB 50. The crediting period start date is appropriate which is clearly explained under section C.2.2.1 of the PDD. The start date of the crediting period is 2011-04-01 or date of registration of the project activity with UNFCCC. During course of validation, CL C1 and CL C2 were raised and successfully closed.

5.2.10 Environmental Impacts

As per the Schedule 1 of the EIA notification 2006, given by the Ministry of Environment and Forests under the Environment (Protection)¹ Act 1986, the proposed wind project activity doesn't fall under the list of activities requiring EIA²².

CL D1 was raised during the course of validation and successfully closed.

5.2.11 Comments by Local Stakeholders

A local stakeholder meeting was conducted in Gadag District on 23 November 2007. Information about the proposed project has been given to the stakeholders through invitation and their comments have been recorded. The main parameter to assess the adequacy of the stakeholder consultation process was the cross section of the society that the invitees represented. The meeting was attended by local communities, farmers, officials of Gram Panchayat and O & M contractor Enercon s. Secondly, whether adequate and advance information was provided to the invitees about the likely agenda for the meeting and whether the information about the project was available to them before hand. That these two factors had been taken care of was confirmed during the interview with relevant stakeholders^{/SHC/} at the time of site visit. The participants were eager to see that the project was implemented early as it would help them / their dependents to get employment. Moreover, the minutes of Stakeholder meeting was verified. The comments received in respect to the project activity and the responses by PP to address all the comments were checked. The stakeholders comments listed in PDD like significant impact on the economic and social life in and around Gadag villages due to the wind power project, regarding the nature of benefits that local stakeholders will get, queries on effect on rainfall due to wind turbine, impact on crops and flora and fauna were also cross checked from interview with local stakeholders during site visit and thus the listed comments provided in the PDD is complete. The comments addressed by the PP are found to be realistic and acceptable.

²² <http://www.envfor.nic.in/divisions/iass/notif/eia.htm>



Thus, the stakeholder consultation process is considered adequate and satisfactory.

CL E1 was raised during the course of validation and finally closed.

The PDD was webhosted for a period of 30 days from 2009-04-04 to 2009-05-03 on the UNFCCC website in order to give Stakeholders the opportunity to comment on the project activity. No comment has been received during the 30 days web hosting time period.



6 VALIDATION OPINION

M/s. Generacion Eolica India Limited has commissioned the TÜV NORD JI/CDM Certification Program to validate the project: “GEI Wind Power Project in Karnataka, India”, with regard to the relevant requirements of the UNFCCC for CDM project activities, as well as criteria for consistent project operations, monitoring and reporting. UNFCCC criteria include article 12 of the Kyoto Protocol, the modalities and procedures for CDM (Marrakech Accords), and the relevant decisions by COP/MOP and CDM Executive Board.

The purpose of this project activity is to generate electricity using renewable sources (wind) and export to southern grid, thereby displacing the grid generated electricity.

In the course of the validation 12 Corrective Action Requests (CARs), 14 Clarification Requests (CLs) were raised and successfully closed.

The review of the project design documentation and additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up interviews and review of comments by parties, stakeholders and NGOs have provided TÜV NORD JI/CDM CP with sufficient evidence to validate the fulfillment of the stated criteria.

In detail the conclusions can be summarized as follows:

- The project is in line with all relevant host country criteria (India) and all relevant UNFCCC requirements for CDM project activity approval has been obtained from National CDM Authority as DNA of India vide the Letter of Approval (HCA) No.4/7/2008-CCC, dated 2008-10-03.
- The project additionality is sufficiently justified in the PDD.
- The monitoring plan is transparent and adequate.
- The calculation of the project emission reductions is carried out in a transparent and conservative manner, so that the calculated emission reductions of 640950 t CO₂e is most likely to be achieved within the 10 years (fixed) crediting period.

The conclusions of this report show, that the project, as it was described in the project documentation, is in line with all criteria applicable for the validation.

Bangalore, 2010-10-29

A handwritten signature in blue ink, appearing to read 'Ma.Paa.Puratchikkanal'.

Ma.Paa.Puratchikkanal
TÜV India Private Limited
Validation Team Leader

Essen, 2011-03-09

A handwritten signature in blue ink, appearing to read 'Eric Krupp'.

Eric Krupp
TÜV NORD JI/CDM CP
Final Approval



7 REFERENCES

Table 7-1: Documents provided by the project participant

Reference	Document																						
/BoD 1/	Management decision by M/s. Generacion Eolica India Limited with serious consideration of CDM benefits and finalization of EPC Contractors as well as committing investment into the project on 2006-08-23																						
/BoD 2/	Management decision by M/s. Generacion Eolica India Limited with serious consideration of CDM benefits took place on 2007-02-05 based on revised DPR dated 2007-02-01.																						
/BM/	Benchmark spreadsheet corresponding to version 6 of the PDD																						
/BS/	Beta snapshots for the companies CESC Ltd, Gujarat Industries, Neyveli Lignite Corporation, Reliance Industries and Tata Power taken from Bloomberg website																						
/C-WET/	C-WET report (dated May 2007) on site validation and generation estimate of proposed wind farm at Kurtkoti village of Gadag District in Karnataka.																						
/CC/	<div>Commissioning certificates of all 39 wind turbines from Karnataka Power Transmission Corporation Ltd. Dates of commissioning certificates as given in the certificates for commissioning is as under:</div> <table><tr><th>Loc.Nos.</th><th>No. of Machines</th><th>Commissioning Date</th></tr><tr><td>170a</td><td rowspan="4">4</td><td rowspan="4">17/12/2007</td></tr><tr><td>170</td></tr><tr><td>171</td></tr><tr><td>236</td></tr><tr><td>229</td><td rowspan="5">6</td><td rowspan="5">17/03/2008</td></tr><tr><td>181</td></tr><tr><td>180</td></tr><tr><td>163</td></tr><tr><td>226</td></tr><tr><td>230</td><td rowspan="4">8</td><td rowspan="4">25/06/2008</td></tr><tr><td>173</td></tr><tr><td>231</td></tr><tr><td>174</td></tr></table>	Loc.Nos.	No. of Machines	Commissioning Date	170a	4	17/12/2007	170	171	236	229	6	17/03/2008	181	180	163	226	230	8	25/06/2008	173	231	174
Loc.Nos.	No. of Machines	Commissioning Date																					
170a	4	17/12/2007																					
170																							
171																							
236																							
229	6	17/03/2008																					
181																							
180																							
163																							
226																							
230	8	25/06/2008																					
173																							
231																							
174																							



Reference	Document		
	233		
	232		
	234		
	169A		
	237		
	168	10	7/7/2008
	169		
	235		
	136		
	137		
	138		
	139		
	140		
	141		
	179		
	228	4	11/9/2008
	172		
	227		
	239		
	167	4	29/09/2008
	176		
	178		
	164		
	165	3	10/10/2008
	166		
	177		
	Total:	39	
/DPR/	Detailed Project Report Prepared by Enercon (India) Limited and submitted to Generacion Eolica India Limited dated 2006-07-28		
/ER/	Emission Reductions calculation spreadsheet corresponding to version 5 of PDD		
/EI/	Electrical Inspectorate Certificates received from Government of Karnataka for 39 WTGs with reference numbers CEIG/DEI-1/ 23724-29/2008-09 dated 2008-10-06; CEIG/DEI-1/ 35506-11/2007-08 dated 2008-02-16, CEIG/DEI-1/ 18962-67/2008-09 dated 2008-09-04, CEIG/DEI-1/ 37838-43/2008-09 dated 2008-03-03, CEIG/DEI-1/ 22419-24/2008-09 dated 2008-09-26, CEIG/DEI-1/ 8895-900 /2008-09 dated 2008-06-19, CEIG/DEI-1/ 10599-604		



Reference	Document
	/2008-09 dated 2008-07-02.
/FS/	Financial Statement of the Company M/s. Generacion Eolica India Limited for FY 2007-08
/HCA/	Host Country Approval from Ministry of Environment & Forests, Govt of India, No. 4/7/2008-CCC dated 2008-10-03
/INS/	Insurance premium receipts from Royal Sundaram Alliance Insurance Company Limited dated 2009-01-29
/INDICES/	List of companies under Sensex and BSE indices. (Sensex constituents; BSE 100 index constituents; BSE 200 index constituents; BSE TECK index constituents; BSE –PSU index constituents; BSE Sectoral indices constituents; BANKEX constituents; BSE-Mid-cap constituents; BSE-Small-cap constituents; BSE IPO index constituents)
/IRR/	Investment analysis calculation sheet corresponding to version 6 of PDD
/IWP/	Directory for Indian wind Power 2008
/JMR/	Sample Joint Meter Report for the month June 2010 to cross check monitoring plan.
/KA/	Government of Karnataka approval letter dated 2007-09-01
/LA/	Loan Agreement between M/s. Generacion Eolica India Limited and Indian Renewable Energy Development Agency dated 2008-01-29
/LOAN/	Loan Sanction Letter of Term Loan dated 2007-07-05 from IREDA
/LT/	Manufacturer and equipment supplier certificate for lifetime of WTG given by Enercon (India) Limited stating the technical life time of WTG as 20 years.
/LAND/	Land sale deeds documents between M/s. Enercon (India) Limited and M/s. Generacion Eolica India Limited dated 2008-12-23, 2009-02-04, 2009-01-22, 2009-02-27.
/OMP/	Operation & Maintenance Contract / Procedure-For starting 10 Years contract between M/s Enercon (India) Ltd and M/s Generacion Eolica India Limited dated 2008-07-04 for 39 WTGs.
/ORG/	Organizational chart
/PDD /	1. Draft Project design document: “GEI Wind Power Project in Karnataka,



Reference	Document
	<p>India" (hosted for public comments during 04/04/2009 to 03/05/2009).</p> <p>2. Project design document incorporating corrections out of Draft Validation Report. Dated 2009-07-30 version 02</p> <p>3. Project design document "GEI Wind Power Project in Karnataka, India" dated 2009-09-08, version 03.</p> <p>4. Project design document "GEI Wind Power Project in Karnataka, India" dated 2010-07-28, version 04</p> <p>5. Project design document "GEI Wind Power Project in Karnataka, India" dated 2010-10-01, version 05.</p>
/PDD F/	<p>Project design document "GEI Wind Power Project in Karnataka, India" dated 2010-10-20, version 06.</p> <p>Project design document "GEI Wind Power Project in Karnataka, India" dated 2011-02-25, version 07.</p>
/PO/	Purchase Order No. GEI/2006-2007/EIL-101 dated 24/08/2006 issued to M/s. Enercon (India) Ltd, Mumbai for the supply, Installation and commissioning of 39 nos of 800kW Wind Turbine Generator(s) by M/s Generacion Eolica India Limited.
/PO- AD/	Amendment to purchase Order Ref No. GEI/2006-2007/EIL-101 dated 24/08/2006 issued to M/s. Enercon (India) Ltd, Mumbai for the supply, Installation and commissioning of 39 nos of 800kW Wind Turbine Generator(s) by M/s Generacion Eolica India Limited dated 2007-03-15.
/PPA/	Power purchase agreement for 31.2 MW wind mill power project between Hubli Electricity Supply Company Limited and M/s. Generacion Eolica India Limited dated 2007-11-22
/PS/	Southern region Power sector profile given by Ministry of power, Government of India released during January 2007
/RDPR/	Revised Detailed Project Report prepared by Enercon (India) Limited and submitted to Generacion Eolica India Limited dated 2007-02-01
/SOP/	Enercon (India) Limited offer for the supply of 39 x800 KW WTGs for M/s. Dated Generacion Eolica India Limited 2006-07-25
/SHC/	Proof of local stakeholder consultation process (dt. 2007-11-23) at Gadag district and communication. Stakeholders invitation letter dated 2007-11-03
/TC/	Meter test report from Hubli Electricity Supply Company Limited dated 2009-02-27.
/TRG/	Training records for operation and maintenance



Reference	Document
/WO/	Placement of Work order for DoE Appointment to TUV India Limited dated 2009-02-20

Table 7-2: Background investigation and assessment documents

Reference	Document
/ACM0002/	ACM0002 : “Consolidated baseline and monitoring methodology for “Grid-connected electricity generation renewable sources (version 11)
/CPM/	TÜV NORD JI / CDM CP Manual (incl. CP procedures and forms)
/EF tool/	Tool to calculate the emission factor for an electricity system version 2.
/EB 51 annex 58/	Guidelines on the Assessment of Investment Analysis version 3.
/EB 50 annex 15/	Tool to determine the remaining lifetime of equipment version 1.
/EB 49 annex 22/	Guidelines on the demonstration and assessment of prior consideration of the CDM version 3.
/EB 48 annex 11/	Guidelines for the reporting and validation of plant load factors, version 1.
/GCP/	UNFCCC: Guidelines for completing CDM-PDD (Version 07)
/IPCC-GP/	IPCC Good Practice Guidance & Uncertainty Management in National Greenhouse Gas Inventories, 2000
/IPPC-RM/	Revised 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Reference Manual.
/KP/	Kyoto Protocol (1997)
/kredl/	http://www.kredl.kar.nic.in/docs/Yearwise_allotment_and_commissioned_wind_power_projects.xls
/MA/	Decision 17/CP. 7 (Marrakesh – Accords & Annex to decision 17/CP.7)

Reference	Document
/psr 1/	Table 3.4 titled “Gross Electrical Energy Generation (Utilities Only) Prime mover-wise, Region-wise / State-wise During 2004-05” in chapter 3 of the CEA general review 2006 available at http://www.cea.nic.in/power_sec_reports/general_review/index_general_Review.html
/psr 2/	Table 5.3 titled “State wise System Losses During 2004-05” in chapter 5 of the CEA General review 2006 available at http://www.cea.nic.in/power_sec_reports/general_review/index_general_Review.html
/VVM/	Validation and Verification Manual (Version 1.1, Annex 3; EB 51), version 1.2, annex 1, EB 55.

Table 7-3: Websites used

Reference	Link	Organisation
/cea/	http://www.cea.nic.in/planning/c%20and%20e/Government%20of%20India%20website.htm	Central Electricity Authority
/unfccc/	http://cdm.unfccc.int	UNFCCC
/BSE/	http://www.bseindia.com/historical/hindices.asp	BSE India (Used for checking the values used to compute Market return for BSE Sensex, BSE 200 and BSE 500)
/eia/	http://www.envfor.nic.in/divisions/iass/notif/eia.htm	Ministry of Environment and Forests (used for checking EIA requirements)
/wp/	http://www.windpowerindia.com/statpriv.html	Wind Power India (Used for checking common Practice)
/cdmindia/	http://cdmindia.nic.in/host_approval_criteria.htm	Ministry of Environment and Forest (Used for checking HGA)
/RBI 1/	http://rbidocs.rbi.org.in/rdocs/Wss/PDFs/71184.pdf	Reserve Bank of India (Prime Lending Rate for June 2006)
/YR/	http://rbidocs.rbi.org.in/rdocs/	Reserve Bank of India (Yield Rate for year

Reference	Link	Organisation
	Publications/PDFs/87456.pdf	2005-06)
/LAT-LON/	http://www.satsig.net/maps/lat-long-finder.htm	Satellite signal (Used to cross check the location of site and WTGs)
/invest/	http://www.investopedia.com/articles/06/CAPM.asp	Investopedia (used to cross check CAPM approach used by PP)
/ba/	http://books.google.com/books?id=DPK43Sku2PsC&pg=PA219&lpg=PA219&dq=adjustment+of+current+assets+kris hna&source=bl&ots=YX7n9YGjRg&sig=npIFIHuMfdR5CyTnSmzbPYcGcSI&hl=en&ei=KH3hSpyLJZSMtgfG9-y7AQ&sa=X&oi=book_result&ct=result&resnum=1&ved=0CAwQ6AEwAA#v=onepage&q=&f=true	Business Analysis (used to check the applicability of increase and decrease of asset in the cash flow)
/EB 1/	http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v5.2.pdf	UNFCCC (Tool for demonstration and assessment of additionality version 5.2)
/EB 2/	http://cdm.unfccc.int/UserManagement/FileStorage/HGY3TLRFPQVM016WA4I7XCZD92KE5S	UNFCCC (Version 11 of ACM 0002)
/KERC/	http://kerc.org/NCE-PUBLIC-HEARING-23-10-2007/4%20KERC%20Order%20DATED%2018.1.2005%20on%20NCE%20Tariff%20.doc	Karnataka Electricity Regulatory Commission (Tariff order dated 2005-01-18 applicable for the project activity)
/RF/	http://pages.stern.nyu.edu/~adamodar/pdfiles/papers/beta.pdf	Estimation of risk factors by Aswath Damodran;
/IT-C/	http://www.rashminsanghvi.com/Contents1.htm	Rashim & Sanghvi Associates (Corporate Tax Rate for 2005-06)
/IT-DP/	www.fastfacts.co.in/resources/DepIncomeTax.rtf	Income Tax Dept (Accelerated depreciation of 80% for wind mills)



Reference	Link	Organisation
/IT-H/	http://www.incometaxindia.gov.in/acts/income%20tax%20act/80-ia.asp	Section 80IA of IT Act (Tax holiday for 10 consecutive years from the first 15 years)
/IT-M/	http://www.rashminsanghvi.com/Contents1.htm	Rashim & Sanghvi Associates (Minimum Tax Rate for 2005-06)

Table 7-4: List of interviewed persons

Reference	Mol ¹		Name	Organisation / Function
/IM02/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Saujanya Kumar	Enercon (India) Limited
/IM02/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Rohit Joshi	Enercon (India) Limited.
/IM01/	T	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	Ignacio Moreno Hernandez	M/s Generacion Eolica India Limited
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	Aveg Agarwal	M/s Generacion Eolica India Limited

¹⁾ Means of Interview: (Telephone, E-Mail, Visit)

ANNEX

- A1:** Validation Protocol
- A2:** Assessment of Baseline Identification
- A3:** Assessment of Financial Parameters
- A4:** Assessment of Barrier analysis
- A5:** Outcome of the GSCP
- A6:** Appointment certificates of the team members



ANNEX 1: VALIDATION PROTOCOL

Table A-1: Requirements Checklist

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
A. General Description of Project Activity				
A.1. Approval <i>The written approval of the parties involved is a mandatory requirement</i>				
A.1.1. Has the project provided written approvals of all parties involved? (EB 55 Annex 1, § 44) <i>Indicate whether a letter of approval has been received, with a clear reference to the supporting documentation.</i> <i>Indicate whether this letter was provided to the DOE by the project participants or directly by the DNA</i>	<i>Description:</i> Host Country (India) is the only party involved in the project activity. The project has been provided with host country approval from the DNA, the Ministry of Environment and Forests (MoEF), Government of India. Letter of approval bearing number 4/7/2008-CCC dated 2008-10-03 from Ministry of Environment and Forests, DNA, Government of India, has been received by the Project Participants (PP) and was provided to TÜV NORD by the PP “M/s. Generacion Eolica India Limited”. <i>Justification of evidences:</i> The letter of approval for the project “GEI Wind Power Project in Karnataka, India” bearing the reference number 4/7/2008-CCC	/HCA/	CAR A1	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<p>dated 2008-10-03 from Ministry of Environment and Forests, DNA, Government of India, the host country has been submitted by the PP and was verified. The host country approval status was subsequently cross checked from the CDM India website²³.</p> <p><i>Conclusion:</i></p> <p>The Project has been provided with the letter of approval from the host Country, which was submitted to TÜV NORD by the PP. The letter of approval was checked and found to meet the requirements, In this context refer finding CAR A1.</p>			
<p>A.1.2. Are the approvals issued from organisations listed as DNAs on the UNFCCC CDM website?</p> <p>(EB 55 Annex 1, §§ 44, 47, 48, 49 (b), 49 (c), 53)</p> <p><i>Indicate the means of validation employed to assess the authenticity, i.e. in case of doubt whether LoA has been verified with the DNA. Further describe which entity submitted the LoA for validation.</i></p>	<p><i>Description:</i></p> <p>The approval is issued by the National Clean Development Mechanism (CDM) Authority, Ministry of Environment & Forests, listed in the UNFCCC website as the DNA in India.</p> <p>The validation team has checked the letter and confirmed that the approval has been issued by the Ministry of Environment & Forests, the DNA of India mentioned in the UNFCCC CDM Website. Moreover, the issuance of approval was confirmed by checking the website of the National CDM Authority, MoEF, Government of India.</p> <p><i>Justification of evidences:</i></p> <p>The letter of approval for the project “GEI Wind Power Project in Karnataka, India” bearing the reference number 4/7/2008-CCC dated 2008-10-03 from Ministry of Environment and Forests, Government of India, DNA, has been submitted by the PP and was verified. Moreover, the following web link has been cross checked regarding the status of approval.</p>	/HCA/	CAR A1	OK

²³ <http://cdmindia.nic.in/#>

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<p>http://cdmindia.nic.in/cdmindia/projects/PCN_893_08.pdf .</p> <p>The list of DNA were checked from the following UNFCCC web link, http://cdm.unfccc.int/DNA/index.html and confirmed that the National Clean Development Mechanism (CDM) Authority, Ministry of Environment & Forests, as the DNA for India</p> <p><i>Conclusion:</i></p> <p>The letter of Approval from the host Country was submitted by the PP to TUV- NORD. The validation team verified the letter and confirmed that the approval has been issued by the National Clean Development Mechanism (CDM) Authority, Ministry of Environment and Forests, Government of India, which is the DNA for India as listed in unfccc website.</p> <p>In this context see CAR A1.</p>			
<p>A.1.3. Do the written approvals confirm that the corresponding party is a Party to the Kyoto Protocol?</p> <p>(EB 55 Annex 1, § 45(a))</p>	<p><i>Description:</i></p> <p>The letter of approval from the host country has been submitted by PP to TUV NORD. The validation team has checked the letter and found that the host Country, India (the party listed in the PDD), is a party ratified to the Kyoto Protocol on 26 August 2002.</p> <p><i>Justification of evidences:</i></p> <p>The letter of approval for the project “GEI Wind Power Project in Karnataka, India” bearing the reference number 4/7/2008-CCC dated 2008-10-03 from Ministry of Environment and Forests, Government of India, DNA, was verified</p> <p><i>Conclusion:</i></p> <p>On verification of Letter of approval from Ministry of Environment</p>	/HCA/	CAR A1	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	and Forests, DNA, Government of India, it has been confirmed that the host Country India has been ratified to the Kyoto Protocol on 26 August 2002 However during the initial course of validation, it was noted that the letter of approval was missing in the documentation and hence the PP was asked to submit the same. So CAR A1 was raised.			
A.1.4. Do the written approvals confirm that the participation is voluntary? (EB 55 Annex 1, § 45(b))	<i>Description:</i> The letter of Approval confirms that the participation is voluntary. The PP had submitted the letter of approval from host country to TÜV NORD. The validation team has checked the letter which states “This is the approval of voluntary participation in the proposed CDM Project activity” <i>Justification of evidences:</i> Letter of approval bearing number 4/7/2008-CCC dated 2008-10-03 from Ministry of Environment and Forests, DNA, Government of India, the host country has been verified to confirm that the participation of the project is voluntary. <i>Conclusion:</i> The letter of approval has been verified and confirmed that the participation of proposed CDM Project is voluntary. CAR A1 is closed.	/HCA/	CAR A1	OK
A.1.5. Does the written approval from the host	<i>Description:</i>	/HCA/	CAR	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
country confirm that the project contributes to the sustainable development in the country? (EB 55 Annex 1, § 45(c))	<p>The letter confirms that the project contributes to Sustainable Development of India.</p> <p>The PP had submitted the letter of approval from host country to TÜV NORD. The validation team has checked the letter which states "The Project contributes to Sustainable Development in India".</p> <p><i>Justification of evidences:</i></p> <p>Letter of approval bearing number 4/7/2008-CCC dated 2008-10-03 from Ministry of Environment and Forests, DNA, Government of India, the Host country has been verified in respect to the contribution of Project to sustainable development in the Country.</p> <p><i>Conclusion:</i></p> <p>Thus from verification of the letter of approval from host Country, it has been confirmed that the project contributes to Sustainable Development of India. CAR A1 is closed.</p>		A1	
A.1.6. Do the written approvals refer to the precise project title in the PDD submitted for registration or an additional specification of the project activity, e.g. PDD version number? (EB 55 Annex 1, §§ 45(d), 50)	<p><i>Description:</i></p> <p>The title in the HCA is "GEI Wind Power Project in Karnataka, India" and tallies with the project title mentioned under section A.1 of the PDD version no 3.</p> <p>The letter of approval from host country was submitted to TÜV NORD by PP. The validation team has checked the letter stating the title of the project as "GEI Wind Power Project in Karnataka, India" which tallies with the PDD title.</p> <p><i>Justification of evidences:</i></p>	/HCA/ /PDD F/	CAR A1	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<p>The Letter of Approval (HCA) No: 4/7/2008-CCC dated 2008-10-03 from the Ministry of Environment and Forests, DNA, submitted by PP was verified.</p> <p>The PDD version no: 4, dated 2010-07-28 was cross checked to confirm the same.</p> <p><i>Conclusion:</i></p> <p>Thus from verification of the letter of approval, it was concluded that the letter of approval from DNA, India refers to the precise project title mentioned in the PDD version no 4 (latest version).</p>			
<p>A.1.7. Are the written approvals unconditional with regard to A.1.3 to A.1.6?</p> <p>(EB 55 Annex 1, § 46)</p>	<p><i>Description:</i></p> <p>The written approval with regard to A.1.3 to A.1.6 of this checklist is unconditional.</p> <p><i>Justification of evidences:</i></p> <p>The Letter of Approval (HCA) No: 4/7/2008-CCC dated 2008-10-03 from the Ministry of Environment and Forests, DNA, was verified.</p> <p><i>Conclusion:</i></p> <p>The letter of approval has been verified and thus with regard to A.1.3 to A.1.6 of this checklist, it is found to be unconditional.</p>	/HCA/	OK	
<p>A.1.8. Is the information regarding the project participants listed in section A3 and in Annex 1 of the PDD internally consistent to each other?</p> <p>(EB 55 Annex 1, § 51)</p>	<p><i>Description:</i></p> <p>The information regarding the project participants listed in section A.3 and in Annex 1 of the PDD has been checked to be internally consistent to each other.</p>	/HCA/ /PDD F/	OK	

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<p><i>Justification of evidences:</i></p> <p>PDD version 4 was checked in respect to the information regarding Project participant. The name of the PP mentioned in the PDD was cross checked with the name indicated in the Host Country approval and found to be the same.</p> <p><i>Conclusion:</i></p> <p>The name of the Project Participant (PP) as shown in section A.3 and in Annexure 1 of the PDD version 4 is consistent.</p> <p>Hence no further corrective actions or clarifications necessary.</p>			
<p>A.1.9. Are all project participants listed in the PDD approved at least by one Party involved?</p> <p>(EB 55 Annex 1, § 51)</p> <p><i>Indicate whether the participation of the project participant(s) has been approved by a Party to the Kyoto Protocol.</i></p> <p><i>Describe the means of validation employed to draw this conclusion.</i></p>	<p><i>Description:</i></p> <p>The project has single project participant, M/s Generacion Eolica India Limited. More over the Host Country (India) and Party to the Kyoto Protocol, has approved the project participant through its letter of approval. The host country approval letter submitted by the PP was checked to have clearly stating that the project participant as M/s. Generacion Eolica India Limited.</p> <p>But during the initial stage of validation, as the letter of approval was missing in the documentation, the PP was asked to submit the same and hence CAR A1 was raised. In response to the DVR, the PP had submitted the letter of approval from host country to TÜV NORD. The validation team has checked the letter stating the name of the Project Proponent as “M/s Generacion Eolica India Limited” which tallies with the name of PP mentioned in the PDD.</p> <p><i>Justification of evidences:</i></p> <p>The Letter of Approval (HCA) No: 4/7/2008-CCC dated 2008-10-</p>	/HCA/	CAR A1	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<p>03 from the Ministry of Environment and Forests, DNA, was verified.</p> <p><i>Conclusion:</i></p> <p>Thus the listed Project participant in the PDD has been approved by the Host Country through its letter of approval. In this context refer CAR A1.</p>			
<p>A.1.10. Are any other project participants approved but not listed in the PDD?</p> <p>(EB 55 Annex 1, § 52)</p>	<p><i>Description:</i></p> <p>The DNA has approved only one PP which is included in the PDD. There is no other PP approved by the DNA but not listed in the PDD. The host country approval letter has been verified to have approved only M/s. Generacion Eolica India Limited.</p> <p><i>Justification of evidences:</i></p> <p>The Letter of Approval (HCA) No: 4/7/2008-CCC dated 2008-10-03 from the Ministry of Environment and Forests, DNA, submitted by PP was verified.</p> <p><i>Conclusion:</i></p> <p>The DNA has approved only one PP which is included in the PDD.</p>	/HCA/ & /PDD/	OK	OK
<p>A.1.11. Does the DoE have a direct contractual relationship with the PP?</p> <p>(EB 55 Annex 1, § 51; EB 50 Annex 48, §§ 7–9)</p> <p><i>Check whether the PPs listed in the published PDD are still listed in the PDD going to be submitted to request for registration.</i></p>	<p><i>Description:</i></p> <p>Yes. TÜV NORD has a direct contractual relationship with the PP.</p> <p>The PP listed in the Published PDD and the latest version of the PDD is found to be same. The Validation proposal between TÜV-Nord and GEI was checked. The work order placed by PP to TÜV NORD has been checked and concluded that the DOE has a direct contractual relationship with the PP.</p>	/PDD F/ /PDD / /wo/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<p><i>Justification of evidences:</i></p> <p>Validation Proposal as well as work order placed by PP to TÜV NORD was checked. Moreover the PP's name mentioned in the webhosted PDD as well as in the final version of the PDD was checked to be same.</p> <p><i>Conclusion:</i></p> <p>TÜV NORD has a direct contractual relationship with the PP. Moreover, published PDD and the latest version of the PDD were verified to have the PP's name as consistent.</p>			
<p>A.2. Contribution to Sustainable Development</p> <p><i>The project's contribution to sustainable development is assessed.</i></p>				
<p>A.2.1. Has the host country confirmed that the project assists it in achieving sustainable development?</p> <p>(EB 55 Annex 1, §§ 125–127)</p> <p><i>Contains a statement confirming whether the letter of approval by the DNA of the host party confirmed the contribution of the project to the sustainable development of the Host Party.</i></p>	<p><i>Description:</i></p> <p>The Host Country (India) has confirmed that the project contributes to Sustainable Development of India through its approval letter.</p> <p>The letter of approval from host country was submitted by PP to TÜV NORD. The validation team has checked the letter which states "The Project contributes to Sustainable Development in India"</p> <p><i>Justification of evidences:</i></p> <p>Letter of approval bearing number 4/7/2008-CCC dated 2008-10-03 from Ministry of Environment and Forests, DNA, Government of</p>	/HCA/ & /PDD/	CAR A1	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<p>India, the host country has been verified in respect to project's contribution to sustainable development</p> <p><i>Conclusion:</i></p> <p>It has been verified and concluded from the statement of the letter of approval from HCA, which confirms that the project contributes to Sustainable Development of India. In this context refer CAR A1 is closed.</p>			
<p>A.2.2. Will the project create other environmental or social benefits than GHG emission reductions?</p> <p>(EB 55 Annex 1, §§ 125–127)</p> <p><i>Describe the other positive aspects not related to GHG emission reduction on the environment.</i></p>	<p><i>Description:</i></p> <p>Yes, it is expected to increase the employment potential for local community people like security and also maintenance work. The construction of project activity also enhances the quality of living by infrastructure development.</p> <p><i>Justification of evidences:</i></p> <p>Local stakeholder's assessment reports were verified to have included the positive aspects of the project activity. This was further substantiated from interviews with local people during the site visit.</p> <p><i>Conclusion:</i></p> <p>From verification of Local stakeholder's comments as well as from the interaction with local people during the site visit, it is deemed acceptable that the project has created environmental and social benefits other than GHG emission reduction.</p>	<p>/HCA/ /SHC/</p>	<p>OK</p>	<p>OK</p>

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
A.3. PDD editorial aspects <i>The PDD used as a basis for validation shall be prepared in accordance with the latest template and guidance from the CDM Executive Board available on the UNFCCC CDM website.</i>				
A.3.1. Has the latest version of the PDD form been applied? (EB 55 Annex 1, § 55)	<p><i>Description:</i></p> <p>Yes. The PDD has been prepared in the approved format (CDM-PDD) Version 03 in effect as on 28 July 2006.</p> <p><i>Justification of evidences:</i></p> <p>The following web link has been referred to check the latest version of the PDD format uploaded in the UNFCCC website. http://cdm.unfccc.int/Reference/PDDs_Forms/PDDs/PDD_form04_v03_2.pdf. It was found that version 3 is the latest version of PDD form available. The Project activity's PDD has used version 3 (latest) of PDD form available in UNFCCC website.</p> <p><i>Conclusion:</i></p> <p>The project description is checked to have presented in the latest template version 3 of PDD form available in the UNFCCC website.</p>	/UNFCC C/ /PDD F/	OK	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
A.3.2. Has the PDD been duly filled in accordance with the latest guidance(s)? (EB 55 Annex 1, §§ 56–57)	<p><i>Description:</i></p> <p>Yes, the PDD has been duly filled in accordance with the Guidelines Project Design Document (CDM-PDD) and the Proposed new baseline and monitoring methodologies (CDM-NM) version 7, EB 41 annex 12.</p> <p><i>Justification of evidences:</i></p> <p>The following web link can be referred to check the latest version of the Guidelines to develop PDD. http://cdm.unfccc.int/Reference/Guidclarif/pdd/PDD_guid04_v07.pdf. Version 7 is the latest guideline available in UNFCCC website. The PDD has been checked to have followed the latest guidelines.</p> <p><i>Conclusion:</i></p> <p>The PDD has been developed based on the Guidelines for completing the simplified project design document (CDM-PDD), version 07. It is checked from UNFCCC website and the same procedure has been found to be adopted in the PDD.</p>	/UNFCC C/ /PDD F/	OK	OK
A.4. Technology to be employed <i>Validation of project technology focuses on the project engineering, choice of technology and competence/ maintenance needs. The DOE should ensure that environmentally safe and sound technology and know-how is used.</i>				
A.4.1. Does the PDD contain a clear, accurate and complete project description?	<p><i>Description:</i></p> <p>Yes the PDD contains clear, accurate and complete description of</p>	/PDD/ A.2,	OK	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
<p>(EB 55 Annex 1, §§ 58–59)</p> <p><i>The PDD shall contain a clear description of the project activity which provides the reader with a clear understanding of the precise nature of the project activity and the technical aspects of its implementation.</i></p> <p><i>Pl. consider esp. chapters A.2, A.4.2 and A.4.3 (in case of LSC PDD) for assessment.</i></p> <p><i>Describe the process undertaken to validate the accuracy and completeness of the project description.</i></p> <p><i>Contain the DOE’s opinion on the accuracy and completeness of the project description.</i></p>	<p>project activity. The project activity involves installation of 39 nos of 800 KW capacity WTGs (E-53) supplied by Enercon (India) Limited. The total capacity of the project activity is about 31.2MW. The generated electricity is supplied to Karnataka state grid which is a part of Southern Grid. The Project is located at Harthi, Kurtakoti & Malasamudra villages in Gadag district of Karnataka state in India.</p> <p>The project activity is grid connected renewable power generation hence Consolidated baseline and monitoring methodology for “Grid-connected electricity generation from renewable sources” (ACM 0002, Version 11) is applicable.</p> <p>The technical descriptions of the project activity has been tabulated in section A.4.3 of the PDD is found to be OK.</p> <p><i>Justification of evidences:</i></p> <p>The technical specification of E-53 WTGs provided in the PDD has been cross verified from technical specifications of the WTG (E-53) provided in Manufacturers certificate on technical lifetime. The technical descriptions were also checked from http://www.thewindpower.net/wind-turbine-datasheet-4-enercon-e53-800.php we blink which is publically available. Moreover, the project description and nature of the project activity is found to be in line with real site conditions which were checked during on site visit.</p> <p><i>Conclusion:</i></p> <p>To validate the completeness of the project description, the validation team had visited the site on 2009-07-16 and 2009-07- 17. The purpose and nature of the project activities are observed in similar project activities in the geographical region which are in</p>	<p>A.4.2, A.4.1.3 /PDD F/ site visit/ /LT/</p>		



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	CDM pipeline. Thus from on-site verification and from verification of purchase order specifying the technical descriptions, the validation team concludes that the project description is accurate and complete.			
A.4.2. Is this description in accordance with the real situation or (in case of greenfield projects) is it most likely that the project will be implemented acc to the project description?	<p><i>Description:</i></p> <p>During site visit, the DOE has verified the Unique Identification number, details of installed energy meters, transformers and also CMS at the project site and has confirmed the correctness of the technical details of the project activity.</p> <p><i>Justification of evidences:</i></p> <p>The unique identification numbers (location numbers), details of installed energy meters, transformers mentioned in Electrical Inspectorate Certificates received from Government of Karnataka for 39 WTGs with reference numbers CEIG/DEI-1/ 23724-29/2008-09 dated 2008-10-06; CEIG/DEI-1/ 35506-11/2007-08 dated 2008-02-16, CEIG/DEI-1/ 18962-67/2008-09 dated 2008-09-04, CEIG/DEI-1/ 37838-43/2008-09 dated 2008-03-03, CEIG/DEI-1/ 22419-24/2008-09 dated 2008-09-26, CEIG/DEI-1/ 8895-900 /2008-09 dated 2008-06-19, CEIG/DEI-1/ 10599-604 /2008-09 dated 2008-07-02 were cross verified during on-site visit and found to be correct.</p> <p><i>Conclusion:</i></p> <p>By checking the electrical inspectorate certificates and cross verification during on-site visit, it has been confirmed that the description of project activity is in accordance with the real situation.</p>	/PDD/ A.2, A.4.2, A.4.1.3 /EI/ /site visit/	OK	OK
A.4.3. In case the project involves alteration of the	<p><i>Description:</i></p>	/PDD F/	OK	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
existing installation or process, is a clear description available regarding the differences between the project and the pre-project situation? (EB 55 Annex 1, §§ 63–64) <i>Describe the steps taken to validate this issue.</i>	<p>The project activity being a green field project, it does not involve alteration of any existing installation. This was further confirmed during on-site verification.</p> <p><i>Justification of evidences:</i></p> <p>The project description given in the PDD was cross checked during on –site verification and interview with the Project proponent and local stakeholders and confirmed this as a green field project activity and there was no pre-project scenario.</p> <p><i>Conclusion:</i></p> <p>There is no pre-project scenario; hence alternation of existing installation is not applicable for this project activity.</p>	/site visit/ /IM01/		
A.4.4. Does the project design engineering reflect current good practices? <i>Consider the equipment specifications, literature (e.g. EU BREF papers) and professional experiences. Describe the process undertaken to assess the engineering.</i>	<p><i>Description:</i></p> <p>The project activity involves installation of 39 nos of 0.8 MW capacity WTGs supplied by Enercon (India) Limited. The total capacity of the project activity is about 31.2MW. The design features include Gearless Construction - Rotor & Generator Mounted on same shaft eliminating the Gearbox. Variable speed function – has the speed range of 18 to 33 RPM thereby ensuring optimum efficiency at all times.</p> <p>Less Wear & Tear since the system eliminates mechanical brake, which are not needed due to low speed generator which runs at maximum speed of 33 rpm and uses Air Brakes.</p> <p><i>Justification of evidences:</i></p> <p>The technical specification of E-53 WTGs provided in the PDD has been checked from the technical details of WTGs given as per</p>	/IM01/ /PO-AD/ /LT/	OK	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<p>amendment to purchase Order No. GEI/2006-2007/EIL-101 dated 2007-03-15. The same has been cross verified from technical specifications of the WTG (E-53) provided in Manufacturers certificate on technical lifetime. The technical descriptions were also checked from http://www.thewindpower.net/wind-turbine-datasheet-4-enercon-e53-800.php we blink which is publically available.</p> <p><i>Conclusion:</i></p> <p>Thus based on verification of equipment specifications and technical details of the Project activity, the validation team has assessed the project design engineering reflects current good practices</p>			
<p>A.4.5. 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?</p> <p><i>Describe the process undertaken to assess the state of the art technology.</i></p>	<p><i>Description:</i></p> <p>The technology adopted by the project is on par with the current technology adopted by similar projects</p> <p><i>Justification of evidences:</i></p> <p>The technical specification of E-53 WTGs provided in the PDD has been checked from the technical details of WTGs given in Purchase Order No. GEI/2006-2007/EIL-101 dated 2007-03-15. The same has been cross verified from technical specifications of the WTG (E-53) provided in Manufacturers certificate on technical lifetime. The technical descriptions were also checked from http://www.thewindpower.net/wind-turbine-datasheet-4-enercon-e53-800.php web link which is publically available and confirmed that the technology used by the project activity is the state of art technology</p> <p><i>Conclusion:</i></p>	<p>/PO/ //LT/ /UNFCC C/</p>	OK	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	The project uses state of art technology which can be verified based on technical specifications of the WTGs and also found in similar project activities in the geographical region. .			
A.4.6. Does the project make provisions for meeting training and maintenance needs? <i>Describe the process undertaken to assess the maintenance and training needs.</i>	<i>Description:</i> The project activity is a wind power electricity generation project and the PP has signed an O & M contract with Enercon (India) Limited (EIL). All the provision for training and maintenance is looked after by the EPC contractor. Enercon (India) Limited has an agreement to carry out O&M services for a 10 year period. <i>Justification of evidences:</i> The O&M provider is an ISO certified organization; the meeting training and maintenance are look after by the O&M contractor (EIL).Hence adequate training has been provided for operation and maintenance personal of WTGs which has been confirmed through verification of training records maintained at the Enercon site office during the site visit. <i>Conclusion:</i> During the site visit the training records were checked by the validation team and thus the provision for meeting training and maintenance were found to be adequate.	/IM01/ /OMP/ /TRG/	OK	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
A.5. Small scale project activity <i>It is assessed whether the project qualifies as small-scale CDM project activity</i>				
A.5.1. Does the project qualify as a small scale CDM project activity as defined in decision 4 / CMP.1 annex II? (EB 55 Annex 1, §§ 135–136 (a))	NA			
A.5.2. Does the project apply one of the approved small scale categories and any methodology and tool referred therein? (EB 55 Annex 1, § 136 (b)) <i>Check, if applicable the expiry dates of the applied methodology. Further, take into consideration the general guidance to the methodologies²⁴, which provide guidance on equipment capacity, equipment performance, sampling and other monitoring related issues.</i>	NA			
A.5.3. Is the small scale project activity not a debundled component of a larger project activity?	NA			

²⁴ <http://cdm.unfccc.int/methodologies/SSCmethodologies/approved.html>

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
(EB 55 Annex 1, § 136 (c)) <i>Describe the steps taken to validate this issue. PI refer to the Compendium of guidance on debundling (EB 36, Annex 27 54, Annex 13).</i>				
A.5.4. Is an assessment of the environmental impacts of the proposed SSC CDM project activity required by the host Party? (EB 55 Annex 1, § 136 (d))	NA			
B. Project Baseline, Additionality and Monitoring Plan				
B.1. Application of the Methodology				
B.1.1. Does the project apply an approved and applicable CDM methodology and a valid version thereof? (EB 55 Annex 1, § 65) <i>Describe the steps taken to validate this issue.</i>	<p><i>Description:</i></p> <p>The project falls under Type I: Renewable Energy Projects and rightly applies the approved methodology ACM0002 “Consolidated baseline methodology for grid-connected electricity generation from renewable sources” approved at EB meeting 52 Annex 11, valid from 2010-02-26 onwards.</p> <p>The methodology also refers to</p> <p>The latest version (2) of “Tool to calculate the emission factor for an electricity system”</p>	/PDD/ /EF tool/ /ACM000 2/ /UNFCC C/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<p>Tool for the demonstration and assessment of additionality – Version 05.2</p> <p><i>Justification of evidences:</i></p> <p>The following web link has been verified and found that the methodology ACM0002 version 11 is valid from 2010-02-26 onwards.http://cdm.unfccc.int/methodologies/DB/TZFK7NUO5DYE5AI2PDMLG65BFIWMG5/view.htm; http://cdm.unfccc.int/EB/050/eb50_repan14.pdf and http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v5.2.pdf/history_view were also checked and found that the tools applied are of latest version.</p> <p><i>Conclusion:</i></p> <p>Both the methodology and tools referred for this project activity have been checked and the methodology version and tools for baseline calculation are found to be valid.</p>			
<p>B.1.2. Is the applied CDM methodology identical with the version available on the UNFCCC website?</p> <p>(EB 55 Annex 1, §§ 65, 70)</p> <p><i>Describe the steps taken to validate this issue.</i></p>	<p><i>Description:</i></p> <p>The applied methodology ACM0002 (Consolidated baseline methodology for grid-connected electricity generation from renewable sources Ver.11) is still applicable as the requests for registration can be submitted until 17 May 2011</p> <p><i>Justification of evidences:</i></p> <p>The methodology applied in PDD was checked to be in consistent with the latest version available in UNFCCC website by checking the web link.</p> <p>http://cdm.unfccc.int/methodologies/DB/TZFK7NUO5DYE5AI2PDM</p>	<p>/PDD/ /UNFCCC/ /ACM0002/</p>	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<p>LG65BFIWMG5/view.html</p> <p><i>Conclusion:</i> The validation team checked from the UNFCCC website that the applied CDM methodology ACM0002 version 11 in the project activity is still applicable as the requests for registration can be submitted until 17 May 2011.</p>			
<p>B.1.3. Are all applicability criteria in the methodology, the applied tools or any other methodology component referred to therein fulfilled?</p> <p>(EB 55 Annex 1, §§ 66(a)–(b), 68, 71, 76)</p> <p><i>Describe for each applicability criterion listed in the selected approved methodology the steps taken to assess the information contained in the PDD.</i></p>	<p><i>Description:</i></p> <p>Considering the UNFCCC web site the applicability criteria of ACM 0002 version 11 are</p> <ul style="list-style-type: none"> The project activity is the installation of grid connected renewable power generation from wind. Hence the methodology ACM0002 is applicable. The project activity does not involve in capacity additions, retrofits or replacement therefore criteria is not applicable The project activity is a new wind power plant. It does not involve in replacement, modification and retrofit measures - > therefore criteria is not applicable It does not involve in the installation of a hydro power plant -> therefore criteria is not applicable. The project activity does not involve switching from fossil fuels to renewable energy at the site of the project activity. It is neither a biomass fired plant nor hydro power plant Hence the project activity fulfills the applicable criteria of the methodology. <p>The project activity refers to the following tools:</p> <ul style="list-style-type: none"> "Tool to calculate the emission factor for an electricity 	<p>/PDD F/ /IM01/ /CR/ /PO/ /ACM000 2/ / EF tool/ /EB 1/ /site visit/</p>	OK	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<p>system“, version 2.</p> <ul style="list-style-type: none">• Tool for demonstration and assessment of additionality – Version 05.2 <p>Thus the latest approved versions of the above tools have been applied in the PDD.</p> <p><i>Justification of evidences:</i></p> <p>Based on the verification of purchase order, commissioning certificates of all 39 WTGS and also from on-site verification, it has been concluded that the project activity fulfils the applicability criterion of ACM0002, version 11.</p> <p>Moreover, the following websites http://cdm.unfccc.int/EB/050/eb50_repan14.pdf and http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v5.2.pdf/history_view were also checked and found that the applied tools are of latest version.</p> <p><i>Conclusion:</i></p> <p>The information on applicability criteria given in the PDD were assessed during site visit and thus the project activity is in line with the applicability criteria of selected methodology. The applied tools were verified to be of latest version. Thus all applicability criteria in the methodology, the applied tools are fulfilled.</p>			

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
<p>B.1.4. In case one or more applicability criteria have not been met, has the validation team requested clarification to, revision of or deviation from the methodology in accordance with the latest guidelines?</p> <p>(EB 55 Annex 1, §§ 72–75)</p>	<p><i>Description</i></p> <p>The project activity has been checked to have met all the applicability conditions mentioned in the methodology. Hence there was no requirement of clarification or revision or deviation from the methodology in accordance with the latest guidelines</p> <p><i>Justification of evidences:</i></p> <p>The information on applicability criteria given in the PDD were assessed during site visit and thus the project activity is in line with the applicability criteria of selected methodology.</p> <p><i>Conclusion:</i></p> <p>As all the applicability criteria of the methodology been met, there was no necessary for the validation team to request clarification, revision or deviation from the methodology in accordance with the latest guidelines.</p>	<p>/PDD F/ /ACM000 2/ /site visit/</p>	OK	OK
<p>B.1.5. Is the project in accordance with every other stipulation or requirement mentioned in all sections of the methodology and in guidances for approved methodologies provided by the CDM EB?</p> <p>(EB 55 Annex 1, § 69, 71)</p> <p><i>Describe the steps taken to check whether the proposed project activity meets all the other possible stipulations and /or limitations mentioned in all sections of the approved</i></p>	<p><i>Description:</i> The applicability conditions of the methodology are met and the project activity is in accordance to every other stipulation or requirement of the other sections in methodology ACM0002.</p> <p>The tools used are “Tool for the demonstration and assessment of additionality, Version 5.2” and “Tool to calculate the emission factor for an electricity system” version 2. There are no special conditions of applicability and hence it can be stated that project fulfils all requirements.</p> <p><i>Justification of evidences:</i></p> <p>As the project activity is grid connected renewable power</p>	<p>/PDD F/ /ACM000 2/ /EB 1/ /EF tool/</p>	OK	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
<i>methodology selected.</i>	generation from wind, the choice of the methodology is justified. Stipulations and requirements of the methodology ACM0002 were considered. <i>Conclusion:</i> Stipulations and requirements of the other sections in the methodology ACM0002 were considered and it has been concluded that the project is in accordance with the methodological requirements.			
B.2. Project Boundaries <i>Project Boundaries are the limits and borders defining the GHG emission reduction project</i>				
B.2.1. Are the project's spatial boundaries (geographical) clearly defined? (EB 55 Annex 1, §§ 67(a), 78–80) <i>Provide information on how the validation of the geographical boundary has been performed either based on reviewed documented evidence or by describing what was observed/viewed during a site visit.</i>	<i>Description:</i> The geographical co-ordinates of the project location are provided in the PDD. Please refer to section 2.3 of this report. The project activity is connected to the network of state transmission utility which falls in Southern grid. Thus the project boundary includes all the power plants physically connected to the Southern grid. <i>Justification of evidences:</i> The given geographical coordinates were verified through http://www.satsig.net/maps/lat-long-finder.htm and found acceptable. From verification of commissioning certificates and Electrical inspectorate certificates, it was confirmed that the wind turbines are connected to grid. The project boundary depicted in the PDD has been cross verified during site visit and found to be	/PDD F/ /LAT&LO N/ /CC/ /EI/	GL B40	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<p>correct</p> <p><i>Conclusion:</i></p> <p>The spatial boundary of the project activity as per the actual site conditions. Thus by cross verifying the geographical coordinates and supporting documents like commissioning certificates and from the observation during site visit, it has been confirmed that the project boundary has been clearly defined. In this context refer CL B10.</p>			
<p>B.2.2. Are all sources and GHGs included in the project boundary as required in the applied methodology?</p> <p>(EB 55 Annex 1, §§ 67(a), 78–80)</p> <p><i>Provide information on how the validation of the GHGs and sources has been performed either based on reviewed documented evidence or by describing what was observed/viewed during a site visit.</i></p>	<p><i>Description:</i></p> <p>The baseline study of southern grid shows that the main sources of GHG emissions in the baseline are CO₂ emissions from the conventional power generating systems. The project activity is the emission free electricity generation from renewable sources and hence emits no gases in the atmosphere.</p> <p><i>Further the emission sources included in the project boundary were represented in “Flow diagram of the project boundary “mentioned under section B.3 of the PDD</i></p> <p><i>Justification of evidences:</i></p> <p>The emission sources and gases were included in the table B– “Emission sources included in or excluded from the boundary” and assessed as credible through document review of commissioning certificates and Electrical inspectorate certificates. The project boundary depicted in the PDD has been cross verified during site visit and found to be correct.</p> <p><i>Conclusion:</i></p> <p>The emission sources and gases are included in the project</p>	<p>/PDD F/ /IM01/ /site visit// /ACM000 2/ /CC/ /EI/</p>	<p>/CL B10/</p>	<p>OK</p>



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	boundary are listed in a table and presented in diagram. Thus from on-site observation, the identified boundary and the selected sources and gases are justified for the project activity and in line with the methodology. <i>In this context refer CL B10.</i>			
B.2.3. In case the methodology allows to choose whether a source and/or gas is to be included, is the choice sufficiently explained and justified? (EB 55 Annex 1, §§ 67(a), 78–80) <i>Confirm if the justification provided by the PPs is reasonable, based on assessment of supporting documented evidence provided by the PPs or by onsite observations.</i>	<i>Description:</i> The sources of GHG emissions in the baseline are CO ₂ emissions from the conventional power generating systems. The project activity is the emission free electricity generation from renewable sources and hence emits no gases in the atmosphere. The source and gas included in or excluded from the project boundary was listed in table in section B.3 of PDD. <i>Justification of evidences:</i> The justifications of the exclusions are clearly indicated in the PDD version 4. The justification is assessed be reasonable as per ACM0002 Ver.11 document review of commissioning certificates and Electrical inspectorate certificates and on-site observation. <i>Conclusion:</i> The choice of source and gas were sufficiently explained and justified.	/PDD F/ /ACM000 2/ /CC/ /EI/	OK	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
B.3. Baseline Identification <i>The choice of the baseline scenario will be validated with focus on whether the baseline is a likely scenario, and whether the methodology to define the baseline scenario has been followed in a complete and transparent manner.</i>				
B.3.1. What possible baseline scenarios have been considered? (EB 55 Annex 1, §§ 67(b), 83) <i>Fill in all alternatives in table A-2.</i>	<p><i>Description:</i></p> <p>The baseline scenario has been taken as per ACM0002 approved methodology for this project activity. Refer A-2 As the project is a newly built grid-connected renewable power plant, the project baseline scenario is defined as equivalent amount of electricity generated from the existing grid connected power plants and planned capacity additions which are also largely fossil fuel based. Thus generation from the project displaces the electricity generated from existing and planned power plant capacities in the southern grid whose emission intensities are represented by the Combined Margin Emission Factor of the Southern Grid.</p> <p><i>Justification of evidences:</i></p> <p>The baseline scenario has been checked to have defined as per the methodology ACM0002 Ver.11; It is therefore in compliance with the methodology. The combined margin emission factor value has been calculated from operating margin and build margin emission factor values of southern grid. The applied values were checked from CEA Database for CO₂ emission factor, version 4 (.http://www.cea.nic.in/) and found to have applied correctly.</p>	/PDD F/ /ACM000 2/ /cea/	OK	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<i>Conclusion:</i> The baseline scenario has been described as per the approved methodology for this project activity and it has been checked to be correct.			
B.3.2. Is the list of alternatives complete? (EB 55 Annex 1, §§ 67(b), 83) <i>Describe how it was validated that all alternatives are plausible and no plausible alternative is excluded from the consideration</i>	<input checked="" type="checkbox"/> All plausible alternative scenarios listed in the approved methodology have been considered. In the course of document review and site visit, it has been validated that no other alternatives which supply comparable outputs and / or services are to be taken into consideration. Thus no plausible scenario has been omitted. <input type="checkbox"/> The following alternative scenarios/options have been omitted. Corresponding CAR(s)/CL(s) has /have been issued As per the methodology ACM0002 version 11," if the project activity is new grid connected renewable power plant", the baseline scenario would be as indicated in the methodology. Only "if the project activity involves retrofit or replacement of existing grid connected renewable power plant at the project site", then" Identification of realistic and credible alternative baseline scenarios for the power generation needs to be carried out, The project activity being installation of grid connected wind power plant, the identification of alternatives for baseline scenario is not required. Hence the PDD has not listed out the alternatives for baseline scenario, which is found to be in line with the methodology.	/PDD F/ /ACM000 2/	OK	OK
B.3.3. What has been identified as the baseline scenario?	<i>Description:</i> The identified baseline scenario is "In the absence of the project	/PDD F/ /cea/	OK	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
(EB 55 Annex 1, §§ 81–82, 86) <i>Describe the chosen BL scenario, taking into consideration the technology that would be employed and / or the activities that would take place in the absence of the proposed CDM project activity.</i>	<p>activity equivalent amount of electricity would have been generated from the existing grid connected power plants and planned capacity additions which are also largely fossil fuel based. Thus generation from the project displaces the electricity generated from existing and planned power plant capacities in the southern grid whose emission intensities are represented by the Combined Margin Emission Factor of the Southern Grid“.</p> <p><i>Justification of evidences:</i></p> <p>The baseline scenario was defined as per ACM0002 Ver.11. The project activity being installation of grid connected wind power plant, the identification of alternatives for baseline scenario is not required. . The combined margin emission factor value has been calculated from operating margin and build margin emission factor values of southern grid. The applied values were checked from CEA Database for CO2 emission factor, version 4 (http://www.cea.nic.in/) and found to be correct.</p> <p><i>Conclusion:</i></p> <p>It is concluded that the identified baseline scenario is correct taking into consideration the technology that would be employed and / or the activities that would take place in the absence of the proposed CDM project activity.</p>	/ACM000 2/		
B.3.4. Has the baseline scenario been determined according to the methodology? (EB 55 Annex 1, §§ 82, 87(e)) <i>Describe how it is validated that the identification of the most plausible baseline scenario is carried out in accordance with the applied methodology and applied methodological tools.</i>	<p>For details of the assessment regarding the evaluation of the baseline scenario pl. refer to table A-2.</p> <p><input checked="" type="checkbox"/> The determination has been carried out as per the procedure contained in the applied methodology.</p> <p><input type="checkbox"/> The following CARs / CLs have been identified with respect to the selection of the baseline scenario:</p>	/PDDF/ ACM000 2/	OK	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
Please refer to table A-2.				
B.3.5. Has any plausible alternative scenario been excluded? (EB 55 Annex 1, § 83) <i>Describe how it is validated that no plausible alternative scenario has been excluded.</i>	For details of the assessment regarding the evaluation of the baseline scenario pl. refer to table A-2. <input checked="" type="checkbox"/> No plausible baseline scenario has been excluded. <input type="checkbox"/> The following plausible baseline scenarios have been excluded though no adequate justification has been provided for elimination. The following CARs / CLs have been issued:	/PDD F/ /ACM000 2/	OK	OK
B.3.6. Is the identified baseline scenario reasonable and has the baseline scenario been determined using conservative assumptions where possible, including relevant references and sources? (EB 55 Annex 1, §§ 84–86(a)–(c)) <i>Describe whether the choice of the identified baseline scenario is reasonable by validating the <u>key assumptions, calculations and rationales</u> used in the PDD. Describe whether these are listed, relevant and <u>conservatively interpreted</u> in the PDD.</i>	<input checked="" type="checkbox"/> The baseline scenario is reasonable and has been determined using conservative assumptions where possible. Please refer to comments in table A-2 and sections B.3.2 to B.3.5 above. The baseline scenario was defined as per ACM0002 Ver.11. The project activity being installation of grid connected wind power plant, the identification of alternatives for baseline scenario is not required. The combined margin emission factor value has been calculated from operating margin and builds margin emission factor values of southern grid. The applied values were checked from CEA Database for CO2 emission factor, version 4 (http://www.cea.nic.in/) and found to be correct. Thus the key assumptions, calculations and rationales used in the PDD for identification of baseline scenario were found to be conservative. <input type="checkbox"/> The following CARs / CLs have been issued because assumptions used in the baseline determination have been assessed to be not conservative	/PDD F/ /ACM000 2/ /cea/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
B.3.7. Does the baseline scenario sufficiently take into account relevant national and/or sectoral policies, macro-economic trends and political aspirations? (EB 55 Annex 1, §§ 85, 87(d)) <i>Describe whether the PP has shown that all relevant policies and circumstances have been identified and correctly considered in the PDD in accordance with the guidance by the Board. Pl. consider the guidance EB 22 annex 3 (regarding E+ and E- policies).</i>	<p><i>Description:</i></p> <p>Yes, <i>relevant national</i> / state level circumstances relevant to the baseline have been considered in section B.5 of the PDD. Power sector reforms initiated in the Host country provide greater thrust for renewable energy projects. The project activity is in line with such measures. While determining the most suitable for the alternative of having a power plant with a fossil fuel, the fuel chosen is coal. Much of India's diesel and other petroleum products are dependent on imported petroleum crude, whereas coal reserves are plenty and close by to the project site. Thus, choice of coal has been done keeping in mind the policies, economic trends and political aspirations.</p> <p><i>Justification of evidences:</i></p> <p>The following web link can be referred as a evidence for fixing the baseline, http://www.cea.nic.in</p> <p><i>Conclusion:</i></p> <p>It is concluded that the identified baseline scenario is correct and all the account relevant to national and/or Sectoral policies, macro - economic trends and political aspirations are taken.</p>	/PDD F / /Cea/	OK	OK
B.3.8. Is the baseline scenario determination compatible with the available data and are all literature and sources clearly referenced? (EB 55 Annex 1, § 87(a)–(c))	<p><i>Description:</i></p> <p>Yes the baseline scenario determination compatible with the available data and are all literature and sources clearly referenced. In the Indian power sector, CEA is the repository of all data pertaining to power generation, fuel consumption, intra-grid</p>	/PDD F / /Cea/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
<i>Describe whether the documents and sources referred to in the PDD are correctly quoted and clearly referenced.</i>	<p>transfers, and power purchases. The grid emission factor for the southern region as calculated and released by CEA has been used and is referenced properly.</p> <p><i>Justification of evidences:</i></p> <p>The following web link was referred as evidence for OM & BM values for fixing the baseline scenario. http://www.cea.nic.in/planning/c%20and%20e/Government%20of%20India%20website.htm.</p> <p><i>Conclusion:</i></p> <p>It is concluded that for baseline determination, all the corresponding sources of information are clearly referenced in the PDD.</p>			
<p>B.3.9. Does the PDD contain a <i>verifiable</i> description of the identified baseline scenario, including a description of the technology that would be employed and/or the activities that would take place in the absence of the proposed CDM project activity.</p> <p>(EB 55 Annex 1, § 86)</p>	<p><i>Description:</i></p> <p>In the absence of the project activity equivalent amount of electricity would have been generated from the existing grid connected power plants and planned capacity additions which are also largely fossil fuel based is the identified baseline scenario.</p> <p><i>Justification of evidences:</i></p> <p>PDD version 4 was checked to have contained a verifiable description of identified baseline scenario and the technology employed (existing grid connected power plants) that would have taken place in the absence of the project activity. The grid emission factor for the southern region as calculated and released by CEA has been used and is referenced from the web link http://www.cea.nic.in/planning/c%20and%20e/Government%20of%20India%20website.htm.</p> <p><i>Conclusion:</i></p>	/PDD F/ /cea/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	Thus the PDD was verified to contain a description of the identified baseline scenario and technology employed that would take place in the absence of the proposed CDM project activity.			
B.4. Additionality Determination <i>The assessment of additionality will be validated with focus on whether the project itself is not a likely baseline scenario.</i>				
B.4.1. Methodology				
<p>B.4.1.1. Does the PDD describe how the project is additional and does the additionality justification follow the requirements of the applied methodology and/or methodological tools?</p> <p>(EB 55 Annex 1, §§ 67(d), 94–95)</p> <p><i>Describe how it is validated that additionality justification is carried out in accordance with the applied methodology and/or applied methodological tools. Further focus your assessment on the reliability and credibility of data, rationales and assumptions, justifications and documentations provided by the PP.</i></p>	<p><i>Description:</i> Additionality justifications have followed the requirements of the ACM0002 version 11 and in line with 'Tool for the demonstration and assessment of additionality' version 5.2. As per the additionality tool, the additionality of the project activity has been demonstrated by 1. Identification of alternatives, 2. Investment analysis, 4. Common practice analysis.</p> <p><i>Justification of evidences:</i></p> <p>1. Identification of alternatives All plausible alternatives to the project activity have been identified. The identified alternatives are verified to be in compliance with mandatory laws and regulations.</p> <p>2. Investment analysis Moreover all the input values used for the investment analysis are referenced from Enercon offer dated 2006-07-25, which were cross verified from DPR dated 2006-07-28 and publically available</p>	/PDD F/ /IRR/ /ACM000 2/ /EB 1/ /SOP/ /KERC/ /DPR/ /RBI1/ /YR/ /C-WET/ /BSE/	CAR B2 CAR B3 CAR B4 CAR B5 CAR B6 CAR B7 CAR B8 CAR B9 -CAR	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<p>information like KERC order dated 2005-01-18 for tariff and RBI PLR for loan http://rbidocs.rbi.org.in/rdocs/Wss/PDFs/71184.pdf. The tax rate assumed is verified to be in line with IT Act. The PLF of 25.3% is estimated by third party (C_WET), hence found to be in line with EB 48 annex 11. Hence all the input values are assumed based on investment decision. Moreover, the input values used for arriving at benchmark computation (WACC) were cross checked from the following web link in respect to interest rate, market return and yield rate.</p> <ul style="list-style-type: none">http://rbidocs.rbi.org.in/rdocs/Wss/PDFs/71184.pdfhttp://www.bseindia.com/histdata/hindices.asphttp://rbidocs.rbi.org.in/rdocs/Publications/PDFs/87456.pdf <p>Beta snapshots were checked for applicable average beta value.</p> <p>Thus the sources and references used for benchmark computation were verified to be correct.</p> <p>Thus the overall investment analysis and the sensitivity analysis computation are verified to be OK.</p> <p>3. Common practice analysis:</p> <p>Moreover, in respect to common practice analysis, the individual investors who have wind installations greater than 15 MW were checked from the website http://www.windpowerindia.com/statpriv.html. Moreover the list of wind power investors was cross checked using the Directory for Indian wind Power 2008 to identify the capacity of installations in each state for each investor. Thus from document review and analysis, it has been concluded that there are no similar project</p>	<p>/BS/ /windpower india/ /IWP/ /IT-C/ /IT-DP/ /IT-H/ /IT-M/</p>	<p>B10 CL-B2 CL-B3 CL-B4 CL-B5 CL-B7 CL-B8 CL-B9</p>	



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<p>activities without CDM and therefore non-CDM large scale wind energy investments is not a common practice in the region.</p> <p><i>Conclusion:</i></p> <p>Thus based on the assessment on the reliability and credibility of data, rationales and assumptions, justifications and documentations provided by the PP in respect to demonstrate additionality, It has been concluded that additionality arguments of this project activity are be in line with the stipulations of the methodology and the requirement of the 'Tool for the demonstration and assessment of additionality'.</p> <p>In this context refer CAR B2- to CAR B10 CL B2- to CL B5 and CL B7 to CL B9.</p>			
B.4.2. Consideration of CDM before project start				
<p>B.4.2.1. Is the project starting date reported in accordance with the CDM glossary of terms?</p> <p>(EB 55 Annex 1, § 104(a))</p> <p><i>Assess why the chosen starting date can be considered as the earliest date at which either the implementation or construction or real action of a project has begun or will begin.</i></p> <p><i>Check that no other activities related to the project that happened before the identified start date can be considered as start date. In this context please also take into</i></p>	<p><i>Description:</i></p> <p>The Purchase order between the Generacion Eolica India Limited and EIL for supply of WTG has been submitted to support the PP's contention that the start date of project to be considered as 2006-08-24.</p> <p><i>Justification of evidences:</i></p> <p>The purchase order placed by GEI on Enercon dated 2006-08-24 was checked and the date is found to have correctly applied in the PDD</p> <p><i>Conclusion:</i></p>	<p>/PDDF/ /PO/ /GLOS/</p>	<p>OK</p>	<p>OK</p>

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
<i>consideration infrastructural expenses if they are relevant (in terms of costs and importance for the project implementation) in the specific context of the project activity.</i>	Copy of the PO has been verified. As this document signifies the commitment of the PP to meet a major project related expenditure, considering this as the start date is in accordance with the CDM glossary of terms.			
<p>B.4.2.2. In case the project start date is on or after 2nd August 2008 has the PP informed the DNA and UNFCCC about the intension to seek CDM status?</p> <p>(EB 55 Annex 1, §§ 99–101) Describe whether such a notification has been provided by the project participants within six months of the project activity start date; if NOT it shall be determined that the CDM was not seriously considered.</p>	<p><i>Description:</i></p> <p>The project start date is before 2008-08-02 and it is 2006-08-24 as per the placement of purchase order with the WTG supplier. Hence it is not applicable.</p> <p><i>Justification of evidences:</i></p> <p>NA</p> <p><i>Conclusion:</i></p> <p>As the project's start date is before 2nd August 2008, it is not applicable.</p>	<p>/PDD F/ /PO/ /BoD 1/</p>	OK	
<p>B.4.2.3. In case the project start date is before commencing of validation and 2nd August 2008, was the incentive from the CDM seriously considered and are details given in the PDD?</p> <p>(EB 55 Annex 1, §§ 100, 102) Describe whether the evidence to support such consideration is adequately and transparently described in the PDD.</p>	<p><i>Description:</i></p> <p>The project start date is before 2nd August 2008 and it is 2006-08-24 as per the placement of purchase order with the WTG supplier.</p> <p>Benefits of CDM were a decisive factor in the decision to proceed with the project which was verified from the Board decision documents.</p> <p>Moreover, Chronology of the events after the board decision like</p> <ul style="list-style-type: none"> Placing the purchase order Revised DPR submitted by Enercon to GEI 2nd Board resolution meeting, 	<p>/PDDF/ /BoD 1/ /BoD 2/ /RDPR/ /PO/ /PO-AD/ /UNFCC C/ /LOAN/</p>	<p>CLB6 CAR B4</p>	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<ul style="list-style-type: none">Amendment of purchase orderObtaining loanCapacity transfer to GEI by Nodal AgencySigning of PPAStakeholders consultation meetingCommissioning of first Wind turbinePDD preparationApproaching DOEObtaining host country approvalCommissioning of last WECRevision of PDD based on revision in methodology versionAppointment of DOEWebhosting of PDD <p>were all substantiated with supporting documents which were verified and hence confirmed that continuing real actions were taken to secure CDM status for the project in parallel with its implementation.</p> <p><i>Justification of evidences:</i> The list of activities mentioned under chronology of events have been verified from</p> <ul style="list-style-type: none">Minutes of management decision by M/s Generacion Eolica India Limited with serious consideration of CDM benefits as	<p>/LA/ /PPA/ \</p> <p>/WO/ /HCA/ /SHC/ /CC/</p>		



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<p>well as committing investment into the Project on 2006-08-23^{/BoD1/}</p> <ul style="list-style-type: none"> • Purchase Order No. GEI/2006-2007/EIL-101 dated 24/08/2006 issued to M/s. Enercon (India) Ltd, Mumbai for the supply, Installation and commissioning of 39 nos of 800kW Wind Turbine Generator(s) by M/s Generacion Eolica India Limited^{/PO/} • Revised Detailed Project Report prepared by Enercon (India) Limited and submitted to Generacion Eolica India Limited dated 2007-02-01^{/RDPR/} • Minutes of management decision by M/s Generacion Eolica India Limited with serious consideration of CDM benefits based on 2nd DPR dated 2007-02-05^{/BoD 2/} • Amendment to purchase Order Ref No. GEI/2006-2007/EIL-101 dated 24/08/2006 issued to M/s. Enercon (India) Ltd, Mumbai for the supply, Installation and commissioning of 39 nos of 800kW Wind Turbine Generator(s) by M/s Generacion Eolica India Limited dated 2007-03-15^{/PO-AD/} • Loan Sanction Letter of Term Loan dated 2007-07-05 from IREDA^{/LOAN/} • Government Approval for transfer of 31.2 MW wind power capacity in favour of M/s Generacion Eolica India Limited dated 2007-09-01^{/KA/} 			

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<ul style="list-style-type: none"> • Power purchase agreement ^{/PPA/} for all WTGS dated 2007-11-22 • Stakeholder consultation documents like minutes of meeting and attendance sheets dated 2007-11-23 ^{/SHC/}. • Commissioning certificates of WTGs dated 2007-12-17. • PDD preparation period has been verified from Consultants ^{/IM02/} • Mail communication for the approach of DOE dated 2008-07-16 has been verified. • Loan agreement document dated 2008-01-29 • EB-39, Annex-10, May 2008 checked http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v5.2.pdf ^{/EB1/} was checked for change in additionality tool version • Host Country Approval from Ministry of Environment & Forests, Govt of India, No. 4/7/2008-CCC dated 2008-10-03 ^{/HCA/} has been verified • Commissioning certificates of WTGs dated 2008-10-10. • First wind power project to be registered with WACC in India dated 2008- 10-27 which was checked from the web 			



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<p>link: http://cdm.unfccc.int/Projects/DB/DNVCUK1185356859.49/view /</p> <ul style="list-style-type: none">• ACM0002 was revised to version 08 dated 2008-10-28 was checked from UNFCCC website• Revised PDD preparation from Nov-08 to Dec-08 which was confirmed with consultants ^{/IM02/}.• ACM0002 was revised to version 09 from 13-Feb-09 which was verified from the web link ^{/EB} Weblink:http://cdm.unfccc.int/EB/045/eb45_repan10.pdf ^{2/}• Appointment of DoE on 20-Feb-09 was verified from the work order ^{/WO/} placed with TUV.• PDD Web hosting period has been checked from UNFCCC website and found to be 04-Apr-09 to 03-May-09. <p>Thus from verification of above documents, the serious consideration of CDM for this project activity is found to be adequate.</p> <p><i>Conclusion:</i></p> <p>Based on verification of Board resolution document, the validation team concludes that the CDM was seriously considered before project start date. Moreover the evidences to support series of actions which had taken place to secure CDM status in parallel with implementation of the project activity have been adequately and transparently described in the PDD. Thus it has been concluded</p>			



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	that the incentive from the CDM is seriously considered prior to project activity start date and continuing and real actions were taken to secure CDM benefits In this context refer CAR B1 and CL B6.			
B.4.2.4. How and when was the decision to proceed with the project taken? <i>Describe the steps taken to validate the starting date.</i>	<i>Description:</i> The decision was taken by the Board of Directors to implement the proposed project and seek CDM status on 2006-08-23. Purchase order for the WTG was placed on 2006-08-24, which is considered as the start date of project activity. <i>Justification of evidences:</i> The evidences such as <ul style="list-style-type: none">Minutes of management decision by M/s Generacion Eolica India Limited with serious consideration of CDM benefits as well as committing to investment into Project on 2006-08-23 ^{/BoD1/}Purchase Order No. GEI/2006-2007/EIL-101 dated 24/08/2006 issued to M/s. Enercon (India) Ltd, Mumbai for the supply, Installation and commissioning of 39 nos of 800kW Wind Turbine Generator(s) by M/s Generacion Eolica India Limited ^{/PO/} submitted by the PP were verified and concluded that the decision to proceed with the project with the CDM benefits was taken by Board of Directors of the Company and hence gone ahead in placing the purchase order for WTGs. <i>Conclusion:</i>	/PDDF/ /PO/ /BoD1/	OK	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	Based on verification of Board resolution document and purchase order document, the validation team concludes that CDM was seriously considered before project start date and PP was seriously committed to project related expenditure by placing the purchase order on 2006-08-24.			
<p>B.4.2.5. Is the project start date consistent with the available evidences? (EB 55 Annex 1, § 102)</p> <p><i>Describe the evidence assessed regarding the prior consideration of the CDM (if necessary). Describe whether the evidence to support such consideration is adequately and transparently described in the PDD.</i></p>	<p><i>Description:</i></p> <p>Yes, start date which is mentioned as 2007-08-24 is consistent with the purchase order date.</p> <p>The decision to proceed with the wind power project along with the CDM benefits was approved by the Board of Directors during the Board meeting on 2006-08-23.</p> <p><i>Justification of evidences:</i></p> <p>Purchase Order No. GEI/2006-2007/EIL-101 dated 24/08/2006 issued to M/s. Enercon (India) Ltd, Mumbai for the supply, Installation and commissioning of 39 nos of 800kW Wind Turbine Generator(s) by M/s Generacion Eolica India Limited ^{/PO /} was checked for the start date of the project activity and found to have applied correctly.</p> <p>The evidence to support the serious consideration of CDM was assessed through the following document: Minutes of management decision by M/s Generacion Eolica India Limited with serious consideration of CDM benefits and finalization of EPC Contractors as well as committing to investment into project on 2006-08-23 ^{/BoD1/}</p> <p><i>Conclusion:</i></p>	<p>/PDDF/ /BoD 1/</p>	<p>CLB6 CAR B1 /CL B9/</p>	<p>OK</p>

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	Thus the project start date is consistent with the placement of first purchase order of windmills. Moreover, the evidence to support serious consideration of CDM ^{/BoD 1/} is adequately and transparently described in the PDD and verified to be OK.			
<p>B.4.2.6. Was the decision to proceed with the project taken by a person which has the authority to do so?</p> <p>(EB 55 Annex 1, § 102(a))</p> <p><i>Describe the steps taken to validate this issue.</i></p>	<p><i>Description:</i></p> <p>The project investor is a limited company for which all major decisions are taken by the Board of Directors during a meeting of the Board of Directors with quorum. Accordingly, the decision to proceed with the power project was also considered and approved by the Board of Directors.</p> <p><i>Justification of evidences:</i> Minutes of management decision by M/s Generacion Eolica India Limited with serious consideration of CDM benefits and finalization of EPC Contractors as well as committing to investment into project on 2006-08-23 ^{/BoD1/} and Minutes of management decision by M/s Generacion Eolica India Limited with serious consideration of CDM benefits based on 2nd DPR dated 2007-02-05 ^{/BoD 2/} submitted by the PP were verified and found that the Board Directors of the Company (GEI) took decision to proceed with the project activity of installation of WTGs with the consideration of CDM benefits.</p> <p><i>Conclusion:</i></p> <p>Thus from the verification of Board resolution meeting document, it has been concluded that decision to proceed with the project taken by Board of Directors who have the authority to take such decision.</p>	<p>/BoD 1/</p> <p>/BoD 2/</p>	OK	OK
<p>B.4.2.7. How was the CDM involved in the decision making process?</p>	<p><i>Description:</i></p> <p>The prospect of eligibility of the project to obtain registration as a</p>	<p>/PDD F/</p> <p>/BoD 1/</p>	OK	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
(EB 55 Annex 1, § 102) <i>Describe why CDM was a decisive factor in the decision making process.</i>	CDM project and the possibility of earning CER revenues to supplement the company's revenues in investing in wind mills was the main factor to drive the decision making proceed with CDM <i>Justification of evidences:</i> Minutes of management decision by M/s Generacion Eolica India Limited with serious consideration of CDM benefits and finalization of EPC Contractors as well as committing to investment into project on 2006-08-23 ^{/BoD1/} and Minutes of management decision by M/s Generacion Eolica India Limited with serious consideration of CDM benefits based on 2 nd DPR dated 2007-02-05 ^{/BoD 2} submitted by PP were verified and concluded that CDM was involved in decision making. <i>Conclusion:</i> The decision taken by the board of directors considered CDM as a decisive factor because of lower returns on the project investment and also a renewable energy project which will reduce the GHG emissions. It is verified by the documents submitted by the PP.	/BoD 2/		
B.4.2.8. Do the evidences provided doubtlessly prove that continuous and real actions were taken in order to secure the CDM status? (EB 55 Annex 1, § 102; EB 49 Annex 22 § 7)	<i>Description:</i> The project activity follows all the real action to secure CDM status. All the actions are done in parallel with the implementation of the project activity. The chronological events are mentioned in the PDD under section B.5. The Chronology of the events for serious consideration are, <ul style="list-style-type: none"> • Board decision for serious consideration of CDM • Placing the purchase order 	/PDDF/ /BoD 1/ /BoD 2/ /PO/ /PO-AD/ /UNFCC C/	CLB6 CAR B4	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<ul style="list-style-type: none">Revised DPR submitted by Enercon to GEI2nd Board decision based on revised DPRAmendment of purchase orderObtaining loanCapacity transfer to GEI by Nodal AgencySigning of PPAStakeholders consultation meetingCommissioning of first set of Wind turbinesPDD preparationApproaching DOEObtaining host country approvalCommissioning of last set of Wind turbinesRevision of PDD based on revision in methodology versionAppointment of DOEWebhosting of PDD <p><i>Justification of evidences:</i></p> <p>To prove that the project activity seriously considered to secure the CDM status the following documents are submitted by the PP and it is verified,</p> <ul style="list-style-type: none">Minutes of management decision by M/s Generacion Eolica India Limited with serious consideration of CDM benefits as	/LOAN/ /PPA/ /LA/ /WO/ /HCA/ /SHC/		



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<p>well as committing investment into the project on 2006-08-23^{/BoD1/}</p> <ul style="list-style-type: none">• Purchase Order No. GEI/2006-2007/EIL-101 dated 24/08/2006 issued to M/s. Enercon (India) Ltd, Mumbai for the supply, Installation and commissioning of 39 nos of 800kW Wind Turbine Generator(s) by M/s Generacion Eolica India Limited^{/PO/}• Minutes of management decision by M/s Generacion Eolica India Limited with serious consideration of CDM benefits based on 2nd DPR dated 2007-02-05^{/BoD 2/}• Amendment to purchase Order Ref No. GEI/2006-2007/EIL-101 dated 24/08/2006 issued to M/s. Enercon (India) Ltd, Mumbai for the supply, Installation and commissioning of 39 nos of 800kW Wind Turbine Generator(s) by M/s Generacion Eolica India Limited dated 2007-03-15^{/PO-AD/}• Loan Sanction Letter of Term Loan dated 2007-07-05 from IREDA^{/LOAN/}• Government Approval for transfer of 31.2 MW wind power capacity in favour of M/s Generacion Eolica India Limited dated 2007-09-01^{/KA/}• Power purchase agreement^{/PPA/} for all WTGS dated 2007-11-22			

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<ul style="list-style-type: none"> Stakeholder consultation documents like minutes of meeting and attendance sheets dated 2007-11-23 ^{/SHC/}. PDD preparation period has been verified from Consultants ^{/IM02/} Mail communication for the approach of DOE dated 2008-07-16 has been verified. EB-39, Annex-10, May 2008 checked http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v5.2.pdf ^{/EB1/} was checked for change in additionality tool version Host Country Approval from Ministry of Environment & Forests, Govt of India, No. 4/7/2008-CCC dated 2008-10-03 ^{/HCA/} has been verified Loan Agreement dated 2008-01-29 First wind power project to be registered with WACC in India dated 2008- 10-27 which was checked from the web link: http://cdm.unfccc.int/Projects/DB/DNVCUK1185356859.49/view / ACM0002 was revised to version 08 dated 2008-10-28 was checked from UNFCCC website Revised PDD preparation from Nov-08 to Dec-08 which was confirmed with consultants ^{/IM02/}. 			



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<ul style="list-style-type: none">ACM0002 was revised to version 09 from 13-Feb-09 which was verified from the web link Weblink:http://cdm.unfccc.int/EB/045/eb45_repan10.pdf^{/EB 2/}Appointment of DoE on 20-Feb-09 was verified from the work order^{WO/} placed with TUV.PDD Web hosting period has been checked from UNFCCC website and found to be 04-Apr-09 to 03-May-09. <p>Thus from verification of above documents, the serious consideration of CDM for this project activity is found to be adequate.</p> <p><i>Conclusion:</i></p> <p>From verification of above documents, it has been concluded that the evidences provided by PP to support the series of actions taken in parallel to implementation of the project activity, substantiates the serious prior consideration of CDM for this project activity. Moreover, the gap between the documented evidences were found to be less than 2 years and hence the validation team concludes that continuous and real actions were taken in order to secure the CDM status.. It has been validated in accordance with EB 49 Annex 22, §7</p> <p>In this context refer CAR B1 and CL B6.</p>			



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
B.4.2.9. Is the gap of documented evidences to secure the CDM status less than 3 years and are the evidences relevant for substantiating the action taken, credible, reliable and complete? (EB 49 Annex 22 § 8)	<p><i>Description:</i></p> <p>The gap between the documented evidences to secure CDM status was verified to be less than 1 year.</p> <p><i>Justification of evidences:</i></p> <p>The references and the documented evidences like</p> <ul style="list-style-type: none">Minutes of management decision by M/s Generacion Eolica India Limited with serious consideration of CDM benefits and committing investment into the Project on 2006-08-23 /BoD1/Purchase Order No. GEI/2006-2007/EIL-101 dated 24/08/2006 issued to M/s. Enercon (India) Ltd, Mumbai for the supply, Installation and commissioning of 39 nos of 800kW Wind Turbine Generator(s) by M/s Generacion Eolica India Limited /PO/Revised Detailed Project Report prepared by Enercon (India) Limited and submitted to Generacion Eolica India Limited dated 2007-02-01 /RDPR/Minutes of management decision by M/s Generacion Eolica India Limited with serious consideration of CDM benefits based on 2nd DPR dated 2007-02-05 /BoD 2/Amendment to purchase Order Ref No. GEI/2006-2007/EIL-101 dated 24/08/2006 issued to M/s. Enercon (India) Ltd, Mumbai for the supply, Installation and commissioning of 39 nos of 800kW Wind Turbine	/PDDF/ /BoD 1/ /BoD 2/ /PO/ /PO-AD/ /UNFCC C/ /LOAN/ /PPA/ /LA/ /WO/ /HCA/ /SHC/	GLB6 CAR B4	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<p>Generator(s) by M/s Generacion Eolica India Limited dated 2007-03-15^{/PO-AD/}</p> <ul style="list-style-type: none">• Loan Sanction Letter of Term Loan dated 2007-07-05 from IREDA^{/LOAN/}• Government Approval for transfer of 31.2 MW wind power capacity in favour of M/s Generacion Eolica India Limited dated 2007-09-01^{/KA/}• Power purchase agreement^{/PPA/} for all WTGS dated 2007-11-22• Stakeholder consultation documents like minutes of meeting and attendance sheets dated 2007-11-23^{/SHC/}.• Commissioning certificates of WTGs dated 2007-12-17.• PDD preparation period has been verified from Consultants^{/IM02/}• Mail communication for the approach of DOE dated 2008-07-16 has been verified.• Loan agreement document dated 2008-01-29• EB-39, Annex-10, May 2008 checked http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v5.2.pdf^{/EB1/}was checked for change in additionality tool version			



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<ul style="list-style-type: none">Host Country Approval from Ministry of Environment & Forests, Govt of India, No. 4/7/2008-CCC dated 2008-10-03 ^{/HCA/} has been verifiedCommissioning certificates of WTGs dated 2008-10-10.First wind power project to be registered with WACC in India dated 2008- 10-27 which was checked from the web link: http://cdm.unfccc.int/Projects/DB/DNVCUK1185356859.49/view /ACM0002 was revised to version 08 dated 2008-10-28 was checked from UNFCCC websiteRevised PDD preparation from Nov-08 to Dec-08 which was confirmed with consultants ^{/IM02/}.ACM0002 was revised to version 09 from 13-Feb-09 which was verified from the web link Weblink:http://cdm.unfccc.int/EB/045/eb45_repan10.pdf ^{/EB 2/}Appointment of DoE on 20-Feb-09 was verified from the work order^{/WO/} placed with TUV.PDD Web hosting period has been checked from UNFCCC website and found to be 04-Apr-09 to 03-May-09. <p>were verified in respect to the evidences supporting chronology of</p>			



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	events for serious consideration of CDM. <i>Conclusion:</i> From the verification of above documents, it has been found that the gap of documented evidences to secure the CDM status are less than 2 years and the verified evidences relevant for substantiating the action taken are credible, reliable and complete In this context refer CAR B1 and CL B6.			
B.4.2.10. Did implementation of the project ceased after its commencement and did implementation recommence after consideration of the CDM? (EB 51 Annex 58, § 7) <i>Describe the reasons for ceasing the project and explain why the incentive from CDM was necessary to recommence the implementation.</i>	<i>Description:</i> No. The implementation of the project has not been ceased after its commencement. <i>Justification of evidences:</i> During on site visit, validation team checked the monthly JMR corresponding to all months starting from the commission date and concluded that there was continuous generation of power from the turbines and thus the project has not ceased after its commencement. This information was cross checked with the PP and the O&M persons at the site. <i>Conclusion:</i> From on site verification of JMRs and interview with PP and O&M persons the validation team concludes that the project has not been ceased after its commencement and there was no recommencement after consideration of CDM.	/IM01/ /Site Visit/ /JMR/	OK	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
B.4.2.11. Can the CDM involvement in the decision assessed as serious? <i>Describe whether or not the project would have been undertaken without the incentive of the CDM.</i> (EB 55 Annex 1, § 104(b)–(c))	<i>Description:</i> Yes. The CDM involvement in the decision assessment by the Board of directors of M/s. Generacion Eolica India Limited is taken as serious. The board members decided to take up the wind mill installation project because with the help of CDM funds they can make the project financially viable and sustainable <i>Justification of evidences:</i> Minutes of management decision by M/s Generacion Eolica India Limited with serious consideration of CDM benefits and finalization of EPC Contractors as well as committing investment into the Project activity on 2006-08-23 submitted by the PP was verified and assessed that CDM involvement in the decision as serious. <i>Conclusion:</i> The decision taken by the board of directors considered CDM as a decisive factor because of lower returns on the project investment and also a renewable energy project which will reduce the GHG emissions. If the PP does not invest in the project activity the same capacity of energy will be generated in the fossil fuel intensive southern grid. Thus the CDM involvement in the decision assessment by the board of directors of M/s.Generacion Eolica India Limited is taken as serious.	/BoD 1/ //BoD 2/	OK	OK
B.4.3. Identification of alternatives Step 1 (in case of SSC projects pl. Skip steps 1 and 2)				
B.4.3.1. Does the list of alternatives contain the status-quo situation, the project not undertaken as a CDM project as well as all	<i>Description:</i> The identified alternatives to the project activity are	/PDD F/ /PS/	OK	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
<p>other viable means of supplying the outputs or sevices that are to be supplied by the proposed CDM project activity?</p> <p>(EB 55 Annex 1, §§ 105–107)</p> <p><i>Describe the steps taken to validate this issue on the basis of your local and sectoral knowledge.</i></p>	<p>(a) The Project is not undertaken as a CDM project activity.</p> <p>(b) Setting up of comparable utility scale fossil fuel (gas or coal), biomass or hydro power projects that supply to the Karnataka grid under a PPA.</p> <p>(c) Continuation of the current situation</p> <p>Hence the the list of alternatives contain the status-quo situation, the project not undertaken as a CDM project as well as all other viable means of supplying the outputs or services that are to be supplied by the proposed CDM project activity.</p> <p><i>Justification of evidences:</i></p> <p>Both alternative a and alternative b are in compliance with mandatory laws and regulations taking into account the enforcement in the region or country and EB decision on national and sectoral policies. Based on sectoral knowledge, the validation team could conclude that alternative a and b are realistic and credible alternatives to the project activity.</p> <p>By verification of Southern Power sector profile, it has been noted that Karnataka had energy (MU) shortages of 0.7% and peak (MW) shortages of 9.8% in 2005-06, hence continuation with current situation is not assessed to be plausible scenario,</p> <p><i>Conclusion:</i></p> <p>The validation team concludes that the listed alternatives to be credible and complete.</p>			
<p>B.4.3.2. Have all realistic alternatives been identified to the project?</p>	<p><i>Description:</i></p> <p>Following alternatives has been identified in the section B.5 of the</p>	<p>/PDD F/ /PS/</p>	<p>OK</p>	<p>OK</p>



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
<p>(EB 55 Annex 1, §§ 105–107)</p> <p><i>Describe whether the list of alternatives is credible and complete. Describe how it is validated that the alternatives are realistic.</i></p>	<p>PDD</p> <ul style="list-style-type: none">• The Project is not undertaken as a CDM project activity.• Setting up of comparable utility scale fossil fuel fired projects that supply to the southern grid under a PPA.• Continuation of the current situation <p>Yes all the realistic alternatives have been identified and compatible with the available data and are all literature and sources clearly referenced.</p> <p><i>Justification of evidences:</i> Both alternative a and alternative b are in compliance with mandatory laws and regulations taking into account the enforcement in the region or country and EB decision on national and sectoral policies. Based on sectoral knowledge the validation team could conclude that alternative a and b are realistic and credible alternatives to the project activity. By verification of Southern Power sector profile, it has been noted that Karnataka had energy (MU) shortages of 0.7% and peak (MW) shortages of 9.8% in 2005-06, hence continuation with current situation is not assessed to be plausible scenario,</p> <p><i>Conclusion:</i> It is concluded that for alternatives identification, all the corresponding literature and sources of information Southern Region Power Sector Profile, January 2007, Ministry of Power are clearly referenced in the PDD. Thus the list of alternatives is complete.</p>			



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
<p>B.4.3.3. Do all identified alternatives comply with enforced legislations?</p> <p>(EB 55 Annex 1, §§ 106(c))</p> <p><i>Describe the steps taken to validate this issue. Refer to the legislations.</i></p>	<p><i>Description:</i></p> <p>Both alternative ‘a’ and alternative ‘b’ are in compliance with mandatory laws and regulations taking into account the enforcement in the region or country and EB decision on national and sectoral policies.</p> <p><i>Justification of evidences:</i></p> <p>The project not undertaken as CDM project activity, will be still wind power project activity hence applicable laws for setting up wind power projects in India and Karnataka state has to be in compliance under the following applicable rules of the Government of India:</p> <ul style="list-style-type: none">• Certificate from the Chief Electrical Inspector :• Power Purchase Agreement (PPA) of the project proponent with the BESCOM :• Commissioning Certificates: <p>Evacuation Agreement for the transmission and distribution of electricity generated from project with state transmission utility: <i>As the above requirements would be met by the project activity, even not undertaken as CDM project activity, the alternative a) listed in the PDD is justified as plausible alternative to the project activity.</i></p> <p>For setting up of comparable utility scale fossil fuel fired projects that supply power to the southern grid under a PPA following requirements are needed under Government of India :</p> <ul style="list-style-type: none">• Power Purchase Agreement (PPA) of the project proponent	/PDD F/	OK	



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<p>with State Electricity Board</p> <ul style="list-style-type: none">• Commissioning certificates• Boiler Inspectorate and Electrical Inspectorate. <p>The above requirements would be met by alternative b), hence justified as plausible alternative scenario</p> <p><i>Conclusion:</i></p> <p>Thus it has been assessed and concluded that both alternatives a) and b) listed in the PDD comply with enforced legislations.</p>			
B.4.4. Investment analysis Step 2 <i>In case the investment analysis as per step 2 is chosen to justify the additionality Annex 2 "Assessment of Financial Parameters" has to be used to provide additional details of the the calculation parameters..</i>				
<p>B.4.4.1. Does the PDD provide evidence that the project would not be the most economically or financially attractive alternative or economically / financially feasible without the revenues from the sale of CERs?</p> <p>(EB 55 Annex 1, § 108)</p>	<p><i>Description:</i></p> <p>The project activity is the installation of wind turbines to generate power in the southern grid of India. Investment analysis calculation has also been provided to show that the calculated IRR for the Project activity is less than the benchmark, hence financially unattractive.</p> <p><i>Justification of evidences:</i></p> <p>The input values used for investment analysis calculations were</p>	<p>/PDD F/ /IRR/ /ACM000 2/ /EB 1/ /SOP/</p>	<p>CAR B2 CAR B3 CAR B5 CAR B6</p>	<p>OK</p>



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<p>verified from the following evidences submitted by the PP</p> <ul style="list-style-type: none">Capital costs, were checked from Supplier Offer dated 2006-07-25. The same was cross verified from the purchase orders of the wind mills dated 2006-08-24O&M costs were checked from the Supplier Offer dated 2006-07-25. The same was cross checked from the operation and maintenance contract dated 2008-07-04Insurance costs were checked from the DPR dated 2006-07-28.The applied PLF was checked from the third party estimated plant load factor given by C-WET in the year May 2007.Interest rate was checked from the PLR of Reserve Bank of India dated on last week of June 2006Term Loan was verified from the DPR dated 2006-07-28. The same was cross verified from the loan sanction letter dated 2007-07-05 from IREDATariff rate was checked from the KERC tariff order dated 2005-01-18. The same was cross verified from PPA signed by PP with state utility.The income tax for the project activity confirms to the income tax rate applicable to the corporates in India for year 2006-07 which was cross checked from the web link http://exim.indiamart.com/budget-2006-07/The Minimum alternative income tax rate for year 2006-07	<p>/KERC/ /DPR/ /RBI1/ /YR/ /C-WET/ /BSE/ /BS/ /wp/ /IWP/ /IT-C/ /IT-DP/ /IT-H/ /IT-M/ /DEP/</p>	<p>CAR B7 CAR B8 CAR B9 CAR B10 CL-B2 CL-B3 CL-B5 CL-B7 CL-B9.</p>	



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<p>which was cross checked from the web link http://exim.indiamart.com/budget-2006-07</p> <ul style="list-style-type: none">IT depreciation rate is in conformity with Appendix I of IT Rules Income Tax Act (source: www.fastfacts.co.in/resources/DeplIncomeTax.rtf)Tax holiday considered conforms to Sec. 80IA of the IT Act, verified from the source ((SOURCE: http://www.incometaxindia.gov.in/acts/income%20tax%20act/80-ia.asp) <p>From the above evidences, the input values used for investment analysis calculation are found to be correct.</p> <p>Moreover, the input values used for arriving at benchmark computation(WACC) were cross checked from the following web link in respect to:</p> <ul style="list-style-type: none">Interest rate - http://rbidocs.rbi.org.in/rdocs/Wss/PDFs/71184.pdfMarket return - http://www.bseindia.com/histdata/hindices.aspYield rate- http://rbidocs.rbi.org.in/rdocs/Publications/PDFs/87456.pdfBeta snapshots were checked from applicable average beta value. <p>Thus the sources and references used for benchmark computation were verified to be correct.</p> <p>Conclusion:</p>			



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<p>Thus the overall investment analysis and the sensitivity analysis computation are verified to be OK. Based on the above evidences it is concluded that the project is not financially attractive without the CER revenue. The detailed financial spread sheet analysis is submitted and it is verified and found to be valid and correct. Moreover, the PDD also found to provide evidence that the project would not be financially attractive without CDM revenues.</p> <p>In this context refer CAR B2, CAR B3, CAR B5- CAR B10, CL B2- B3 and CL B5 to B7, CL B9.</p>			
<p>B.4.4.2. Is an appropriate analysis method chosen for the project (simple cost analysis, investment comparison analysis or benchmark analysis)?</p> <p>(EB 55 Annex 1, § 108; EB 39 Annex 10)</p> <p><i>Describe why the selected analysis method is appropriate under consideration of potential revenues and costs, potential project alternatives and potential available benchmark values.</i></p>	<p><i>Description:</i></p> <p>Yes. Benchmark analysis has been chosen to demonstrate additionality of the project</p> <p>The main revenue for the project accrues from sale of generated electricity and hence Simple Cost Analysis cannot be applied. Benchmark analysis is the method of choice as it helps to find, track, and analyse investment options. The company has chosen this method as it helps it to compare its key financial and operating metrics against widely acceptable benchmarks; this in turn would help it decide if it should proceed with investing in the project.</p> <p><i>Justification of evidences:</i></p> <p>The baseline is continuation of grid supply on which no investment needs to be made and on which the PP has no control and hence benchmark analysis is considered appropriate as per EB 51 annex 58 guidelines.</p> <p><i>Conclusion:</i></p> <p>It is concluded that the benchmark analysis method is the</p>	<p>/PDD F/ /Loan/ /PO/ /PO-AD/ /O&M/ /PPA/ /INSU/ /LT/ /EB 51-A58/ / /BM/ /IRR/</p>	<p>CAR B40 CL B2 CL B3</p>	<p>OK</p>

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	appropriate method to prove that the non-viability of the project. The project activity follows the guidance on investment analysis to prove additionality. Thus the chosen benchmark analysis is found to be appropriate under consideration of potential revenues and costs, potential project alternatives and potential available benchmark values. <i>Refer CAR B10, CL B3 and CL B2</i>			
B.4.4.3. Is a clear, viewable and unprotected Excel spreadsheet available for the investment calculation? (EB 55 Annex 1, § 110; EB 51, Annex 58, §8) <i>Describe the steps taken to validate this issue.</i>	<i>Description:</i> Yes, a clear and viewable and unprotected excel spread sheet containing investment analysis calculations has been submitted. The final investment analysis calculation sheet was verified and found to meet the requirements. <i>Justification of evidences:</i> The investment analysis calculation provided in an unprotected excel sheet was checked and thus the calculations were traceable. <i>Conclusion:</i> A clear, viewable and unprotected excel spread sheet on investment calculations has been submitted, using the latest guidance given in the Guidance on the Assessment of Investment Analysis.	/IRR/ /PDD F/	OK	OK
B.4.4.4. Does the period chosen for the investment analysis reflect the technical lifetime of the project activity or in case a shorter period is chosen, is the fair value of the project activity's assets at the end of the investment analysis period (as a cash	<i>Description:</i> Yes, the period chosen for investment analysis is 20 years which reflects the technical lifetime of the WTG which is 20 years. <i>Justification of evidences:</i> The confirmation letter from Manufacturer and the Supplier stating	/PDD/ /EB50-A15/ /LT/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
inflow) included? (EB 55 Annex 1, § 109; EB 51 Annex 58 § 3 – 4) <i>Describe how the technical lifetime / period chosen for calculating financial parameter(s) is reviewed and which documents were utilised in the course of review. Describe furthermore the approach used to check the inclusion of a potential fair value.</i>	the life time of the WTGs were verified. The operational life considered, therefore, is in conformity with paragraph II (a) of Annex 15, EB 50 At the end of the period, the value of land and a fair value of 10% of the remaining assets are taken as salvage value and have been added back to the cash flow. <i>Conclusion:</i> Thus the Investment analysis has been verified to have carried out for 20 years which is the technical lifetime of the project activity.	/IRR/		
B.4.4.5. Is the (remaining) technical lifetime of existing or project equipment defined in accordance with the guidance of the <i>Tool to determine the remaining lifetime of equipment?</i> (EB 50 Annex 15)	<i>Description:</i> The project activity is not the replacement of existing project activity. Hence NA <i>Justification of evidences:</i> NA <i>Conclusion:</i> NA.	/PDD F/ /EB 50 annex 15/	OK	OK
B.4.4.6. Is the fair value calculated in accordance with local accounting regulations (where available) or international best practice? (EB 55 Annex 1, § 109; EB 51 Annex 58, § 4) <i>State the accounting regulations applied for calculating the fair value and describe why these are applicable under the project specific circumstances. Describe potential mismatches between regulations and the approach applied for calculating the fair value.</i>	<i>Description:</i> The project activity Investment analysis has been carried out for full technical lifetime of the WTG, hence only the salvage value has been added back at the end of project activity in cash flow statement. The fair value has not been calculated. No fair value remains at the end of the technical lifetime of the project activity (20 years). <i>Justification of evidences:</i> The investment analysis sheet has been checked and found no fair	/PDD F/ /LT/ /IRR/	OK	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	value has been calculated. Only salvage value has been added at the final year. <i>Conclusion:</i> Fair value has not been calculated, hence not applicable.			
B.4.4.7. Is the book value as well as the expectation of the potential profit or loss included in the fair value calculation? (EB 55 Annex 1, § 109; EB 51 Annex 58, § 4)	<i>Description:</i> This is not applicable as no fair value remains at the end of the technical lifetime. <i>Justification of evidences:</i> The investment analysis sheet has been checked and found no fair value has been calculated. Only salvage value has been added at the final year. <i>Conclusion:</i> Fair value has not been calculated, hence not applicable.	/PDD F/ /LT/ /IRR/	OK	OK
B.4.4.8. Are depreciation and other non-cash related items added back to net profits for the purpose to calculate the financial indicator? (EB 55 Annex 1, § 109; EB 51 Annex 58, § 5)	<i>Description:</i> Depreciation and other non-cash related items have been added back to net profits for the purpose to calculate the financial indicator. <i>Justification of evidences:</i> The following reference document was verified, <u>Section-III (Plant and Machinery), subsection-III (Renewable Energy Devices), Item “L” for depreciation rates applicable to the project activity.</u> The Investment analysis calculation sheet was checked and found	/PDD F/ /IRR/ /DEP/	CAR B8	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<p>that depreciation and other non-cash related items have been added back to net profits.</p> <p><i>Conclusion:</i></p> <p>It is concluded that the depreciation and other non-cash related items were added back to net profits for the purpose to calculate the financial indicator and depreciation rates were also cross checked from the evidence provided by the PP and was cross checked from the information available in public domain ^{/IT-D/} for depreciation available for such projects and found to be OK.</p> <p>Refer CAR B8.</p>			
<p>B.4.4.9. Is taxation excluded in the investment analysis or is the benchmark intended for post tax comparisons?</p> <p>(EB 55 Annex 1, § 109; EB 51 Annex 58, § 5)</p>	<p><i>Description:</i></p> <p>Benchmark is intended for post tax comparison.</p> <p><i>Justification of evidences:</i></p> <p>The cash generation is taken into account as envisaged in the Detailed Project report dated 2006-07-28 and crosschecked from Enercon offer dated 2006-07-25 ^{/SO/}.</p> <p>The following web link was referred, http://www.rashminsanghvi.com/Contents1.htm and thus the applied tax rate are found to be correct.</p> <p><i>Conclusion:</i></p> <p>It was concluded based on the evidence provided by the PP that adjustment of current assets is market practice. The cash generation is taken into account as envisaged in the DPR</p>	<p>/PDD/ /IRR/ /IT-M /IT-C//</p>	<p>CAR B 8</p>	<p>OK</p>



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	crosschecked from Enercon offer ⁷ . Thus post tax comparisons are justified. Refer CAR B8.			
<p>B.4.4.10. Were the input values used in the investment analysis valid and applicable at the time of the investment decision?</p> <p>(EB 55 Annex 1, § 109,112; EB 51 Annex 58, § 6)</p> <p><i>In case the basis for input values is a Feasibility Study Report (FSR) describe how it has been ensured that the period in time between the finalisation of the FSR and the investment decision is sufficiently short so that it is unlikely that input values would have materially changed. Further confirm the consistency of values in FSR and PDD.</i></p>	<p><i>Description:</i></p> <p>The input values mainly consist of project cost, financing pattern, terms of loan, generation, tariff, various costs, statutory parameters like depreciation and taxation. Input values used in the investment analysis are based on supplier Offer and DPR. The values were valid at the time of investment decision took place in 2006-08-23. The DPR was prepared on 2006-07-28 and based on the DPR; the investment decision took place on 2006-08-23. As the investment decision was taken within one month after finalising the DPR, the changes in input values from the DPR are unlikely. Moreover, the input values in the DPR and PDD are found to be consistent. The Supplier's offer dated 2006-07-25 and DPR dated 2006-07-28 were submitted to the management of M/s. Generacion Eolica India (GEI) in order to decide upon investing in wind power projects. It is evident from the Board resolution dated 2006-08-23⁷ that GEI had taken into consideration the initial offer from supplier and also the DPR to evaluate the viability of the project. It is also evident that GEI considered CDM revenue to proceed to invest in the project.</p> <p><i>Justification of evidences:</i></p> <p>The following evidences are submitted by the PP and it is verified</p>	<p>/SO/ /DPR/ /RBI 1/ /PDD/ /Loan/ /PO/ /O&M/ /PPA/ /INSU/ /LT/ /IT-C/ /IT-M/ /IT-DP/ /IRR/ /CWET/</p>	<p>CAR B2 CAR B5 CAR B6 CAR B7 CAR B8 CL-B9</p>	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<p>that they were available at the time of decision making,</p> <ul style="list-style-type: none"> • Capital costs, were checked from Supplier Offer dated 2006-07-25. The same was cross verified from the purchase orders of the wind mills dated 2006-08-24 • O&M costs were checked from the Supplier Offer dated 2006-07-25. The same was cross checked from the operation and maintenance contract dated 2008-07-04 • Insurance costs were checked from the DPR dated 2006-07-28. • The applied PLF was checked from the third party estimated plant load factor given by C-WET in the year May 2007. • Interest rate was checked from the PLR of Reserve Bank of India dated on last week of June 2006 • Term Loan was verified from the DPR dated 2006-07-28. The same was cross verified from the loan sanction letter dated 2007-07-05 from IREDA • Tariff rate was checked from the KERC tariff order dated 2005-01-18. The same was cross verified from PPA signed by PP with state utility. • The income tax for the project activity confirms to the income tax rate applicable to the corporates in India for year 2006-07 which was cross checked from the web link http://exim.indiamart.com/budget-2006-07/ • The Minimum alternative income tax rate for year 2006-07 			



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<p>which was cross checked from the web link http://exim.indiamart.com/budget-2006-07</p> <ul style="list-style-type: none">IT depreciation rate is in conformity with Appendix I of IT Rules Income Tax Act (source: www.fastfacts.co.in/resources/DeplIncomeTax.rtf)Tax holiday considered conforms to Sec. 80IA of the IT Act, verified from the source ((SOURCE: http://www.incometaxindia.gov.in/acts/income%20tax%20act/80-ia.asp) <p><i>Conclusion:</i></p> <p>The input values are taken as per Enercon offer dated 2006-07-25 and DPR dated 2006-07-28 which were prevailing during investment decision. DOE has also verified the project cost, rate of interest; tariff prevailed at the time of investment decision. Since the investment decision was taken in 23rd August 2006, the input values were valid at the time of investment decision.</p> <p>Since, the board on 2006-08-23 has resolved to go ahead with CDM, TÜV NORD has validated the input parameters that were available at the time of investment decision, which have been sourced from the supplier's offer letter and the DPR dated 2006.</p> <p>Though, due to subsequent addition of contingent cost to the total project cost offered by Enercon in its offer letter, the DPR has been revised on 2007-02-01 and also the board based on the second DPR has again resolved on date 2007-02-05 to proceed with the CDM, however, the validation team considered the first board resolution date as the investment decision date as the PP had</p>			



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<p>already decided to invest in the project activity with CDM benefits in August 2006 itself.</p> <p>TUV NORD in its validation had considered only the first DPR values and not the second DPR values because the project IRR provided in the first DPR is found to be 8.38% whereas the project IRR provided in the second / revised DPR is 8.06%. The correctness of the presented/calculated IRRs in the DPRS was checked during validation by the validation team and found to be ok. Hence the overall project IRR with input values sourced from first DPR is more conservative than with the input values sourced from second DPR (after some conservative adaptations during validation e.g. using higher PLF based on EB 48 guidelines the project IRR works out to 9.35%).</p> <p>Hence, referring to EB 51, Annex 58, Paragraph 6 of "Guidance of Assessment of Investment Analysis" TÜV NORD is able to confirm that the input values sourced from the supplier's offer (2006-07-25) and DPR (2006-07-28) were agreeable for investment analysis, as all the input parameters sourced from these documents were prevailing during the investment decision time (2006-08-23) and are apart from that also more conservative than the values from the second DPR.</p> <p>In this context please refer to CAR B2, CAR B5, CAR B6, CAR B7, CAR B8 and CL B9.</p>			
B.4.4.11. Is the plant load factor (PLF) chosen in a conservative manner, taking into account that the PLF may be different in the framework of demonstrating additionality	<p><i>Description:</i></p> <p>PP had 3 options of PLF based on KERC tariff order PLF (26.5%), Enercon offered PLF (25.47%) and effective PLF based on DPR (23.71%) which were available at the time of decision making.</p>	/C-WET/ /SOP/ /KERC/	CAR B2	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
and calculating the ex-ante ER? (EB 48, Annex 11)	<p>However PP has also commissioned study from CWET (independent third party). The PLF has been chosen based on estimated generation value is given C-WET report which is a third party. The value is deemed acceptable as the estimation of the PLF conforms to Annex 11 of EB 48.</p> <p><i>Justification of evidences:</i></p> <p>C-WET report (May 2007) on site validation and generation estimate of proposed wind farm at Kurtkoti village of Gadag District in Karnataka was checked in respect to the estimated PLF of 25.3% which was cross verified from the Enercon Offer which states almost equal PLF of 25.47% and comparable with KERC PLF. Infact C-WET assessed PLF was found to be more conservative when compared to the effective PLF of 23.71% given in the first DPR.</p> <p><i>Conclusion:</i></p> <p>Estimation of PLF by third party organization like C-WET conforms to section 3a) of the guidelines for the reporting and validation of Plant Load Factors i.e.; The plant load factor determined by a third party contracted by the project participants. The value is deemed acceptable as the estimation of the PLF conforms to Annex 11 of EB 48. Moreover the third party estimated PLF is almost equal to the Supplier estimated PLF (25.47%) and also comparable to KERC estimated PLF (26.5%) for tariff computation. Further the validation team noted that even with 10 % increase in PLF, the project IRR is less than the benchmark. As the above mentioned PLFs are already covered under sensitivity analysis, the validation team concluded that the additionality of the project would not be affected with 0.6% increase in PLF (25.47%) and also with 4.7%</p>	/DPR/		

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	increase in PLF (26.5%) (even e.g. with a PLF of 32,5% the project is still additional). Infact C-WET assessed PLF was found to be more conservative when compared to the effective PLF of 23.71% given in the first DPR. Thus the third party (C-WET) estimated PLF is justified and acceptable. The applied PLF is found to be conservative and the same PLF has been used for demonstrating additionality and for ex-ante ER calculations. In this context refer CAR B2.			
B.4.4.12. In case of project IRR: Are the costs of financing expenditures (loan repayments and interests) excluded from the calculation of project IRR? (EB 55 Annex 1, § 109; EB 51 Annex 58, § 9)	<p><i>Description:</i></p> <p>Project IRR is taken as the financial indicator. The cost of financing expenditure is excluded from the calculation of project IRR and hence is added back in the cash flow.</p> <p><i>Justification of evidences:</i></p> <p>The investment analysis spread sheet was checked in respect to costs of financing expenditures and found to have excluded correctly.</p> <p><i>Conclusion:</i></p> <p>It is concluded that the loan repayment and interests are excluded from the calculation of project IRR. Project IRR calculation conforms to the guidance given vide Annex 58, EB 51.</p>	/PDD/ /IRR/	OK	OK
B.4.4.13. In cases where a post-tax benchmark is applied please ensure that actual interest payable is taken into account in the calculation of income tax. (EB 51 Annex 58, § 11)	<p><i>Description:</i></p> <p>The interest published by Reserve Bank of India is taken into account in the calculation of income tax in post tax benchmark</p> <p><i>Justification of evidences:</i></p>	/BM/ /RBI 1/	OK	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
<i>As per the guidance it is recommended to select a pre tax benchmark in order to Describe the steps taken in assessing this requirement.</i>	<p>The following PLR from RBI web in link http://rbidocs.rbi.org.in/rdocs/Wss/PDFs/71184.pdf was checked in respect to the interest rate used in benchmark computation.</p> <p><i>Conclusion:</i></p> <p>This is the project developed by the PP and therefore the interest rate published by Reserve Bank of India in weekly statistical supplement of last week of June 2006 is acceptable as all the data and parameters used in the financial analysis are based on DPR and the DPR was prepared in July 2006 and is taken into account in the calculation of income tax in post tax benchmark</p>			
<p>B.4.4.14. In case of equity IRR: Is the part of the investment costs, which is financed by equity considered as net cash outflow and is the part financed by debt excluded in net cash outflow?</p> <p>(EB 55 Annex 1, § 109; EB 51 Annex 58, § 10)</p>	<p><i>Description:</i></p> <p>The Project activity has used project IRR. Hence Not Applicable</p> <p><i>Justification of evidences:</i></p> <p>NA</p> <p><i>Conclusion:</i></p> <p>NA</p>	/IRR/	OK	
<p>B.4.4.15. Is the type of benchmark chosen appropriate for the type of IRR calculated (e.g. local commercial lending rates or weighted average costs of capital for project IRR; required/expected returns on equity for equity IRR)?</p>	<p><i>Description:</i></p> <p>Yes. Weighted average costs of capital have been chosen as benchmark which is appropriate for the project IRR as per EB 51 annex 58.</p> <p><i>Justification of evidences:</i></p> <p>The spread sheets w.r.t financial analysis and benchmark have</p>	<p>/PDD F/ /IRR/ /BM/ /EB 51-A</p>	<p>CAR B40 CL-B3</p>	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
(EB 55 Annex 1, § 111; EB 51 Annex 58, §§12 – 15) <i>In case risk premiums are applied precisely describe its suitability to reflect the risks associated with the project activity, considering the project type and market situation.</i>	been checked and found the project IRR is lower than the considered bench mark value of 13.47%. <i>Conclusion:</i> The type of benchmark chosen for the project activity is WACC which is found to be appropriate for the project IRR calculated in this project activity. Thus the benchmark selection is in line with EB 51 annex 58. In this context refer CAR B10 and CL B3.	58/		
B.4.4.16. Is the benchmark value suitable for the project activity and is it reasonable to assume that no investment would be made at a rate of a lower return than the benchmark? (EB 55 Annex 1, § 109; EB 51 Annex 58, §§13 – 15) <i>Describe whether it is reasonable to assume that a lower rate of return would consequently result in the baseline scenario.</i>	<i>Description:</i> Yes, the benchmark value is suitable for the project IRR chosen to demonstrate additionality and investment would not have been made at a rate lower than the benchmark. The benchmark computed based on input value and information prevailing at the time of investment decision is taken for proving the addtionality of the project activity. The benchmark value is 13.47% <i>Justification of evidences:</i> Minutes of Board resolution meeting was checked to confirm that no investment would be made at a rate of lower return than benchmark. Bench mark calculation sheet has been verified and the benchmark computation is found to be OK. <i>Conclusion:</i> The benchmark chosen for the project activity is WACC and the arrived value is 13.47%. The chosen benchmark of WACC and the	/ /BoD 1/ /BM/	CAR B10 CL B3	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	applied value is found to be reasonable for this project activity as no investment would have been made at a rate lower than the this value. Thus, a lower rate of return than the applied benchmark rate would consequently result in the baseline scenario. Moreover, the minutes of Board resolution meeting reveals that no investment would be made at a rate of a lower return than the benchmark. In this context refer CAR B10, CL B3			
B.4.4.17. Is it ensured that the project cannot be developed by other developers than the PP? (EB 55 Annex 1 § 109; EB 51 Annex 58, §§ 13 – 14) <i>Describe why the benchmark does not include the subjective profitability expectations or risk profile of the project developer. If applicable assess the past financial behavior of the entity during at least the last 3 years in relation to similar projects.</i>	<i>Description:</i> No. The project can be developed by other developers other than the PP, M/s.Generacion Eolica India Limited. <i>Justification of evidences:</i> Not applicable. <i>Conclusion:</i> As it is a green field project, it is concluded that the project can be developed by other developers than PP.	/PDD F/ /UNFCC C/	OK	
B.4.4.18. Was the benchmark consistently used in the past for similar projects with similar risks? (EB 55 Annex 1, § 112(c))	<i>Description:</i> Not applicable as internal benchmark has not been used <i>Justification of evidences:</i> Not applicable <i>Conclusion:</i> Since internal benchmark has not been used, the question does not arise	/PDD F/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
<p>B.4.4.19. Does the PDD and related spreadsheets contain a sensitivity analysis and does the same contain variation of parameters which may vary throughout the project lifetime,</p> <p>(EB 55 Annex 1, §§ 109–110(e); EB 51 Annex 58, § 17–18)</p> <p><i>Describe relevance of parameters used in the sensitivity analysis as well as their likeliness to vary during the project's lifetime. Parameters which are fixed on the basis of contracts, PPAs etc. may not be subject to variation and not adequate.</i></p>	<p><i>Description:</i></p> <p>Sensitivity analysis has been presented in the PDD and in the spread sheet. The parameter such as project cost, PLF and tariff beyond the term of PPA are considered for sensitivity analysis.</p> <p><i>Justification of evidences:</i></p> <p>Sensitivity analysis calculation in IRR calculation sheet was checked and found to have done as per EB 51 annex 3.</p> <p><i>Conclusion:</i></p> <p>The parameters such as project cost, PLF and tariff beyond the terms of PPA have been subjected to 10% variation on either side. The parameters such as tariff for the first 10 years are fixed as per PPA, hence not subjected to variation for first 10 years. The sensitivity analysis is in conformity with guidance 17 and 18 of Annex 58, EB 51.</p> <p>In this context refer CAR B3.</p>	/IRR/ /PDD F/	CAR B3	OK
<p>B.4.4.20. Were only variables that constitute more than 20% of either total project costs or total project revenues subjected to reasonable variation?</p> <p>(EB 55 Annex 1, § 109; EB 51 Annex 58, § 17)</p>	<p><i>Description:</i></p> <p>PLF and capital cost have been subjected to sensitivity +/-10%. The tariff beyond the term of PPA is also included in sensitivity analysis. Thus variables constituting more than 20% of the capital costs or revenues are subjected to variation of +/-10%.</p> <p><i>Justification of evidences:</i></p> <p>Investment analysis calculation sheet and PDD version 5 was checked in respect to sensitivity analysis.</p>	/IRR/ /PDD F/	CAR B3	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<p><i>Conclusion:</i></p> <p>The sensitivity analysis which have been carried out by varying the parameters PLF and Project cost and tariff in line with the guidance for investment analysis. It has been analysed and concluded that all the parameters will constitute more than 20% of material impact of total project revenues have been subjected to sensitivity analysis.</p> <p>In this context refer CAR B3.</p>			
<p>B.4.4.21. Have parameters, constituting less than 20% of total project costs or revenues, been identified with potential material impact on the financial parameter?</p> <p>(EB 55 Annex 1, § 109; EB 51 Annex 58, § 17)</p> <p><i>Describe whether those parameters are considered in the sensitivity analysis?</i></p>	<p><i>Description:</i></p> <p>NO. Only parameters constituting more than 20% of the capital costs or revenues are subjected to variation of +/-10%. As the parameters constituting less than 20% of the project costs does not have any material impact on the financial parameters, these parameters are not considered for sensitivity analysis.</p> <p><i>Justification of evidences:</i></p> <p>The investment analysis sheet was checked in respect to the sensitivity analysis calculation and found that only parameters PLF, project cost and tariff are subject to variation. These parameters are verified to constitute more than 20% of material impact of total project revenues have been subjected to sensitivity analysis.</p> <p><i>Conclusion:</i></p> <p>Thus from verification of sensitivity analysis computation, it has been confirmed that parameters constituting less than 20% of total project costs or revenues are not subjected to variation as it has got less impact on the financial parameter.</p>	<p>/IRR/ /PDD F/</p>	<p>OK</p>	
<p>B.4.4.22. Is the range of variation reasonable in the</p>	<p><i>Description:</i></p>	<p>/IRR/</p>	<p>CAR</p>	<p>OK</p>



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
<p>specific context of the project activity, taking into consideration historic trends in the business sector?</p> <p>(EB 55 Annex 1, § 109; EB 51 Annex 58, § 18)</p> <p><i>Describe whether the range of variation is appropriate with focus on historic developments, e.g. price of oil / labour etc., energy potential in the region in question.</i></p>	<p>Range of variation considered is reasonable for the project activity considering the historic trends as PLF is based on independent third party company's study and the annual inflation averaging more than 5%, the variation considered is appropriate for as per the historic trends in this business sector. As the cost of WTGs are increasing due to substantial increase in prices of steel and cement, which contribute significantly to wind turbine structure. Hence therefore in light of the above, varying the project cost more than 5%, is considered appropriate based on historic trends.</p> <p><i>Justification of evidences:</i></p> <p>KERC order dated 2005-01-18 was checked in respect to the historic trends prevailing in the region in respect to PLF of wind mills and WTG cost. It was noticed that IWPA (referred from KERC Order) has stated that in Karnataka, over the last three years the PLF achieved is 23%. However it is stated that the PLF could be improved by 3% due to technological advancement ^{/KERC/}. IWPA has also stated that the capital cost for wind projects would be higher as it involves vast land acquisition and construction of sub-station and transmission lines. Further they have stated that the increase in cost of steel, increase in excise duty by 4% and depreciation of Rupee against Euro has increased the investment costs ^{/KERC/}.</p> <p>Thus the above statements taken from KERC order justifies the range of variation carried out for sensitivity analysis of PLF and project cost to be reasonable.</p> <p><i>Conclusion:</i></p> <p>Considering the fact that the PLF is based on independent third</p>	<p>/PDD F/ /KERC/ /C-WET/</p>	<p>B3</p>	



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	party company’s study and the annual inflation averaging more than 5%, the variation considered is appropriate for this business sector. Moreover the the last three years the PLF achieved in the region was considered for its historic trends ^{/KERC/} . The project cost is bound to increase on a year-on-year basis, on the basis of inflationary trend as seen from the historic cost. IWPA statements for increasing project cost are acceptable ^{/KERC/} . The variation of tariff beyond 10 years is deemed acceptable. Thus the selected parameters were checked to have subjected to reasonable variation. In this context refer CAR B3.			
B.4.5. Barrier analysis Step 3 or SSC additionality assessment				
B.4.5.1. Are there any barriers given which have a clear and direct impact on the financial returns of the project? (EB 55 Annex 1, §§ 115, 134, 137) <i>In case of LSC projects those issues cannot be considered as barriers and shall be assessed in the investment analysis. In case of SSC projects the same fundamentals as for LSC projects shall apply, i.e. the assessment of the investment barrier according to EB 51 Annex 58.</i>	<i>Description:</i> NA <i>Justification of evidences:</i> NA <i>Conclusion:</i> NA			
B.4.5.2. Are the barriers described risk related (e.g technology failure, other performance related risks)? (EB 55 Annex 1, §§ 116, 134, 137)	<i>Description:</i> NA <i>Justification of evidences:</i>			



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
Are there other barriers or barriers due to prevailing practice existent which would have led to higher emissions?	NA Conclusion: NA			
B.4.5.3. Has the unavailability of means of finance for the project been described and adequately substantiated? Do evidences doubtlessly prove that the financing of the project was assured only due to the benefit of the CDM? (EB 55 Annex 1, §§ 116, 137, EB 50 Annex 13, § 9)	Description: NA Justification of evidences: NA Conclusion: NA			
B.4.5.4. How is it justified and evidenced that the barriers given in the PDD are real? (EB 55 Annex 1, § 116(a))	Description: NA Justification of evidences: NA Conclusion: NA			
B.4.5.5. How is it justified that one or a set of real barriers prevent(s) the implementation of the project activity and do not prevent the implementation of at least one of the alternatives? (EB 55 Annex 1, § 116(b))	Description: NA Justification of evidences: NA Conclusion:			



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	NA			
B.4.5.6. Does the review of relevant background information on the nature of the company(ies) and entitiy(ies) involved in the financing and implementation of the project sufficiently justify that the barriers related to the lack of access to capital, technologies and skilled labour are real? (EB 50 Annex 13, § 4)	Description: NA Justification of evidences: NA Conclusion: NA			
B.4.5.7. Has it been demonstrated in an objective way how the CDM alleviates each of the identified barriers to a level that the project is not prevented anymore from occurring by any of the barriers? (EB 50 Annex 13, § 5)	Description: NA Justification of evidences: NA Conclusion: NA			
B.4.5.8. Would provision of additional financial means lead to the mitigation of the barrier(s) demonstrated? (EB 50 Annex 13, § 7) <i>Describe why provision of additional financial means would not lead to mitigation of the barrier(s) demonstrated and hence analysing the project's additionality within the framework of an investment analysis is inappropriate. .</i>	Description: NA Justification of evidences: NA Conclusion: NA			



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
B.4.6. Common practice analysis Step 4 (in case of SSC projects skip this step)				
<p>B.4.6.1. Is the defined region for the common practice analysis appropriate for the technology/industry type?</p> <p>(EB 55 Annex 1, § 120(a))</p> <p><i>Describe why the project activity is not common practice in a transparent and unambiguous manner. If a region other than the entire host country is chosen, describe why this region is more appropriate.</i></p>	<p><i>Description:</i></p> <p>As the analysis of wind mill installations have been done in the region of Karnataka, it is concluded that the common practice analysis has been done in a defined scope i.e. specified region - Karnataka). More over analysis proves that the wind power installations developed in this region are under CDM. Hence it is concluded that other than CDM project activity, the wind power installations in the defined region is not a common practice.</p> <p><i>Justification of evidences:</i></p> <p>In respect to common practice analysis, the individual investors who have wind installations greater than 15 MW were checked from the website http://www.windpowerindia.com/statpriv.html. Moreover the list of wind power investors was cross checked using the Directory for Indian wind Power 2008 to identify the capacity of installations in each state for each investor.</p> <p><i>Conclusion:</i></p> <p>Thus from document review and analysis, it has been concluded that there are no similar project activities without CDM and therefore non-CDM large scale wind energy investments is not a common practice in the region.</p> <p>Hence the project activity is not a common practice in the region.</p> <p>Thus the common practice analysis with respect to WTG installations is in line with the additionality tool version 5.2. In this</p>	<p>/PDD T/ /unfccc/ /wp/ /IWP/</p>	<p>CAR B4 CL-B8 CL-B4</p>	<p>OK</p>



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	context refer CAR B4, CL B4 and CL B8.			
B.4.6.2. To what extent similar projects have been undertaken in the relevant region? (EB 55 Annex 1, § 120(b))	<p><i>Description:</i></p> <p>The individual investors who have wind installations greater than 15 MW in the region of Karnataka were considered for analysis of similar projects. . In India there 95 individual investors who have wind installations greater than 15 MW. Out of these there are 8 investors who have wind installations greater than 15 MW in the state of Karnataka. All private investors in the state of Karnataka with installations greater than 15 MW have developed these projects as CDM projects. Hence there is no similar project activity.</p> <p><i>Justification of evidences:</i></p> <p>In respect to common practice analysis, the individual investors who have wind installations greater than 15 MW were checked from the website http://www.windpowerindia.com/statpriv.html. Moreover the list of wind power investors was cross checked using the Directory for Indian wind Power 2008 to identify the capacity of installations in each state for each investor. Moreover the existent 8 comparable scale projects were checked to be under CDM from UNFCCC website. <i>Conclusion:</i></p> <p>Thus from document review and analysis and also from the assessment of existence of comparable projects, it has been concluded that there are no similar project activities without CDM and therefore non-CDM large scale wind energy investments is not a common practice in the region</p> <p>In this context refer CAR B4, CL B8 and CL B4.</p>	/PDD F/ /unfccc/ /wp/ /IWP/	CAR B4 CL B8 CL B4	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
B.4.6.3. In case similar projects are identified, are there any key differences between the proposed project and existing or ongoing projects and what kind of differences are observed? (EB 55 Annex 1, § 120(c))	Description: NA as no similar projects is identified. Justification of evidences: NA Conclusion: NA	/PDD F/	OK	OK
B.5. Ex-Ante Calculation of GHG Emission Reductions <i>It is assessed whether the ex-ante calculations of project emissions, baseline emissions, leakage emissions are stated according to the methodology and whether the argumentation for the choice of default factors and values – where applicable – is justified. Furthermore calculation of emission reductions shall be assessed.</i>				
B.5.1. Are the equations applied correctly according to the applied approved methodology? (EB 55 Annex 1, §§ 67(c), 89–90, 92) <i>Describe clearly the steps taken to assess whether the methodology has been applied correctly to calculate project</i>	<input checked="" type="checkbox"/> The equations applied for calculation are correctly applied according to the approved methodology. <input type="checkbox"/> The following mistakes have been identified in this context:	/PDD F/ /ACM000 2/ /ER/	OK	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
<i>emissions, baseline emissions, leakage and emission reductions. Further take into consideration that all estimates of the baseline emissions can be replicated using the data and parameter values provided in the PDD.</i>	<p><i>Description:</i> The methodology applied for the project activity is ACM0002, version 11. For Ex-ante calculation of GHG emission reduction, all the equations are applied correctly as per the methodology. The E_{Ry} of the project activity during the crediting period is the difference between the baseline emission (BE_y), project emission (PE_y) and leakage (Ly). The GHG emission reduction is calculated as per ACM0002 with the following equations: $ER_y = BE_y - PE_y - Ly$ BE_y is calculated by multiplying the grid emission factor (EF_y) and the electricity supplied to the grid (EG_{PJ, y})</p> <p>Since it is a wind energy project activity, there are no project emissions and leakages considered for GHG emission reduction calculation. Thus all the equations applied to calculated emission reduction calculations are in line with the methodology.</p> <p><i>Justification of evidences:</i> The emission factor (EF) is derived as per “Tool to calculate the emission factor for an electricity system” (version 02). The operating margin and build margin emission factor values are referred from, CEA database version 4 and the calculated combined margin emission factor value is found to be correct. The PLF used for calculating the net electricity supplied to the grid has been referred from C-WET report and found to have correctly applied.</p>	<p>/C-WET/ /cea/ /EF tool/</p>		

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<p>The emission reduction calculation sheet was checked for the above calculations and the ER calculations are found to be correct.</p> <p><i>Conclusion</i> It is concluded that all the parameters taken for emission reduction calculations are found to be appropriate. All the equations used in ER calculations are in line with the methodology.</p>			
<p>B.5.2. In case the methodology allows for different methodological choices, are the equations applied properly justified and have they been used reflecting the other methodological choices (i.e. baseline identification)?</p> <p>(EB 55 Annex 1, §§ 90–91) <i>Assess the correct selection and application of methodological choices. Describe whether proper justification has been provided (based on the choice of the baseline scenario, context of the project activity and other evidence provided) and whether the correct equations have been used reflecting the relevant methodological choices.</i></p>	<p><i>Description:</i> Since it is a wind project activity all the parameters and equations used for baseline identification are explained and justified as per the methodological choices.</p> <p><i>Justification of evidences:</i> The methodology ACM0002 was checked in respect to methodological choices.</p> <p><i>Conclusion:</i> The project considers the methodology ACM0002 and is in line with the methodological requirement</p>	<p>/PDD F/ /ACM000 2/</p>	OK	OK
<p>B.5.3. Have conservative assumptions been used when calculating the project emissions?</p> <p>(EB 55 Annex 1, §§ 90–91) <i>Describe clearly the steps taken to assess whether all the assumptions and data used by the PP are listed in the PDD including references and sources and are conservatively interpreted in the PDD.</i></p>	<p><i>Description:</i> As the project activity being a wind power project activity, the project emissions are zero (PE=0) as per the methodology. Moreover, no other GHG emissions within the project boundary which were expected to contribute more than 1% of the overall expected average annual emission reductions have been identified.</p> <p><i>Justification of evidences:</i></p>	<p>/PDD F/ /ACM000 2/ /ER/ /</p>		OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<p>The methodology ACM0002 version 11 was checked to confirm that the project emissions for renewable power generating projects are considered as zero.</p> <p><i>Conclusion:</i></p> <p>It is concluded that there is no project emissions identified for the wind power project activity which is in line with the applied methodology ACM0002 version 11.</p>			
<p>B.5.4. Does the implementation of the project activity lead to GHG emissions within the project boundary which are expected to contribute more than 1% of the overall expected average annual emission reductions, which are not addressed by the methodology?</p> <p>(EB 55 Annex 1, § 77)</p>	<p><i>Description:</i></p> <p>The project activity comprises of generation of power by using renewable resources and supplying it to a carbon intensive regional grid. Moreover, no other GHG emissions within the project boundary which were expected to contribute more than 1% of the overall expected average annual emission reductions have been identified</p> <p><i>Justification of evidences:</i></p> <p>The following web link has been referred in this regard, http://www.cea.nic.in/</p> <p><i>Conclusion:</i></p> <p>Being a wind power project activity, it has been concluded that implementation of project activity would not lead to GHG emissions</p>	<p>/cea/ /ER/ /PDD F/</p>	OK	OK
<p>B.5.4.1. Has a plant load factor (PLF) been defined ex-ante and considered for determination of baseline emissions?</p> <p>(EB 48 Annex 11, §§ 1, 3–4)</p>	<p><i>Description:</i></p> <p>The PLF of 25.3% has been taken ex-ante based on the estimation given by C- WET, a third party. The applied PLF is found to be conservative for baseline emissions when compared to the KERC</p>	<p>/C-WET/ /PDD / /ER/</p>	OK	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
<i>Describe why the PLF is conservative in the framework of calculating emissions reductions and whether the PLF is the same in the framework of demonstrating additionality by applying the investment analysis. Note, in order to be conservative in both cases the PLF may be different.</i>	<p>tariff order estimated PLF of 26.5% which was publically available at the time of decision making. The PLF applied in ER calculation and in additionality demonstration are same.</p> <p><i>Justification of evidences:</i></p> <p>The applied PLF was cross verified from third part estimated (C-WET report) .The PLF used in ER calculation and in investment analysis calculation are found to be consistent.</p> <p><i>Conclusion:</i></p> <p>The applied PLF is found to be conservative in the framework of calculating emissions reductions as it is comparably less than the KERC estimated PLF of 26.5%</p>	/IRR/ /PDD F/ /KERC/		
<p>B.5.5. Are all data sources and assumptions appropriate and parameters which remain fixed throughout the crediting period correct, applicable to the project and will lead to a conservative estimation of emission reductions?</p> <p>(EB 55 Annex 1, § 91)</p> <p><i>Describe clearly the steps taken to assess whether the values used for the fixed parameters are considered reasonable, correct and applicable in the context of the project activity. Check esp. chapter 6.2 of the PDD.</i></p>	<p><i>Description:</i></p> <p>The methodology applied for the project activity is ACM0002, version 11. For Ex-ante calculation of GHG emission reduction all the values are applied as per the methodology. The most important parameter which remains fixed throughout the crediting period and has a huge influence on ER calculations is the grid emission factor.</p> <p><i>Justification of evidences:</i></p> <p>This value has been sourced from the published data of Central Electricity Authority, CDM CO₂ database, Version 4. The OM & BM values were checked to have applied correctly.</p> <p><i>Conclusion:</i></p> <p>CEA version 4 is the most recent official data that was available at the time of preparation of the first version of PDD which was web</p>	/PDD F/ /ACM0002/ /ER/ /cea/	OK	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	hosted and has led to conservative estimation of emission reductions. It is concluded that all the data and parameters which remain fixed throughout the crediting period are correct as well as applicable to the project and will lead to a conservative estimation of emission reductions.			
<p>B.5.6. Are all ex-ante calculation values for monitoring parameters (as defined as per chapter B.7.1) reasonable?</p> <p>(EB 55 Annex 1, § 91)</p> <p><i>Describe clearly the steps taken to assess whether the values used for the monitoring parameters are considered reasonable, applicable and conservative in the context of the project activity</i></p>	<p><input checked="" type="checkbox"/> All “Values of data to be applied for the purpose of calculating expected emissions reductions” are considered to be reasonable, applicable and conservative.</p> <p>Under section B.7.1, the parameters to be monitored are</p> <ul style="list-style-type: none">• Net electricity supplied to the grid by the Project,(EGy)• Electricity Export recorded at the meter(s) connected 39 machines of the project activity (Gpe).• Electricity Import recorded at the meter(s) connected 39 machines of the project activity(Gpi).• Transmission loss between the metering point for the project activity feeding the pooling substation of Enercon and the metering point at EB Substation (Li). <p>The estimated values for monitoring parameters EGy was derived based on estimated PLF given by third party (C-WET).Thus the value mentioned as EGy is the product of capacity of wind turbine, PLF and no of working hours, Gpe, Gpi and Li were sourced from Joint Meter reading (B-forms) which is signed by the representatives of Enercon and the state utility. The sample JMRs were checked to have mentioned the above parameters. Hence the values used for monitoring parameters is assessed to be reasonable, applicable and conservative in the context of the project activity</p>	<p>/PDD F/ /ER/ /C-WET/ /JMR/</p>	OK	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<input type="checkbox"/> The following mistakes have been identified in this context:			
B.5.7. Are the emission reductions real, measurable and give long-term benefits related to the mitigation of climate change. <i>Describe the steps taken to validate this issue.</i>	<p><i>Description:</i></p> <p>The project activity generates power from a renewable resource and feeds it to carbon intensive grids. The project will have an expected life time of 20 years which has been confirmed by the Manufacturer and the Supplier. Thus, the emission reductions caused by the project activity are real, measurable and provide long term environmental benefits.</p> <p><i>Justification of evidences:</i></p> <p>The emission reduction sheet and PDD were checked to have calculated the emission reductions of the project activity correctly. The Combined margin emission factor value has been correctly calculated based on the OM & BM emission factor values which were verified from CEA database version 4.</p> <p><i>Conclusion:</i></p> <p>Thus the emission reductions associated with such renewable power generation are real, measurable and give long term benefits related to mitigation of climate exchange.</p>	/PDD F/ /ER/ /LT/	OK	OK
B.6. Monitoring of Emission Reductions <i>It is assessed whether the monitoring plan is appropriate for the project activity and in line with the applied methodology.</i>				
B.6.1. Are all monitoring parameters required by the	<i>Description:</i>	/PDD F/	OK	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
<p>applied methodology contained in the monitoring plan?</p> <p>(EB 55 Annex 1, §§ 67(e), 121, 123(a), 124)</p> <p><i>Assess whether all applicable parameters listed in the methodology are included in the monitoring plan.</i></p> <p><i>Pl. check further whether the selection of parameters not to be monitored (section B.6.2) is appropriate and in line with the applied methodology.</i></p> <p><i>In case of different approaches can be chosen acc. to the methodology assess whether the selection of parameters is justified and correct.</i></p>	<p>Only the appropriate parameter applicable to the project activity i.e., “Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (EGy) has been included in the monitoring plan of the PDD as per the methodology. In addition to the applicable parameter, other relevant parameters to be monitored are</p> <ul style="list-style-type: none">Electricity Export recorded at the meter(s) connected 39 machines of the project activity (Gpe).Electricity Import recorded at the meter(s) connected 39 machines of the project activity(Gpi).Transmission loss between the metering point for the project activity feeding the pooling substation of Enercon and the metering point at EB Substation (Li). <p>Moreover, ex- ante option is chosen from operating margin (3-year generation-weighted average) emission factor and the build margin emission factor as per “Tool to calculate emission factor of the electricity system” version 2 , Therefore, the combined margin emission factor has been calculated ex-ante .</p> <p>Hence combined margin emission factor is not monitored.</p> <p>The parameters which are not monitored included in the PDD are</p> <ol style="list-style-type: none">Operating margin emission factorBuild Margin Emission factorCombined margin emission factor	<p>/ER/</p> <p>/JMR/</p> <p>/PPA/</p> <p>/cea/</p> <p>/EF tool/</p> <p>/site visit/</p>		



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<p>The parameters which are not monitored are mentioned as per the tool to calculate emission factor of the electricity system” which is one of the tools referred by the methodology ACM0002, version 11.</p> <p><i>Justification of evidences:</i></p> <p>Sample joint meter readings were checked during the validation stage and during site visit. Thus the selection of parameters monitored is in line with real case scenario as well in line with the methodology. The monitoring system is verified to be in line with PPA. Tool to calculate emission factor of the electricity system” version 2 was checked and thus the parameters not monitored are listed as per the tool referred in the methodology ACM0002, version 11.</p> <p>The operating margin and build margin emission factor values applied in the PDD were verified to be correct as per the CEA database version 4.</p> <p>Thus the calculated combined margin emission factor values are found to be correct.</p> <p><i>Conclusion:</i></p> <p>Thus only the appropriate parameter applicable to this project activity has been included in the monitoring plan as per the methodology which is found to be correct. In addition to the applicable parameter (EGy), the other relevant parameters (Gpe, Gpi and Li) are monitored in specific to the project activity . Thus the selection of parameters monitored is in line with real case scenario as well in line with the methodology. Also the parameters not to be monitored are - the grid emission factors (OM, BM and</p>			

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	CM) and the selection of these parameters are found to be in line with the "Tool to calculate emission factor of the electricity system" version 2			
<p>B.6.2. Are the means of monitoring of all parameters contained in the monitoring plan feasible and in accordance with the requirements of the applied methodology?</p> <p>(EB 55 Annex 1, § 123(a)–(b), 124)</p> <p>Assess whether the provided information for all parameters w.r.t.</p> <ul style="list-style-type: none"> a) Label (name of the data / parameter) b) data unit c) description d) source of data e) measurement equipment / method / procedure f) monitoring frequency g) QA/QC procedures <p>are appropriately described and in compliance with the requirements of the methodology..</p>	<p><i>Description:</i></p> <p>The monitoring parameters are net electricity supplied to the southern grid, electricity export and import and the transmission loss. The information provided for all the parameters are appropriately described and in compliance with the methodology.</p> <p><i>Justification of evidences:</i></p> <p>Sample joint meter readings are cross checked during the pre-validation stage, The monitoring system is verified to be in line with PPA. During the site visit the validation team verified the actual monitoring plan at the project site and concluded that the all monitoring parameters are feasible</p> <p><i>Conclusion:</i></p> <p>Thus tables under section B.7.1 of PDD describing all monitoring parameters from the project activity are complete with required data like parameters, description, and source of data, measurement equipment, monitoring frequency and QA/QC procedures. Thus the described monitoring parameters are feasible to monitor and is in compliance with the methodology.</p>	<p>/PDD F/ /ER/ /JMR/ /IM 01/ /IM 02/ /PPA/ /site visit/</p>	OK	OK
<p>B.6.3. Have all means of implementing the monitoring plan, e.g. equations necessary for ex-post emission reduction calculation, been described clearly and in line with the</p>	<p><i>Description:</i></p> <p>Yes, the required formula and the description of the parameters to be monitored are described clearly and are also in line with the applied methodology.</p>	<p>/PDD F/ /ER/ /cea/</p>	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
<p>methodology?</p> <p>(EB 55 Annex 1, §§ 123(b), 124)</p> <p><i>Check whether all necessary equations have been provided in the PDD. Pl. consider that ex-post and ex-ante calculations might be different.</i></p> <p><i>Please consider that additional equations might be necessary to calculate auxiliary parameters.</i></p>	<p>The ex- ante calculations for grid emission factor have been provided in the PDD.. The operating margin is obtained from weighted average of 3 years data based on CEA database version 4 and build margin from the recent year data available in CEA database version 4. Thus the combined margin emission factor of grid has been calculated ex-ante.</p> <p><i>Justification of evidences:</i></p> <p>The calculation and equation used in emission reduction calculations were checked from ER sheet and found to be OK.</p> <p>CEA database version 4 was checked in respect to ex-ante values of OM & BM emission factor applied in the PDD and thus the calculated combined margin emission factor value is found to be correct.</p> <p><i>Conclusion:</i></p> <p>It is concluded that the formula and equations used for emission reduction calculation are in line with the methodology. No additional equations are required for auxiliary parameter since this is a wind power project activity.</p>	/		
<p>B.6.4. Is it likely that the monitoring arrangements described in the PDD can properly be implemented in the context of the project activity?</p> <p>(EB 55 Annex 1, § 124(c))</p> <p><i>Assess whether the described monitoring arrangements are sufficient and realistic to enable a thorough monitoring. Pl. consider also special monitoring conditions, e.g. downtimes</i></p>	<p><i>Description:</i></p> <p>The monitoring plan covers all the monitoring parameters as per the applied methodology ACM0002. All these parameters have been monitored with respect to project boundary. Each WTG is equipped with energy meter to measure the generated electricity. The energy meters are owned by KPTCL. The class of accuracy of the meter is 0.2. All meter are sealed and it is kept under the control of KPTCL. Every month the representative of KPTCL and</p>	<p>/PDD/ /ER/ /JMR/ /IM 01/ /IM 02/</p>	OK	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
of monitoring equipment etc.	<p>Enercon will sign a document which contains the unit of electricity generated by the wind mill for the previous month. The Joint meter readings will be considered for emission reduction computations. All these meters are calibrated once in a year as per the industrial standards. In case of the failures such as burning of the meter, the meters will be immediately replaced and in case of an erratic display of the metered parameters and when the error found in testing the meters is beyond the permissible limit of error, the meter shall be calibrated immediately and the correction will be applied to the reading registered by the main meter to arrive the correct reading of energy supplied to the grid for the period up to last test.</p> <p><i>Justification of evidences:</i></p> <p>Sample joint meter readings are cross checked during the pre-validation stage, The monitoring system is verified to be in line with PPA. During the site visit the validation team verified the actual monitoring plan at the project site and concluded that the all monitoring parameters are feasible.</p> <p><i>Conclusion:</i></p> <p>The monitoring arrangements described in the PDD are properly implemented in the context of the project activity and all the monitoring arrangements are sufficient and realistic to enable a thorough monitoring. In addition to the KPTCL electricity measurement the O&M provider is also monitoring the electricity generation by using SCADA in the central monitoring system. Monitoring arrangements are sufficient and realistic to enable a thorough monitoring</p>	<p>/PPA/ /site visit/</p>		



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
<p>B.6.5. Are the QA/QC procedures appropriate sufficient to ensure the emission reductions achieved from the project activit can be reported ex-post and verified?</p> <p>(EB 55 Annex 1, § 124(b))</p> <p>Please consider the description given in section B.7.2. Describe which QA/QC provisions are considered. Address Quality Management System provisions, calibration and maintenance of equipment. Address further any review procedures.</p>	<p>Description:</p> <p>All measuring instruments are subject to calibration once in a year. The energy meters are calibrated and sealed and it is under the control of KPTCL. Necessary energy meters are also installed for emergency situations during calibration of main meters and malfunctioning of meters. Procedure for internal audit has been specified</p> <p>Justification of evidences:</p> <p>QA / QC procedures were cross verified during site visit. As the PP has signed operation and maintenance contract with the Supplier Enercon, the O&M of the WTGs are carried out by the trained persons from Enercon which is being monitored by site in charges. The information was confirmed through interview with O&M persons during site visit. Moreover the meter test report dated 2009-02-27 was checked and confirmed that the calibration of meters are done once in a year.</p> <p>Conclusion:</p> <p>From on-site verification, interviews with O&M persons and from verification of meter test report, it has been concluded that the QA/QC procedures are appropriate and sufficient to ensure the emission reduction achieved by the project activity can be reported in a transparent manner.</p> <p>Refer CAR B11.</p>	<p>/PDD/ /PPA/ /IM01/ /TC/</p>	<p>CAR B11</p>	<p>OK</p>
<p>B.6.6. Are procedures identified for data management?</p>	<p>Description:</p> <p>Central Monitoring Station (CMS) monitors and records data continuously. Provision for back up of data in the CMS made</p>	<p>/PDD F/ /IM01/</p>	<p>OK</p>	<p>OK</p>



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
<p>(EB 55 Annex 1, § 124(b))</p> <p><i>Check whether appropriate provisions are considered for data management including responsibilities, what records to keep, storage area of records and how to process performance documentation</i></p> <p><i>Check further the data archiving provisions for the project activity and ensure that provisions are made to archive data for the whole crediting period + 2 years.</i></p>	<p>available. Provisions have been made for archiving and preservation of data for a period of 2 years beyond the crediting period.</p> <p><i>Justification of evidences:</i></p> <p>During site visit, the log book records and training records were checked. Moreover data was checked to be monitored through SCADA and the data is archived in soft copy. Thus the procedures identified for data management is verified to be OK.</p> <p><i>Conclusion:</i></p> <p>Based on the interview with the project proponent and the O&M operator during site visit it is ensured that the data will be recorded in SCADA and will be verified in case of emergencies. The data will be stored in electronic format and also EIL being an ISO certified organization the data management and monitoring personnel's are professionally trained and all the data will be kept for more than 2 years after the crediting period.</p>	<p>/TRG/ /site visit/</p>		
<p>C. Duration of the Project/ Crediting Period</p> <p><i>It is assessed whether the temporary boundaries of the project are clearly defined.</i></p>				

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
<p>C.1. Is the project's starting date clearly defined and evidenced?</p> <p>(EB 55 Annex 1, § 99)</p> <p><i>Check whether the starting date is correct. Apply the definition of the project starting date as per the "Glossary of CDM terms".</i></p>	<p><i>Description:</i></p> <p>The Purchase order between the Generacion Eolica India Limited and EIL for supply of WTG has been submitted to support the PP's contention that the start date of project be considered as 2006-08-24</p> <p><i>Justification of evidences:</i></p> <p>The purchase order dated 2006-08-24 was verified and concluded that the project start date is correct,</p> <p><i>Conclusion:</i></p> <p>The project start date is clearly defined and evidenced in the PDD and also with documentary evidence. As this document signifies the commitment of the PP to meet a major project related expenditure, considering this as the start date is in accordance with the CDM glossary of terms. In this context refer CL C1</p>	<p>/PDD F/ /PO/ /GLOS/ /Unfccc/</p>	CL C4	OK
<p>C.2. Is the project's operational lifetime clearly defined and evidenced?</p> <p><i>Check whether the project lifetime is correctly defined. Consider the guidance on the assessment of investment analysis (annex to the additionality tool).</i></p> <p><i>Check in case of phased implementation this has been reflected throughout the whole PDD incl. the financial assessment, if applicable.</i></p>	<p><i>Description:</i></p> <p>Operational lifetime of WTG is 20 years which is clearly stated in the PDD. The same life time has been backed by the letter from WTG Manufacturer and the Supplier. Thus the project lifetime is clearly defined.</p> <p><i>Justification of evidences:</i></p> <p>The Manufacturer and Supplier certificate for lifetime of the project activity was checked Thus the life time of WTGs as 20 years is acceptable, The Investment analysis calculation sheet was checked to have done the analysis for 20 years time period.</p> <p><i>Conclusion:</i></p>	<p>/PDD/ /LT/ /EB 50-A15/</p>	OK	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	The investment analysis calculation is considered for 20 years as per the life time of the project activity. Project life is based on the letter issued by Enercon (India) Limited, the windmill Manufacturer and Supplier. The operational life considered, therefore, is in conformity with paragraph II (a) of Annex 15, EB 50. Hence, the operating life of the project considered is correct and appropriate..			
C.3. Is the start of the crediting period clearly defined and reasonable? <i>Check whether the envisaged starting date of the crediting period is realistic, taking into consideration the times needed for validation and registration.</i>	<i>Description:</i> A fixed crediting period of ten years is chosen. The start date of the crediting period is taken as 2011-04-01 or date of registration of the project activity with UNFCCC. <i>Justification of evidences:</i> Version 04 of the PDD mention the date as 2011-04-01 or date of registration of project with UNFCCC. Thus the date of the crediting period is found to be realistic. <i>Conclusion:</i> Thus the starting date of the crediting period is realistic, taking into consideration the times needed for validation and registration. Refer CL C2.	/PDDF/	/CL C2/	OK
D. Environmental Impacts <i>Documentation on the analysis of the environmental impacts will be assessed, and if deemed significant, an EIA should be provided to the DOE.</i>				



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
D.1.1. Are there any Host Party requirements for an Environmental Impact Assessment (EIA)? (EB 55 Annex 1, §§ 131–133) <i>Check the host party regulations, regarding EIA.</i>	<p><i>Description:</i></p> <p>As per the Schedule 1 of the EIA notification 2006, given by the Ministry of Environment and Forests under the Environment (Protection) Act 1986, the proposed wind project activity doesn't fall under the list of activities requiring EIA.</p> <p><i>Justification of evidences:</i></p> <p>The following web link has been referred http://envfor.nic.in/legis/legis.html and it is verified that the wind project does not fall under the requirements of EIA.</p> <p><i>Conclusion:</i></p> <p>It is concluded that the host party, India does not require EIA clearance for the setting up of the wind projects in India. It is verified from the above evidence.</p> <p>Refer CL D1.</p>	/PDD F/ /EIA/	CLD1	OK
D.1.2. In case an Environmental Impact Assessment (EIA) is requested by the host party, has it been carried out and if applicable duly approved? (EB 55 Annex 1, §§ 131–133) <i>Check the EIA and its approval, if applicable.</i>	<p><i>Description:</i></p> <p>EIA is not requested by host party.</p> <p><i>Justification of evidences:</i></p> <p>The following web link has been referred http://envfor.nic.in/legis/legis.html and it is verified that the wind project does not fall under the requirements of EIA.</p> <p><i>Conclusion:</i></p> <p>It is concluded that the host party, India does not require EIA clearance for the setting up of the wind projects in India. It is verified from the above evidence.</p>	/PDD F/ /EIA/	/CL D1/	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	Refer CL D1.			
D.1.3. Has an analysis of the environmental impacts of the project activity been sufficiently described and in line with the host party environmental legislation? (EB 55 Annex 1, §§ 130–132) <i>Check the PDD (section D). Check whether the project will create any adverse environmental effects.</i> <i>Check the relevant national environmental legislation.</i>	<i>Description:</i> EIA is not required for this type of project activity. Hence NA. <i>Justification of evidences:</i> NA <i>Conclusion:</i> NA		OK	OK
D.1.4. Are transboundary environmental impacts considered in the analysis? (EB 55 Annex 1, §§ 131–133) <i>Check the documents and local official sources / expertise regarding transboundary environmental impacts.</i>	<i>Description:</i> EIA is not required for this type of project activity. Hence NA. <i>Justification of evidences:</i> NA <i>Conclusion:</i> NA	-	OK	OK
E. Stakeholder Comments <i>The DOE should ensure that stakeholder comments have been invited with appropriate media and that due account has been taken of any comments received.</i>				

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
<p>E.1. Have relevant local stakeholders been invited to consultation prior to the publication of the PDD?</p> <p>(EB 55 Annex 1, § 128)</p> <p><i>Check by means of document review and interviews with local stakeholders if and when a local stakeholder consultation process has been carried out.</i></p>	<p><i>Description:</i></p> <p>A local stakeholders meeting conducted in Gadag District on 23 November 2007. Information about the proposed project has been given to the participants and their comments have been recorded.</p> <p><i>Justification of evidences:</i></p> <p>The documentary evidences such as stake holder invitation letter, minutes of the meeting are submitted by the PP. It is verified and found to be satisfactory. The same has been cross checked by interviewing the local stakeholders during site visit.</p> <p><i>Conclusion:</i></p> <p>Based on the above documentary evidences it is concluded that the stake holder meeting was conducted on 2007-11-23 at District Gadag.</p> <p>Refer CL E1.</p>	<p>/PDD/ /IM01/ /SHC/</p>	GLE1	OK
<p>E.2. Can the local stakeholder consultation process be assessed as adequate?</p> <p>(EB 55 Annex 1, § 129(a)–(c))</p> <p><i>Describe what assessment steps have been undertaken to assess the adequacy of the stakeholder consultation process. Give a final opinion on the adequacy.</i></p> <p><i>Please consider the following requirements in this context:</i></p> <p><i>(a) Comments by local stakeholders that can reasonably be considered relevant for the proposed CDM project activity,</i></p>	<p><i>Description:</i></p> <p>The main parameter to assess the adequacy of the stake holder consultation process was the cross section of the society that the invitees represented. The meeting was attended by people of the village, members of the Village Panchayat, workers and a representative of the Local entrepreneurs. Secondly, whether adequate and advance information was provided to the invitees about the likely agenda for the meeting and whether the information about the project was available to them before hand. That these two factors had been taken care of was confirmed during the interview. The participants were eager to see that the project was implemented early as it would help them / their dependents to get</p>	<p>/PDD/ /SHCP/ /IM01/</p>	OK	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
<p><i>have been invited;</i></p> <p><i>(b) The summary of the comments received as provided in the PDD is complete;</i></p> <p><i>(c) The project participants have taken due account of any comments received and have described this process in the PDD.</i></p>	<p>employment. Thus, the stakeholder consultation process is considered adequate and satisfactory.</p> <p><i>Justification of evidences:</i></p> <p>The documentary evidences such as stake holder invitation letter, minutes of the meeting are submitted by the PP. It is verified and found to be satisfactory. Moreover, the minutes of Stakeholder meeting was verified. The comments received in respect to the project activity and the responses by PP to address all the comments were checked. The stakeholders comments listed in PDD were cross verified from interview with local stakeholders during site visit and thus the listed comments provided in the PDD is complete. The comments addressed by the PP is found to be realistic and acceptable</p> <p><i>Conclusion:</i></p> <p>It is concluded that the comments received from the local stake holders are relevant to the CDM project activity and the stakeholders are very impressed by the implementation of the project activity will help to improve the employment opportunity, development of the region, better infrastructure development.. The summary has been included in the PDD. The entire stakeholder consultation process is verified to be adequate.</p>			



ANNEX 2: ASSESSMENT OF BASELINE IDENTIFICATION

Table A-2: Assessment of Baseline Identification (EB 51 Annex 3, §§ 82 – 85)

<input type="checkbox"/>	Baseline is not identified
<input checked="" type="checkbox"/>	Assessment of baseline see below

Baseline Alternatives identified	Inline with the Methodology?	Eliminated	Reasons for elimination / non-elimination from list of alternatives	Evidence used	DOE Assessment	
					Appropriateness of elimination	Assessment of validation team (results and means of assessment)
Not Applicable	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>As the project activity is the installation of a new grid-connected renewable power plant/unit, the baseline Scenario is the Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the “Tool to calculate the emission factor for an electricity system”.</p> <p>No other alternative is identified other than the above mentioned baseline. It is assessed as per the documents submitted from PP and also during site visit.</p>	http://www.cea.nic.in/	<input type="checkbox"/>	<p>As per ACM0002 version11, If the project activity is the installation of a new grid-connected renewable power plant/unit, the baseline scenario is the following:</p> <p><i>Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the “Tool to calculate the emission factor for an electricity system”.</i></p> <p>The PP has identified the baseline scenario in line with the methodology requirements</p>





ANNEX 3: ASSESSMENT OF FINANCIAL PARAMETERS

Table A-3: Assessment of Financial Parameters (EB 51 Annex 3, §§110, 111, 113/ in case financial parameters stem from FSR §112,)

<input type="checkbox"/>	No financial parameters are used for additionality justification						
<input checked="" type="checkbox"/>	Assessment of all financial parameters see below						
Parameter	Value applied	Unit	Source of Information (please indicate document and page)	Reference	DOE ASSESSMENT		
					Correctness of value applied	Appropriateness of information source	Comment
1. Total Project cost	1554.15	Rs. Mn.	1. Enercon Offer (Page No: 3) dated 2006-07-25 2. KERC order dated 2005-01-18 (page 15). 3. Purchase order dated 2006-08-24 (pg: 1, 7,11,16, 20 and 23) 4. Amended purchase order dated 2007-03-15.	/SOP/ /KERC/ /PO/ /PO-AD/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	TUV has validated this value as per the requirements of VVM version 1.1 Para 109 (a) & (b). The value has been considered from the 'Supplier Offer' of Enercon available at the time of decision making. Moreover, the capital cost in the 'Supplier offer' is equal to capital cost in the final 'Purchase Order'. Hence the project cost considered by PP is justified. The same has been cross-verified against the WTG cost per MW mentioned publicly by Karnataka Electricity Regulatory Commission (KERC) in its tariff order dated 2005-01-18 ^{/KERC/} . The KERC order dated 2005-01-18 has considered a capital cost of 42.5 Million per MW whereas capital cost for the project activity is 49.8 million per MW. Due to substantial increase in prices of steel and cement, which contribute significantly to wind turbine structure, the project cost is bound to increase on a year-on-



<input type="checkbox"/>	No financial parameters are used for additionality justification						
<input checked="" type="checkbox"/>	Assessment of all financial parameters see below						
Parameter	Value applied	Unit	Source of Information (please indicate document and page)	Reference	DOE ASSESSMENT		
					Correctness of value applied	Appropriateness of information source	Comment
							<p>year basis. Based on the above fact, as well as considering the time gap (one and half years) between between KERC's tariff order (2005-01-18) and the Supplier offer (2006-07-25), the increase in the capital cost is deemed to be realistic and reasonable.</p> <p>Moreover, the CDM pipeline data given in http://cdmpipeline.org/ website reveals that the cost ranges between \$1084.6/KW to \$1720.4/KW for the windmills installed in Karnataka for which the orders were released during the years 2005-2006 and 2006-2007 (Ref Nos: 1308; 1632;1291;1268;1259;1216;1421;1824;1797;1949;2036;2265;2950). Validation team also found that the costs of windmills were ranging from \$1142.9/KW to \$1615.6/KW for the windmills for which orders were released in the early 2006 (Ref No: 2265 and 1259). This project activity with a cost of \$1200.30/KW falls within the range. Therefore, the cost has been accepted by the validation team as correct and</p>



<input type="checkbox"/>	No financial parameters are used for additionality justification						
<input checked="" type="checkbox"/>	Assessment of all financial parameters see below						
Parameter	Value applied	Unit	Source of Information (please indicate document and page)	Reference	DOE ASSESSMENT		
					Correctness of value applied	Appropriateness of information source	Comment
							appropriate.
Installed Capacity	31.2	MW	Enercon Offer (Page No: 1) dated 2006-07-25 Detailed Project report 2006-07-28. (P:no: 3) Purchase order dated 2006-08-24 (page 1).	/SOP/ /DPR/ /PO/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	The plant capacity is based on the Enercon Offer and the detailed project report, Besides, the capacity is also supported by the purchase order placed with the supplier Enercon. Since the turbine determines the plant capacity, the value is considered correct and appropriate for the project activity.
Term loan	1165.6	INR Mn.	DPR dated 2006-07-28 (P:no:8) Loan Sanction Letter of Term Loan dated 2007-07-05 from IREDA.	/DPR/ /Loan/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	The loan amount envisaged in the DPR dated 2006-07-28 is 1165.6 Million. This was cross checked from the actual loan sanction letter dated 2007-07-05. However actual loan section was after the decision making date, the cross check was performed to check the consistency of the envisaged loan during the decision making with the actual. The loan was consistent and hence accepted.
Rate of interest	11.00	percent	Lending rates published	/RBI 1/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Interest is based on the prevailing rate of interest at the time of decision making



<input type="checkbox"/>	No financial parameters are used for additionality justification						
<input checked="" type="checkbox"/>	Assessment of all financial parameters see below						
Parameter	Value applied	Unit	Source of Information (please indicate document and page)	Reference	DOE ASSESSMENT		
					Correctness of value applied	Appropriateness of information source	Comment
			by Reserve Bank of India (RBI) (Source: http://rbidocs.rbi.org.in/rdocs/Wss/PDFs/71184.pdf) DPR dated 2006-07-28. (P:No:15)				published by Reserve Bank of India (RBI), which has been cross checked with DPR dated 2006-07-28 and found to have applied correctly.
Repayment	40	Quarters	DPR dated 2006-07-28 (P: No:15) Loan Sanction Letter of Term Loan dated 2007-07-05 from IREDA.	/DPR/ /Loan/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	The repayment is envisaged for the period of 10 years in DPR dated 2006-07-28. Repayment period can also be cross checked from the loan sanction letter dated 2007-07-05. The repayment period in DPR is consistent with loan sanction letter and hence accepted.
PLF	25.30%	percent	Based on C-WET report (May 2007), Estimated PLF for the Gadag site. (P:No:10)	/ / /C-WET/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	The value is based on C-WET report dated May 2007. Estimation of PLF by third party organization like C-WET conforms to section 3a) of the guidelines for the reporting and validation of Plant Load Factors i.e.; The plant load factor determined by a third party contracted by the project participants. The value is acceptable as the estimation of the PLF conforms to Annex 11 of EB 48. Moreover the third party estimated PLF is almost equal



<input type="checkbox"/>	No financial parameters are used for additionality justification						
<input checked="" type="checkbox"/>	Assessment of all financial parameters see below						
Parameter	Value applied	Unit	Source of Information (please indicate document and page)	Reference	DOE ASSESSMENT		
					Correctness of value applied	Appropriateness of information source	Comment
							<p>to the Supplier estimated PLF (25.47%) and also comparable to KERC estimated PLF (26.5%) for tariff computation. The C-WET assessed PLF is found to be more conservative when compared with the effective PLF of 23.71% as per the first DPR. Thus the third party (C-WET) estimated PLF is justified and acceptable.</p> <p>Further, validation team analysed even with 10 % increase in PLF, the project IRR is less than the benchmark. As the above mentioned PLFs are already covered under sensitivity analysis, the validation team concluded that the additionality of the project would not be affected with 0.6% increase in PLF (25.47%) and also with 4.7% increase in PLF (26.5%). (even e.g. with a PLF of 32,5% the project is still additional) Infact, the investment analysis with the third party estimated PLF (25.3%) is found to be more conservative when compared with effective PLF (23.7%) sourced from first DPR which was prevailing during investment decision. Thus the third party (C-WET) estimated PLF is</p>



<input type="checkbox"/>	No financial parameters are used for additionality justification						
<input checked="" type="checkbox"/>	Assessment of all financial parameters see below						
Parameter	Value applied	Unit	Source of Information (please indicate document and page)	Reference	DOE ASSESSMENT		
					Correctness of value applied	Appropriateness of information source	Comment
							justified and acceptable.
Tariff / kWh (base year tariff)	3.40	Rs.	Based on KERC order dated 2005-01-18	/KERC/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	The value is based on KERC order available at the time of decision making. As per VVM 109 (a), the applied value has been validated to be correct and appropriate. The project proponent has also signed PPA with the state utility at the tariff of Rs. 3.40 per unit for the period of 10 years. The fixed tariff of Rs. 3.40 is applicable for the PPA tenure which is 10 years. The KERC order dated 2005-01-18 states that: <i>“From 11th year onwards, from the date of signing of the agreement the corporation shall pay to the company for the energy delivered at the metering point at a rate based on operating costs and incentives to be agreed upon by mutual negotiations”</i> . In fact KERC, while working out the tariff schedule for wind energy projects for the first 10 years, has noted that the reduction in tariff from year to year is mainly on account of repayment of debts and also that there are no running costs other than O&M costs which increases only marginally



<input type="checkbox"/>	No financial parameters are used for additionality justification						
<input checked="" type="checkbox"/>	Assessment of all financial parameters see below						
Parameter	Value applied	Unit	Source of Information (please indicate document and page)	Reference	DOE ASSESSMENT		
					Correctness of value applied	Appropriateness of information source	Comment
							from year to year. Therefore the project will not be able to obtain the same constant tariff beyond the PPA tenure. The tariff beyond the term of PPA is therefore determined as per KERC principle of cost plus 16% return on equity which is deemed acceptable.
Life of the WTG	20	Years	Manufacturer's certificate	/LT/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Project life is based on the letter issued by Enercon (India) Limited, the windmill Manufacturer and Supplier. The operational life considered, therefore, is in conformity with paragraph II (a) of Annex 15, EB 50. Hence, the operating life of the project considered is correct and appropriate.
O&M cost	1.10	Percent	Enercon Offer (Page No: 3) dated 2006-07-25	/SOP/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	O&M cost is based on the Supplier Offer available at the time of decision making. The applied value is correct and appropriate.
O&M cost escalation	5.00	Percent	Enercon Offer (Page No: 3) dated 2006-07-25)	/SOP/ /OMP/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	O&M cost escalation is based on the Supplier Offer available at the time of decision making. The applied percentage of escalation is correct



<input type="checkbox"/>	No financial parameters are used for additionality justification						
<input checked="" type="checkbox"/>	Assessment of all financial parameters see below						
Parameter	Value applied	Unit	Source of Information (please indicate document and page)	Reference	DOE ASSESSMENT		
					Correctness of value applied	Appropriateness of information source	Comment
			Operation and maintenance contract dated 2008-07-04 (p:No:4) 1.				and appropriate. The O&M contract with the supplier is for the period of 10 years. However, O&M for WTGs is expected to rise as they go older. Hence O&M cost with escalation of 5% is considered appropriate for the period beyond the contract
. Insurance	0.18	Percent.	Detailed Project Report dated 2006-07-28	/DPR/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Insurance is based on DPR dated 2006-07-28. The applied value is found to be acceptable as the DPR has been released before investment decision date.
Book depn.	4.50	Percent.	Straight line depreciation used as book depreciation Detailed Project Report dated 2006-07-28.	/IRR/ -C 44 /DPR/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	As the value of plant and machinery (WTG) has been depreciated to a residual value of 10% of its initial value over the entire asset life of 20 years. This translates to an SLM depreciation of 4.50 % per annum. The rate is also found to be in consistent with the book depreciation rate applied in the DPR. Thus the applied book depreciation rate is found to be appropriate.



<input type="checkbox"/>	No financial parameters are used for additionality justification						
<input checked="" type="checkbox"/>	Assessment of all financial parameters see below						
Parameter	Value applied	Unit	Source of Information (please indicate document and page)	Reference	DOE ASSESSMENT		
					Correctness of value applied	Appropriateness of information source	Comment
IT depn.	80.00	Percent.	Income Tax Act (source: www.fastfacts.co.in/resources/DeplIncomeTax.rtf)	/IT-DP/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	IT depreciation rate is in conformity with Appendix I of IT Rules. The rate is correct and appropriate for the project activity.
Tax holiday	10	Years	Income Tax Act (source: HTTP://WWW.INCOME TAXINDIA.GOV.IN/ACTS/INCOME%20TAX%20ACT/80-IA.ASP)	/IT- H/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Tax holiday considered conforms to Sec. 80IA of the IT Act and the calculations are in conformity with IT Act and the rulings given thereon.
Income Tax rate	33.66	Percent.	INCOME TAX ACT (SOURCE: HTTP://WWW.RASHMI NSANGHVI.COM/CONTENTS1.HTM)	/IT-C/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	The tax rate considered in calculation conforms to the ruling rate in 2006-07, when the investment decision was taken.
WACC	13.47	Percent	Benchmark Spreadsheet	/BM/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	The validation team also verified the correctness and authenticity of the data used for the calculation of the weighted average capital cost (WACC) and found them to be

<input type="checkbox"/>	No financial parameters are used for additionality justification						
<input checked="" type="checkbox"/>	Assessment of all financial parameters see below						
Parameter	Value applied	Unit	Source of Information (please indicate document and page)	Reference	DOE ASSESSMENT		
					Correctness of value applied	Appropriateness of information source	Comment
							correct. This is also in line with the guidelines for benchmark selection stipulated in guidance on investment analysis and hence the validation team has accepted the same.
Beta	1.18		Snapshots of Beta are attached as Appendix 4 to the PDD.	/BS/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	The value applied is the average of all the raw beta values that are available for the power sector companies during 2001-07-31 to 2006-06-30. The value has been taken from Bloomberg (financial databases) and found to have applied correctly.
Yield Rate	7.47	percent	http://rbidocs.rbi.org.in/rdocs/Publications/PDFs/87456.pdf	/YR/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	The applied percentage is based on average of range that is published by RBI for year 2005-06. The percentage has been verified to have been correctly applied as per information available during investment decision.
Market return	19.90	percent	http://www.bseindia.com/histdata/hindices.asp List of companies under Sensex and BSE indices.	/BSE/ /INDICES/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	The indices BSE-Sensex, BSE-200 and BSE-500 have been compared for the market return. The market return for the BSE-Sensex is the lowest and hence conservatively BSE-Sensex has been used for computing WACC.



<input type="checkbox"/>	No financial parameters are used for additionality justification						
<input checked="" type="checkbox"/>	Assessment of all financial parameters see below						
Parameter	Value applied	Unit	Source of Information (please indicate document and page)	Reference	DOE ASSESSMENT		
					Correctness of value applied	Appropriateness of information source	Comment
							The conservative approach for computing market return derived from BSE-sensex is acceptable.
Market risk premium	12.43	percent	Benchmark spreadsheet (Calculation Sheet: cell D2)	/BM/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	The applied value is based on the difference between market return and yield rate. The value has been verified to be correct.
Marginal Tax rate	11.22	percent	Income Tax Act (source: http://www.rashminsanghvi.com/Contents1.htm)	/IT-M/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Considering the normative term loan period is for 10 years and the tax rate applicable for this period is MAT. Same has been applied by the PP for computation of WACC and is therefore acceptable. The applied MAT rate was cross checked from the publically available web link and found to be OK.



ANNEX 4: ASSESSMENT OF BARRIER ANALYSIS

Table A-4: Assessment of Barrier Analysis (EB 51 Annex 3, § 117)

<input checked="" type="checkbox"/>	No barrier parameters are used for additionality justification			
<input type="checkbox"/>	Assessment of barriers see below			
Kind of Barrier (invest, tech, other)	Description of Barrier	Evidence used	Assessment of validation team	
			Appropriateness of information source	Explanation of final result



ANNEX 5: OUTCOME OF THE GSCP

Table A-5: Outcome of the Global Stakeholder Consultation Process
(§§ 41, 42 VVM Version 1)

<input checked="" type="checkbox"/>	No comments were received during the global stakeholder consultation period					
<input type="checkbox"/>	Comments were received during the global stakeholder consultation period. The comments (in unedited form) and the consideration/response of the validation team are presented below:					
Comment No.:	Comment by:	Inserted on:	Subject	Comment ^{*)}	Action taken by the validation team to take due account on the comment ^{*)}	Conclusion (incl. CARs CLs or FARs)

^{*)} In case clarifications have been requested by the validation team corresponding rows shall be added



ANNEX 6: APPOINTMENT CERTIFICATES OF TEAM MEMBERS



CERTIFICATE OF APPOINTMENT

Mr. K. V. Sudarshan

born on 1952-04-15

satisfies the requirements as specified in the TÜV NORD
JI/CDM CP directives and is hereby appointed as

TÜV NORD CDM Assessor

The present appointment will terminate on 2013-08-11
Certification registration No. 10 08 01 – 78

Essen, 2010-08-12


Head of TÜV NORD JI/CDM Certification Program
of TÜV NORD CERT GmbH



CERTIFICATE OF APPOINTMENT

Mr. Ma Paa Puratchikkanal

born on 1971-09-21

satisfies the requirements as specified in the TÜV NORD
JI/CDM CP directives and is hereby appointed as

TÜV NORD CDM Senior Assessor

The present appointment will terminate on 2013-09-09
Certification registration No. 10 09 03 – 79

Essen, 2010-09-10


Head of TÜV NORD JI/CDM Certification Program
of TÜV NORD CERT GmbH







TÜV NORD CERT GmbH • P.O. Box 10 32 61 • 45032 Essen • Germany

To whom it may concern

TÜV NORD CERT GmbH
Langemarkstrasse 20
45141 Essen
Germany
Phone: +49 201 825-0
Fax: +49 201 825-2517
Info.tncert@tuev-nord.de
www.tuev-nord-cert.com

TÜV®

Our / Your Reference

Contact

Direct Dial
Phone: -3329
Fax: -2139

Date
24.05.2010

Provisional extension of Senior Assessor appointment of Mr. Eric Krupp

The Senior Assessor appointment of Mr. Eric Krupp will expire on 2010-07-05. For a re-appointment a successful performance monitoring has to be evidenced once during the appointment period as assessor in team leading position. This monitoring is due on 2010-05-27.

Up to now Mr. Krupp was not able to provide evidence for successful performance monitoring. A monitoring can only be carried out by duly appointed Senior Assessors within the JI/CDM Certification Program. The number of such Senior Assessors was limited in the recent past of which Mr. Krupp himself was one of the Senior Assessors. The head of CP took note that a performance monitoring was difficult to obtain due to this reason.

Hence, the appointment period of Mr. Krupp's Senior Assessor appointment will be extended for six month until 2011-01-04. Until this date Mr. Krupp shall provide evidence for successful performance monitoring. In case this evidence cannot be provided in time, the auditor status of Mr. Krupp will be set inactive.

Kind regards

Dipl.-Ing. Rainer Winter
Head of TÜV NORD JI/CDM Certification Program

Headquarters
TÜV NORD CERT GmbH
Langemarkstraße 20
45141 Essen
Phone: +49 201 825-0
Fax: +49 201 825-2517
info.tncert@tuev-nord.de
www.tuev-nord-cert.com

Director
Dipl.-Volker Ulf Theike
Deputy director
Dipl.-Ing. Wolfgang Wiegand

Registration Office
Amstegstraße 1
45141 Essen
HRB 9976
VAT No.: DE 811389923
Tax No.: 111/57062193

Deutsche Bank AG, Essen
Bank Code: 36070050
Account No.: 0607999000
BIC (SWIFT-Code): DEUTDE33
IBAN-Code: DE 25 3607 0050 0607 8950 00



CERTIFICATE OF APPOINTMENT

Mr. Dipl.-Ing. Eric Krupp

born on 1971-06-25

satisfies the requirements as specified in the TÜV NORD
JI/CDM CP directives and is hereby appointed as

TÜV NORD JI/CDM Senior Assessor

The present appointment will terminate on 2010-07-05
Certification registration No. 06 05 01 - 017

Essen, 2007-07-06

A handwritten signature in black ink, appearing to be 'G. Krupp', written over a horizontal line.

Head of TÜV NORD JI/CDM Certification Program
of TÜV NORD CERT GmbH



CERTIFICATE OF APPOINTMENT

Mr. Ingo Klein

born on 1973-05-15

satisfies the requirements as specified in the TÜV NORD
JI/CDM CP directives and is hereby appointed as

TÜV NORD CDM Assessor

The present appointment will terminate on 2013-10-17
Certification registration No. 10 10 05 – 122

Essen, 2010-10-18

A handwritten signature in black ink, appearing to be "H. Klein", written over a horizontal line.

Head of TÜV NORD JI/CDM Certification Program
of TÜV NORD CERT GmbH