VALIDATION REPORT

M/S GOPAL GLASS WORKS LIMITED

1.65 MW WIND POWER PROJECT IN GUJARAT

Report No: 8105925996 – 09/242

Date: 2011/07/12

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

Validation Report:	***Report No.***	***Rev. No.***	***Date of 1st issue:***	***Date of this rev.***
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Project:	***Title:***		***Initial PDD Version:***	***Final PDD Version***
	1.65 MW Wind Power Project in Gujarat		2009-01-13	2011-07-12
Client:	M/s Gopal Glass Works Limited		***Client ref:***	Mr. Purvish Shah
Project Participant(s):	***Host Party:***		***Other involved parties:***	
	India		--	
Applied methodology/ies:	***Title:***		***No.:***	***Scope / TA:***
	Grid connected renewable electricity generation		AMS I D V 16	01 / 1.2
Validation team / Technical Review and Final Approval	***Validation Team:***		***Technical review:***	***Final approval:***
	Mr Pankaj Patel (TL) Mr Hemang Shah (TM) Mr Saroj Sahoo (TM) Mr Sanjay Kandari (OT)		Ms Sabine Meyer Mr Ingo Klein Mr Martin Saalmann	Saalmann, Martin
Expected Emission reductions: [t CO_2e]	***Expected emission reductions over the first crediting period:***		***Expected date of crediting period:***	
	31250 t CO_{2e}		2011-08-16	
Confidential content:	☐ Yes		☒ No	
Summary of Validation Opinion:	☒ Positive validation opinion		☐ Negative validation opinion	

M/s Gopal Glass Works Limited has commissioned the TÜV NORD JI/CDM Certification Program (CP) to validate the project: "1.65 MW Wind Power Project in Gujarat" 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

In the course of the pre-validation, 22 Corrective Action Requests (CARs) and 08 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 fulfilment of the stated criteria.

In detail, the conclusions can be summarised as follows:

- The project is in line with all relevant host country criteria and all relevant UNFCCC requirements.
- 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 31250 tCO_2e are most likely to be achieved within the 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.

Document	*Filename:*	*No. of pages:*

information:	FVR Gopal Glass	130

Abbreviations

BAU	Business as usual
CA	Corrective Action / Clarification Action
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CL	Clarification Request
CO_2	Carbon dioxide
CO_{2e}	Carbon dioxide equivalent
CP	Certification Program
DNA	Designated National Authority
EB	CDM Executive Board
EIA	Environmental Impact Assessment
FAR	Forward Action Request
GERC	Gujarat Electricity Regulatory Commisison
GGW	Gopal Glass works Limited
GHG	Greenhouse gas(es)
IDC	Interest During Construction
IPCC	Intergovernmental Panel on Climate Change
MAT	Minimum Alternative Tax
MIS	Monthly Information System
O&M	Operation and Maintenance
PDD	Project Design Document
PF	Power Factor
PLF	Plant Load Factor
SEB	State Electricity Board
SERC	State Electricity Regulatory Commission
SLDC	State Load Dispatch Centre
QC/QA	Quality control/Quality assurance
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual
WTG	Wind Turbine Generator

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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 01.2, EB 55).

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	1.65 MW Wind Power Project in Gujarat		
Project size	☐ Large Scale ☒ Small Scale		
Project Scope *(according to UNFCCC sectoral scope numbers for CDM)*	☒	1	Energy Industries (renewable- /non-renewable sources)
	☐	2	Energy distribution
	☐	3	Energy demand
	☐	4	Manufacturing industries
	☐	5	Chemical industry
	☐	6	Construction
	☐	7	Transport
	☐	8	Mining/Mineral production
	☐	9	Metal production
	☐	10	Fugitive emissions from fuels (solid, oil and gas)
	☐	11	Fugitive emissions from production and consumption of halocarbons and hexafluoride
	☐	12	Solvents use
	☐	13	Waste handling and disposal
	☐	14	Afforestation and Reforestation
	☐	15	Agriculture
Applied Methodology	*AMS ID, Version 16*		
Technical Area(s)	1.2: Renewables - Wind		
Crediting period	☐ Renewable Crediting Period (7 y) ☒ Fixed Crediting Period (10 y)		
Start of crediting period[1]	16/08/2011 or a date not earlier than the date of registration		

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 Gopal Glass Works Limited
Other involved party/ies	--	--

[1] As per the published PDD (version 1)

2.3 Project Location

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

Table 2-3: Project Location

No.	Project Location
Host Country	India
Region:	Gujarat
Project location address:	Vill-Lakhapar (Wandhiya), District Kutch, Gujarat, India
Survey No.	147/1P1
Latitude:	N 23° 12' 31.9''
Longitude:	E 70° 38' 07.4''

2.4 Technical Project Description

The project activity involves setting up a wind turbine generator of capacity 1.65 MW supplied by Vestas in village Lakhapar, District Kutch, Gujarat. The generated electricity is wheeled to the manufacturing unit of the project proponent through the Northern Eastern Western & North-Eastern (NEWNE) grid under power purchase agreement. The WTG is estimated to produce approximately 3.45 GWh of annual net electricity based on a plant load factor of 23.84 %. This project is intended to reduce CO_2 emissions to the extent of electricity displaced from the regional grid. The estimated amount of emission reductions over the chosen 10-years “fixed crediting period” is 31,250 tCO2e (acc. to the PDD). The estimated amount of emission reductions per annum are 3125 tCO2e.

The technical key data are provided in table 2-4 below.

Table 2-4: Technical data of the project activity

Particulars	***Specifications***
Turbine Make	Vestas, Model V-82
Rated Power	1650 kW
Rotor Diameter	78 m
Design Lifetime	20 years
Cut-in wind speed	3.5 m/s
Cut-out wind speed	20 m/s
No. of blades	3
Generator Types	Asynchronous water cooled
Rotor diameter	82 m
Nominal revolution (rotor)	14.4 rpm
Area swept (rotor)	5.281 m^2

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)
- Desk review of the PDD and supporting documents
- 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	15/04/2009
Submission of PDD for global stakeholder commenting process	15/07/2009
On-site visit	17/08/2009
Draft reporting finalised	08/09/2009
Final reporting finalised	12/07/2011
Technical review on final reporting finalised	12/07/2011

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 validation 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 validation team, consistent of one team leader and 03 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

	Name	Company	Function [1)]	Qualification Status [2)]	Scheme competence	Technical competence [4)]	Host country Competence	Team Leading competence
☒ Mr. ☐ Ms.	Pankaj Patel	TUV-India	TL	LA	☒	_	☒	☒
☒ Mr. ☐ Ms.	Hemang Shah	TUV-India	TM	LA	☒	T	☒	☒
☒ Mr. ☐ Ms.	Saroj Sahoo	TUV-India	TM	A	☒	_	☒	☐
☒ Mr. ☐ Ms.	Sanjay Kandari	TUV-India	OT[1)]	A	☒	T	☒	☐
☐ Mr. ☒ Ms.	Sabine Meyer	TUV-Nord	TR[3)]	A	☒	-	☐	☐
☒ Mr. ☐ Ms.	Klein Ingo	TUV-Nord	TR[3)]	LA	☒	1.2	☐	☒
☒ Mr. ☐ Ms.	Martin Saalmann	TUV-Nord	TR[3)]/FA	SA	☒	-	☐	☒

[1)] TL: Team Leader; TM: Team Member, OT: Observer-Team, TR: Technical review; OR: Observer-TR; 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 are 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 is described in Figure 1.

Validation Protocol Table A-1: Requirement checklist				
Checklist Item	***Validation Team Comment***	***Reference***	***Draft Conclusion***	***Final Conclusion***
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 sub-divided as per the requirements of the topic and the individual project activity.	*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.*	*Gives reference to the information source on which the assessment is based on*	*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.*	*In case a corrective action or a clarification the final assessment at the final validation stage is given.*

Figure 1: Validation protocol table

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: M/s Gopal Glass Works Limited/IM01/ Project consultant: Deloitte/IM02/	- Chronological description of the project activity with documents of key steps of the implementation. - Current status of plant design - Technical details of the project realization, project

Interviewed Persons / Entities	Interview topics
	feasibility, designing, operational life time, monitoring of the project - Host Government Approval - Approval procedures and status - Monitoring and measurement equipment and system. - Financial aspects - Crediting period - Project activity starting date - CER allocation / ownership - Baseline study assumptions - Additionality - Sustainable development issues - Monitoring - Analysis of local stakeholder consultation - Roles & responsibilities of the project participants w.r.t. project management, monitoring and reporting - National Legislation - Editorial issues of the PDD

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 validation 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	02	-	-
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	18	07	-
Duration of the Project / Crediting Period (C)	01	-	-
Environmental impacts (D)	-	-	-
Stakeholder Comments (E)	01	01	-
SUM	**22**	**08**	**-**

[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	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	The latitude and longitude of the individual WTG should be mentioned in degree (^{0}) minute (') and second (") format in section A.4.1.4 of the PDD.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The latitude and longitude of the WTG is mentioned in degree (°) minute (') and second (") format in section A.4.1.4 of the PDD		
DOE Assessment #1 *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.*	Unique identification for the WTG is specified in the required format in revised PDD. Same is also cross checked during the site visit and found correct. CAR is closed		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☐ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements		

General	CAR A2		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	The technical description of the WTG should be included in section A.4.2 of the PDD instead of the annex-5. As per the Cp guidelines for completing CDM- SSC-PDD there is no annex-5 which should be filled in the PDD.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The technical description of the WTG is included in the section A.4.2 of the PDD instead of the annex-5.		
DOE Assessment #1 *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.*	Technical description of the project activity is now described under section A.4.2 of the PDD as per Cp guidelines for completing CDM-SSC-PDD. Same is cross checked by the validation team from the web site and is correct. CAR is closed.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☐ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements		

General	CAR B1		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Weighted average of the Simple Operating margin emission factor of the last three years should be considered for calculation of Combined Margin (CM) emission factor instead of simple average.(Section B.6.1,page-20)		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The Weighted average of the Simple OM Emission factor for the latest three years for which data is available is used instead of simple average in the revised calculation. (Kindly Refer ER Calculation spreadsheet)		
DOE Assessment #1 *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.*	Weighted average of Simple OM emission factor is considered based on the latest available CO2 database of central electricity authority version 04. This is available at the time of validation. CAR is closed.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☐ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements		

General	CAR B2		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	The format of the table depicted in section B.6.4 of the PDD is not in conformity with Cp guidelines for completing CDM-SSC-PDD.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The format of the table in section B.6.4 of the PDD is corrected as per the “Guidelines for Completing the Simplified Project Design Document (CDM-SSC-PDD) and the Form for Proposed New Small Scale Methodologies (CDM-SSC-NM)		
DOE Assessment #1 *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.*	Format of the table is under section B.6.4 is revised and now is in line with the Cp guidelines for completing CDM-SSC-PDD CAR is closed.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☐ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements		

General	CAR B3		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	In section B.7.1 of the PDD the source written for the data is not appropriate.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The monthly share of electricity certificates/SE/ issued by GEDA/SLDC as the Source for data is mentioned in the section B.7.1		
DOE Assessment #1 *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.*	Net electricity exported to the grid is sourced from the GEDA/SLDC share of electricity. Validation team has reviewed the certificates for the month of March, April, May-2008 and confirmed that the source of data used for net electricity exported to the grid is correct and appropriate. CAR is closed		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☐ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements		

General	CAR B4		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	As it is written in the description (description of the measurement) provided in the section B.7.1 of the PDD there was no check meter near the WTG (i.e. at 33 KV end) found during site visit. This should be corrected. The whole description needs revision.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The section B.7.1 – description of the measurement is revised as per the Wheeling Agreement between PP and UGVCL		
DOE Assessment #1 *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.*	Detailed description is provided under section B.7.1 of the PDD to ensure consistent monitoring of the net electricity exported to the grid as verified during the site visit. CAR is closed		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☐ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements		

General	Finding CAR B5		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	The Prime Lending Rate was 12.75% to 13.25% in December 2007 and hence the mid rate is 13%, while it is given as 13.07% in the PDD (p.12). This may be checked and mistake rectified.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The reference web-link and the rate are corrected. Benchmark Project IRR is considered at 13%. Refer the worksheet "ana		
DOE Assessment #1 *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.*	Prime Lending Rate has been modified to 13%. CAR is closed		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☐ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements		

General	Finding CAR B6		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	The total installed capacity of wind energy given in the PDD (P.14) as of 31.3.2008 does not appear to be correct. This may be checked.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The reference is corrected in the PDD – http://www.cea.nic.in/reports/yearly/annual_rep/2007-08/annual_report_07_08.pdf		
DOE Assessment #1 *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.*	Reference is corrected and the figures are in agreement with the source. CAR is closed		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☐ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements		

General	Finding CAR B7		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	No information is given in the PDD about the conformity of the project activity to Annex 46 of EB 41.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The chronology pertaining to the CDM project activity is provided in the section B.5 of the PDD. All evidences for the chronology of events are provided to DOE.		
DOE Assessment #1 *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.*	Chronology of events given in the PDD. However, it is observed that the CDM consultant was appointed after the WTG commenced generation. Even the discussion with CDM consultants is reported to have commenced only after the WTG commenced generation. The chronology does not seem to indicate that there was serious consideration of CDM benefits. CAR is open		
Corrective Action #2	The chronology of the events is rectified to include all the communications. The first communication took place on 21st December 2007 (submitted to DOE) and the offer for providing the CDM services from Vestas is submitted to DOE, which clearly indicates that the CDM was seriously considered from the time of placing the Purchase orders, the negotiations took a while and thus consultant was finalized in June 2008.		
DOE Assessment #2	Chronology of events has been modified. Though the fact remains that the CDM consultant was appointed only after the WTGs commenced generation, since the project activity conforms to conditions stipulated vide paragraph 6 (a) and (b) of Annex 22, EB 49, CAR is closed		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☐ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements		

General	Finding CAR B8		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	The Purchase Order release date differs between Section C.1.1. of PDD and the worksheet. Reconcile		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The date mentioned refers to the date when permission from GEDA was obtained for setting up the wind farm. It is corrected to the purchase order date i.e. 27/12/2007.		
DOE Assessment #1 *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.*	The start date has been corrected in Section C.1.1. CAR is closed		

General	Finding CAR B8
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☐ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	Finding CAR B9		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	PLF of 23% does not seem to confirm to Annex 11 of EB 48.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Subsequent to the Annex 11 of EB48, an Independent third party was appointed by PP to assess the PLF used for the project activity. The independent third party report is submitted to DOE for the reference. The PLF value as per the report has been used to determine the IRR for the project activity.		
DOE Assessment #1 *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.*	Third party certification is accepted. PLF considered for the project activity is 23.84 % as per third party PLF assessment report/PAR/ is appropriate and correct. This also confirms to requirements of EB-48, Annex-11. CAR is closed		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☐ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements		

General	Finding CAR B10		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Even as per the data given in 'Savings' worksheet, the tariff has gone up by 4.5% (from Rs.4.45 in Dec, 2006 to Rs.4.65 in Nov.2007). In the above background, subjecting O&M cost to escalation and keeping the tariff constant in the projections, does not appear to be correct.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	a) Increase in savings rate: The rate of savings in the 12 months period increased because of introduction of PF adjustment calculations, revision in energy rates etc. These are not regular features. Hence an increase of 4.5% within the 12 months can not be assumed for escalation for further life of WTG. b) Keeping in view the issue raised in CAR the working is modified by deleting the annual increase of 7.5% in O&M so as to make the working more justifiable & appropriate.		

General	Finding CAR B10
	c) Savings Rate: The savings rate calculation is revised so as to be in line with more precise data and facts. The working now provides the generation details for 12 months prior to the decision of PP of the 5 WTGs of 1.65 MW series machines connected to the sub-station where PP's WTG is connected. The average generation of the WTGs is compared to that of generation by PP's WTG to find out the excess unit generation and captive consumption by PP. Based on these details the savings rate works out to be Rs. 4.39. Pl refer spreadsheet 'savings '
DOE Assessment #1 *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.*	The argument is not acceptable. Whatever the reasons may be, the very fact the tariff has gone up reveals that it does not remain constant and hence fixed tariff is not acceptable. Moreover, EB has raised this query in a couple of projects. CAR is open CAR does not seek removal of escalation in O&M costs. If the O&M agreement provides for escalation, DOE is acceptable to such provision. DOE looks at the evidence and accounting principles adopted and not what PP/Consultant considers appropriate and justifiable. CAR is open The calculations and new tariff rate given is not acceptable. The tariff cannot be less than November 2007 (the month prior to decision making date) tariff. CAR is open
Corrective Action #2	The savings due to power wheeled is estimated based on average power cost per unit for the captive unit at BUDASAN (Kadi), as the power consumption at these captive unit on yearly basis is almost equal. The average tariff for power so arrived is INR 4.58/kWh based on Electricity bills submitted to DoE. The same is considered in the IRR Calculation. The escalation in O&M is restored. Escalation of tariff rate is not considered since there are no specific guidelines on the tariff rate escalation which allows the escalation in tariff. Also, no orders were found where it provides the escalation in tariff. Also, the electricity Act 2003, amended 26th may, 2003 – section 45 states that the charges for electricity supplied shall be fixed in accordance with the methods and the principles as may be specified by the concerned State Commission.
DOE Assessment #2	Computing average tariff for the last one year and using it as the basis for electricity cost saved is incorrect. As a cursory glance at the 'Savings 4.58' worksheet would reveal that the electricity cost has not been fluctuating, but has been registering a steady increase from Rs.4.45, 4.49, 4.63, 4.64, 4.65 and finally to 4.66 [The spurt in May 2007 rate is due to the mistake committed in fuel surcharge calculation as instead of 0.12, 0.21 has been used and needs to be set right].. The contention of the PP/consultant that the power tariff has remained almost equal does not appear to be correct, if the

General	Finding CAR B10
	information given is any indication. CAR is open O&M cost escalation restoration is accepted, provided it is evidenced by the O&M agreement. CAR is open The arguments for not subjecting the tariff to escalation are not convincing. No order needs to state that the tariff should be subjected to escalation. The facts presented itself reveals that the power tariff did not remain constant, but has registered a 4% escalation in the last one year. The tariff charged by the state utility is indeed fixed by SERC only. CAR is open
Corrective Action #3	Base tariff rate is constant. There is a fluctuation due to PF adjustment and time of usage charges, which will be taken care in sensitivity analysis. Further, please note that PP has taken the values from electricity bills issued by SEB for the month of May 2007. Same can be cross checked with May – 2007 Electricity bill submitted herewith. The O&M agreement is already submitted to DOE. The 4% escalation is not due to the increase in the power tariff but due to PF adjustment and time of usage charges and the fact that there was addition of capacity which resulted in the increase in the tariff during the months of April-May 2007. The same is evident from the electricity bills analysis submitted to DOE in the working.
DOE Assessment #3	The submission of PP is correct. Base tariff remained constant and there has been no fluctuation. That the fluctuation is due to time usage is also correct. Moreover, publicly available information also reveals that the power tariff in Gujarat remained stable for the last 8 years. CAR is closed
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☐ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	Finding CAR B11		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Derating does not appear to be correct, since GERC Order specifically states that O&M cost would take care of derating also. With a proper maintenance of WTGs, the generating capacity may not come down.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Deration factor deleted		

General	Finding CAR B11
DOE Assessment #1 *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.*	Derating has been removed. CAR is closed
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☐ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	Finding CAR B12		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Actual months like April, May, June may be used in 'Int' worksheet instead of 1, 2, 3		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The 'Int' worksheet is corrected and complied.		
DOE Assessment #1 *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.*	Interest calculation worksheet has been revised. CAR is closed		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☐ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements		

General	Finding CAR B13		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Since the WTG commenced generation on 26.03.2008, WTG will be operating for 6 days and not 5 days in the first year (as stated in the worksheet)		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The working is Corrected.		

General	Finding CAR B13
DOE Assessment #1 *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.*	Worksheet has been corrected. CAR is closed
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☐ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	Finding CAR B14		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Tax computation does not appear to be correct. This may be checked and corrected, if need be.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The working is Corrected.		
DOE Assessment #1 *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.*	Tax computation has been corrected. CAR is closed		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☐ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements		

General	Finding CAR B15		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Adjusting interest to tax in the project IRR worksheet is not acceptable as it results in double counting of tax shield.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	a) PAT is a post tax term and Interest amount is a pre-tax term. The tax adjustment is effected to bring both figures on the post tax level. It is not double counting. b) This adjustment is made so as to derive the project cash flows from the point of view of all the funds suppliers. A sample calculation to substantiate the view considered in this case is provided in the worksheet 'project IRR'. This method has been		

	justified by Ashwath Damodaran, a world famous expert in finance, in his book 'corporate finance References of concerned book are given therein. This is the globally accepted standard book on finance. Hence the adjustment may please be accepted.
DOE Assessment #1 *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.*	The explanation offered is not correct. All the extra worksheets may be removed and interest corrected. CAR is open
Corrective Action #2	Tax calculations are corrected. Also extra worksheets are removed.
DOE assessment #2	Tax adjustment in interest has been removed. Worksheets relating to CAPM have been removed. CAR is closed
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☐ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	**Finding CAR B16**		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Since 10% variation has been given, 5% variation can be removed in the sensitivity analysis. Sensitivity analysis does not seem to conform to Annex 45 of EB 41.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	A 5% variation is removed. O&M Expenses are less than 20% of the revenues. Hence its sensitivity is not considered. Cost of project is based on purchase orders. As such its sensitivity is also not considered.		
DOE Assessment #1 *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.*	Whatever is stated here should form part of PDD so that it becomes clear for EB and other readers as to why other variables have not been subjected to sensitivity analysis. CAR is open		
Corrective Action #2	The necessary explanation added in PDD. As stated in the order, from the analysis of the performance of WTGs prepared by GEDA, the Commission noted that the maximum CUF achieved at the four sites (Jamnagar Coastal site, Jamnagar Inland Patelka, Bhavanagar Sonadar and Surajbari Kutch) are respectively: 23.97%, 20.2%, 22.5% and 25.68%. Hence for the WTGs installed in the above mentioned sites the PLF may vary from 20.2% to 25.68%. Considering, the Maximum PLF of 25.68% (from above four sites), which is 7.7% higher than the PLF considered for the Project Activity (23.84%), 7.5% of Sensitivity is considered for the project activity. Also IRR crosses at 8 % increase in PLF		

General	Finding CAR B16
DOE Assessment #2	Explanation is accepted. PDD has been suitably modified. CAR is closed
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☐ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	Finding CAR B17		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	he CAPM model, the beta used is equity beta, which incorporates project risk and leverage risk. Therefore, unless leverage risk is removed, the risk premium would not conform to Additionality Tool read with VVM.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The working is revised to exclude the leverage risk.		
DOE Assessment #1 *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.*	Since equity IRR has not been used, CAPM has lost its relevance. The entire worksheet may be removed. Moreover, reference to equity IRR may also be removed from PDD.CAR is open		
Corrective Action #2	CAPM working sheet is removed		
DOE Assessment #2	Reference to equity IRR has been removed. CAR is closed		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☐ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements		

General	Finding CAR B18		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Beta seems to reveal that wind power project is less risky than conventional thermal power projects as beta of Tata power, NLC, Reliance, GIPCL, Torrent and GVK are much higher than BFUL. The figures may be checked once again		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Beta Working is revised.		
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and*	Since equity IRR has not been used, Beta has lost its relevance. The entire worksheet may be removed. Moreover, reference to equity IRR may also be removed from PDD.CAR is open		

DOE assessments (#2, #3, etc.) shall be added.	
Corrective Action #2	CAPM working Sheet / Beta Calculation is removed
DOE Assessment #2	CAPM worksheet has been removed. CAR is closed
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☐ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	**Finding CL B1**		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Project cost details, like civil works, WTG cost, Transformer cost, electrical items, power evacuation charges may be furnished, in case the Vestas quotation provides the details.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	As per the supply agreement and Erection & commissioning agreement – no break up of cost is given as requested above. Also both the agreements indicate that the prices are firm. There is no such break-up of cost was made available by the Technology supplier.		
DOE Assessment #1 *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.*	Accepted. However, it is observed that while bank charges have been amortised, IDC has not been capitalised. Moreover, IDC computation also does not seem to be correct as interest has been provided in January and February 2008, while the loan was sanctioned only on February 16, 2008.		
Corrective Action #2	Calculations corrected.		
DOE Assessment #2	Interest calculations have been corrected. However, there is an error in total project cost calculation. The total project cost should be Rs.112.09 mn. and the depreciable cost should be Rs.109.09 mn. CL is open		
Corrective Action #3	Calculations corrected.		
DOE Assessment #3	Calculations have been corrected. CL is closed		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☐ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements		

General	**Finding CL B2**		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	The basis for assuming a salvage value at 5% of the cost may be explained.		

General	Finding CL B2
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Salvage value revised to 10% as indicated in EB guidelines.
DOE Assessment #1 *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.*	CL only seeks the basis not revision. CL is open
Corrective Action #2	The salvage value initially considered by PP was at 5%, and hence it is restored. Salvage value is considered at 5% because of following considerations. (a) The value of asset is depreciated over the life of asset entirely. As such depreciated value at the end of project period is nil. Hence the 5% value is conservatively estimated. (b) Further when the depreciated value is nil and a salvage value is realised there is always incidence of capital gains tax. If this is considered the net salvage value is further lowered. (c) Moreover because of remote location of WTGs and complexity of dismantling and transportation of WTG, it is very likely that these costs may consume the entire salvage value realisation. Under these circumstances considering 5% salvage value is very reasonable and justified. DOE is requested to validate the above justification and consider the Salvage value at 5%.
DOE Assessment #2	Response is accepted. CL is closed
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☐ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	Finding CL B3		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MAT has been provided in a few years in the worksheet. Since this project activity is a part of the Company, which is the assess, clarify, whether MAT is applicable to this project activity at all under IT Act.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	MAT is excluded from the working.		
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure,*	MAT has been removed. The reference to MAT in PDD and 'data' worksheet may also be removed. CL is closed		

additional corrective action and DOE assessments (#2, #3, etc.) shall be added.	
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☐ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	**Finding CL B4**		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Since there is a 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 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.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The chronology pertaining to the CDM project activity is depicted in the Section B.5 of the PDD. The chronology clearly demonstrates that CDM was considered as a necessary adjunct for the company to take up this project activity even at the time of planning stage. The sequence of events also helps conclude that the proponent took concrete steps for registration of the project under CDM in parallel with the implementation of the project.		
DOE Assessment #1 *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.*	CL does not question whether CDM was considered as necessary or not. It only states that since the CDM consultant was appointed much after the WTG commenced generation, PP would have, rather, had gone ahead with the implementation independent of CDM benefits. Therefore, the investment would have taken place (rather, had taken place) though the return is lower. Response does not answer the CL. CL is open		
Corrective Action #2	The chronology pertaining to the CDM project activity is depicted in the Section B.5 of the PDD which indicates that the CDM was considered before the WTG commenced generation i.e. clearly visible from the initial offer by consultant dated 21st December 2007 (submitted to DOE). Subsequently other consultants were identified and the proposals were invited and then consultant was finalized. Subsequently the PDD was under development and was submitted for HCA and DOEs were invited in the month of January for the Validation of the project. Hence, it is only logical to say that PP has gone ahead with the implementation of the project only after considering the CDM benefits would be available in the subsequent years.		
DOE Assessment #2	As the project activity conforms to paragraph 6 (a) and (b) of Annex 22, EB 49, CL is closed		

General	Finding CL B4
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☐ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	Finding CL B5		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	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.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The decision regarding the investment decision towards WTG project was taken during the board meeting held on 20/12/2007. The extract of the board resolution is submitted to DOE. Since the PP understood that seeking the CDM benefits requires the preparation of set of documents and it requires time to get the project registered, considering the fact the PP decided to proceed with the investment that the CDM revenue may be available during the operational phase of the project, which will alleviate some of the barriers as described in the PDD.		
DOE Assessment #1 *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.*	Response does not answer the CL. CL is open		
Corrective Action #2	The Project IRR while considering the CDM benefits works out to be 13.01% which crosses the required benchmark than the Project IRR without CDM benefits, which in turn helps in alleviating some of the risks during the project operation phase. Thus, the CDM benefits were crucial in overcoming the Investment barrier to this project activity.		
DOE Assessment #2	Since the project IRR crosses the benchmark with CDM benefits, it could be inferred that the investment decision would not have taken place at a return lower than the benchmark. CL is closed		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☐ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements		

General	Finding CL B6		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Following documents/documentary evidence should be submitted: a) Project cost details like civil works, WTG cost, Transformer cost, electrical items, power evacuation charges may be furnished, in case the Vestas quotation provides the details b) Quotations/Purchase Orders c) O&M contract d) Insurance premium receipts e) Electricity bills for the period considered in 'Savings' worksheet f) Commencement of Generation certificate		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The documents a) Supply agreement and E&C agreement already submitted to DOE. Project cost details are as per the agreements. b) Quotations / Purchase Orders – The documents referred in the bullet "a)" serves as the purchase orders for the project activity. c) The O&M contract is submitted herewith. d) Insurance premium receipts are submitted herewith. e) Electricity bills for the period considered in 'Savings' worksheet, are submitted herewith. f) Commissioning certificates issued by GEDA are already submitted to DOE.		
DOE Assessment #1 *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.*	Following documents have been received a) Offer letter from Vestas b) Supply agreement with Vestas c) Agreement for erection and commissioning with Vestas d) Loan application letter e) Loan sanction letter f) O&M agreement g) Insurance receipts h) Electricity bills i) Commissioning certificate j) Third party estimation of PLF CL is closed		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☐ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements		

General	CL B 7		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	The proof of the board resolution or any other equivalent meeting in which the decision to proceed with the project has been taken may be produced to the DOE.		

General	CL B 7
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The Extract of the Board resolution is submitted to DOE, regarding the decision to proceed with the project.
DOE Assessment #1 *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.*	Copy of the management decision taken by the Board members is submitted to DOE. Same is cross checked and confirmed that CDM was considered in the decision making. CL is closed.
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☐ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	CAR C 1		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Start date of the project activity as stated in section C.1.1 of the PDD needs to be supported with the documentary evidence and should confirm to the requirement of EB 41 annex 67.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Start date of the project activity in section C.1.1 is corrected. The supply agreement is already submitted to DOE. The start date confirms the requirement of EB 41, Para. 67 i.e. “the date on which the project participant has committed to expenditures related to the implementation or related to the construction of the project activity. This, for example, can be the date on which contracts have been signed for equipment or construction/operation services required for the project activity”		
DOE Assessment #1 *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.*	Start date of the project is now corrected as per the requirements of EB 41 annex 67. CAR is closed.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☐ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements		

General	CAR E 1		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	The name of the local stakeholders with their comments should be listed out in the section E.2 of the PDD (Cp guidelines for completing CDM- SSC-PDD).		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The views from the stakeholders are included in the section E.2 of the PDD.		
DOE Assessment #1 *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.*	Local stakeholder consultation was carried out by inviting villagers from Wandhiya and nearby villages by giving advertisement in the local news paper. There are no negative comments for the project. Validation team has reviewed the attendance list of stakeholder meeting and confirmed that total 10 stakeholder i.e. villagers from nearby villages have attended the meeting. CAR is closed.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☐ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements		

General	CL E 1		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	The copy of minutes of stake holder meeting dated 18/08/2008 may to be submitted to the DOE as a proof of the local stake holder meeting.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The hard copy of MoM of the Stakeholder' meeting is submitted herewith.		
DOE Assessment #1 *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.*	Details of local stakeholder meeting including list of participants, Attendance sheet , copy of paper advertisement are submitted. CAR is closed.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☐ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements		

5 VALIDATION ASSESSMENT SUMMARY

5.1 General Description of the Project Activity

5.1.1 Participation

LOA

Host Party for this project activity is India. India has ratified the Kyoto protocol in August 2002. Same has been confirmed from the UNFCCC web site. Link http://unfccc.int/kyoto_protocol/status_of_ratification/items/2613.php Host country approval No 4/5/2009-CCC dated 17/04/2009 issued by DNA of India confirm voluntary participation by M/s Gopal Glass Works Limited in proposed CDM project activity entitle "1.65 MW Wind Power Project in Gujarat" at Kutch district of Gujarat state of, India, by M/s Gopal Glass Works Limited. Host country approval was checked and found that it confirms the EB guidelines and contributes sustainable development in India.

Project Participants

Project participant M/s Gopal Glass Works Limited is correctly specified in section A.3, annex-I of the PDD as per Host Country Approval/HCA/ received from DNA of India (party to Kyoto protocol). Host country approval was checked and found that it confirms the EB guidelines.

5.1.2 Contribution to Sustainable Development

Host Government i.e. DNA of India vide Host Country Approval dated 17/04/2009 approved that the project will contribute to sustainable development in India.

5.1.3 PDD editorial Aspects

Latest version 03 of small scale CDM-SSC-PDD format is used by Project Participant and filled up as per the guidelines for completing CDM-SSC-PDD version 05 dated 14/09/2007, EB 34, Annex 09.

5.1.4 Technology to be employed.

Based on site visit and document review, Validation team confirms that the project activity involves installation of new wind turbine generators to reduce GHG emission. Detailed description of the project activity is given in Section A.2 and A.4.2 of the PDD is adequate. Technology used is clean and uses renewable source of energy which is environmentally safe and sound.

5.1.5 Small Scale Projects

In accordance with decision 17/CP.7 as project activity is a renewable energy project and total installed capacity is 1.65 MW which is less than 15 MW falls under small scale CDM project activity. Project activity has applied methodology AMS I-D version 16 and tool to calculate emission factor for an electricity system version 02 correctly.

By reviewing the conditions stipulated in EB-36, Annex 27 compendium of guidance on the debundling for SSC project activities, it is confirmed that the project activity is not a debundled component of any large scale project.

5.2 Project Baseline, Additionality and Monitoring Plan

5.2.1 Application of the Methodology

The selected baseline methodology is the approved baseline methodology “Grid connected renewable electricity generation” (AMS-I.D: Version 16: EB 54). The selected baseline methodology, i.e., AMS-I.D, and Tool to calculate the emission factor for an electricity system is correctly applied to this type of grid connected renewable generation by wind. The project meets all the applicability criteria specified in the methodology. Validation team is convinced that as this being generation of electricity by using renewable source of energy i.e. wind, it does not result in any emission from project or leakages other than described in methodology. Detailed assessment of each applicability criteria is done in section B.1.3 of Table A-1 under Annex-A1.

5.2.2 Project Boundary

The system boundaries of the project are clearly defined in the PDD. As per para 9 of the approved methodology, the physical, geographical site of the renewable generation source delineates the project boundary. As per the approved methodology project emission from renewable source of energy is zero. There are no other sources which are impacted by the project. Validation team has confirmed the same by conducting site visit and interview with project participants.

5.2.3 Baseline Identification

Project activity is installation of 1.65 MW new grid connected Wind Turbine Generators hence, according to methodology, baseline identified is the electricity delivered to the NEWNE grid by the project activity that otherwise would have been generated by the operation of grid-connected power plants and by the addition of new generation sources.

5.2.4 Calculation of GHG Emission Reductions

As per the methodology, baseline emission are calculated by multiplying net electricity supplied to the grid by the project activity ($EG_{,y}$) in MWh with Combined margin CO_2 emission factor of NEWNE grid is taken from the public data vailable from database of Central Electricity Authority (CEA) version 04. Combined Margin (CM) emission factor consisting of the combination of Operating Margin (OM) and Build Margin (BM) and calculated in a transparent and conservative manner according to the procedures prescribed in the "Tool to calculate the emission factor for an electricity system, version 2". As the project involves installation of wind turbines using renewable source of energy, there is no project emission from the project activity. Combined Margin Emission factor is fixed ex-ante for the entire crediting period and considered as 0.9059 t CO2/MWh.

The project intends to reduce GHG emissions to the extent of the difference of baseline emissions and project emissions. The baseline emissions have been identified correctly as per AMS I D version 16 methodology (3125 tCO_2/year). Project emission is considered as zero as per the methodology AMS I D V 16 as project activity is an installation of a wind turbines and using renewable source of energy.

As the energy generating equipment is not transferred from another activity or the existing equipment is transferred to another activity, the leakages are not considered as per the guidelines of approved methodology.

The calculations of the baseline emission and emission reduction are documented in section B.6.3 and B.6.1 of PDD[/PDD2/]. For assessment of baseline emission please refer to section B.4. of Annex-A1 of this report.

Formulas, parameters, values are complete, accurate, transparent and conservative. All of the formulas, cell references & parameters contained in the emission calculation spreadsheet has been validated & confirmed to be accepted..

5.2.5 Additionality Determination

Consideration of CDM in decision making (if project start before validation)

The project developer has stated the start date of the project activity is December 27, 2007 and has submitted a copy of the Supply Agreement (for the WTGs) entered into with M/s Vestas Wind Technology India (P) Limited as evidence. The project developer has not undertaken any construction or any real action on the implementation of the project activity prior to this date. Since the *real action of the programme activity* had begun on December 27, 2007, as per Glossary of CDM terms (Version 05), this date has been treated as the start date of the project activity. Since the real action of the project activity had begun before 02 August 2008, the project activity falls under the category of *existing project activity* as per paragraph 100 of VVM (1.2).

The PDD was web-hosted for public comments on July 15, 2009, i.e., after the start date of the project activity. Since the project is an 'existing project activity' and the PDD was web-hosted after the start date, the project developer was asked to demonstrate the serious consideration of CDM while taking the decision to implement the project activity as required vide paragraphs 102 (a) and (b) of VVM [ver.1.2] read with paragraphs 6 (a) & (b) and 8 of Annex 22, EB 49.

During the personal discussion, project developer informed that he was aware of the CDM benefits as the machinery supplier had informed him about the eligibility of the project to get registered with UNFCCC as CDM activity. Project developer had submitted a certified copy of the Board Resolution dated 20th December 2007. The resolution states, "After a detailed deliberation and review of the details, it was concluded that the proposed wind mill project *will be economically viable and financially sustainable after taking into due consideration the carbon credit revenues* that the said project will entail under CDM". Validation team was therefore convinced that the project developer was aware of CDM benefits before the investment decision was taken and that CDM benefits were the decisive factor in going ahead with the project activity.

As regards demonstration of continuing and real action were taken to secure CDM status for the project in parallel with its implementation, the project developer submitted a chronology of events [which forms part of PDD] a summary of which is given below:

Activity	Date
1. Serious consideration of CDM benefits by the Board	20/12/2007
2. Signing of supply agreement with M/s Vestas Wind Tehnology India (P) Limited	27/12/2007
3. Appointment of CDM Consultant	03/06/2008
4. Letter of Host Country Approval for the project activity	17/04/2009
5. Appointment of TUV NORD as DOE	17/04/2009

As evident from the chronology of events given above, the gap between any two CDM activity is less than even 1 year, Validation Team concludes that continuing and real action were being taken to secure CDM status for the project in parallel with its implementation in terms of paragraphs 112 (b) of VVM [ver.1.2] read with paragraphs 6 (b) and 8 of Annex 22, EB 49.

Based on the documents submitted and discussions held, Validation Team is convinced that the

a) PP was aware of the CDM benefits prior to the start date of the project activity;
b) project activity would not have taken place without CDM benefits;

c) benefits of the CDM were a decisive factor in the decision to proceed with the project;
d) continuing and real action were/are being taken to secure CDM status for the project in parallel with its implementation;

In the light of the above and the documentary evidence[2] submitted by the PP, since the fulfillment of both the conditions stipulated vide paragraphs 102 (a) and (b) of VVM [ver.1.2] have been demonstrated with documentary evidence, Validation Team concludes that *there was a prior consideration of CDM and the CDM benefits were considered necessary in the decision to undertake the project as a CDM project activity*.

Application of methodology / methodological tools

The project is small scale in size. Therefore, in accordance with § 28 of the simplified modalities and procedures for small-scale CDM project activities, the additionality of the project activity has been demonstrated using *Attachment A to Appendix B* and Guidance given vide Annex 58 of EB 51. As all requirements specified vide § 28 of the simplified modalities and procedures are complied with by the project activity, this approach has been assessed to be appropriate for the additionality assessment for this project activity.

Project developer had chosen investment barrier and to demonstrate the investment barrier had selected benchmark analysis and project IRR as financial indicator. Having regard to the fact that the project involves investment and is funded by a mix of debt and equity, project IRR is the most suited for the project type and decision making context. Since in this instant case, as subsequent section would reveal, baseline is outside the direct control of the project developer (grid connected power) and hence, the choice of the project developer is restricted to 'invest or not to invest', the benchmark approach is most suited as per Guidance 16 of Annex 58 of EB 51.

In the above background Validation Team concludes that the additionality justification given by the project developer is in accordance with the requirements derived from the approved CDM methodology and the methodological tools referred therein and also conforms to guidance given by EB vide paragraph 110 of VVM (Ver 1.2).

Alternatives

This is a wind energy project and is based on the Methodology AMS I-D Ver. 16. The methodology states,

[2] Documentary evidence submitted include Board Resolutions/MD/, Agreement with Vestas Wind Technologies India Ltd/PO/. appointment of CDM consultant, HCA , and appointment of DOE.

"*If 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 that otherwise would have been generated by the operation of grid-connected power plants and by the addition of new generation sources*".

Paragraph 105 of VVM states that PDD is required to identify credible alternatives to the project activity in order to determine the most realistic baseline scenario, unless the approved methodology that is selected by the proposed CDM project activity prescribes the baseline scenario and no further analysis is required. Since the approved methodology AMS I-D used by the project activity prescribes the baseline scenario, no further analysis of alternatives is required for the project activity.

Validation Team, therefore, concludes that the PDD and the validation report conforms to the guidance given by EB vide paragraph 105 of VVM (Ver.1.2)

Investment analysis

PDD provides that the project would not be economically or financially feasible, without the revenue from the sale of certified emission reductions (CERs). In order to assess the claim of the project developer that the project scenario is not economically feasible without benefits from CER sales, Validation Team adopted a six-pronged strategy, viz.,

a) determining the suitability of the investment analysis, benchmark applied and the suitability thereof to the type of financial indicator presented;

b) conducting an assessment of parameters and assumptions used in calculating the financial indicator and determining the accuracy and suitability of parameters;

c) cross-checking the parameters against third-party or publicly available sources;

d) reviewing annual financial reports related to the project participant;

e) assessing the correctness of computations carried out and documented; and

f) subjecting the critical assumptions of the project activity to reasonable variations to determine under what conditions variations in the result would occur, and the likelihood of these conditions.

a) Suitability of investment analysis, financial indicator and benchmark: Project developer had demonstrated that the financial returns of the proposed CDM project activity would be insufficient to justify the required investment (Paragraph 109 (c) of VVM). For demonstrating the financial unattractiveness of the project activity, project developer had chosen investment barrier and to demonstrate the investment barrier had selected benchmark analysis. Since in this instant case, as subsequent section would reveal, baseline is outside the direct control of the project developer (grid connected power) and hence, the choice of the project developer is restricted to "invest or not to invest", the benchmark approach is most suited as per the latest version of Guidance 16 of Annex 58 of EB 51.

In the above background, as subsequent paragraphs would reveal, Validation Team concludes that the additionality justification given by the project developer is in accordance with the requirements derived from the approved CDM methodology and the methodological tools referred therein as well as the guidance given by EB vide paragraphs 108-110 of VVM (1.2).

The project developer has chosen project IRR [3]to demonstrate the additionality of the project. As stated above, considering the fact that the project is financed by a mix of debt and equity and that guidance 12 of Annex 58, EB 51 permit the use of project IRR as one of the financial indicators to demonstrate additionality, project IRR has been considered as appropriate financial indicator for the project type and decision making context.

As per guidance 12 of Annex 58, EB 51, **"***Local commercial lending rates* or weighted average costs of capital (WACC) are *appropriate* benchmarks for a project IRR"[4]. The project developer has chosen the Prime Lending Rate (PLR), which is the commercial lending rate, as the benchmark. Since the PP has chosen project IRR as financial indicator, selection of PLR as benchmark conforms to Guidance 12 of Annex 58, EB 51. At the time of decision making the PLR (evidenced by publications by the Reserve Bank if India) ranged between 12.75% and 13.25%[5]. PLR represents the commercial lending rate of banks. Therefore, the PLR as benchmark conforms to guidance 12 of Annex 58, EB 51. Moreover, since the PLR is publicly available and can be validated by DOE, it also conforms to guidance 13 of Annex 58, EB 51. PP has chosen the mid rate of the range, viz., 13% as benchmark[6].

Therefore, the Validation Team concludes that the benchmark selected by the project developer is suitable for the financial indicator selected and is conservative. Since the financial indicator breaches the benchmark only with CDM benefits, Validation Team considers that it is reasonable to assume that the investment would not have taken place at a return lower than the benchmark and the CDM benefits were

[3] In the webhosted PDD, project developer had given both project IRR and equity IRR to demonstrate additionality. While commercial lending rate was used as the benchmark for project IRR, expected/required rate of return on equity computed as per CAPM was used as benchmark for equity IRR. However, consequent upon the CARs raised on CAPM, project developer had chosen to restrict the demonstration of additionality only with project IRR and the equity IRR has been removed from the PDD and worksheet.

[4] Annex 58 of EB 51, Guidance on the Assessment of Investment analysis, item 12

[5] http://rbidocs.rbi.org.in/rdocs/Wss/PDFs/82114.pdf .The PLR is sourced from the RBI Weekly Statistical Supplement (Dec. 14, 2007) issued by the Reserve Bank of India, which was available to the PP at the time of decision making (i.e., Dec. 20, 2007). This rate pertains to Nov. 30, 2008. The PLR as of Dec 14-21. 2007 can be sourced from Jan. 4 2008 issue (which was not available to the PP at the time of decision making). There was no change in the PLR subsequently also and that it remained at 12.75% -13.25% during the week ended December 21 also. see http://rbidocs.rbi.org.in/rdocs/Wss/PDFs/82364.pdf..

[6] In the webhosted PDD, the benchmark given was 13.07%. As this was incorrect, a CAR was raised and the PP corrected the mistake and rectified the benchmark to 13%.

decisive factor in taking the investment decision. Therefore, the selected benchmark is appropriate and conforms to paragraph 112 (a) and (c)[7] of VVM (1.2).

b) Parameters and assumptions used: The three important parameters, which determine the project IRR of the project, are project cost, financing pattern, and profitability estimates.

The project cost includes land, WTGs, tower, transformer, electrical, erection and commissioning cost. All these costs are based on purchase orders, copies of which have been submitted to validation team. There is a difference in the project cost between the quotation (based on which the decision was taken) and the Purchase Order. However, as the final value of the project cost was already known at the time of the board decision/MD/ due to negotiations between the project owner and the supplier, the value of the purchase order/PO/ is considered to be appropriate as more conservative. As per the quotation, the cost of the project works out to Rs.114.00 mn. (excluding interest during construction and loan processing charges), while as per the purchase order; the cost works out to Rs.110.0 mn[8] only. Since the cost as given in the purchase order is the cost actually paid by the company and is lower than that of the quotation, validation team felt it appropriate to consider the cost based on purchase order. Had the validation team gone by guidance 6 of Annex 58, EB 51 the cost should be based on the quotation, which is much higher than the purchase order. Consequently, the financial indicator would have been much lower[9] and hence the project would have been more additional. Hence, the cost considered in the computation of financial indicator is more conservative.

The cost of the project works out to Rs.68 mn./MW. Validation team observed that very few projects have chosen 1.65 MW WTGs of Vestas. M/s V.M. Salgaonkar Bros. (P) Ltd. (Project No.3479), which placed the order in December 2005 had projected a cost of Rs.62.31 mn./MW; M/s. Shree Naman Developers Ltd. (Project No.3238), which placed order in June 2007 had projected a cost of Rs.69.15 mn./MW; Powerica Ltd. (Project No. 3632), which placed order in December 2009 had project a cost of Rs.65.81 mn./MW and Powerica Ltd. (Project No.3327), which placed order in July 2007 had projected a cost of Rs.66.06 mn./MW. The country experienced inflation of about 4.5%[10] between December 2005 (when the order was placed by project No.3479) and December 2007 (when the order for the project activity was placed). Even if the general inflation rate is applied to the cost of project No. 3479 (Shree Naman Developers Ltd.), the cost as of December 2007 should be Rs.68.04 mn./MW – same as the cost of candidate project. In the case Powerica Ltd., though the cost appears to be lower, the O&M cost (which is a recurring cost subject to 7.5%

[7] Paragraph 112 (b) does not apply to the project as no risk premium has been applied in determining the benchmark

[8] Normally in India, the suppliers submit quotation, based on which negotiations take place and the negotiated price is either equivalent to the quoted price or more often lower than the quoted price.

[9] The project IRR would be 10.70%. if the cost had been based on the quotation as against 11.35% presented now with the cost based on purchase order. In other words, consideration of cost based on quotation would render the project all the more additional.

[10] Whole sale price index – all commodities – went up from 197.2 in December 2005 6o 216.4 in December 2007. Please see http://eaindustry.nic.in/asp2/list_d.asp

escalation) has been higher at Rs.2 mn./WTG and Rs.2.5 mn./WTG, as against Rs.1.35 mn/WTG with 2 year free warranty, paid by the candidate project. In other words, the lower capital cost is getting compensated by higher O&M cost. After comparing the project cost of the candidate project with other CDM projects, it can be confirmed that the cost per MW of the candidate project is in the range and hence has been accepted by the validation team.

Project is funded by term loan of Rs.74 mn. and equity capital of Rs.38.1 mn. Project developer had sought a loan of Rs.82.5 mn. for the project, (as evidenced by the loan application letter[11],), while the bank had sanctioned a sum of Rs.74 mn.. Likewise, while the loan application seeks an interest rate of 10.5%, bank had sanctioned the loan at 12.75% interest, which is in line with the then prevailing PLR[12]. Since the actual interest payable by the project activity is taken into consideration, this is in conformity with guidance 11 of Annex 58, EB 51[13]. Project IRR goes down marginally from 11.35% to 11.32% (making the project all the more additional), if the loan amount and the interest rate is considered as per the loan application submitted by the project developer. Hence, the calculations are conservative.

The project financing pattern yields a gearing of 66:34, which is based on *actual loan sanctioned*[/LSL/] to the project activity by the banks. In India, infrastructure projects are generally entitled to a debt equity ratio of 70:30, though depending on the case the ratio can be marginally higher or lower. GERC itself recommends a debt equity ratio of 70:30 for wind energy projects. As the debt equity ratio is only marginally lower than the general norm and is evidenced by the sanction letter, the validation team is convinced that the financing pattern assumed is appropriate and correct and is also valid. As stated above if the loan amount and the interest rate envisaged at the time of decision making (Rs.82.5 mn and 10.5%) is taken into consideration, the financial indicator will come down by about 3 basis points, i.e., from 11.35% to 11.32% which would only render the project more additional. Hence, the calculations submitted are conservative.

The profitability estimates of the project, which forms the basis for IRR calculation is based on installed capacity, PLF, power tariff, O&M cost, interest[14], depreciation, taxation. The installed capacity is based on the capacity of wind mills, which is evidenced by the purchase orders. As per Annex 11, EB 48, the plant load factor (PLF) should be defined ex-ante according to one of the following three options:

(a) The plant load factor provided to banks and/or equity financiers while applying the project activity for project financing, or to the government while applying the project activity for implementation approval;

[11] As per Loan application dated January 7, 2008 submitted by the company to the Bank

[12] Please see http://rbidocs.rbi.org.in/rdocs/Wss/PDFs/82364.pdf..

[13] Guidance 11of annex 58, EB 51 states, “In cases where a post-tax benchmark is applied the DOE shall ensure that actual interest payable is taken into account in the calculation of income tax”

[14] Loan amount and terms are based on actual loan sanction letter as that is the only document which is verifiable

(b) The plant load factor determined by a third party contracted by the project participants (e.g. an engineering company).

Project developer has submitted a copy of the third party (Vijayant Consultants) estimation on PLF. The report estimates the PLF 23.84%. During the personal discussion, the project developer informed that they had taken into consideration PLF of 23% as recommended by GERC at the time of decision making[15]. However, consequent upon the issue of Annex 11 by EB in its 48th meeting, project developer contracted a third party in February 2010 to estimate the generation. Since the PLF conforms to the requirements of Annex 11, EB 48 and is marginally more than PLF recommended by GERC, PLF is considered suitable and conservative (from additionality demonstration point of view) for the project activity.

Project developer proposes to wheel the power to the factory for captive consumption. Accordingly, the project developer had considered a tariff of Rs.4.66/kWh, based on the power tariff paid by the company before the decision making date. The tariff includes energy charges, fuel charge, PF adjustment and electricity duty. In short, the tariff reckoned includes all costs except fixed cost (viz., demand charges, meter rent and electricity duty on demand charges), which are anyway payable by the company, with or without wind energy. Since the tariff is uniform for all the companies located in the region, the tariff considered also takes care of the concern expressed by EB vide paragraph 48 of the minutes of the 49th Meeting.

O&M cost is based on the day of investment decision, on the purchase order and on the O&M agreement entered into by the project developer with the machinery supplier.[16] Validation team compared the O&M cost with that of other projects and found that Vestas had charged Rs.2 mn. and 2.5 mn. per WTG in the case of Powerica Ltd., (Project No. 3632 and 3327 respectively) and Rs.1.1 mn. in the case of Shree Naman Developers Ltd. (project No. 3238) as against Rs.1.3545 mn (excluding Service Tax) to the candidate project. As observed earlier, the WTG cost

[15] Annex 11 was issued by EB in its 48th meeting held in July 2009, i.e., much after the project developer had taken the investment decision in December 2007. Hence, as required by Annex 11, EB 48, project developer commissioned a study and submitted the report to DOE to be compliant with Annex 11, EB 48. Worksheet has been recast by taking into consideration the generation as estimated by the third party estimation

[16] As per the offer letter, the O&M cost was Rs.1.20 mn. (exclusive of any taxes and duties) from the second year with an annual escalation of 7.5% from the previous years rate from the third year onwards upto the fifth year. O&M cost does not cover repair/ replacements costs for main components of the WTG as also repair charges on account of damages due to *force majeure* conditions. As against this the company negotiated on the day of investmentment decision an all inclusive rate (including repair/replacement costs for main components of the WTG as also repair charges on account of damages due to *force majeure* condition) at Rs.1.3545 mn. (plus service tax at 12.36%, resulting in an O&M cost of Rs.1.522 mn.). This value is also stated in the purchase order. If a provision is made for repairs and replacement of components of WTG and also repair on account of force maneure conditions even at 0.5% of the cost of WTG, the O&M cost would be Rs.1.77 mn., plus service tax resulting in a cost of 1.99 mn., which is much higher than the cost of Rs.1.522 mn. assumed in the financial indicator calculation. Hence, the cost assumed in financial indicator calculations are conservative.

in the case of Shree Naman Developers Ltd. was Rs.69.15 mn. as against Rs.68 mn. in the case of candidate project. As the cost is within the range, rather lower than the O&M cost being paid by other projects, validation team accepted the O&M cost. O&M cost is subjected to 7.5% escalation based on the offer letter and evidenced by the O&M agreement entered into subsequently[17]. Validation team observed that the escalation has been assumed at 7.5% by Shree Naman Developers Ltd. (project No. 3238), V.M. Salgaonkar Bros. (P) Ltd. - Project No.3479) and Mission Biofuels Ltd. (Project No. 2710) – all using Vestas Windmills Insurance works out to 0.12% of the project cost and is based on the enquiry by the project developer with insurance companies, (conformity to guidance 6 of Annex 58, EB 51), which the validation team accepted based on its sectoral and local expertise; the project developer had also evidenced it by subsequent insurance premium receipts/INS/. Neither O&M cost nor insurance premium are critical parameters in that while the O&M cost has to go down by as much as 75% for the project to become non-additional, the project would remain additional even if the insurance cost is totally removed.

The project developer has adopted straight line depreciation as per Schedule XIV of the Companies Act, 1956 for computing book profit and Income Tax Act stipulated WDV depreciation for income tax calculation, which are accepted accounting methods. The block of assets has been computed for depreciation purpose as per the accepted accounting principles. Tax liability has been calculated as per the income tax rules and the rulings given. In computing the income tax liability, the project developer has taken into account the accelerated depreciation (80%), which the project is entitled to under Income Tax Rules (Appendix I) and the Tax holiday (u/s 80IA of the Income Tax Act, 1961), which the infrastructure projects (under which the project activity falls in as much as it generated electricity) are entitled to for 10 consecutive years out of the first 15 years. The tax rate assumed corresponds to the tax rate prevailing at the time of taking decision (conformity to guidance 6 of Annex 58, EB 51)

The project developer has adopted Income Tax Act stipulated WDV depreciation for income tax calculation, which is in conformity with Tax regulations. The block of assets has been computed for depreciation purpose as per the accepted accounting principles and ruling given. Tax liability has been calculated as per the income tax rules and the rulings given. In computing the income tax liability, the project developer has taken into account the accelerated depreciation (80%), which the project is entitled to under Income Tax Rules (Appendix I) and the Tax holiday (u/s 80IA of the Income Tax Act, 1961), which the infrastructure projects (under which the project activity falls in as much as it generated electricity) are entitled to for 10 consecutive years out of the first 15 years. The tax rate assumed corresponds to the tax rate prevailing at the time of taking decision.

[17] As per the O&M agreement, it is valid for 60 months, whereafter the terms and condidtions will be discussed and agreed upon. As by that time the Windmills would have become old, the rate is expected to be much higher partcularly with the country experiencing inflation at the rate of 4.5% on an average. However, the esclation has been assumed at the same rate even after 60 months. Validation team considers this as conservative and appropriate.

Since the input parameters have been sourced either from the quotations, purchase orders, loan sanction letters/LSL/, acts and regulations, they were valid at the time of decision making, (or modified to ensure conservativeness in the computation of financial indicator), are reliable, credible and appropriate for the project activity. Thus, the Validation conforms to the guidance given vide paragraph 111,112 and 114 of VVM (1.2).

c) Cross checking parameters: The cost of windmills, power tariff, O&M cost, interest costs, depreciation and tax rate have been cross checked with quotations, purchase orders, Tariff order, loan application and sanction letter/LAL/LSL/ furnished by the project developer, Income Tax Act and cost, O&M cost of other projects. The documents supporting the financial calculations, in the opinion of Validation Team, are therefore authentic and appropriate. CARs and CLs were raised on non-conformities and they were set right. With the corrections having been incorporated, the input costs considered appear to be in order. All the input parameters considered in computation, the basis, correctness and appropriateness thereof are given in Table A-3 along with Validation Team's comments. Validation, therefore, conforms to guidance given vide paragraphs 111 of VVM (1.2).

d) Financial reports of project participant: Validation team requisitioned the Annual Report of the project developer. Since the project developer is in glass manufacture, none of the input values taken in the computation can be based on the Annual Report. However, the Validation team observed that the developer is a profit-making firm and accordingly, the project developer has taken into consideration the tax shield enjoyed on account of accelerated depreciation as *notional cash inflow* at the present tax rate while computing IRR.

e) Assessment of correctness of computation: The assessment involved checking the data input taken from quotation/purchase order/loan sanction letter/LSL/documents, adoption of correct accounting principle and arithmetical accuracy. Validation Team checked the documents and ensured that right input has been taken in the project cost and projections. In several places, the calculations were not conforming to accepted accounting principles and the laws and regulations in force necessitating CARs and CLs. Based on the CARs and CLs, corrections were incorporated. The accounting principles adopted with respect computation of interest, block of assets and tax computation were found to be in order in the corrected version presented. The arithmetical accuracy was also found to be correct.

The project IRR has been computed for a period of 20 years, which is the life time of the project and is in conformity with the Annex 58 of EB 51 and Annex 15 of EB 50[18]. As required by Annex 58 of EB 51 the expected realisation on the sale of assets at the end of the operating life has been taken as *salvage value* in the terminal year. In computing the IRR, the project developer has taken into account profit after tax, depreciation and interest on term loan, tax shield and salvage value (in the terminal

[18] The life of the plant is based on the manufacturer's information on technical life time of the project

year). The principle adopted conforms to the accepted accounting and taxation principles.

Based on the above, the project IRR works out to 11.35%[19] in contrast to the benchmark of 13%. In the above background, the Validation Team is convinced that the project is additional and not a business-as-usual scenario.

Sensitivity analysis: The Guidance on Assessment of Investment Analysis requires the robustness of the conclusion arrived at to be proved through a sensitivity analysis by varying the critical assumptions to a reasonable variation. The project developer has identified generation, tariff and project cost as critical assumptions. These constitute more than 20% of the project cost/revenue. Guidance 18 of Annex 58 of EB 51 states that as a general point of departure, variations in the sensitivity analysis should at least cover a range of +10% and –10%, unless this is not deemed appropriate in the context of the specific project circumstances. Since the project cost is based on the purchase order, PLF is higher than what has been recommended by GERC and the power tariff has remained constant in Gujarat for the last few years, PP has considered a variation of ±7.5%. Having regard to the circumstances, the variation chosen by the PP is considered appropriate. Since project has already been implemented any variation in project cost is hypothetical. Nevertheless, the project cost has also been subjected to 7.5% variation. The sensitivity analysis reveals that even under more favorable conditions, the IRR would not cross the benchmark return as given in the following table:

Sensitive factors	**-7.5%**	**Baseline**	**+7.5%**
Generation	9.70%	11.35%	12.90%
Power Tariff	9.70%	11.35%	12.90%
Project cost	10.05%	11.35%	12.80%

Validation Team carried out its own independent assessment, which reveals that the project would become *non additional* if

- Generation goes up by 8%
- Project cost goes down by 8.45%
- Tariff goes up by 8%

PP has submitted that such a reduction in project cost or increase in PLF or tariff is highly unrealistic and unlikely to happen and reasoned out as follows:

Generation: Generation taken into consideration is marginally more than the GERC recommended PLF. GERC has recommended the PLF after conducting an exhaustive study over a long period on the wind pattern, velocity. Though the machinery suppliers do give estimation of power generation, the estimation is not backed by any bank guarantee and hence it is unenforceable. Though GERC

[19] In the webhosted PDD, the financial indicator (project IRR) was 9.08%.

recommended PLF of 23%, the report states, "..from the analysis of the performance of WTGs (installed during 2002 policy) submitted by GEDA, the Commission has noted that the maximum CUF achieved at the four sites (Jamnagar Coastal site, Jamnagar Inland Patelka, Bhavanagar Sonadar and Surajbari Kutch) are respectively: 23.97%, 20.2%, 22.5% and 25.68%"[20]. Even as per the GEDA study, the maximum achievable PLF is 25.68%, which is 7.7% higher than the PLF assumed in the estimation of financial indicator. The sensitivity analysis conducted with 7.5% variation proves that the project does not lose its additionality even if the generation goes up by 7.5%. In fact, the analysis reveals that the PLF has to go up to 25.75%, which has never been achieved by windmills even as per the GEDA (Govt. organization) study. Hence, though in a few years, the PLF could cross 23.84%, to get a PLF of 25.75% (which an 8 percent increase translates to) on a sustained basis is highly hypothetical and unrealistic.

Project cost: As stated above, the cost taken into computation is based on purchase orders[21]. Since purchase orders have already been placed, payment has already been made and the project has already been implemented, the cost, therefore, represents firm cost and as such the question of any reduction in the cost is hypothetical.

Tariff: The tariff is based on the power tariff paid by the company before the decision making date. The tariff includes all costs except fixed cost (viz., demand charges, meter rent and electricity duty on demand charges), which are anyway payable by the company, with or without wind energy. Moreover, once the project has been set up and the company commenced wheeling power to the factory, increase or decrease in grid tariff is not relevant for the project as wind power becomes a *fait accompli*. Nevertheless, tariff has been subjected to 7.5% increase and it was observed that the project does not lose its additionality. Only if the tariff goes up to Rs.5.03 /kWh (which a 8% increase translates to) the project would lose its additionality. Considering the fact that the power tariff remained stable for the last eight years[22] in Gujarat, any increase in tariff is unrealistic.

Validation Team is in agreement with the reasoning given by the PP and hence concludes that such an increase in tariff or generation or reduction in project cost is unrealistic and hypothetical.

[20] GERC tariff order No. 2/2006 dated 11th August 2006 (p.4)

[21] Quotations have been submitted to DOE during validation. As per the quotation, the cost of the project works out to Rs.114.00 mn. (excluding interest during construction and loan processing charges), while as per the purchase order; the cost works out to Rs.110.0 mn[21] only. Since the cost as given in the purchase order is the cost actually paid by the company and it is lower than that of the quotation, validation team felt it appropriate to consider the cost based on purchase order. Had the validation team gone by guidance 6 of Annex 58, EB 51 the cost should be based on the quotation, which is much higher than the purchase order. Consequently, the financial indicator would have been much lower and hence the project would have been more additional.

[22] Please see http://findarticles.com/p/news-articles/dna-daily-news-analysis-mumbai/mi_8111/is_20090922/msedc-learn-lesson-gujarat/ai_n50946602/pg_2/?tag=content;col1

Having regard to the assessment of conformity of additionality demonstration and benchmark selection to the latest version of the guidance issued by EB on the assessment of investment analysis, plausibility and appropriateness of parameters used and correctness of financial calculations, Validation Team concludes that the project scenario is not economically feasible without benefits from CER sales

Barrier analysis

Project developer did not consider barrier analysis. Hence, this is not applicable.

Common practice analysis

Since it is a small scale project activity, PP is not required to demonstrate common practice barrier and hence, the project developer has not demonstrated additionality through common practice barrier. As per Attachment A to Appendix B (and Annex 34 of EB 35), the project developer is required to provide an explanation to show that the project activity would not have occurred anyway due to at least one barrier out of five barriers[23]. Since project developer had chosen investment barrier, additionality demonstration is in conformity with Attachment A to Appendix B read with Annex 34 of EB 35.

Summary

In the above background, Validation Team concludes that the project is not a business-as-usual scenario and is additional. The CDM benefits would enable the project to become financially attractive in as much as the project IRR with CDM benefits would cross the benchmark (13%) and hence CDM benefits would enable the project developer to overcome the barrier.

Nevertheless, CARs under finding B.4 -10 (7 issues) and CLs under finding B.1-8 (8 issues), were raised and successfully closed (ref Annex: Validation Protocol).

5.2.6 Monitoring Methodology

In section B.7.1 of the PDD, the monitoring plan was developed according to the applied monitoring methodology AMS I D version 16 and the related tools. By means of document review it can be confirmed that the monitoring plan is in compliance with the requirements of the methodology and/or tool. The means of implementation of the monitoring plan are sufficient to ensure that the emission reduction can be reported ex-post and verified.

[23] While Attachment A to Appendix B lists only four barriers, viz., investment barrier, technological barrier, barrier due to prevailing practices and other barriers, Annex 34 of EB 35, had split investment barrier into two resulting in five barriers, viz., investment barrier, access to finance barrier, technological barrier, barrier due to prevailing practices and other barriers.

(Please refer to section B.6 of the table A-1of the validation protocol attached in Annex A1 for detail assessment).

5.2.7 Monitoring Plan

The project applies monitoring methodology *AMS-I.D.:" Grid-connected renewable electricity generation" version 16, EB 54.*

The methodology requires monitoring of net electricity generation from the renewable technology installed by the project proponent.

1.65 MW wind mill is located in Kutch district of Gujarat State of India, and are connected to the substations under NEWNE grid. Details of the monitoring plan and apportionment approach is described in section B.7 of the PDD. Monitored parameter $EG_{,y}$ i.e. net electricity supplied to the grid.

Electricity generated by the wind mill is measured by transformer yard meter installed at WTG end on continuous basis. Energy generated from all WTG's including PP in wind farm is measured by main meter installed at substation. Based on this readings apportionment is done by the Government agency Gujarat State Energy Agency (GEDA) / SLDC and issue share of electricity Certificate/SE/. This will form the basis of emission reduction for the project activity.

Accuracy, calibration, periodical testing and maintenance procedures of monitoring equipment are clearly mentioned in the section B.7.2 of PDD/PDD2/ Validation team has reviewed the same and is convinced that the same is adequate and will lead to correct measurement of the net electricity exported to the grid. Also the GEDA / SLDC is governmental body and share of electricity certificate/SE/ is used for commercial purpose and is considered as authentic and correct by the validation team based on the local and sectoral expertise.

In case of failure of the main meter, WTG controller meter will be used by the PP for calculation of net electricity exported to the grid. DOE is convinced that as a fail safe arrangement calibration of controller meter cannot be done because it is a software control panel meter.

Proper descriptions have been provided in section B.7.1 of the PDD to describe the measuring methods and procedures to be applied. (Please refer to section B.6 of the table A-1of the validation protocol attached in Annex A1 for detail assessment).

5.2.8 Project Management Planning

The roles and responsibilities of the responsible person for monitoring of emission reductions for the verification of measurement, data collection as well as the preparation of monitoring report have been implemented as it is defined in the PDD/PDD2/. This was verified during the on site assessment conducted by the

verification team. All monitored data are archived partly in physical and partly in electronic form. The data will be kept for the whole crediting period and additional 2 years as given in the PDD/PDD2/.

5.2.9 Crediting Period

As described in section C.2.2.1 of the PDD, period chosen is 10 years fixed period starting from 16/08/2011 or from the date of registration whichever is later. Start date of the project activity stated in section C.1.1 of the PDD is 27/12/2007 which is the purchase order date placed to equipment supplier /PO/ is verified by validation team. Expected life time of the project activity is 20 years is cross checked from technical specifications provided along with purchase order/PO/.

5.2.10 Environmental Impacts

Ministry of Environment and Forest i.e. Government of India vide their notification S.O 1533, 14th November 2006, http://envfor.nic.in/legis/eia/so1533.pdf does not require any Environment Impact Assessment (EIA) of wind turbine projects. It results in no emission of GHGs and other gases i.e. SO_2 and NO_x common in conventional power generation sources.

5.2.11 Comments by Local Stakeholders

Local stakeholders were invited by personal invitation to the local stakeholders and meeting were conducted at village Vandhiya, district Kutch on 18/08/2008. No negative or adverse comments were received. Details of the stakeholder consultation meet was described in section E of the PDD. This was also confirmed during the site visit by conducting interview.

6 VALIDATION OPINION

M/s Gopal Glass Works Limited has commissioned the TÜV NORD JI/CDM Certification Program (CP) to validate the project: "1.65 MW Wind Power Project in Gujarat" 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.

In the course of the pre-validation 22 Corrective Action Requests (CARs) and 08 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 fulfilment of the stated criteria.

In detail the conclusions can be summarised as follows:

- The project is in line with all relevant host country criteria India and all relevant UNFCCC requirements for
- 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 31250 tCO_2e are most likely to be achieved within the 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.

Vadodara, 2011-07-12

Pankaj Patel

TÜV NORD JI/CDM CP

Validation Team Leader

Essen, 2011-07-12

Saalmann, Martin

TÜV NORD JI/CDM CP

Final Approval

7 REFERENCES

Table 7-1: Documents provided by the project participant

Reference	Document
/ACT/	• Income Tax Act http://law.incometaxindia.gov.in/DIT/income-tax-rules.aspx http://www.v-krishnan-and-company.com/tax_rates_in_India.html • Companies Act http://www.vakilno1.com/bareacts/companiesact/SCHEDULE%20659%20-%20674/sSCXIV%20-%20672.htm
/CA/	• Chartered Accountant's certificate dated. 24/09/2010 in support of administrative cost
/CC/	Commissioning certificate GEDA/PWF/GEDA-GGWL/Wandhiya/2007-08/233 dated 16/04/2008
/ELB/	Electricity Bills of the Company for the months of October, November and December 2007
/GERC/	GERC Tariff order dated 11th August 2006 http://geda.org.in/pdf/wind_final_order.pdf
/HCA/	Host Country Approval Letter from INDIA DNA dated 17/04/2009
/INS/	Insurance premium receipt dated 24/03/2009 from the New India Assurance company limited.
/IRR/	IRR calculation sheet.
/LAL/	Loan application letter dated 07/01/2008
/LSL/	Loan Sanction letter from state bank of India dated. 16/02/2008
/MD/	Minutes of the Board meeting dated 20/12/2007
/MOC/	Modalities of Communication
/O&M/	Operation and maintenance contract with M/s Vestas Wind technology India Pvt Limited dated 31/12/2007 and Erection and commissioning agreement dated 29/12/2007.
/PAR/	PLF Estimation Report by Vijayant Consultants dated February 2010

Reference	Document
/PDD1/	Draft Project Design Document named "1.65 MW Wind Power Project in Gujarat Version 01 dated 13/01/2009 (Hosted PDD) .
/PDD2/	Final Project Design Document version 05 dated 12/07/2011
/PO/	Purchase orders to M/s Vestas Wind Technology India Private Limited dated 27/12/2007 and Erection and commissioning agreement dated 29/12/2007.
/PWA/	Power wheeling agreement with GETCO dated 13/05/2008.
/QUOTE/	Quotation from Vestas Ref: VESTAS/MKTG/GUJ/SPM/81 Date: Nov 04, 2007
/RBI/	• Weekly Statistical Supplement dated 14/12/2007 http://rbidocs.rbi.org.in/rdocs/Wss/PDFs/82114.pdf • Weekly Statistical Supplement dated 04/01/2008 http://rbidocs.rbi.org.in/rdocs/Wss/PDFs/82364.pdf
/SE/	Monthly Share of electricity certificate issued by GEDA/SLDC for the month of March- April- May 2008
/SP/	Signed Service proposal no 09CDMINBRD – 09/242 dated 23/09/2009 between PP and DOE
/LSHC/	Local Stakeholder consultation process evidences: 1. Advertisement in local news paper 15/08/2008. 2. Stakeholder consultation- 18/08/2008.
/TS/	Technical specifications of Wind mills
/XLS/	Emission reduction calculation sheet

Table 7-2: Background investigation and assessment documents

Reference	Document
/AMS I D/	AMS I-D: Grid connected renewable electricity generation
/CPM/	TÜV NORD JI / CDM CP Manual (incl. CP procedures and forms)
/GCP/	UNFCCC: Guidelines for completing CDM-PDD and CDM-NM

Reference	Document
/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)
/MA/	Decision 3/CMP. 1 (Marrakesh – Accords & Annex to decision (17/CP.7))
/TA/	• Indicative simplified baseline and monitoring methodologies for selected small-scale CDM project activity categories (Attachment A to Appendix B) • Non-binding best practice examples to demonstrate additionality for SSC project activities (Annex 34, EB 35) • Guidelines on the assessment of investment analysis (Annex 58, EB 51).
/VVM/	Validation and Verification Manual (Version 01.2, Annex 1, EB 55)

Table 7-3: Websites used

Reference	Link	Organization
/CEA/	www.cea.nic.in http://www.cea.nic.in/reports/yearly/annual_rep/2007-08/annual_report_07_08.pdf	Central Electricity Authority of India. CO_2 database for grid.
/DNA/	www.cdmindia.nic.in	The Designated National Authority of India
/IPCC/	www.ipcc-nggip.iges.or.jp	IPCC publications
/IT/	http://law.incometaxindia.gov.in/DIT/income-tax-rules.aspx	Income Tax Act, 1961
/MNES/	www.mnes.nic.in	Ministry of New and Renewable Energy
/MOEF/	http://envfor.nic.in/	Ministry of Environment and Forests.
/MOP/	www.powermin.nic.in	Ministry of power
/RBI/	www.rbi.org.in	Reserve Bank of India
/UNFCCC/	http://cdm.unfccc.int	UNFCCC

Table 7-4: List of interviewed persons

Reference	MoI[1]		Name	Organisation / Function
/IM01/	V	☒ Mr. ☐ Ms	Mr Purvish Shah, Manager	M/s Gopal Glass Works Limited
/IM01/	V	☒ Mr. ☐ Ms	Mr S. Parameswaran,	M/s Vestas Wind Technology india Private Limited.
/IM02/	V	☒ Mr. ☐ Ms	Mr Chirag Gajjar,	Project consultants

[1)] Means of Interview: (**T**elephone, **E**-Mail, **V**isit)

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 *The written approval of the parties involved is a mandatory requirement*				
A.1.1. Has the project provided written approvals of all parties involved? (EB 55 Annex 1, § 44) *Indicate whether a letter of approval has been received, with a clear reference to the supporting documentation.* *Indicate whether this letter was provided to the DOE by the project participants or directly by the DNA*	*Description:* Host country approval is provided by the Project Participants for the project activity. *Justification of evidences:* Host country approval dated 17/04/2009 issued by DNA of India. *Conclusion:* Letter of approval/HCA/ dated 17/04/2009 from the DNA i.e. Ministry of Environment and forest (MoEF) has been submitted to the DOE by the project participant. The project is a unilateral project and no other parties except India have been involved in the project.	/PDD/(A. 3) /HCA/	OK	OK
A.1.2. Are the approvals issued from orgainsations listed as DNAs on the UNFCCC CDM website?	*Description:* Host country approval issued by DNA of India. *Justification of evidences:* http://cdm.unfccc.int/DNA/index.html	/PDD/ /HCA/	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, §§ 44, 47, 48, 49 (b), 49 (c), 53) *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.*	*Conclusion:* It is verified from the details available on UNFCCC web site that the organisation i.e. Ministry of Environment and Forests (MoEF) which has issued the approval is a listed DNA.	/UNFCCC/		
A.1.3. Do the written approvals confim that the corresponding party is a Party to the Kyoto Protocol? (EB 55 Annex 1, § 45(a))	*Description:* Host country approval issued by DNA of India. *Justification of evidences:* Host country approval dated 17/04/2009 issued by DNA of India. *Conclusion:* Yes, it has been mentioned in the letter of approval/HCA/ that the host party India is a party to Kyoto protocol.	/HCA/ /UNFCCC/	OK	OK
A.1.4. Do the written approvals confim that the participation is voluntary? (EB 55 Annex 1, § 45(b))	*Description:* Host country approval issued by DNA of India. *Justification of evidences:* Host country approval dated 17/04/2009 issued by DNA of India. *Conclusion:* Yes, it has been verified from the written letter of approval/HCA/ that the participation is voluntary.	/PDD/ /HCA/	OK	OK
A.1.5. Does the written approval from the host country confim that the project contributes to the sustainable development in the country? (EB 55 Annex 1, § 45(c))	*Description:* Host country approval issued by DNA of India. *Justification of evidences:* Host country approval dated 17/04/2009 issued by DNA of India. *Conclusion:* Yes, it has been verified from the written letter of approval/HCA/ that the project contributes to the sustainable development in the country.	/PDD/ /HCA/	OK	OK
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	*Description:* Host country approval issued by DNA of India. *Justification of evidences:* Host country approval dated 17/04/2009	/PDD/ /HCA/	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.
project activity, e.g. PDD version number? (EB 55 Annex 1, §§ 45(d), 50)	issued by DNA of India. *Conclusion:* Yes, it has been verified from the written letter of approval/HCA/ that the project title is exactly same as per the details provided in section A. 1 of the PDD/PDD2/.			
A.1.7. Are the written approvals unconditional with regard to A.1.3 to A.1.6? (EB 55 Annex 1, § 46)	*Description:* Host country approval issued by DNA of India. *Justification of evidences:* Host country approval dated 17/04/2009 issued by DNA of India. *Conclusion:* Yes, it has been verified from the written letter of approval/HCA/ that the issued approval is unconditional.	/PDD/ /HCA/	OK	OK
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? (EB 55 Annex 1, § 51)	*Description:* Details of project participants provided in the PDD are consistent. *Justification of evidences:* Written approval obtained from DNA of India and PDD submitted by PP. *Conclusion:* Validation team has reviewed PDD and confirmed that the details of the project participants are consistent in Annex-1 and section A.3 of the PDD. Same is also similar as per the host country approval.	/PDD/ /HCA/	OK	OK
A.1.9. Are all project participants listed in the PDD approved at least by one Party involved? (EB 55 Annex 1, § 51) *Indicate whether the participation of the project participant(s) has been approved by a Party to the Kyoto Protocol.* *Describe the means of validation employed to draw this conclusion.*	*Description:* Providing written approval for the PP specified in the PDD. *Justification of evidences:* Written approval obtained from DNA of India and PDD submitted by PP. *Conclusion:* Validation team has reviewed PDD and UNFCCC website and confirmed that there is only one project participant i.e. M/s Gopal Glass Works Limited. (GGWL) and is approved by the DNA of India which is party to Kyoto protocol.	/PDD/ /HCA/	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.1.10. Are any other project participants approved but not listed in the PDD? (EB 55 Annex 1, § 52)	*Description:* Details of project participants provided in the PDD. *Justification of evidences:* Written approval obtained from DNA of India and PDD submitted by PP. *Conclusion:* As verified from the host country approval there is only one project participant for the project activity.	/PDD/ /HCA/	OK	OK
A.1.11. Does the DoE have a direct contractual relationship with the PP? (EB 55 Annex 1, § 51; EB 50 Annex 48, §§ 7–9) *Check whether the PPs listed in the published PDD are still listed in the PDD going to be submitted to request for registration.*	*Description:* Contractual agreement with TUV-NORD and M/s Gopal Glass Works Limited (project participants). *Justification of evidences:* Signed Service proposal no 09CDMINBRD – 09/242 dated 23/09/2009 between PP and DOE/SP/ *Conclusion:* It can be confirmed from the service proposal dated 23/09/209 that the DOE has direct contractual agreement with the PP.	/HCA/ /SP/	OK	OK
A.2. Contribution to Sustainable Development *The project's contribution to sustainable development is assessed.*				
A.2.1. Has the host country confirmed that the project assists it in achieving sustainable development? (EB 55 Annex 1, §§ 125–127) *Contains a statement confirming whether the letter of approval by the DNA of the host party confirmed the*	*Description:* Host country approval issued by DNA of India. *Justification of evidences:* Host country approval dated 17/04/2009 issued by DNA of India *Conclusion:* Yes, as per the Letter of host Government approval/HCA/ dated 17/04/2009, the project contributes to Sustainable Development in India	/PDD/ /HCA/	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.
contribution of the project to the sustainable development of the Host Party.				
A.2.2. Will the project create other environmental or social benefits than GHG emission reductions? (EB 55 Annex 1, §§ 125–127) *Describe the other positive aspects not related to GHG emission reduction on the environment.*	*Description:* Contribution by renewable source of energy generation other then GHG emission reduction *Justification of evidences:* The validation team had conducted interview during the on-site visit. *Conclusion:* The project will lessen the power shortage in the region, generate local employments and will bring benefits to the local community around the project site.	/PDD/	OK	OK
A.3. PDD editorial aspects *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.*				
A.3.1. Has the latest version of the PDD form been applied? (EB 55 Annex 1, § 55)	*Description:* In cover page of PDD written the utilized version is version 03 dated 22/12/2006. *Justification of evidences:* During visited UNFCCC official website found that the latest version is version 03 as per EB 28 Annex 34. *Conclusion:* It evidenced that latest version of PDD is utilized and applied accordingly.	/PDD/ /UNFCCC/	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)	*Description:* Yes, the PDD has been duly filled in accordance with the latest guidance for completing CDM –SSC-PDD version 05. *Justification of evidences:* During visited UNFCCC official website it has been found that the latest version is version 05 as per EB 34 Annex 09. *Conclusion:* By means of website review it can be confirmed that the PDD is filled as per latest guidance for completing CDM-SSC-PDD. However CAR A1, A2, B2 were raised and closed successfully.	/PDD/ /UNFCCC/	~~CAR A1, A2, B2,~~	OK
A.4. Technology to be employed *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.*				
A.4.1. Does the PDD contain a clear, accurate and complete project description? (EB 55 Annex 1, §§ 58–59) *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.* *Pl. consider esp.* chapters *A.2, A.4.2 and A.4.3 (in case of*	*Description:* The project description is given in various parts of the PDD (esp. In sections A.2 and A.4.2 and A.4.3). *Justification of evidences:* The validation team has verified the relevant sections of the PDD and compared the observation during site visit against the applied methodology. *Conclusion* By means of site visit and document review it is confirmed that the description of the project activity along with its technical aspects has been filled adequately in the PDD.	/PDD/ /IM01/	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.**
LSC PDD) for assessment. *Describe the process undertaken to validate the accuracy and completeness of the project description.* *Contain the DOE's opinion on the accuracy and completeness of the project description.*				
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?	*Description:* Description of the project activity is based on the real situation. *Justification of evidences:* Document review of PDD and interview with project participants during site visit. *Conclusion:* The project has already been commissioned and it has been verified during site visit that the project is implemented according to the project description in the PDD.	/PDD/ /IM01/	OK	OK
A.4.3. In case the project involves alteration of the 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) *Describe the steps taken to validate this issue.*	*Description:* Project does not involve alteration of the existing installation. *Justification of evidences:* Document review of PDD and interview with project participants during site visit. *Conclusion:* As verified, project activity is an installation of a new wind mill and is a Greenfield project and does not involve any alteration of the existing installations.	/PDD/ /IM01/	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.4.4. Does the project design engineering reflect current good practices? *Consider the equipment specifications, literature (e.g. EU BREF papers) and professional experiences. Describe the process undertaken to assess the engineering.*	*Description:* The project description is given in various parts of the PDD (esp. In sections A.2 and A.4.2 and A.4.3). *Justification of evidences:* By means of document check, interview and site visit the engineering of the wind mill was checked. *Conclusion:* By means of knowledge of the validation team and document check it can be assessed that the project design reflects current good practice.	/PDD/ /IM01/	OK	OK
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? *Describe the process undertaken to assess the state of the art technology.*	*Description:* The project description is given in various parts of the PDD (esp. In sections A.2 and A.4.2 and A.4.3). *Justification of evidences:* During the site visit the technology and engineering of the project activity was verified. Wind mill technology is supplied by Vestas wind technology India Private Limited and is proven technology. *Conclusion:* By means of knowledge of the validation team and document review it can be confirmed that the project will use state of the art technology.	/PDD/ /TS/ /IM01/	OK	OK
A.4.6. Does the project make provisions for meeting training and maintenance needs? *Describe the process undertaken to assess the maintenance and training needs.*	*Description:* Operation and maintenance of the wind mill was awarded to the wind mill manufacturer *Justification of evidences:* Operation and maintenance contract between PP and WTG manufacturer. *Conclusion:* By document review and interview conducted during site visit it is evident that the operation and maintenance of the wind mill is looked after trained and skilled staff of the manufacturer.	/PDD/ /O&M/	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 *It is assessed whether the project qualifies as small-scale CDM project activity*				
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))	*Description:* Project activity is a installation of 1.65 MW wind mill small scale project *Justification of evidences:* The justification of chosen project type and category of the project activity is provided under the section B.2. of PDD in an adequate manner. *Conclusion:* By document review it is confirmed that the project falls under small scale project as per the criteria defined by UNFCCC.	/PDD/	OK	OK
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)) *Check, if applicable the expiry dates of the applied methodology. Further, take into consideration the general guidance to the methodologies[24], which provide guidance on equipment capacity, equipment performance, sampling and other monitoring related issues.*	*Description:* Project activity correctly applies approved methodology AMS I D and tools referred therein. *Justification of evidences:* During visited UNFCCC official website found that the latest version is version 16 of approved methodology AMS I D. *Conclusion:* By document review it is confirmed that the PP has correctly applied approved methodology AMS ID and tools referred therein. All the applicability conditions are met with.	/PDD/ /UNFCCC/	OK	OK
A.5.3. Is the small scale project activity not a	*Description:* The small scale project activity is not a debundled component of a larger project activity.	/PDD/	OK	OK

[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.
debundled component of a larger project activity? (EB 55 Annex 1, § 136 (c)) *Describe the steps taken to validate this issue. PI refer to the Compendium of guidance on debundling (EB ~~36, Annex 27~~ 54, Annex 13).*	*Justification of evidences:* Description and justification as provided in the PDD. *Conclusion:* By document review it is confirmed that that there is no other WTG owned by the project participant apart from the project under consideration in the same wind farm.			
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))	*Description:* Assessment of environmental impacts are not required as per local environmental regulations prevailing in the host country. *Justification of evidences:* Environmental laws and acts prevailing in India. Schedule I of Environmental Impact Notification 2004 S.O. (60) E, dated 27/01/1994, Environment Impact Assessment Notification Ministry of Environment and Forests dated, 14th September, 2006. *Conclusion:* Based on the local and sectoral knowledge of the DOE and by conducting document review of the environmental laws it is confirmed that Environmental Impact Assessment is not required for the project activity being installation of wind mill of 1.65 MW capacity.	/PDD/ /MOEF/	OK	OK
B. Project Baseline, Additionality and Monitoring Plan				

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.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) *Describe the steps taken to validate this issue.*	*Description:* Project activity applies approved methodology AMS I D *Justification of evidences:* During visited UNFCCC official website found that the latest version is version 16 of approved methodology AMS I D. *Conclusion:* By document review it is confirmed that the PP has correctly applied approved methodology AMS ID and is valid.	/PDD/ /AMS I D/	OK	OK
B.1.2. Is the applied CDM methodology identical with the version available on the UNFCCC website? (EB 55 Annex 1, §§ 65, 70) *Describe the steps taken to validate this issue.*	*Description:* Project activity applies approved methodology AMS I D V 16 *Justification of evidences:* During visited UNFCCC official website found that the latest version is version 16 of approved methodology AMS I D. *Conclusion:* By document review it is confirmed that the PP has correctly applied approved methodology AMS ID and is valid and identical with the version available on UNFCCC website.	/PDD/ /UNFCCC/	OK	OK
B.1.3. Are all applicability criteria in the methodology, the applied tools or any other methodology component referred to therein fulfilled? (EB 55 Annex 1, §§ 66(a)–(b), 68, 71, 76) *Describe for <u>each</u> applicability criterion listed in the selected approved methodology the steps taken to assess the information contained in the PDD.*	As described in section B.2 of the PDD, the applicability criteria of the approved methodology AMS I D V 16 are as below: **Applicability criteria 1** : The project activity comprises the installation of a wind mill using wind as a renewable source of energy for generation of power and supplies electricity to the NEWNE grid of India and hence meets the applicability criteria. As verified from the CO_2 database published by Central Electricity Authority/CEA/, NEWNE grid is	/PDD/ /UNFCCC/ /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.
	connected to fossil fuel based power plant which will be replaced by the addition of the power from project activity. **Applicability criteria 2**: Project activity is a greenfield project of a total installed capacity of 1.65 MW (Less than 15 MW) and is not an addition / retrofit / replacement of any units to existing generation facility. Same is validated by document review and conducting interview during site visit/IM01/. Project activity meets the applicability criteria. **Applicability criteria 3:** As verified from the document review and site visit, project activity is not a hydro power plant and hence this applicability criteria is not applicable. **Applicability criteria 4:** As verified from the document review and site visit, project activity is not a biomass power plant and hence this applicability criteria is not applicable. **Applicability criteria 5:** In the project activity, total installed capacity of the wind mill is 1.65 MW and is of renewable component only. Validation team has reviewed technical specification/TS/, purchase orders/PO/, Project Design Document /PDD/ and conducted interview during site visit. The validation team is convinced that the installed capacity of the renewable component is only 1.65 MW which is less than the			

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	eligibility limit of 15 MW for small scale project activity. Hence, this applicability criteria has been fulfilled. **Applicability criteria 6:** As verified from the document review and site visit, project activity is not a combined heat and power (Co-generation) system and hence this applicability criteria is not applicable. **Applicability criteria 7:** Project activity is a greenfield project of a total installed capacity of 1.65 MW (Less than 15 MW) and is not an addition of any units to existing generation facility fulfilling this applicability criteria. Same is validated by document review and conducting interview during site visit. **Applicability criteria 8:** Project activity is a greenfield project of total installed capacity of 1.65 MW (Less than 15 MW) and is not a retrofit activity fulfilling this applicability criteria. Same is validated by document review and conducting interview during site visit.			

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.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? (EB 55 Annex 1, §§ 72–75)	*Description:* Please refer to section B.1.3. All the applicability criteria are met. *Justification of evidences:* Not applicable *Conclusion:* Not applicable	/PDD/	OK	OK
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? (EB 55 Annex 1, § 69, 71) *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 methodology selected.*	*Description:* In the approved methodology, no specific stipulation or requirements are indicated. *Justification of evidences:* The stipulation/requirements of the methodology were checked. *Conclusion:* It can be confirmed that the project is in accordance to every other stipulation or requirement of the methodology.	/PDD/ /AMS I D/	OK	OK
B.2. Project Boundaries *Project Boundaries are the limits and borders defining the GHG emission reduction project*				
B.2.1. Are the project's spatial boundaries (geographical) clearly defined?	*Description:* The project boundary includes the physical and geographical site of the WTG. This has been clearly shown in the	/PDD/	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, §§ 67(a), 78–80) *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.*	section B.3 of the PDD. *Justification of evidences:* Validation team has performed site visit and CO_2 database of Central Electricity Authority/CEA/ Project design Document/PDD/ *Conclusion:* It can be confirmed that the physical delineation of the proposed CDM project activity are clearly identified and is in conformity with the para 9 of the approved methodology.	(B.3.) /IM01/		
B.2.2. Are all sources and GHGs included in the project boundary as required in the applied methodology? (EB 55 Annex 1, §§ 67(a), 78–80) *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.*	*Description:* As required by approved methodology, CO_2 which is emitted from the electricity generation in fossil fuel fired power plants, is the only GHG included in the project boundary to calculate the baseline emission. *Justification of evidences:* Same is verified by validation team by reviewing approved methodology available on UNFCCC web site/UNFCCC and details provided in the PDD. *Conclusion:* Based on above it can be confirmed that all sources and GHG are included as per approved methodology.	/PDD/	OK	OK
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) *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.*	*Description:* The methodology does not allow to choose a source and/or gas is to be included, hence this question is not applicable for this project activity. *Justification of evidences:* Not applicable *Conclusion:* Not applicable	/PDD/ /AMS I D/	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 *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.*				
B.3.1. What possible baseline scenarios have been considered? (EB 55 Annex 1, §§ 67(b), 83) *Fill in all alternatives in table A-2.*	*Description:* Please refer table A-2. *Justification of evidences:* Approved methodology AMS I D, PDD, CEA CO_2 database. *Conclusion:* As per the approved methodology AMS I D v 16, PP has correctly identified the baseline as the product of electrical energy baseline produced by renewable generating unit multiplied by an emission factor.However CAR B6 was raised and closed successfully.	/PDD/ /AMS I D/	~~CAR B6~~	OK
B.3.2. Is the list of alternatives complete? (EB 55 Annex 1, §§ 67(b), 83) *Describe how it was validated that all alternatives are plausible and no plausible alternative is excluded from the consideration*	☒ 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. ☐ The following alternative scenarios/options have been omitted. Corresponding CAR(s)/CL(s) has /have been issued		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.3.3. What has been identified as the baseline scenario? (EB 55 Annex 1, §§ 81–82, 86) *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.*	*Refer section B.3.1*	/PDD/ /AMS I D/	OK	OK
B.3.4. Has the baseline scenario been determined according to the methodology? (EB 55 Annex 1, §§ 82, 87(e)) *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. Please refer to table A-2.*	For details of the assessment regarding the evaluation of the baseline scenario pl. refer to table A-2. ☒ The determination has been carried out as per the procedure contained in the applied methodology. ☐ The following CARs / CLs have been identified with respect to the selection of the baseline scenario: .	/AMS I D/	OK	OK
B.3.5. Has any plausible alternative scenario been excluded? (EB 55 Annex 1, § 83) *Describe how it is validated that no plausible alternative scenario has been excluded.*	For details of the assessment regarding the evaluation of the baseline scenario pl. refer to table A-2. ☒ No plausible baseline scenario has been excluded. ☐ 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/	OK	OK
B.3.6. Is the identified baseline scenario reasonable and has the baseline scenario been	☒ 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.	/PDD/	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.
determined using conservative assumptions where possible, including relevant references and sources? (EB 55 Annex 1, §§ 84–86(a)–(c)) *Describe whether the choice of the identified baseline scenario is reasonable by validating the key assumptions, calculations and rationales used in the PDD. Describe whether these are listed, relevant and conservatively interpreted in the PDD.*	☐ The following CARs / CLs have been issued because assumptions used in the baseline determination have been assessed to be not conservative			
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)) *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).*	*Description:* Consideration of national and sectoral policies ,macro-economic trends and political aspirations for baseline scenario *Justification of evidences:* Validation team has reviewed the Central electricity Authority/CEA/ and the Ministry of Power/MOP/ documents. *Conclusion:* By means of document review it can be confirmed that the baseline scenario has taken into account prevailing national law of India.	/PDD/ /CEA/ /MOP/	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)) *Describe whether the documents and sources referred to in the PDD are correctly quoted and clearly referenced.*	*Description:* Compatibility of baseline scenario with available data and referenced sources in the PDD. *Justification of evidences:* Document review of PDD. *Conclusion:* Validation team is convinced that the sources and data are properly referenced in the PDD for the determination of the baseline scenario.	/PDD/	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.3.9. Does the PDD contain a *verifiable* description of the identified baseline scenario, including a description of the technology that would be employed and/or the activities that would take place in the absence of the proposed CDM project activity. (EB 55 Annex 1, § 86)	*Description:* Under the section B.4 of the PDD there is a verifiable description of the identified baseline scenario including the description of the technology that would be employed and/or that would take place in absence of the proposed CDM project activity. *Justification of evidences:* Validation team has reviewed Technical specifications/TS/, PDD, and conducted site visit. *Conclusion:* As per the approved methodology AMS I D v 16, PP has correctly identified the baseline as the product of electrical energy baseline produced by renewable generating unit multiplied by an emission factor. Technical description is also sufficiently included in the PDD.	/PDD/	OK	OK
B.4. Additionality Determination *The assessment of additionality will be validated with focus on whether the project itself is not a likely baseline scenario.*				
B.4.1. Methodology				
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? (EB 55 Annex 1, §§ 67(d), 94–95) *Describe how it is validated that additionality justification is carried out in accordance with the applied methodology*	*Description:* Yes, the PDD describes additionality of the project and additionality justifications have followed the requirements of the Appendix B of the simplified modalities and procedures for small-scale CDM project activities (Attachment A to Appendix B). *Justification of evidences:* • Attachment A to Appendix B • Annex 34, EB 35	/PDD/ /unfccc/	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.
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.	• Annex 51, EB 58 • Revised PDD. *Conclusion:* The PDD demonstrates the additionality of project using benchmark analysis. The additionality justification conforms to Attachment A to Appendix B, read with Annex 34, EB 35 and Annex 51, EB 58.			
B.4.2. Consideration of CDM before project start				
B.4.2.1. Is the project starting date reported in accordance with the CDM glossary of terms? (EB 55 Annex 1, § 104(a)) *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.* *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 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.*	*Description:* The contract between M/s Vestas Wind Technology India (P) Limited. and M/s Gopal Glass Works Limited for the supply of WTG is considered as the start date of the project activity. *Justification of evidences:* Supply Agreement dated 27th December 2007 between M/s Vestas Wind Technology India (P) Limited. and M/s Gopal Glass Works Limited. *Conclusion:* The project start date is in conformity with the Glossary of CDM terms. However, CAR B8 and CL C1 were raised and closed successfully.	/PDD/ /PO/	~~CAR B8 CL C1~~	OK
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	Not applicable	-.		

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
seek CDM status? (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.*				
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? (EB 55 Annex 1, §§ 100, 102) *Describe whether the evidence to support such consideration is adequately and transparently described in the PDD.*	*Description:* Yes, the PP had seriously considered CDM incentive at the time of taking investment decision and it is transparently described in the PDD. *Justification of evidences:* • The extract of the minutes of Board resolution dated 20th December 2007 • Revised PDD *Conclusion:* The Board resolution reveals that the CDM benefits were considered seriously at the time of taking investment decision and the CDM benefits were the decisive factor in decision making. However, CL B7 was raised and closed successfully	/PDD/ /MD/	~~/CL B7/~~	OK
B.4.2.4. How and when was the decision to proceed with the project taken? *Describe the steps taken to validate the starting date.*	*Description:* The decision to proceed with the project was taken by the Board of Director of M/s Gopal glass Works Limited. on 20.12.2007. The Board seriously considered CDM benefits. *Justification of evidences:*	/MD/ /PDD/ /PO/	~~CAR B8 CL B1 CL B7~~	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 extract of the minutes of Board resolution dated 20th December 2007 • Revised PDD • Supply Agreement dated 27th December 2007 between M/s Vestas Wind Technology India (P) Limited. and M/s Gopal Glass Works Limited *Conclusion:* Board resolution states the wind mill project will be economically viable and financially sustainable after taking into due consideration the carbon credit revenues. The agreement for the supply of WTG was entered into on 27/12/2007, i.e., after the Board took the investment decision in which the CDM benefits were seriously considered. However CAR B8, CL B1, CL B7 were raised and closed successfully			
B.4.2.5. Is the project start date consistent with the available evidences? (EB 55 Annex 1, § 102) *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.*	*Description:* Yes, the project start date is consistent with the agreement for the supply of WTG entered into with M/s Vestas Wind Technology India Pvt. Limited. by M/s Gopal Glass Works Limited. *Justification of evidences:* • The extract of the minutes of Board resolution dated 20th December 2007 • Revised PDD • Supply Agreement dated 27th December 2007 between M/s Vestas Wind Technology India (P) Limited. and M/s Gopal	/MD/ /PDD/ /PO/	~~CAR B8 CL B1 CL B7~~	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.
	Glass Works Limited *Conclusion:* Board resolution states the wind mill project will be economically viable and financially sustainable after taking into due consideration the carbon credit revenues. The agreement for the supply of WTG was entered into on 27/12/2007, i.e., after the Board took the investment decision in which the CDM benefits were seriously considered. However CAR B8, CL B1, CL B7 were raised and closed successfully			
B.4.2.6. Was the decision to proceed with the project taken by a person which has the authority to do so? (EB 55 Annex 1, § 102(a) *Describe the steps taken to validate this issue.*	*Description:* Yes, the decision to proceed with the project was taken by the Board of Directors of M/s Gopal Glass works Limited. 20.12.2007. *Justification of evidences:* • The extract of the minutes of Board resolution dated 20th December 2007 *Conclusion:* Validation team checked the Board resolution and observed that it clearly states the wind mill project will be economically viable and financially sustainable after taking into due consideration the carbon credit revenues. Since the entire power of the company rests with the Board of Directors, the Board is the only competent authority to take investment decision However CL B7 was raised and closed successfully	/MD/	~~CL B7~~	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.4.2.7. How was the CDM involved in the decision making process? (EB 55 Annex 1, § 102) *Describe why CDM was a decisive factor in the decision making process.*	*Description:* The decision to proceed with the project was taken by the Board of Director of M/s Gopal glass Works Limited. on 20.12.2007 after taking into consideration CDM benefits. *Justification of evidences:* • The extract of the minutes of Board resolution dated 20th December 2007 *Conclusion:* Validation team checked the Board resolution and observed that it clearly states the wind mill project will be economically viable and financially sustainable after taking into due consideration the carbon credit revenues. The resolution proves that the CDM benefits were the decisive factor in decision making process However CL B7 was raised and closed successfully	/MD/	~~CL B7~~	OK
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)	*Description:* PDD contains chronology of events, which prove doubtlessly that continuous and real actions were taken in order to secure the CDM status. *Justification of evidences:* ▪ Revised PDD • Extract of the Board resolution dated 20/12/2007 • Supply Agreement dated 27/12/2007 between M/s Vestas Wind Technology India (P) Limited. and M/s Gopal Glass Works	/PDD/ /MD/ /PO/ /LSHC/	~~CAR B7~~	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.
	Limited ▪ Contract with CDM consultant dated 03/06/2008 ▪ Minutes of local stake holders' meeting held on 18/08/2008. ▪ Host Country Approval dated 17/04/2009 *Conclusion:* The chronology of events given in the PDD and the documentary evidence submitted prove that the gap between any two CDM activity was less than one year. Hence, as per paragraph 6 and 8 of Annex 22, EB 49, the project had taken continuous and real action to secure CDM status in parallel with the implementation of the project activity. However CAR B7 was raised and closed successfully.			
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)	*Description:* The gap between the documented evidences to secure CDM status is less than 3 years. *Justification of evidences:* ▪ Revised PDD • Extract of the Board resolution dated 20/12/2007 • Supply Agreement dated 27/12/2007 between M/s Vestas Wind Technology India (P) Limited. and M/s Gopal Glass Works Limited ▪ Contract with CDM consultant dated 03/06/2008 ▪ Minutes of local stake holders' meeting held on 18/08/2008 ▪ Host Country Approval dated 17/04/2009 *Conclusion:* The chronology of events given in the PDD and the documentary	/PDD/ /MD/ /PO/ /LSHC/	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.
	evidence submitted prove that the gap between any two CDM activity was less than one year. All the evidences submitted are reliable, credible and complete. The documents reveal that the gap between any two CDM activity has been less than 3 years.			
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) *Describe the reasons for ceasing the project and explain why the incentive from CDM was necessary to recommence the implementation.*	*Description:* No, the implementation of the project did not cease after its commencement. *Justification of evidences:* ▪ Revised PDD • Supply Agreement dated 27/12/2007 between M/s Vestas Wind Technology India (P) Limited. and M/s Gopal Glass Works Limited ▪ Certificate of commissioning dated 16/04/2008 *Conclusion:* Chronology of events forming part of Sec. B.5. of PDD and documentary evidence submitted relating to purchase order and commencement of the project prove that the project implementation did not cease after its commencement.	/PDD/ /PO/ /CC/	OK	OK
B.4.2.11. Can the CDM involvement in the decision assessed as serious? *Describe whether or not the project would have been undertaken without the incentive of the CDM.* (EB 55 Annex 1, § 104(b)–(c))	*Description:* Yes, the CDM involvement in the decision making was serious. The CDM incentive was considered imperative by the Board of Directors to make the project economically viable and financially sustainable. *Justification of evidences:* ▪ Extract of the of Board resolution dated 20/12/2007 ▪ Revised Worksheet	/MD/ /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.
	Conclusion: Validation team checked the minutes of the board meeting and observed that the Board of Directors after discussion had concluded that the wind mill project will be economically viable and financially sustainable only after taking into due consideration the CDM benefits. Moreover, considering the fact that with CDM benefits the financial indicator breaches the benchmark, validation team is convinced that it could be reasonably concluded that no investment would have taken place without CDM benefits			
B.4.3. Identification of alternatives Step 1 (in case of SSC projects pl. skip steps 1 and 2 if appropriate)				
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 other viable means of supplying the outputs or sevices that are to be supplied by the proposed CDM project activity? (EB 55 Annex 1, §§ 105–107) *Describe the steps taken to validate this issue on the basis of your local and sectoral knowledge.*	Not applicable as this is a small scale project activity.	/AMS-I.D/	OK	OK
B.4.3.2. Have all realistic alternatives been identified to the project? (EB 55 Annex 1, §§ 105–107) *Describe whether the list of alternatives is credible and*	Not applicable as this is a small scale project activity.	/AMS-I.D/	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.
complete. Describe how it is validated that the alternatives are realistic.				
B.4.3.3. Do all identified alternatives comply with enforced legislations? (EB 55 Annex 1, §§ 106(c)) *Describe the steps taken to validate this issue. Refer to the legislations.*	Not applicable as this is a small scale project activity.	/AMS-I.D/	OK	OK
B.4.4. Investment analysis Step 2 *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 additonal details of the the calculation parameters..*				
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 feasable without the revenues from the sale of CERs? (EB 55 Annex 1, § 108)	*Description:* Yes, the PDD provides evidence to the effect that the project activity is not financially attractive without CER revenues. *Justification of evidences:* ▪ Revised PDD ▪ Revised Worksheet /IRR/ ▪ Board decision *Conclusion:* PDD, duly supported by worksheet reveal that the project would not be the economically/financially feasible without the revenues from	/IRR/ /PDD/	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 sale of CERs.			
B.4.4.2. Is an appropriate analysis method chosen for the project (simple cost analysis, investment comparison analysis or benchmark analysis)? (EB 55 Annex 1, § 108; EB 39 Annex 10) *Describe why the selected analysis method is appropriate under consideration of potential revenues and costs, potential project alternatives and potential available benchmark values.*	*Description:* Project developer has chosen benchmark analysis to demonstrate additionality of the project, which is in conformity with guidance 16 of Annex 58, EB 51. *Justification of evidences:* ▪ Revised PDD ▪ Revised Worksheet *Conclusion:* Since the project activity would be earning revenue from the sale of power to the grid and that the baseline is outside the direct control of project developer, benchmark analysis considered appropriate for demonstration of additionality and is in conformity with guidance 16 of Annex 58, EB 51	/IRR/ /PDD/	OK	OK
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) *Describe the steps taken to validate this issue.*	*Description:* Yes, a clear and viewable and unprotected excel spread sheet containing investment analysis calculations has been submitted. *Justification of evidences:* ▪ Revised Worksheet *Conclusion:* A clear, viewable and unprotected excel spread sheet on investment calculations has been submitted, using the latest guidance given in the latest Guidance on the Assessment of Investment Analysis. All the input parameters have been evidenced	/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.
	by credible and reliable documents, copies of which have been submitted to DOE			
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 inflow) included? (EB 55 Annex 1, § 109; EB 51 Annex 58 § 3 – 4) *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.*	*Description:* A 20 year period has been chosen for investment analysis which reflects the technical lifetime of the project activity. *Justification of evidences:* ▪ Revised worksheet • Supply Agreement dated 27/12/2007 between M/s Vestas Wind Technology India (P) Limited and M/s Gopal Glass Works Limited. *Conclusion:* The period chosen for investment analysis is 20 years which is in agreement with the supply agreement, which estimates the technical life time to 20 years. However CAR B4 was raised and closed successfully	/IRR/ /PO/	~~CAR B4~~	OK
B.4.4.5. Is the (remaining) technical lifetime of existing or project equipment defined in accordance with the guidance of the *Tool to determine the remaining lifetime of equipment*? (EB 50 Annex 15)	*Description:* Not applicable as it is a green-field project *Justification of evidence* Not applicable *Conclusion:* Not applicable	/IRR/	OK	OK
B.4.4.6. Is the fair value calculated in accordance with local accounting regulations (where	*Description*:	/IRR/	~~CL 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.**
available) or international best practice? (EB 55 Annex 1, § 109; EB 51 Annex 58, § 4) *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.*	Salvage value has been taken at 5% of the value of assets plus 100% of land cost *Justification of evidence:* ▪ Revise worksheet *Conclusion*: Salvage value provided in the terminal year conforms to international best practices. Moreover, since the entire assets is written off fully in the first 5 years and the benefits reckoned in the financial indicator calculation, the salvage value represents only potential profit expected to be realised. However CL B2,was raised and closed successfully			
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)	*Description*: Salvage value has been taken at 5% of the value of assets plus 100% of land cost (which represents book value plus potential profit or loss). *Justification of evidence:* ▪ Revise worksheet *Conclusion*: Salvage value provided in the terminal year conforms to international best practices. Moreover, since the entire assets is written off fully in the first 5 years and the benefits reckoned in the	/IRR/	~~CL 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.
	financial indicator calculation, the salvage value represents only potential profit expected to be realised. However CL B2,was raised and closed successfully			
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)	*Description:* Depreciation and non tax items have been added back to net profits for the purpose of calculation of financial indicator *Justification of evidence:* ▪ Revised worksheet *Conclusion* Depreciation and related items have been added back to net profits for the purpose of calculating the financial indicator	/IRR/	OK	OK
B.4.4.9. Is taxation excluded in the investment analysis or is the benchmark intended for post tax comparisons? (EB 55 Annex 1, § 109; EB 51 Annex 58, § 5)	*Description:* Benchmark is intended for post tax comparison and hence tax has been excluded in the investment analysis *Justification of evidence:* ▪ Revised worksheet /IRR/ *Conclusion:* Taxation has been excluded in the investment analysis as the benchmark is intended for post tax comparison	/IRR/	~~CL B3 CAR B14~~	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.
	However CL B3, CAR B14 ,were raised and closed successfully			
B.4.4.10. Were the input values used in the investment analysis valid and applicable at the time of the investment decision? (EB 55 Annex 1, § 109,112; EB 51 Annex 58, § 6) *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.*	*Description:* Input values used in the investment analysis were applicable at the time of investment decision or the values chosen were conservative. Input values are not based on FSR *Justification of evidence:* • Revised worksheet/IRR/ • Quotation dated 04/11/2007 • Sale Agreement with Vestas dated 27/12/2007, • Agreement for erection and commissioning dt. 29/12/2007 • Loan application to SBI dated 07/01/2008/LAL/ • SBI Loan sanction letter dated 16/02/2008/LSL/ • PLF Assessment Report dated February 2010/PAR/ • O&M agreement dated 31/12/2007 • Electricity Bill of the company for October, November and December 2007 • Certificate of commencement of generation dt.16/04/2008 • CA certificate dated 24/09/2010 on the admn. expenses • Income Tax Act,1961 • Income Tax Rules • Companies Act, 1956 *Conclusion*: The input values used in the investment analysis are either based on the input values which were available at the time of decision making or conservative	/IRR/ /QUOTE/ /PO/ /LAL/ /LSL/ /PAR/ /O&M/ /EB/ /CC/ /ACT/	~~CAR B2~~ ~~CAR B9~~ ~~CAR B10~~ ~~CAR B11~~ ~~CAR B12~~ ~~CAR B13~~ ~~CAR B14~~ ~~CL B1~~ ~~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.
	However CAR B2, B9, B10, B11, B12, B13, B14, CL B1, CL B3 were raised and closed successfully			
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 and calculating the ex-ante ER? (EB 48, Annex 11)	*Description:* PLF has been chosen in conservative manner and is based on third party estimation of PLF. *Justification of evidence:* ▪ PLF estimation by Vijayant Consultants dated February 2010 /PAR/; ▪ Revised worksheet /IRR/ *Conclusion:* PLF assumed in the additionality demonstration is based on third party estimation of PLF /PAR/. This is in conformity with Annex 11, EB 48. However CAR B9 ,was raised and closed successfully	/IRR/ /PAR/	~~CAR B9~~	OK
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)	*Description:* Loan repayments and interests have been excluded from the calculation of project IRR *Justification of evidence:* ▪ The validation team has reviewed the excel calculation sheet /IRR/. The work sheet "ana" of the IRR excel sheet (row 27) clearly shows that the interests on the term loan have been added back into the net cash flow prior determining the IRR. No loan repayments are included. ▪ Loan sanction letter dated 16/02/2008 /LSL/	/IRR/ /LSL/	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.
	Conclusion: In the computation of project IRR, loan repayments and interests have not been treated as costs which is therefore in conformity with Annex 58, EB 51.			
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) *As per the guidance it is recommended to select a pre tax benchmark in order to Describe the steps taken in assessing this requirment.*	*Description:* Actual interest has been taken into consideration in the calculation of Income tax *Justification of evidence:* ▪ Revised worksheet/IRR/ ▪ Loan sanction letter dated 16/02/2008/LSL/ *Conclusion:* Tax calculation takes into account actual interest payable and is therefore in conformity with Annex 58, EB 51. However CAR B15,was raised and closed successfully	/IRR/ /LSL/	~~CAR B15~~	OK
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? (EB 55 Annex 1, § 109; EB 51 Annex 58, § 10)	*Description:* Not applicable as additionality is demonstrated through project IRR *Justification of evidence:* ▪ Revised worksheet/IRR/ *Conclusion:* In the web-hosted PDD, project developer had given both equity and project IRR and had chosen expected/required rate of return	/IRR/	~~CAR B5~~ ~~CAR B17~~ ~~CAR B18~~	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.
	on equity (computed through CAPM) as the benchmark for the former and commercial lending rate as benchmark for the latter. However, consequent upon the CARs raised on the CAPM, project developer had chosen to remove the equity IRR and has restricted the demonstration of additionality with project IRR only However CAR B5, B17, B18 ,were raised and closed successfully			
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)? (EB 55 Annex 1, § 111; EB 51 Annex 58, §§12 – 15) *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.*	*Description :* Benchmark chosen – commercial lending rate - is appropriate for the financial indicator used – project IRR - to demonstrate additionality *Justification of evidence* ▪ Revised worksheet/IRR/ ▪ Weekly Statistical Supplement of RBI *Conclusion:* Project developer has chosen commercial lending rate (PLR) during the decision making period, as the benchmark, which is in conformity with the guidance given vide paragraph 12 and 13 of Annex 58, EB 51. However CAR B5, B17, B18 ,were raised and closed successfully	/IRR/ /RBI/	~~CAR B5~~ ~~CAR B17~~ ~~CAR B18~~	OK
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?	*Description:* Yes, the benchmark – commercial lending rate prevailing at the time of decision making - is suitable for the project activity and investment would not have been made at a rate lower than the benchmark *Justification of evidence*	/IRR/ /MD/	~~CL B5~~	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, § 109; EB 51 Annex 58, §§13 – 15) *Describe whether it is reasonable to assume that a lower rate of return would consequently result in the baseline scenario.*	▪ Revised worksheet/IRR/ ▪ Extract of the of Board resolution dated 20/12/2007 *Conclusion:* Commercial lending rate prevailing at the time of decision making has been chosen as the benchmark and the data has been sourced from RBI Weekly Statistical supplement – an authentic and credible publication. Since project IRR has been chosen as the financial indicator as per guidance 12 and 13 of Annex 58, EB 51, the benchmark value is suitable. Board resolution reveals that CDM benefits are imperative to make the project economically viable and financially sustainable. Since the financial indicator breaches the benchmark with CDM benefits, it can be reasonably concluded that no investment would have been made at a return lower than the benchmark However CL B5 was raised and closed successfully			
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) *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.*	*Description:* The project can be developed by other developers also *Justification of evidence:* ▪ Revised PDD *Conclusion:* Since it is a green-field project, it can be developed by other developers also.	/PDD/	OK	OK
B.4.4.18. Was the benchmark consistently used in	*Description:*	/PDD/	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 past for similar projects with similar risks? (EB 55 Annex 1, § 112(c))	Not applicable, as internal benchmark has not been used *Justification of evidence:* ▪ Revised PDD *Conclusion:* Since internal benchmark has not been used, the question does not arise			
B.4.4.19. Does the PDD and related spreadsheets contain a sensitivity analyis and does the same contain variation of parameters which may vary throughout the project lifetime, (EB 55 Annex 1, §§ 109–110(e); EB 51 Annex 58, § 17–18) *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.*	*Description:* Yes, the PDD and related spreadsheets contain sensitivity analysis and they contain variation in parameters which may vary throughout the project lifetime *Justification of evidence:* ▪ Revised worksheet/IRR/ ▪ Revised PDD *Conclusion*: Project cost, tariff and generation – which constitute more than 20% of the project cost/revenue/ have been subjected to variation. All these factors vary over the life time of the project. It was observed that the only other expenditure O&M cost (which would also vary during the life time of the project), which accounts for less than 20%, is not critical at all as only 75% reduction in the O&M cost would render the project non-additional, which is highly unrealistic. Hence, only those critical factors which account for more than 20% of project cost and revenue have been subjected to variation in the sensitivity analysis	/IRR/ /PDD/	~~CAR B16~~	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.
	However CAR B 16 was raised and closed successfully			
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? (EB 55 Annex 1, § 109; EB 51 Annex 58, § 17)	*Description:* Yes, only factors which constitute more than 20% of total project revenue were subjected to reasonable variation *Justification of evidence* ▪ Revised worksheet /IRR/ *Conclusion:* Only project cost, tariff and generation – which constitute more than 20% of the project cost/revenue/ have been subjected to variation. It was observed that the only other expenditure O&M cost, which accounts for less than 20%, is not critical at all as only 75% reduction in the O&M cost would render the project non-additional, which is highly unrealistic. Hence, only those critical factors which account for more than 20% of project cost and revenue have been subjected to variation in the sensitivity analysis However CAR B 16 was raised and closed successfully	/IRR/	~~CAR B16~~	OK
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? (EB 55 Annex 1, § 109; EB 51 Annex 58, § 17) *Describe whether those parameters are considered in the sensitivity analysis?*	*Description:* Yes. Variable that constitute less than 20% of total project revenue has not been subjected to variation *Justification of evidence* ▪ Revised worksheet /IRR/ *Conclusion:* Only project cost, tariff and generation – which constitute more than	/IRR/	~~CAR B16~~	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.
	20% of the project cost/revenue/ have been subjected to variation. It was observed that the only other expenditure O&M cost, which accounts for less than 20%, is not critical at all as only 75% reduction in the O&M cost would render the project non-additional, which is highly unrealistic. Hence, only those critical factors which account for more than 20% of project cost and revenue have been subjected to variation in the sensitivity analysis However CAR B16 was raised and closed successfully			
B.4.4.22. Is the range of variation reasonable in the specific context of the project activity, taking into consideration historic trends in the business sector? (EB 55 Annex 1, § 109; EB 51 Annex 58, § 18) *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.*	*Description:* Range of variation considered is reasonable for the project activity considering the historic trends Justification of evidence: ▪ Revised worksheet/IRR/ *Conclusion:* Considering the fact that the PLF is based on third party study, the project cost has already been incurred and the tariff has remained stable, the variation considered is appropriate for the business sector. However CAR B16 was raised and closed successfully	/IRR/	~~CAR B16~~	OK
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?	*Description:* Not Applicable *Justification of evidence:*	/PDD/	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, §§ 115, 134, 137) *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.*	▪ The PP has chosen the investment analysis to prove the additionality. Pls refer to the PDD. *Conclusion:* Not applicable			
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) *Are there other barriers or barriers due to prevailing practice existent which would have led to higher emissions?*	*Description:* Not Applicable *Justification of evidence:* The PP has chosen the investment analysis to prove the additionality. Pls refer to the PDD.*Conclusion:* Not applicable	/PDD/	OK	OK
B.4.5.3. Has the unavailabilty of means of finance for the proejct 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:* Not Applicable *Justification of evidence:* The PP has chosen the investment analysis to prove the additionality. Pls refer to the PDD.*Conclusion:* Not applicable	/PDD/	OK	OK
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:* Not Applicable *Justification of evidence:* The PP has chosen the investment analysis to prove the	/PDD/	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.
	additionality. Pls refer to the PDD.*Conclusion:* Not applicable			
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:* Not Applicable *Justification of evidence:* The PP has chosen the investment analysis to prove the additionality. Pls refer to the PDD.*Conclusion:* Not applicable	/PDD/	OK	OK
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:* Not Applicable *Justification of evidence:* The PP has chosen the investment analysis to prove the additionality. Pls refer to the PDD.*Conclusion:* Not applicable	/PDD/	OK	OK
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:* Not Applicable *Justification of evidence:* The PP has chosen the investment analysis to prove the additionality. Pls refer to the PDD.*Conclusion:* Not applicable	/PDD/	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.4.5.8. Would provision of additional financial means lead to the mitigation of the barrier(s) demonstrated? (EB 50 Annex 13, § 7) *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. .*	*Description:* Not Applicable *Justification of evidence:* The PP has chosen the investment analysis to prove the additionality. Pls refer to the PDD.*Conclusion:* Not applicable	/PDD/	OK	OK
B.4.6. Common practice analysis Step 4 (in case of SSC projects skip this step)				
B.4.6.1. Is the defined region for the common practice analysis appropriate for the technology/industry type? (EB 55 Annex 1, § 120(a)) *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.*	*Description:* Not Applicable *Justification of evidence:* The project is a SSC project. *Conclusion:* Not applicable	/PDD/	OK	OK
B.4.6.2. To what extent similar projects have been undertaken in the relevant region? (EB 55 Annex 1, § 120(b))	*Description:* Not Applicable *Justification of evidence:* The project is a SSC project.*Conclusion:* Not applicable	/PDD/	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.4.6.3. 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:* Not Applicable *Justification of evidence:* The project is a SSC project. *Conclusion:* Not applicable	/PDD/	OK	OK
B.5. Ex-Ante Calculation of GHG Emission Reductions *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.*				
B.5.1. Are the equations applied correctly according to the applied approved methodology? (EB 55 Annex 1, §§ 67(c), 89–90, 92) *Describe clearly the steps taken to assess whether the methodology has been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions. Further take into consideration that all estimates of the baseline emissions can be replicated using the data*	☒ The equations applied for calculation are correctly applied according to the approved methodology. ☐ The following mistakes have been identified in this context: The applied equations for calculations of the baseline emission are in line with the requirements of the approved methodology AMS –I D V 16. Project emission and leakages are considered zero as appropriate for project activity as it is using renewable source of energy. Also values and data used by PP in the PDD are relevant and properly referenced.	/PDD/	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.**
and parameter values provided in the PDD.	*The validation was conducted by document review*			
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)? (EB 55 Annex 1, §§ 90–91) *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.*	Methodology does not allow for different methodological choices.	/PDD/	OK	OK
B.5.3. Have conservative assumptions been used when calculating the project emissions? (EB 55 Annex 1, §§ 90–91) *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.*	*Description:* There is no project emission from the project activity *Justification of evidence: Approved methodology AMS I D Version 16* *Conclusion:* As per the approved methodology AMS I D Version 16, as the project uses renewable energy project emission is correctly taken as zero and same is validated by document review.	/PDD/	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.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? (EB 55 Annex 1, § 77)	*Description:* Project activity does not expect to contribute more than 1 % of overall expected average annual emission which are not addressed by the methodology. *Justification of evidence: Approved methodology AMS I D Version 16* *Conclusion:* Project activity is installation of wind mills and does not lead to GHG emission within the project boundary more than 1 % of expected average annual emission reduction. Same is verified by document review	/PDD/	OK	OK
B.5.4.1. Has a plant load factor (PLF) been defined ex-ante and considered for determination of baseline emissions? (EB 48 Annex 11, §§ 1, 3–4) *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.*	*Description:* Plant load factor is defined ex-ante for determination of baseline emissions *Justification of evidences:* As per EB-48, Annex-11, PP has carried out third party PLF assessment report for the project activity/PAR/. *Conclusion:* Validation team is convinced that the PLF is correctly and conservatively assessed by the third party engineering company. Ex-ante Baseline emissions are calculated based on the same PLF. Detail assessment is given in section 5 of this report.	/PDD/ /PAR/	OK	OK
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	*Description:* Parameters are appropriately defined ex-ante for conservative estimation of the emission reductions *Justification of evidences:* CEA CO_2 database version 04 and AMS I D have been checked.	/PDD/ /UNFCC/ /CEA/	~~CAR B1~~	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.**
conservative estimation of emission reductions? (EB 55 Annex 1, § 91) *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.*	*Conclusion:* As verified, emission factor considered for the project activity for the calculation of emission reduction is conservative. Combined Margin emission factor is chosen for calculating baseline emission is fixed ex-ante for entire crediting period and is calculated based on EF_{OM} and $EF_{BM.}$ Values are taken from CO2 database version 04 published by Central Electricity Authority/CEA/ Same is validated by document review of tool to calculate emission factor for an electricity system version 02/UNFCCC, CO_2 database of Central electricity Authority/CEA/ However during the course of validation CAR B1 was raised and successfully closed			
B.5.6. Are all ex-ante calculation values for monitoring parameters (as defined as per chapter B.7.1) reasonable? (EB 55 Annex 1, § 91) *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*	☒ All "Values of data to be applied for the purpose of calculating expected emissions reductions" are considered to be reasonable, applicable and conservative. ☐ The following mistakes have been identified in this context:	/PDD/	OK	OK
B.5.7. Are the emission reductions real, measurable and give long-term benefits related to the mitigation of climate change. *Describe the steps taken to validate this issue.*	*Description:* Emission reductions are real measurable and give long term benefits to mitigate climate change. *Justification of evidences:* Validation team has reviewed O&M contract/O&M/, Purchase orders/PO/, CO2 database of Central electricity authority/CEA/ to validate the same.	/PDD/ /O&M/ /PO/ /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.
	Conclusion: Yes, the project is a green field wind based renewable energy generation project. The emission reduction occurred from the project will be calculated by measuring net exported electricity to the grid by energy meters. Emission reduction generated from the project activity are real measurable and will provide long term benefit related to the mitigation of climate change.			
B.6. Monitoring of Emission Reductions *It is assessed whether the monitoring plan is appropriate for the project activity and in line with the applied methodology.*				
B.6.1. Are all monitoring parameters required by the applied methodology contained in the monitoring plan? (EB 55 Annex 1, §§ 67(e), 121, 123(a), 124) *Assess whether all applicable parameters listed in the methodology are included in the monitoring plan.* *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.* *In case of different approaches can be chosen acc. to the methodology assess whether the selection of parameters is justified and correct.*	*Description:* As per approved methodology, all monitoring parameters are included in the monitoring plan. *Justification of evidences:* Validation team has reviewed, PDD, Methodology for same. *Conclusion:* As verified, the net electricity supplied to the grid is the only parameter which needs to be monitored as per the applied methodology. This has been clearly mentioned in the monitoring plan of the PDD/PDD02/. Validation has reviewed approved methodology AMS I D V 16 available on UNFCCC web site/UNFCCC and details provided in PDD,	/PDD/ /UNFCCC/	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.
	to validate the same.			
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? (EB 55 Annex 1, § 123(a)–(b), 124) *Assess whether the provided information for all parameters w.r.t.* *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* *are appropriately described and in compliance with the requirements of the methodology..*	*Description:* Feasibility of means of monitoring for monitoring parameter as required by approved methodology. *Justification of evidences:* Validation team has reviewed PDD, PWA, and approved methodology to assess the same. Same is also cross verified by conducting site visit. *Conclusion:* As verified, details provided in section B.7.1 of the PDD is appropriate and complete. All the details as required as per CP guidelines is provided. However CAR B 3 and CAR B4 was raised and closed successfully.	/PDD/ /UNFCCC/	~~CAR B3,~~ ~~CAR B4~~	OK
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	*Description:* PDD contains all the required equations for ex-post emission reduction calculations. *Justification of evidences:* Validation team has reviewed PDD,	/PDD/ /UNFCCC/	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.
methodology? (EB 55 Annex 1, §§ 123(b), 124) *Check whether all necessary equations have been provided in the PDD. Pl. consider that ex-post and ex-ante calculations might be different.* *Please consider that additional equations might be necessary to calculate auxiliary parameters.*	Methodology for assessment. *Conclusion:* As described under section B.6.1, all the required equations for calculating ex-post emission reductions are included as per the approved methodology.			
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? (EB 55 Annex 1, § 124(c)) *Assess whether the described monitoring arrangements are sufficient and realistic to enable a thorough monitoring. Pl. consider also special monitoring conditions, e.g. downtimes of monitoring equipment etc.*	*Description:* Implementation of monitoring arrangement as per PDD *Justification of evidences:* PDD, PWA, AMS ID *Conclusion:* Validation team has cross checked the installation of the energy meters at wind mills during the site visit and also verified the document Power wheeling agreement/PWA/ and concluded that the Monitoring arrangement as described in the PDD and is implemented at the project location.	/PDD/ /AMS I D/	OK	OK
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? (EB 55 Annex 1, § 124(b)) *Please consider the description given in section B.7.2. Describe which QA/QC provisions are considered. Address*	*Description:* QA/QC procedures as described in the PDD is sufficient to ensure ex-post emission reduction *Justification of evidences:* Validation team has reviewed PDD, wheeling agreement and AMS I D	/PDD/ /PWA/	~~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.**
Quality Management System provisions, calibration and maintenance of equipment. Address further any review procedures.	*Conclusion:* Energy meters are confirming the metering specifications approved by GETCO and calibration frequency is once in three years and it is confirmed that emission reduction achieved from the project activity can be reported ex-post and easily be verified. However CAR B4 was raised and closed successfully			
B.6.6. Are procedures identified for data management? (EB 55 Annex 1, § 124(b)) *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* *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.*	*Description:* Organisation chart and responsibility are defined in the PDD section B.7 *Justification of evidences:* Validation team has reviewed, Purchase orders, O&M contract, and Power wheeling agreement/PWA/. *Conclusion:* Validation team has reviewed, Purchase orders, O&M contract, and Power wheeling agreement and confirmed that Roles and responsibilities are properly defined in PDD. Also data archiving provisions are made in the PDD.	/PDD/		OK
C. Duration of the Project/ Crediting Period *It is assessed whether the temporary boundaries of the project are clearly defined.*				

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
C.1. Is the project's starting date clearly defined and evidenced? (EB 55 Annex 1, § 99) *Check whether the starting date is correct. Apply the definition of the project starting date as per the "Glossary of CDM terms".*	*Description:* According to the CDM glossary of terms, the starting date of a project activity is the earliest date of either the implementation or construction or real action of a project activity begins. *Justification of evidences:* Purchase order, PDD, *Conclusion:* The project starting date is correctly identified as the signing date of equipment purchasing contract However CAR C 1 was raised and closed successfully	/PDD/ /PO/	~~CAR C1~~	OK
C.2. Is the project's operational lifetime clearly defined and evidenced? *Check whether the project lifetime is correctly defined. Consider the guidance on the assessment of investment analysis (annex to the additionality tool).* *Check in case of phased implementation this has been reflected throughout the whole PDD incl. the financial assessment, if applicable.*	*Description:* Operational lifetime of 20 years is identified for the project activity. *Justification of evidences:* Validation team has reviewed purchase orders, O&M contract to ensure the same *Conclusion:* As verified, operational life time is correctly applied as 20 years for wind mills.	/PDD/ /PO/	OK	OK
C.3. Is the start of the crediting period clearly defined and reasonable? *Check whether the envisaged starting date of the crediting period is realistic, taking into consideration the times needed*	*Description:* Crediting period chosen is the fixed crediting period of 10 years. Start of the crediting period stated is 16/08/2011. *Justification of evidences:* Validation team has reviewed the PDD to ensure the same.	/PDD/	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.
for validation and registration.	*Conclusion:* Crediting period chosen is the fixed crediting period of 10 years. Start of the crediting period stated is 16/08/2011 under section C.2.2.1 of the PDD/PDD2/ is correct and realistic considering the approximate time taken for validation and registration. .			
D. Environmental Impacts *Documentation on the analysis of the environmental impacts will be assessed, and if deemed significant, an EIA should be provided to the DOE.*				
D.1.1. Are there any Host Party requirements for an Environmental Impact Assessment (EIA)? (EB 55 Annex 1, §§ 131–133) *Check the host party regulations, regarding EIA.*	*Description:* Environmental Impact Assessment (EIA) is not required for a wind mill projects. *Justification of evidences:* Environment Impact Assessment Notification Ministry of Environment and Forests dated, 14th September, 2006, schedule I of Environmental Impact Notification 2004 S.O. (60) E, dated 27/01/1994, *Conclusion:* As verified from the public domain http://envfor.nic.in/legis/eia/eia-2006.htm, EIA notification 2006, Environmental Impact Assessment (EIA) is not required for the project activity as per the prevailing laws of host country India. (Ministry of Env and forests).	/PDD/ /MOEF/	OK	OK
D.1.2. In case an Environmental Impact Assessment (EIA) is requested by the host party, has it	*Description:* Environmental Impact Assessment (EIA) is not required for a wind mill projects. Please refer section D.1.1.	/PDD/	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.**
been carried out and if applcable duly approved? (EB 55 Annex 1, §§ 131–133) *Check the EIA and its approval, if applicable.*	*Justification of evidences:* not applicable *Conclusion: Not applicable*	/MOEF/		
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) *Check the PDD (section D). Check whether the project will create any adverse environmental effects.* *Check the relevant national environmental legislation.*	*Description:* Environmental Impact Assessment (EIA) is not required for a wind mill projects. Please refer section D.1.1. *Justification of evidences:* not applicable *Conclusion: Not applicable*	/PDD/ /MOEF/	OK	OK
D.1.4. Are transboundary environmental impacts considered in the analysis? (EB 55 Annex 1, §§ 131–133) *Check the documents and local official sources / expertise regarding transboundary environmental impacts.*	*Description:* Environmental Impact Assessment (EIA) is not required for a wind mill projects. Please refer section D.1.1. *Justification of evidences:* not applicable *Conclusion: Not applicable*	/PDD/ /MOEF/	OK	OK
E. Stakeholder Comments *The DOE should ensure that stakeholder comments have been invited with appropriate media and that due account has been taken of any comments received.*				

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
E.1. Have relevant local stakeholders been invited to consultation prior to the publication of the PDD? (EB 55 Annex 1, § 128) *Check by means of document review and interviews with local stakeholders if and when a local stakeholder consultation process has been carried out.*	Description: Local stakeholders were invited by giving advertisement in local news paper dated 15/08/2008 Justification of evidences: Validation team had reviewed the copy of the advertisement and conducted the interview with the local stakeholder to ascertain the same. Conclusion: As verified local stakeholder consultation meet was held on 18/08/2008 and various stakeholder from nearby village have attended the same. However CAR E1 and CL E1 was raised and closed successfully	/PDD/ /LSHC/	~~CAR E1~~ ~~CL E1~~	OK
E.2. Can the local stakeholder consultation process be assessed as adequate? (EB 55 Annex 1, § 129(a)–(c)) *Describe what assessment steps have been undertaken to assess the adequacy of the stakeholder consultation process. Give a final opinion on the adequacy.* *Please consider the following requirements in this context:* *(a) Comments by local stakeholders that can reasonably be considered relevant for the proposed CDM project activity, have been invited;* *(b) The summary of the comments received as provided in the PDD is complete;*	Description: As stated in the PDD local stakeholder concerns are invited during stakeholder meeting on 18/08/2008. Justification of evidences: Same is confirmed by conducting interview with local stakeholder during site visit. Conclusion: Stakeholder consultation process was properly undertaken to invite the concerns of the local stakeholders. Validation team has verified the local newspaper advertisement on 15/08/2008 and conducted interview during site visit. Based on this validation team is convinced that stakeholder consultation process was adequately completed However CAR E1 and CL E1 was raised and closed successfully	/PDD/ /LSHC/	~~CAR E1~~ ~~CL E1~~	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.**
(c) The project participants have taken due account of any comments received and have described this process in the PDD.				

ANNEX 2: ASSESSMENT OF BASELINE IDENTIFICATION

Table A-2: Assessment of Baseline Identification (EB 55 Annex 1, §§ 83 – 86)

☐	Baseline is not identified
☒	Assessment of baseline see below

Baseline Alternatives identified	In line 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)
Baseline emissions are the product of electrical energy baseline $EG_{BL,\ y}$ expressed in kWh of electricity produced by the renewable generating unit multiplied by an emission factor.	☒	☐			☐	As per Para 9 of the approved methodology AMS I D v 16, it is appropriate. Further, it is not a modification or retrofit of an existing electricity generation facility. Validation was conducted by document review.

ANNEX 3: ASSESSMENT OF FINANCIAL PARAMETERS

Table A-3: Assessment of Financial Parameters ((EB 55 Annex 1, §§111, 112, 114/ in case financial parameters stem from FSR §112,)

☐	No financial parameters are used for additionality justification
☒	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
Plant Capacity	1.65	MW	Offer letter dt. 04/11/2007, Supply Agreement dt. 27/12/2007, Agreement for Erection and commissioning dated 29/12/2007	/QUO/ /PO/	☒	☒	The value is based on the Offer letter dated 04/11/2007 confirmed by the Supply Agreement dated 27/12/2007 and Agreement for Erection and Commissioning dated 29/12/2007sigend by the company. Validation team examined the documents and observed that the offer and order is for one WTG of 1.65 MW. Hence, the value is correct and appropriate for the project.
Project life	20	Years	Offer letter dt. 04/11/2007, Supply Agreement dt. 27/12/2007	/QUO/ /PO/	☒	☒	Project life is based on the information given by the machinery supplier in its offer letter dated 04/11/2007 subsequently confirmed by Supply agreement signed by the company with machinery supplier on 27/12/2007. The operating life of the windmill also conforms to Annex 15, EB 50 [paragraph II (a)]. Incidentally, this is also in

							conformity with the operating life given by GERC vide its order 11/08/2006. The projections have therefore been made of 20 full years of operation, which also conforms to guidance 3 of Annex 58, EB 51. Hence, the value considered is correct and appropriate for the project.
Project Cost	112.09	Rs. In million	Supply Agreement dt. 27/12/2007, Agreement for Erection and Commissioning dated 29/12/2007	/PO/ /CA/ /IRR/	☒	☒	The project cost includes land, WTGs, tower, transformer, electrical, erection and commissioning cost. All these costs are based on purchase orders dt. 27/12/2007 and 29/12/2007, copies of which have been submitted to validation team. There is a difference in the project cost between the quotation (based on which the decision was taken) and the purchase order. However, as the final value of the project cost was already known at the time of the board decision/MD/ due to negotiations between the project owner and the supplier, the value of the purchase order/PO/ is considered to be appropriate as more conservative. As per the quotation, the cost of the project works out to Rs.115.00 mn. (excluding interest during construction and loan processing charges), while as per the purchase order; the cost works out to Rs.110.0 mn[25] only. Since the cost as given in the supply agreements is the cost actually paid by the company and is lower than that of the quotation, the validation team considered it appropriate to take the cost based on purchase order. Had the validation team gone by guidance 6 of Annex 58, EB 51, the cost should be based on the quotation, which is much higher than the purchase order. Consequently, the financial

[25] Normally in India, the suppliers submit quotation, based on which negotiations take place and the negotiated price is either equivalent to the quoted price or more often lower than the quoted price.

							indicator would have been much lower - 10.70% as against 11.35% presented in the worksheet - and hence the project would have been more additional. Hence, the cost considered in the computation of financial indicator is more conservative. The cost of the project works out to Rs.68 mn./MW. Validation team observed that very few projects have chosen 1.65 MW WTGs of Vestas. M/s V.M. Salgaonkar Bros. (P) Ltd. (Project No.3479), which placed the order in December 2005 had projected a cost of Rs.62.31 mn.; M/s. Shree Naman Developers Ltd. (Project No.3238), which placed order in June 2007 had projected a cost of Rs.69.15 mn.; Powerica Ltd. (Project No. 3632), which placed order in December 2009 had projected a cost of Rs.65.81 mn. and Powerica Ltd. (Project No.3327)[26], which placed order in July 2007 had projected a cost of Rs.66.06 mn. The country experienced inflation of about 4.5%[27] between December 2005 (when the order was placed by V.M. Salgaonkar Bros. (P) Ltd. - Project No.3479) and December 2007 (when the order for the project activity was placed). Even if the general inflation rate is applied to the cost of project No. 3479, the cost as of December 2007 should be Rs.68.04 mn. – same as the cost of candidate project. In the case Powerica Ltd., though the cost appears to be lower, the O&M cost (which is a recurring cost subject to 7.5% escalation) is higher at Rs.2 mn./WTG and Rs.2.5 mn./WTG, as against

[26] Powerica Ltd. got two projects registered separately – one in Tamil Nadu and the other in Gujarat

[27] Whole sale price index – all commodities – went up from 197.2 in December 2005 6o 216.4 in December 2007. Please see http://eaindustry.nic.in/asp2/list_d.asp

							Rs.1.35 mn/WTG with 2 year free warranty, paid by the candidate project. In other words, the lower capital cost is getting compensated by higher O&M cost. Besides, loan processing charges and interest during construction have been added to the project. Cost. Hence, project cost is realistic and appropriate.
Loan	74.00	Rs. in million	Loan Application dated 07/01/2008 and Loan Sanction letter dated 16/02/2008	/LAL/ /LSL/	☒	☒	Project is funded by term loan of Rs.74 mn. and equity capital of Rs.38.1 mn. The project financing pattern yields a gearing of 66:34. In India, infrastructure projects are generally entitled to a debt equity ratio of 70:30[28], though depending on the case the ratio can be marginally higher or lower. In this instant case the debt equity ratio is marginally lower than the general norm. Project developer had sought a loan of Rs.82.5 mn. Even if the loan sought by the company is taken into consideration, the financial indicator goes up to 11.53% as against 11.35% and thus the project continues to remain additional. Since the loan amount is evidenced by the loan sanction letter, the debt equity ratio is only marginally lower than the general norm and guidance 11 of Annex 58, EB 51 states, “where a post-tax benchmark is applied the DOE shall ensure that actual interest payable is taken into account in the calculation of income tax”, validation team accepted the loan component and considers the value is correct, valid and appropriate.
Interest on Term Loan (IREDA)	12.75	Percent	Loan Application dated 07/01/2008 and Loan Sanction letter dated	/LAL/ /LSL/	☒	☒	The loan application seeks an interest rate of 10.5%; however the bank had sanctioned the loan

[28] All State Electricity Regulatory Commissions – including GERC - have recommended debt equity ratio of 70:30 for wind energy projects

			16/02/2008				at 12.75% interest, which is in line with the then prevailing PLR[29]. Since guidance 11 of Annex 58, EB 51 states, "where a post-tax benchmark is applied the DOE shall ensure that actual interest payable is taken into account in the calculation of income tax", the actual interest payable by the project activity has been taken into consideration, which is in conformity with guidance 11 of Annex 58, EB 51[30]. Project IRR goes down marginally from 11.35% to 11.32% (making the project all the more additional), if the loan amount and the interest rate is considered as per the loan application submitted by the project developer. Hence, the validation team considers the input values are correct, appropriate and conservative..
Repayment Holiday	3	Months	Loan Sanction letter dated 16/02/2008	/LSL/	☒	☒	Initial grace period is based on the sanction letter, which has been verified by the validation team. As per the sanction letter, during the financial year 2008-09, the company is required to pay Rs.7.2 mn. in 9 monthly installments and therefore the first installment should commence in July 2008, which is in conformity with the calculations in the worksheet. The grace period is correct, valid and appropriate.
Repayment	74	Months	Loan Sanction letter dated 16/02/2008	/LSL/	☒	☒	Repayment is based on the sanction letter, which has been verified by the validation team. As per the sanction letter, entire loan has to be repaid in 74 monthly installments commencing from July 2008, which is in conformity with the calculations in the worksheet. The repayment period is correct, valid

[29] Please see http://rbidocs.rbi.org.in/rdocs/Wss/PDFs/82364.pdf..

[30] Guidance 11of annex 58, EB 51 states, "In cases where a post-tax benchmark is applied the DOE shall ensure that actual interest payable is taken into account in the calculation of income tax"

		.					and appropriate.
Plant Load Factor	23.84	Percent	GERC Tariff Order dt 11th August 2006 Vijayant Consultants PLF Estimation Report dt. February 2010	/GERC/ /PAR/	☒	☒	In the web hosted PDD, project developer had assumed PLF of 23% in line with the recommendations of GERC Tariff order. However, during the course of validation, project developer was requested to submit documentary evidence conforming to Annex 11, EB 48, in response to which the project developer engaged a third party engineering consultant to estimate the PLF, who have projected PLF at 23.84%. Project developer was asked to consider this PLF in the financial indicator calculation and accordingly, the PLF was updated. PLF considered conforms to Annex 11 of EB 48. Therefore, validation team is convinced that the value applied is correct, conservative and appropriate for the project.
Tariff per kWh	4.66	Rupees	Electricity Bills	/ELB/	☒	☒	The power is wheeled to the factory for captive consumption. Accordingly, the project developer had considered a tariff of Rs.4.66/kWh, based on the power tariff paid by the company before the decision making date. The tariff includes energy charges, fuel charge, PF adjustment and electricity duty. Since the tariff is uniform for all the companies located in the region, the tariff considered also takes care of the concern expressed by EB vide paragraph 48 of the minutes of the 49th Meeting. For comparison, a one year average value (4,58 Rs. kWh) has been calculated which is, in general, a more representative value of the tariff. However, since the tariff in November 2007, one month

							before the board decision, is more conservative, the client has taken the latter. Since the more conservative tariff is based on electricity bills, which have been submitted to the validation team, the DOE concludes that the value is correct and appropriate.
O &M cost per WTG per annum	1.3545	Rs. in million	Supply Agreement dt. 27/12/2007, Maintenance, Service and Availability Agreement dt.31/12/2007	/PO/ /O&M/	☒	☒	O&M cost is based on the negotiations on the day of investment decision, on the purchase order and on the O&M agreement entered into by the project developer with the machinery supplier.[31] Validation team compared the O&M cost with that of other projects and found that Vestas had charged Rs.2 mn. and 2.5 mn. per WTG in the case of Powerica Ltd., (Project No. 3632 and 3327 respectively) and Rs.1.1 mn. in the case of Shree Naman Developers Ltd. (project No. 3238) as against Rs.1.3545 mn (excluding Service Tax) to the candidate project. O&M cost in the candidate project is realistic and appropriate compared to other similar CDM projects. O&M cost is not a critical parameters, in that the O&M cost has to go down by as much as 75% for the project to become non-additional. Since the cost is evidenced by Purchase order and O&M agreement, the value is correct and appropriate.

[31] As per the offer letter, the O&M cost was Rs.1.20 mn. (exclusive of any taxes and duties) from the second year with an annual escalation of 7.5% from the previous years rate from the third year onwards upto the fifth year. O&M cost does not cover repair/ replacements costs for main components of the WTG as also repair charges on account of damages due to *force majeure* conditions. As against this the company negotiated on the day of investment decision an all inclusive rate (including repair/replacement costs for main components of the WTG as also repair charges on account of damages due to *force majeure* condition) at Rs.1.3545 mn. (plus service tax at 12.36%, resulting in an O&M cost of Rs.1.522 mn.). This value is also stated in the purchase order. If a provision is made for repairs and replacement of components of WTG and also repair on account of force majeure conditions even at 0.5% of the cost of WTG, the O&M cost would be Rs.1.77 mn., plus service tax resulting in a cost of 1.99 mn., which is much higher than the cost of Rs.1.522 mn. assumed in the financial indicator calculation. Hence, the cost assumed in financial indicator calculations are conservative.

Free O&M period	2	Year	Supply Agreement dt. 27/12/2007	/PO/	☒	☒	Purchase orders provide for 2 years free warranty (Offer letter provides for only one year free warranty and hence this is conservative). This has been verified and found to be correct. Hence, the input parameter is correct and appropriate.
O&M escalation	7.5	Percent	Offer letter dt. 04/11/2007, Supply Agreement dt. 27/12/2007 Maintenance, Service and Availability Agreement dt.31/12/2007	/QUO/ /PO/ /O&M/	☒	☒	Quotation, purchase order and the O&M agreement provide for escalation from the 4th year of payment, which is fifth year of operation. The offer, purchase order, O&M agreement have been verified and found correct. Hence, the input parameter is correct and appropriate. Validation team observed that the escalation has been assumed at 7.5% by Shree Naman Developers Ltd. (project No. 3238), V.M. Salgaonkar Bros. (P) Ltd. - Project No.3479) and Mission Biofuels Ltd. (Project No. 2710) – all using Vestas Windmills. As per the O&M agreement, it is valid for 60 months, whereafter the terms and condidtions will be discussed and agreed upon. As by that time the Windmills would have become old, the rate is expected to be much higher particularly with the country experiencing inflation at the rate of 4.5% on an average. However, the escalation has been assumed at the same rate even after 60 months. Validation team considers this as conservative and appropriate.
Insurance	0.138	Rs. in million	Insurance premium receipts	/INS/ /Quote/	☒	☒	As per the offer letter which was available before the board decision, general insurance of the wind mills is in the scope of the PP. The cost considered is evidenced by the insurance agreement and also evidenced by insurance premium receipts (from New India Assurance Company Ltd.). Based on the

							local and sectoral competence, insurance cost generally remains between 0.08 to 0.25 % of the project cost. The amount of Rs. 0.138 mio. is negligible and accounts for about 10 basis points of the project cost. The validation team is convinced that the value considered by the PP is appropriate.
Salvage Value (except Land @ 100%)	5	Percent	International practice		☒	☒	Since the assets are fully depreciated in the first 5 years itself, 5% of plant and machinery and 100% of land cost as salvage value represents potential profit and therefore it conforms to guidance 4 of Annex 58, EB 51. Therefore, the validation team considers the salvage value as correct and appropriate.
Book Depreciation per annum (SLM)	5.28	Percent	Companies Act, 1956	/ACT/	☒	☒	Book depreciation is based on Schedule XIV of Companies Act, 1956. The rates have been checked and found to be correct. Moreover, this value does not affect additionality. The input value is considered correct and appropriate.
Depreciation (IT)	80	Percent	Income Tax Rules	/ACT/	☒	☒	Depreciation provided for computation of IT liability is based on the Appendix I of Income Tax rules. The rate has been verified and found to be correct.
Income Tax (Regular) 2008-09	33.99	Percent	Income Tax Act	/ACT/	☒	☒	The rate is based on the Income tax rate applicable to the financial year 2007-08, i.e., the year in which investment decision was taken. The tax rate is correct and appropriate.
Tax holiday	10	Years	Income Tax Act	/ACT/	☒	☒	As per Sec. 80IA of the Income Tax Act, infrastructure companies (under which the project activity falls) are entitled to claim tax holiday for any

							10 consecutive years in the first 15 years of operation. Hence, the assumption and computation of tax liability are correct and appropriate.
Prime lending rate (benchmark)	13.00	Percent	Weekly Statistical Supplement of the Reserve Bank of India, January 4, 2007.	/RBI/	☒	☒	The PLR is sourced from the RBI Bulletin (Dec. 14, 2007) issued by the Reserve Bank of India, which was available to the PP at the time of decision making (i.e., Dec. 20, 2007). This rate pertains to Nov. 30, 2008. The PLR as of Dec 14-21, 2007 can be sourced from Jan. 4 2007 issue (which was not available to the PP at the time of decision making). The PLR during Dec. 14 – 21 y was also 12.75% - 13.25%.Hence, the average has been used for the project activity.
Administrative expenditure	0.5	Rs. in million	CA certificate	/CA/	☒	☒	Administration cost considered by the PP is based on the man power to be involved for administrative management of the wind mills. The cost is based on the business experience of the PP. Same is cross checked with the CA certificate. Annual escalation of 5 % is also considered appropriate based on the local and sectoral expertise. Value considered by the PP is appropriate to the validation team based on its local and sectoral expertise.

ANNEX 4: ASSESSMENT OF BARRIER ANALYSIS

Table A-4: Assessment of Barrier Analysis (EB 55 Annex 1, § 118)

☒	No barrier parameters are used for additionality justification
☐	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

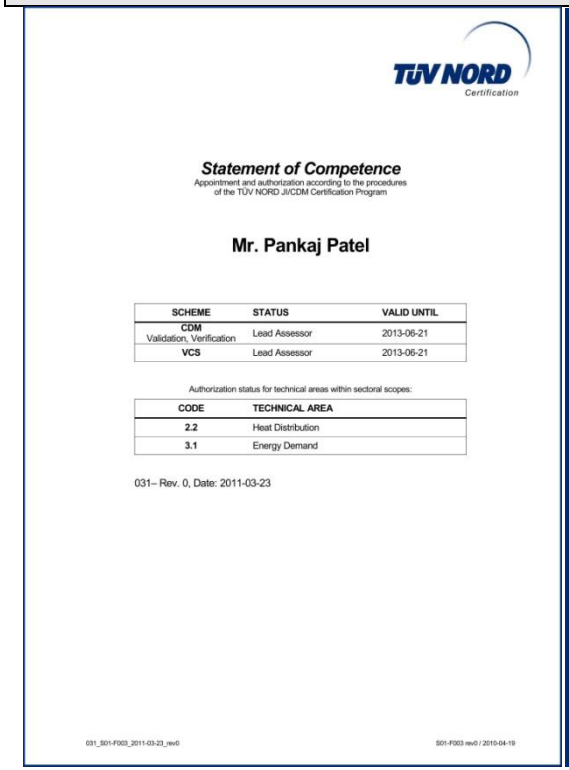
(§§ 40-42, VVM Version 1.2)

☒	No comments were received during the global stakeholder consultation period
☐	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: STATEMENTS OF COMPETENCE OF TEAM MEMBERS



TÜV NORD Certification

Statement of Competence

Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program

Mr. Pankaj Patel

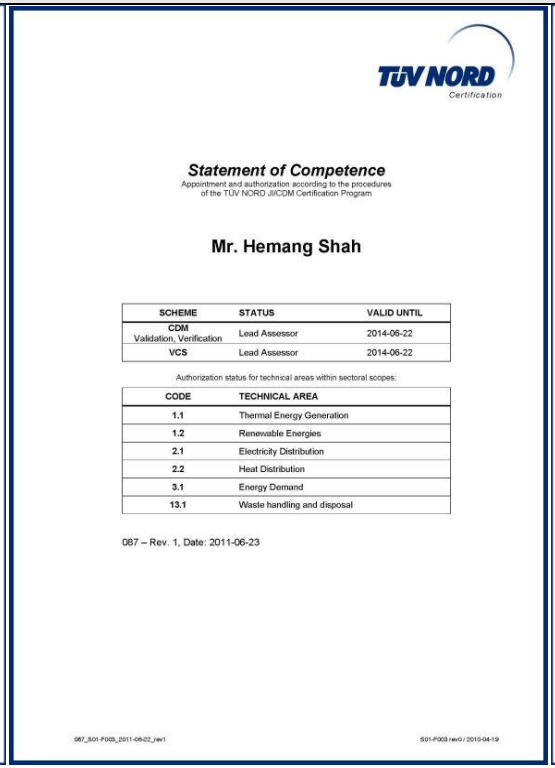
SCHEME	STATUS	VALID UNTIL
CDM Validation, Verification	Lead Assessor	2013-06-21
VCS	Lead Assessor	2013-06-21

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
2.2	Heat Distribution
3.1	Energy Demand

031– Rev. 0, Date: 2011-03-23

031_S01-F003_2011-03-23_rev0 S01-F003 rev0 / 2010-04-19



TÜV NORD Certification

Statement of Competence

Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program

Mr. Hemang Shah

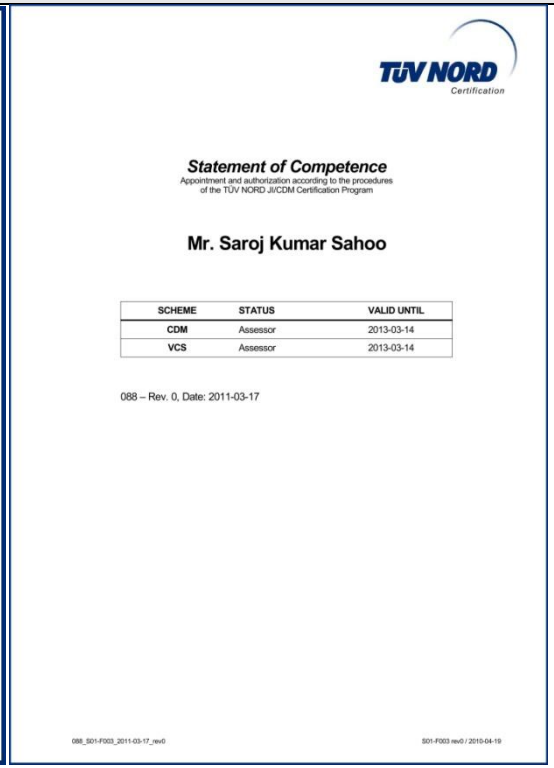
SCHEME	STATUS	VALID UNTIL
CDM Validation, Verification	Lead Assessor	2014-06-22
VCS	Lead Assessor	2014-06-22

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.1	Thermal Energy Generation
1.2	Renewable Energies
2.1	Electricity Distribution
2.2	Heat Distribution
3.1	Energy Demand
13.1	Waste handling and disposal

087 – Rev. 1, Date: 2011-06-23

087_S01-F003_2011-06-22_rev1 S01-F003 rev0 / 2010-04-19



TÜV NORD Certification

Statement of Competence

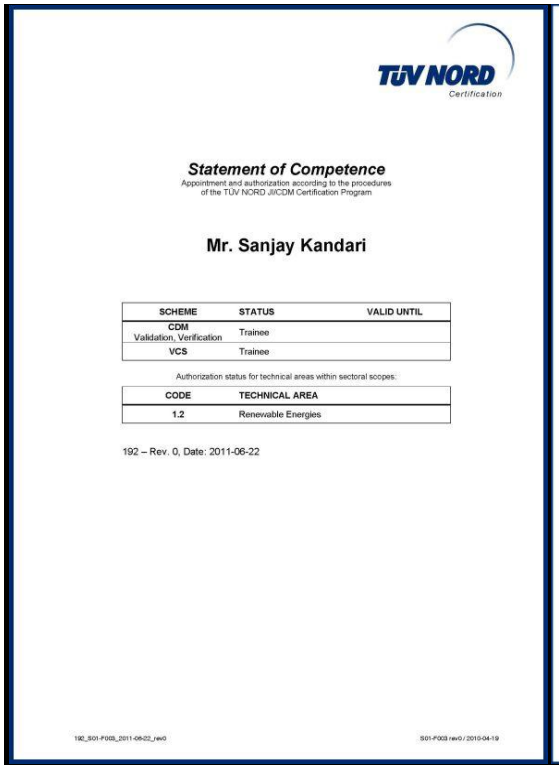
Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program

Mr. Saroj Kumar Sahoo

SCHEME	STATUS	VALID UNTIL
CDM	Assessor	2013-03-14
VCS	Assessor	2013-03-14

088 – Rev. 0, Date: 2011-03-17

088_S01-F003_2011-03-17_rev0 S01-F003 rev0 / 2010-04-19



TÜV NORD Certification

Statement of Competence

Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program

Mr. Sanjay Kandari

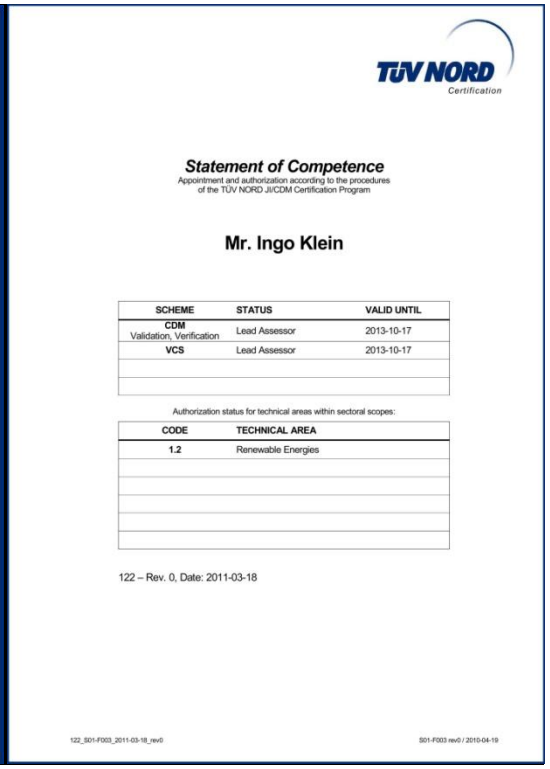
SCHEME	STATUS	VALID UNTIL
CDM Validation, Verification	Trainee	
VCS	Trainee	

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.2	Renewable Energies

192 – Rev. 0, Date: 2011-06-22

192_S01-F003_2011-06-22_rev0 S01-F003 rev0 / 2010-04-19



TÜV NORD Certification

Statement of Competence

Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program

Mr. Ingo Klein

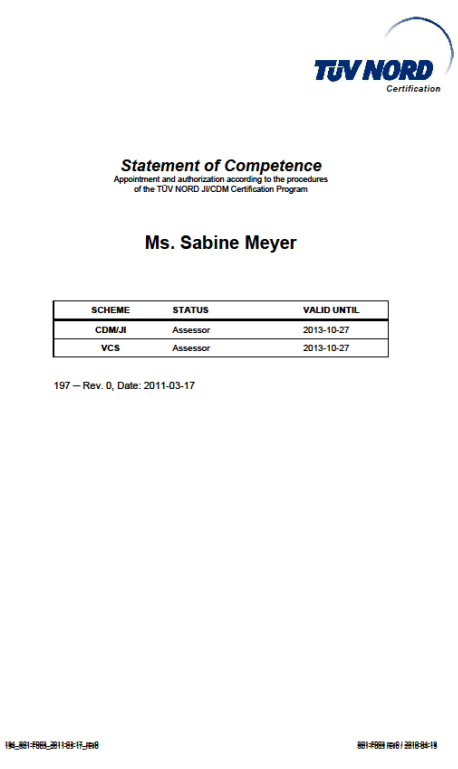
SCHEME	STATUS	VALID UNTIL
CDM Validation, Verification	Lead Assessor	2013-10-17
VCS	Lead Assessor	2013-10-17

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.2	Renewable Energies

122 – Rev. 0, Date: 2011-03-18

122_S01-F003_2011-03-18_rev0 S01-F003 rev0 / 2010-04-19



TÜV NORD Certification

Statement of Competence

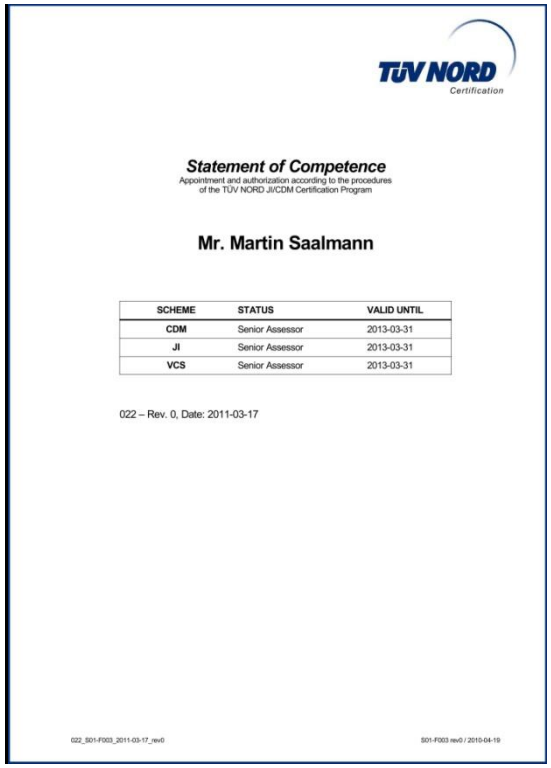
Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program

Ms. Sabine Meyer

SCHEME	STATUS	VALID UNTIL
CDM/JI	Assessor	2013-10-27
VCS	Assessor	2013-10-27

197 – Rev. 0, Date: 2011-03-17

[illegible]



TÜV NORD Certification

Statement of Competence

Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program

Mr. Martin Saalmann

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor	2013-03-31
JI	Senior Assessor	2013-03-31
VCS	Senior Assessor	2013-03-31

022 – Rev. 0, Date: 2011-03-17

022_S01-F003_2011-03-17_rev0 S01-F003 rev0 / 2010-04-19