



VALIDATION REPORT

for the CDM Project Activity

Bundled Wind Power Project by Peethambra Granites Pvt Ltd (EKIESL-CDM. November -11-01 In India

Report No. 01 997 9105069632

Version No. 02, 2012-12-13

Designated Operational Entity (DOE)

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I. Project description:

Project title:	Bundled Wind Power Project by Peethambra Granites Pvt Ltd (EKIESL-CDM. November -11-01)		Report No.: 01 997 9105069632
Host Country:	India		Current revision No.: 02
Methodology:	AMS-I.D Version 17.	<input type="checkbox"/> Large Scale <input checked="" type="checkbox"/> Small Scale	Date of current revision: 2012-12-13 Date of first issue: 2012-06-04
Annual average emission reductions (estimate):			7833 tCO ₂ e/yr
GHG reducing measure/technology:	The project activity is a renewable energy based power generation project which utilizes kinetic energy of wind as a clean fuel to generate the power. The total installed capacity of a bundled wind project is 4 MW, which comprises of five (05) numbers of 800 kW each manufactured by Enercon India Limited (EIL) The power generated from the WEG is supplied to Southern Grid of India and hence replacing the equal amount of power which would have otherwise been generated by the fossil – fuel based power plants. The electricity generated from the project activity will contribute to an average GHG reductions estimated at 7,833 tCO ₂ per annum.		

Party	Project Participants	Party considered a project participant	Contract party
India (Host)	Peethambra Granites Pvt. Ltd (Private Entity)	No	<input checked="" type="checkbox"/>

II. Validation Team:

Validation Team			Role									
Full name	Affiliation TÜV Rheinland	Appointed for Sectoral Scopes (Technical Areas)	Team leader	Acting Team Leader	Local Expert	Team Member (Auditor)	Technical Expert	Acting Tech. Expert	Trainee Auditor	Technical Reviewer	Expert to TR	Trainee TR
Mr. R Narendra Kumar	India	1.2, 3.1	X		X		X					
Mr. Nagaraju Bellapu	India	1.2, 3.1					X		X			
Ms. Indumathi C	India	1.2								X		

(Adjust accordingly, i.e. provide one line per person)

Validation Phases and Validation Status:

- ☒ Desk Review
 ☒ Follow up interviews
 ☒ Resolution of outstanding issues
☒ Corrective Actions / Clarifications Requested
 ☒ Full Approval and Submission for Registration
☐ Rejected

III. Validation Report:

Final approval	Released	Distribution
<input checked="" type="checkbox"/>	By: Mr. Praveen Urs	<input type="checkbox"/> No distribution without permission from the Client or responsible organizational unit <input checked="" type="checkbox"/> Unrestricted distribution
Date: 2012-12-18		

Executive Summary – Validation Opinion

The validation team assigned by the DOE (TÜV Rheinland (China) Ltd.), here after called TRC, is been assigned by “Peethambra Granites Pvt. Ltd.” to perform the validation of their project “**Bundled Wind Power Project by Peethambra Granites Pvt Ltd (EKIESL-CDM. November -11-01)**”. The validation was performed on the basis of UNFCCC criteria for the Clean Development Mechanism. The scope of the validation is defined as an independent and objective review of the project design document, the project’s baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against CDM Validation and Verification Manual (Version 01.2), Kyoto Protocol requirements, CDM Executive Board/UNFCCC rules.

The report is based on the assessment of the project design document undertaken through stakeholder consultations, application of standard auditing techniques including but not limited to document reviews, site visit, and stakeholder interviews, review of the applicable methodology and its underlying formulae and calculations.

Validation methodology and process

The validation has been performed as described in the VVM version 01.2 and constitutes the following steps:

- Publication of the PDD on the UNFCCC website 2012-04-19 to 2012-05-18
- Desk review of the PDD and the relevant documents
- On-site assessment 2012-05-29
- Issuance of Validation Report

Validation criteria

The following CDM requirements have been considered:

- Article 12 of the Kyoto Protocol,
- Modalities and procedures for CDM (Marrakech Accords)
- Subsequent decisions by the COP/MOP and CDM Executive Board
- Host country criteria
- Criteria given to provide for consistent project operations, monitoring and reporting.

The host part is India and the party fulfil the participation criteria and have approved and authorized the project and the project participant. The DNA from country name confirms that the project assists in achieving sustainable development.

The project correctly applies the baseline and monitoring methodology AMS ID version 17, “Grid Connected Renewable Energy Generation”.

The project results in reductions of CO₂ emissions that are real, measurable and give long-term benefits to the mitigation of climate change. It is demonstrated that the project is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity.

The validation did not reveal any information that indicates that the project can be seen as a diversion of ODA funding towards” India”.

The monitoring plan provides for the monitoring of the project’s emission reductions. The monitoring arrangements described in the monitoring plan are feasible within the project design and it is TRC’s opinion that the project participants are able to implement the monitoring plan.

By installing five numbers of new wind turbines of each capacity 800 kW in the state of Tamil Nadu the project activity will result in reductions of greenhouse gas (GHG) emissions that are real, measurable and give long-term benefits to the mitigation of climate change.

The total emission reductions from the project are estimated to be 54,831 t of CO₂e over a Seven year crediting period, averaging 7,833 t of CO₂e annually. The emission reduction forecast has been checked and it is deemed likely that the stated amount is achieved given the underlying assumptions do not alter.

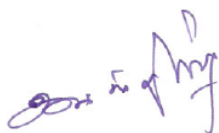
The validation protocol describes a total of 21 findings which include:

- (10) Corrective Action Requests (CARs);
- (11) Clarification Requests (CLs);
- (0) Forward Action Requests (FARs); and all findings have been closed satisfactorily.

TRC concludes that the CDM Project Activity Bundled Wind Power Project by Peethambra Granites Pvt Ltd (EKIESL-CDM. November -11-01)’’ in India, as described in the PDD (03, 2012-12-12), meets all relevant requirements of the UNFCCC for CDM project activities including article 12 of the Kyoto Protocol, the modalities and procedures for CDM (Marrakesh Accords) and the subsequent decisions by the COP/MOP and CDM Executive Board.

The selected baseline and monitoring methodologies (AMS I.D, Version 17) are applicable to the project and correctly applied. The TRC therefore requests the registration of the project as a CDM project activity with UNFCCC.

R Narendra Kumar (Team Leader)



TÜV Rheinland (India) Pvt Limited
Bangalore, 2012-12-13

Mr. Praveen Nagaraje Urs (DOE Manager)



TÜV Rheinland (China) Ltd.
Beijing, 2012-12-18

Abbreviations

AMS	Approved Methodology Small scale
BE	Baseline Emissions
BM	Build Margin
CA	Chartered Accountant
CAPM	Capital Asset Pricing Model
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM EB	CDM Executive Board
CDM M&P	Clean Development Mechanism Modalities & Procedures
CDM VVM	CDM Validation and Verification Manual
CERC	Central Electricity Regulatory Commission
CER	Certified Emission Reduction(s)
CEA	Central Electricity Authority
CH ₄	Methane
CL	Clarification request
CM	Combined Margin
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
DNA	Designated National Authority
DOE	Designated operational entity
ER	Emission Reductions
EKIESL	Enking International India Energy Services Limited
EPA	Energy Purchase Agreement
FAR	Forward Action Request
GHG	Greenhouse gas(es)
GOI	Government of India
GWP	Global Warming Potential
HCA	Host Country Approval
IPCC	Intergovernmental Panel on Climate Change
JMR	Joint Meter Reading
kW	Kilo Watt
kWh	Kilo Watt hour
IRR	Internal Rate of Return
IT	Income Tax
LOA	Letter of approval
MAT	Minimum Alternative Tax
MW	Mega Watt
MWh	Mega Watt hour
MOEF	Ministry of Environment and Forests
MNRE	Ministry of New and Renewable Energy
MOC	Modalities of Communication
NCDMA	National CDM Authority
N ₂ O	Nitrous oxide
NGO	Non-governmental Organization
O & M	Operation & Maintenance
ODA	Official Development Assistance
PE	Project Emissions
PDD	Project Design Document
PLF	Plant Load Factor
PP	Project Participant
P.O	Purchase Order
ROE	Return on Equity
tCO ₂ e	Tones of CO ₂ equivalents
TANGEDCO	Tamil Nadu Generation and Distribution Company
TRC	TÜV Rheinland (China) Ltd.

TNEB	Tamil Nadu Electricity Board
TNERC	Tamil Nadu Electricity regulatory Commission
UNFCCC	United Nations Framework Convention on Climate Change
UNDP	United Nations Development Programme
WEG	Wind Energy Generator
GWP	Global Warming Potential

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Appendix A: Validation Protocol

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1. Introduction:

The organization “Peethambra Granites Pvt. Ltd.” has commissioned the DOE TÜV Rheinland (China) Ltd. to perform a validation of the CDM Project Activity “Bundled Wind Power Project by Peethambra Granites Pvt Ltd (EKIESL-CDM. November -11-01)” in India (hereafter called “the project”). This report summarises the findings of the validation of the project, performed on the basis of UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting. The term “UNFCCC criteria” refers to Article 12 of the Kyoto Protocol, the CDM modalities and procedures or the simplified modalities and procedures for small-scale CDM project activities (as applicable) and the subsequent decisions by the CDM Executive Board.

1.1 Objective:

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

1.2 Scope:

The validation scope is defined as an independent and objective review of the project design document (PDD). The PDD is reviewed against the relevant criteria (see above) and decisions by the CDM Executive Board, including the approved baseline and monitoring methodology. The validation team has, based on the recommendations in the Validation and Verification Manual employed (latest version) a risk-based approach, focusing on the identification of significant risks for project implementation and the generation of CERs. The validation is not meant to provide any consulting towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the project design.

While carrying out the validation, TRC determines if the project activity complies with the requirements of Para 37 of the CDM M&P and also assess the claims and assumptions made in the PDD without limitation on the information provided by the project participants.

The scope of the validation is:

- To apply TRC's own quality management system integrated with the VVM standard along with the recent decisions and guidance provided by the UNFCCC board to determine if the project activity meets all applicable CDM requirements, including those specified in the relevant methodologies, tools and guidelines;
- Asses the accuracy, conservativeness, relevance, completeness, consistency and transparency of the information provided by the project participants;
- Determine whether information provided by the project participants are reliable and credible;
- Present information in the form of validation report in a factual, neutral, coherent manner and document all assumptions, provide references to the background material and identify changes made to the documentation;
- Base the findings and conclusions on objective evidence and conduct all validation in accordance with CDM rules and procedures;
- Apply consistent validation criteria in providing expert judgments to the requirements of applicable approved methodologies, tools and also cross check the same with projects of similar characteristics, technology, time period and region; and
- Safeguard the confidentiality of all information's obtained or created during validation.
- Where sampling is involved, the standard for sampling and surveys are applied.

Methodology:

The validation consists of the following four phases:

- I A desk review of the project design documents
 - Publication of PDD in UNFCCC for global stakeholder consultation;
 - A review of data and information;
 - Cross checking between information provided in PDD with all necessary means without limitations to the information provided by the project proponent;
- II On-site visit and follow-up interviews with project stakeholders
 - Interviews with relevant stakeholders in host country with personnel's having knowledge with the project development via telephone, email or direct on-site visits;
 - Cross checking between information provided by interviewed personnel with all necessary means without limitations to the information provided by the project proponent;
- III Reference to available information's relating to projects or technologies similar projects under validation and review based on the approved methodology being applied of the appropriateness of formulae and accuracy of calculations
- IV The resolution of outstanding issues and the issuance of the final validation report and opinion

The following sections outline each step in more detail.

2.1 Desk Review of the Project Design Documentation:

The following table outlines the documentation reviewed during the validation:

Ref no.	Reference Document
/P01/	Webhosted PDD [Bundled Wind Power Project by Peethambra Granites Pvt Ltd (EKIESL-CDM. November -11-01)], Version 01, Date :2012-03-05
/P02/	PDD [Bundled Wind Power Project by Peethambra Granites Pvt Ltd (EKIESL-CDM. November -11-01)], Version 03, Date : 2012-12-12
/P03/	Letter of approval with reference number 4/16/2012-CCC, dated 2012-11-06 has been provided by Government of India Ministry of Environment and Forests.
/P04/	Modalities of Communication: date:2012-10-04
/P05/	<ol style="list-style-type: none"> i. Declaration for no ODA funding for the project activity by Peethambra Granites Private Limited, Date:2012-01-21 ii. Declaration for no ODA funding for the project activity by M/s. Atul Sharma, Date:2012-01-21 iii. Declaration for no ODA funding for the project activity by M/s Neha Sharma, Date: 2012-01-21
/P06/	<p>Proof of prior consideration of CDM</p> <ol style="list-style-type: none"> i. Prior consideration of CDM form and copy of e-mail sent to the UNFCCC and NCDMA to notify the implementation of proposed CDM project activity titled Bundled Wind Power Project by Peethambra Granites Pvt. Ltd (EKIESL-CDM. November -11-01) dated:2011-12-01 ii. Prior consideration of CDM form and copy of e-mail sent to the UNFCCC and NCDMA to notify the implementation of proposed CDM project activity titled Bundled Wind Power Project by Peethambra Granites Pvt. Ltd (EKIESL-CDM. November -11-01) dated:2011-14-10
/P07/	<ol style="list-style-type: none"> i. Minutes of board meeting approving the CDM project activity by M/s. Atul Sharma, Date: 2011-06-15 ii. Minutes of board meeting approving the CDM project activity by M/s. Neha Sharma, Date: 2011-06-15 iii. Minutes of board meeting approving the CDM project activity by Peethambra Granites Pvt. Ltd Date: 2011-08-30

/P08/	<p>Proof of start date of CDM project activity:</p> <ul style="list-style-type: none"> i. Purchase order placed on Enercon India Limited by M/s Atul Sharma for 02 numbers 800 kW WEG, Date: 2011-06-16. ii. Purchase order placed on Enercon India Limited by M/s. Neha Sharma for 02 number 800 kW WEG, Date: 2011-06-16.
/P09/	<p>Proof of start of commercial operation of the project</p> <ul style="list-style-type: none"> i. Commissioning certificate issued by TANGEDCO for WEG (HTSC No 174) installed by Atul Sharma, Dated: 2011-09-30 ii. Commissioning certificate issued by TANGEDCO for WEG (HTSC No 4061) installed by M/s. Neha Sharma, Dated: 2012-03-27 iii. Commissioning certificate issued by TANGEDCO for WEG (HTSC No 205) installed by M/s. Atul Sharma, Dated: 2012-03-31 iv. Commissioning certificate issued by TANGEDCO for WEG (HTSC No 4120) installed by M/s. Neha Sharma, Dated: 2012-03-31 v. Commissioning certificate issued by TANGEDCO for WEG (HTSC No 206) installed by Peethambra Granites private Limited, Dated: 2012-03-31
/P10/	Spread sheet for emission reduction calculations and grid emission factor version 01 corresponding to /P01/ and /P02/
/P11/	<ul style="list-style-type: none"> i. Energy Purchase Agreement signed with TANGEDCO by M/s. Atul Sharma, for WEG (HTSC No 174) Dated: 2011-09-30 ii. Energy Purchase Agreement signed with TANGEDCO by M/s. Atul Sharma, for WEG (HTSC No 205) Dated: 2012-03-31 iii. Energy Purchase Agreement signed with TANGEDCO by M/s. Neha Sharma, for WEG (HTSC No 4061) Dated: 2012-03-27 iv. Energy Purchase Agreement signed with TANGEDCO by M/s. Neha Sharma, for WEG (HTSC No 4120) Dated: 2012-03-31 v. Energy Purchase Agreement signed with TANGEDCO by Peethambra Granites (P) Ltd, for WEG (HTSC No 206) Dated: 2012-03-31
/P12/	<p>Statuary Clearances</p> <ul style="list-style-type: none"> i. Approval from TANGEDCO (NOC) for Installation of 01 No of WEG (HT.SC No 174) by M/s. Atul Sharma Dated: 2011-09-27 ii. Approval from TANGEDCO (NOC) for Installation of 01 No of WEG (HT.SC No 4061) by M/s. Neha Sharma, Dated: 2012-03-24 iii. Approval from TANGEDCO (NOC) for Installation of 1 No of WEG by Peethambra Granites (P) Ltd, dated: 2012-03-29 iv. Approval from TANGEDCO (NOC) for Installation of 01 No of WEG (HT.SC No 205) by M/s. Atul Sharma Dated: 2012-03-30

	v. Approval from TANGEDCO (NOC) for Installation of 01 No of WEG (HT.SC No 4120 by M/s. Neha Sharma, Dated:2012-03-30
/P13/	i. Spread sheet for investment analysis and sensitivity analysis version 01corresponding to /P01/ ii. Spread sheet for investment analysis and sensitivity analysis version 02corresponding to /P02/ iii. Spread sheet for investment analysis and sensitivity analysis version 03corresponding to /P02/
/P14/	<p>Evidences for all Techno-economic data input data and assumptions used in Investment analysis in particular: M/s. Atul Sharma</p> <ol style="list-style-type: none"> Offer letter from ENERCON India Limited to M/s. Atul Sharma for 02 no of 800 kW Wind power project in Tamilnadu, Dated: 2011-06-04 PLF assessment report conducted by the third party for M/s Atul Sharma, dated: 2011-06-10 Proof of loan sanction, loan sanction letter by Saraswat Bank for M/s Atul Sharma, dated: 2011-08-23 Purchase order placed on Enercon India Limited by M/s. Atul Sharma for 02 number 800 kW WEG, Date: 2011-06-16 Tariff order for Wind power plants released by TNERC, Dated: 2009-03-20 http://tnerc.gov.in/orders/draft%20order%2020-3-2009%20complete%20final.pdf Proof of O&M cost to TNEB, mail communication from the WEG supplier, dated:2011-06-04 <p>M/s. Neha Sharma</p> <ol style="list-style-type: none"> Offer letter from ENERCON India Limited to M/s. Neha Sharma for 02 no of 800 kW Wind power project in Tamilnadu, Dated: 2011-06-04 PLF assessment report conducted by the third party for M/s Neha Sharma, dated: 2011-06-10 Proof of loan sanction, loan sanction letter by Saraswat Bank for M/s Neha Sharma, dated: 2011-08-23. Purchase order placed on Enercon India Limited by M/s. Neha Sharma for 02 number 800 kW WEG, Date: 2011-06-16. <p>M/s Peethambra Granites (P) Ltd</p> <ol style="list-style-type: none"> Offer letter from ENERCON India Limited to M/s. Peethambra Granites (P) Ltd for 1 no of 800 kW Wind power project in Tamilnadu, Dated: 2011-07-10 PLF assessment report conducted by the third party for M/s Peethambra Granites (P) Ltd, dated: 2011-08-25 Proof of loan sanction, loan sanction letter by Saraswat Bank for M/s Peethambra Granites (P) ltd, Dated: 2012-01-30 Purchase order placed on Enercon India Limited by Peethambra Granites (P) Ltd for 1 number 800 kW WEG, Date: 2011-10-20

/P15/	<p>Related documents for the local stakeholder consultation process</p> <ol style="list-style-type: none"> Personal Invitation letters distributed to local stakeholders for inviting them to the stakeholder consultation meeting of the CDM project titled Bundled Wind Power Project by Peethambra Granites Pvt. Ltd (EKIESL-CDM.November-11-01) conducted at project site location Pallankotai village, Tirunelveli district, Tamilnadu on 2012-01-12 from 12.00 hours onwards. Dated:2012-01-02 Minutes of stakeholder consultation meeting and feedback forms filled by the stakeholders attended the consultation meeting conducted on 2012-01-12.
/P16/	Certificate of Incorporation as per the Companies Act, 1956 for M/s. Peethambra Granites Pvt Ltd
/P17/	Letter of statement from Enercon India Limited manufacturer of WEG stating and certifying that the E-53 800 kW Wind Energy Generator Manufactured by Enercon India Limited has a life expectancy of 20 years under normal weather conditions.
/P18/	Letter of statement form the manufacturer (Enercon India Limited) providing the geographical co-ordinates of all the WEG installed in the project activity.
/P19/	Undertaking letters for the non debundling of proposed small scale CDM project from large scale CDM project activity submitted by M/s Peethambra Granites Pvt Limited, M/s. Atul Sharma and M/s. Neha Sharma, dated: 2012-10-04
/P20/	Clean Development Mechanism Form for Submission of Bundled Small Scale Project Activities of the project Bundled Wind Power Project by Peethambra Granites Pvt Ltd (EKIESL-CDM. November -11-01). Version 01, Dated: 2012/12/11

Background investigation and other referred documents/websites:

/B01/	CDM Validation and Verification Manual (Version 01.2)
/B02/	Approved Baseline & Monitoring Methodology: AMS-I.D, version 17
/B03/	Tool to calculate the emission factor for an electricity system, version 02.2.1
/B04/	CO2 Baseline Database for Indian Power Sector -User Guide, version 7 (covering data vintage 2008-2009 and 2009-2010 and 2010-2011)
/B05/	<p>Relevant CDM requirements (CDM M & P; Simplified CDM M&P and decisions by the CMP and documents released by CDM EB) published on the UNFCCC CDM website, in particular:</p> <ol style="list-style-type: none"> Clean Development Mechanism Project design document form (F-CDM-SSC-PDD), version 3.0 http://cdm.unfccc.int/Reference/PDDs_Forms/PDDs/PDD_form02_v03.pdf Guidelines for completing the simplified Project Design document (CDM-SSC-PDD) and the form for proposed new Small Scale Methodologies (CDM-SSC-NM), version 05.0 http://cdm.unfccc.int/Reference/Guidclarif/pdd/PDD_guid02.pdf Guidelines for completing the small-scale CDM project activities bundling form version 1.0 http://cdm.unfccc.int/Reference/Guidclarif/pdd/PDD_guid05.pdf General guidelines for SSC CDM methodologies, Version 17 http://cdm.unfccc.int/Reference/Guidclarif/ssc/methSSC_guid06.pdf Glossary of CDM Terms, version 07.0 Guidelines on the demonstration of additionality of small-scale project activities, Version 09.0 http://cdm.unfccc.int/Reference/Guidclarif/meth/methSSC_guid05.pdf Tool for the demonstration and assessment of additionality, version 6.1.0 Guidelines on assessment of de-bundling for SSC project activities, version 03.0 Guidelines on the demonstration and assessment of Prior consideration of the CDM, version 04.0

	11. Guidelines for the reporting and validation of Plant Load Factors, version 01.0 12. Guidelines on assessment of investment analysis, version 05.0 13. Guidelines for assessing compliance with the calibration frequency requirements, version 01.0 14. National and/or sectoral policies and circumstances in baseline scenarios (Annex 3 of EB 22) 15. Information note on the implementation of E+/E- in the context of projects on the agenda of the fifty-third meeting of the CDM executive board. Version 1.1 16. EB response to the clarification on applicability of guidance on E+/E- policy (EB 53 Annex 32) in the context of REC Regime in India. 17. Non-binding best practise examples to demonstrate additionality for SSC project activities, version 01.0
/B06/	Web sites referred: a) http://www.googleearth.com/ (for crosschecking project location) b) http://www.satsig.net/maps/sat-view-of-lat-long.htm/ (for crosschecking lat-long coordinates) c) http://envfor.nic.in/ (for validating the applicability of EIA notifications to the project activity) d) http://www.cea.nic.in/ (for referring Baseline Emission Factor and latest amendments to the Installation and Operation of Meters Regulation, 2006) e) http://cdmindia.nic.in/ (for validating the Host Country Approval) f) http://cdm.unfccc.int/ (for referring latest applicable guidelines) g) http://tnerc.tn.nic.in/ (for crosschecking tariff rates considered in the Investment analysis) h) http://www.incometaxindia.gov.in/ (for crosschecking various tax-related data considered in the Investment Analysis) i) http://www.ireda.gov.in/ (for validating the applicability conditions of the GBI scheme to the project activity) j) TANGEDCO order on O&M expenses dated:2010-11-16 k) Comprehensive Tariff Order on Wind Energy by TNERC dated: 2012-07-31

2.2. Follow-up Interviews with Project Stakeholders:

TÜV Rheinland validation team carried out an on-site visit dated (2012-05-29) and performed interviews with the project representatives and stakeholders. The site visit was conducted to validate the accuracy and completeness of the project description as specified under webhosted PDD.

During the site visit, the validation team reviewed the available project activity designs, feasibility studies, and documentation check and comparison analysis with equivalent projects as appropriate.

Prior to the interview salient points to be discussed were planned. Date of interview, interviewee and points discussed are given in the following table.

	Date	Name	Organization	Topic
/i/	2012-05-29	Pradeep Verma	EKI ESL	Seriousness of CDM Sustainability criteria, Local Stakeholders meeting process Monitoring plan.
/ii/	2012-05-29	Hibson Daniel	Enercon Limited India	-Project design -Project implementation - Technical details -Monitoring plan -Metering arrangement -lifetime -Risks and uncertainties
/iii/	2012-05-29	Mr. Abhishek Kumar	EKI ESL	-Project description

/iv/	2012-05-29	Ms. Rucha Natsu	EKI ESL	-Investment Analysis -Baseline determination -Project additionally -prior consideration -ER calculation -Monitoring plan -Project Management
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Validation Team considered the views obtained in these interviews while arriving at Validation Opinion.

2.3 Resolution of Outstanding Issues:

The objective of this phase of the validation is to resolve any outstanding issues which need be clarified prior to TÜV Rheinland's positive conclusion on the project design. In order to ensure transparency a validation protocol is customised for the project. The protocol shows in transparent manner criteria (requirements), means of verification and the results from validating the identified criteria. The validation protocol serves the following purposes:

- It organizes, details and clarifies the requirements a CDM project is expected to meet CDM requirements;
- It ensures a transparent validation process where the validator will document how a particular requirement has been validated and the result of the validation.
- It ensures that the issues are accurately identified, formulated, discussed and concluded in the validation report.
- It ensures the determination of achieving credible emission reductions from the project activity.

The validation protocol consists of three tables. The different columns in these tables are described in the figure below. The completed validation protocol for this project is enclosed in Appendix A to this report.

Findings established during the validation can either be seen as a non-fulfilment of CDM criteria or where a risk to the fulfilment of project objectives is identified. Corrective action requests (CAR) are issued, where:

- Mistakes have been made with a direct influence the ability of the project activity to achieve on project results like real, measurable, verifiable and additional emission reductions;
- CDM and/or methodology specific requirements have not been met; or
- There is a risk that the project would not be accepted as a CDM project or that emission reductions will not be certified.

A request for clarification (CL) may be used where additional information is needed to fully clarify an issue.

A forward action request (FAR) is raised during validation to highlight issues related to project implementation that require review during the first verification of the project activity. FARs shall not relate to the CDM requirements for registration.

Validation Protocol Table 1: Validation requirements				
Checklist Question	Reference	Means of verification (MoV)	Comment	Draft and/or Final Conclusion
The various UNFCCC requirements as specified in the VVM are linked to checklist questions the project should meet. The checklist is organised in different sections, following the logic of the VVM.	Gives reference to documents where the answer to the checklist question or item is found.	Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.	The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.	This is either acceptable based on evidence provided (OK), or a corrective action request (CAR) due to non-compliance with the checklist question (See below). A request for clarification (CL) is used when the validation team has identified a need for further clarification.

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

Table 3: List of forward action requests (FARs)			
FAR number	Reference	Summary of project owner response	Validation team conclusion
Forward action request (FAR) to be raised during validation to highlight issues related To project implementation that requires review during the first verification of the project activity. FARs Shall not relate to the CDM requirements for registration.	Reference to the checklist question number in Table 2 where the CAR or CL is explained.	The responses given by the project participants during the communications with the validation team should be summarised in this section.	This section should summarise the validation team's responses and final conclusions. The conclusions should also be included in Table 2, under "Final Conclusion".

Figure 1, Validation protocol tables

2.4 Internal Quality Control:

The draft validation report including the initial validation findings underwent a technical review before being submitted to the project participants. The final validation report underwent a technical review by a qualified independent reviewer before requesting registration of the project activity. The technical review was performed by a technical reviewer qualified in accordance with TÜV Rheinland's qualification scheme for CDM validation and verification that meets the criteria of EB guidelines for qualification.

2.5 Validation Team:

Before the assessment begins, members of the validation team are ensured to cover the technical area(s), sectoral scope(s) and relevant host country experience including local language ability for evaluating the CDM project activity. The qualification of the team is as per the criterias defined by the EB guidelines for qualification.

Validation Team			Type of Involvement						
Full name	Affiliation TÜV Rheinland	Appointed for Sectoral Scopes (Technical Areas)	Supervising the work	Desk review	Site Visit + Interview	Report and protocol Writing	Technical Expert Input	Reporting Support	Technical Reviewer
Mr. R Narendra Kumar	India	1.2, 3.1	X	X	X	X	X		
Mr. Nagaraju Bellapu	India	1.2, 3.1						X	
Ms. Indumathi C	India	1.2							X

3. Validation Findings:

The findings of the validation are stated in the following sections. The validation criteria (requirements), the means of verification and the results from validating the identified criteria are documented in more detail in the validation protocol in Appendix A.

The final validation findings relate to the project design as documented and described in the revised and resubmitted project design documentation.

3.1 Approval and Participation:

3.1.1 Letter of Approval:

The project participant "Peethambra Granites Pvt.Ltd" has received the Letter of approval for the proposed CDM project titled "Bundled Wind Power Project by Peethambra Granites Pvt. Ltd (EKIESL-CDM.November-11-01)". PP has provided the soft copy of the letter of approval reference number 4/16/2012-CCC, dated-2012-11-06/P03/ has been verified. The name of the project proponent is consistent throughout the PDD, under A.3 and Annex 1/P02/. The LoA issued by the DNA of India, MoEF mentions the same name as the project participant and has the same project title.

The Authority through the letter of approval confirms

- The host party (India) is a party to the Kyoto protocol and has ratified the protocol in August 2002.
- The voluntary participation by Peethambra Granites Private Limited in the proposed CDM project activity
- The contribution of the project to sustainable development in India.¹

The below table summarizes the project participants and parties involved. The authenticity of the letters of approval has been validated by TÜV Rheinland validation team.

These LoA(s) are therefore regarded as valid and meeting the requirements of paragraph 39 to 42 of the validation and verification manual version 01.2 /B01/.

The below table summarizes the project participants and parties involved. The authenticity of the letters of approval has been validated by TÜV Rheinland validation team.

¹ http://envfor.nic.in/divisions/ccd/cdm_iac.html

These LoA(s) are therefore regarded as valid and meeting the requirements.

Project participants	Peethambra Granites Pvt. Ltd
Parties involved	India
APPROVAL	
LoA received	Yes
Date of LoA	2012/11/06
Reference to document	4/16/2012-CCC
LoA received from	Peethambra Granites Pvt.Ltd /EKIESL
Validation of authenticity	The HCA/P03/ submitted as a soft copy through e-mail has been cross verified with the original copy. Also Validation team has cross verified the approval from the Host country DNA website ² for the authenticity of the LOA received. Thus the LOA submitted by Peethambra Granites Private Limited is valid
Validity of LoA	Valid
PARTICIPATION	
Party is party to Kyoto Protocol	Yes, India ratified Kyoto protocol in August 2002
Voluntary participation	Yes
Diversion of official development aid towards host country	No, the project has not being financed by other parties which leads to the diversion of the official development towards host country and forward of carbon revenue. PP has also submitted the undertaking letter declaring that no official development and public funding from annex 1 countries was involved in developing and implementing the proposed CDM Project Activity/P05/.
Project contribution to Sustainable Development	Yes, the project fulfills all the sustainable criterion has been mentioned in HCA and in line with the host country requirements

The validation team confirms that the information related to the letter of approval as mentioned in the above table is authentic. The validation team has confirmed the same through DNA website telephonic interview or email communication with the DNA personnel. The entire project participants listed in the tabular form of the PDD have obtained the letter of approval from their respective DNA.

Nevertheless CAR-01 is raised and successfully closed

3.1.2 Modalities of Communications:

Requirement of MOC	Criteria fulfilled	Determination by the validation team
Is the focal point identified	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<i>Mr. Atul Sharma Director of Peethambra Granites Private Limited has been identified as focal point. MOC/P04/ and PDD/P02/ have been verified for the same.</i>
Is the MOC signed by all project participant (including focal point identified entity/personal)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<i>Peethambra Granites Private Limited is the project participant authorized by M/s Neha Sharma and M/s Atul Sharma, project owners involved in the project activity and Mr. Atul Sharma is the person responsible for signing and further communication with EB/UNFCCC. Same has been confirmed from the MOC/P04/</i>
Is the written confirmation obtained by the PP's stating the authorization,	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<i>Validation team has interviewed Mr. Atul Sharma about the employment status and</i>

² <http://www.cdmindia.gov.in/>

specimen signatures and personal details, employment status are valid and accurate?		<i>personal details are verified by interview. Thus the DOE confirms that the personal details, employment status are valid and accurate.</i>
Is MOC received by the validation team from the PP with whom DOE has the contractual relationship?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<i>Yes, the MOC received by the DOE from Peethambra Granites Private Limited with whom TRC has contracted for validation services.</i>

The validation team confirms that the applicable latest template is been employed by the project participant for the MOC. The MOC is been received from the DOE's contractual project participant. All the personal who have duly signed the MOC are been confirmed from the written communication by the project proponent regarding their personal identity, specimen signatures and employment status.

3.2 Project Design Document:

Webhosted PDD/P01/ and all version of the PDD have been presented in the prescribed format Clean Development Mechanism Project Design Document Form (CDM-SSC-PDD)/B05-1/, Version 03, in effect as of 2006-12-22(http://cdm.unfccc.int/Reference/PDDs_Forms/PDDs/PDD_form02_v03.pdf). The template has not been altered and no modifications have been made to the font, format, headings and logo. The PDD follows the contents provided under the "Guidelines for completing the simplified Project Design document (CDM-SSC-PDD) and the form for proposed new Small Scale Methodologies (CDM-SSC-NM), version 05.0 dated 2007-07-14 /B05-02/, and the directions contained under (Pages 6/24 to 19/24) of the above guidelines.

3.3 Project Description:

The project activity is a green filed project activity in the Tirunelveli and Tuticorin districts of Tamil Nadu, India. The project involves installation and operation of five (05) numbers of 800 kW Wind turbine generators each (aggregating to 4 MW capacity), of E-53 model supplied by ENERCON India Limited. The purpose of the proposed project activity is to harness the wind, renewable energy resource to generate the electricity there by displacement of fossil fuel based grid electricity which not only enables conservation of Non-renewable natural resources but also reduces the greenhouse gas emissions. The project activity is a bundled project and the bundle comprises of one WEG owned by M/s. Peethambra Granites Pvt. Ltd, two WEG by M/s Atul sharma and another two WEG by M/s. Neha sharma.

Project Location:

The project activity comprises of total five (05) numbers of 800 kW wind turbine generators out of which two (02) WEG are installed in Tirunelveli district of Tamil Nadu, another three (03) WEGs are installed in Tuticorin district of Tamil Nadu The geographical coordinates of the project mentioned bellow

Sr. No.	Project Owner	UID/Location No.	Latitude		Longitude	
WEG1	Peethambra Granites Pvt Ltd	HT SC No. 206/K38	N	9° 06' 8.5" (9.102361°) ³	E	77° 41' 30.0 " (77.691667°)
WEG2	Neha Sharma	HT SC No. 4061/K14	N	9° 08' 36.1" (9.143361°)	E	77° 40' 49.8" (77.680500°)
WEG3	Neha Sharma	HT SC No. 4120/K18	N	9° 07' 55.6" (9.132111°)	E	77° 40' 23.1" (77.673083°)
WEG4	Atul Sharma	HT SC No. 174/K19	N	9° 07' 49.9 " (9.130528°)	E	77° 41' 10.6" (77.686278°)
WEG5	Atul Sharma	HT SC No. 205/K22	N	9° 07' 19.4" (9.122056°)	E	77° 40' 45.6" (77.679333°)

The exact geographical locations of the WEGs are mentioned in the PDD /P02/ and the same was cross checked with the Google earth/B06-a/.The project is already commissioned and started commercial operation. Commissioning dates of the each WEG is provided in the below table. DOE has verified all commissioning certificates/P09/ of WEGs and confirmed that the commissioned project is found consistent with the technical features and physical locations as mentioned in the PDD/P02/.

³ In Decimals

The operational lifetime of the project has been mentioned as 20 years in the PDD/P02/ which has been confirmed from Enercon India Limited, supplier of Wind turbine generator/P17/. DOE also cross checked the life time of the project with the public sources and registered projects and found that 20 years is the standard design life time for the Wind turbine generators. The project participant has opted for a renewable crediting period of 7 years each and maximum of lifetime of the machines. Considering the crediting period start date and life time of the project activity as 20 years the renewable crediting period chosen by the project activity is possible and appropriate. The start date of the crediting period is mentioned as 2012-12-31 or Date of submission of complete request for registration by the DOE whichever is later.

The start date of project activity is considered as 2011-06-16(Purchase Order date placed for WEG by Neha Sharma & Atul Sharma) and has been verified to be the date of placing the first purchase order among the bundle /P08/.

The net annual exportable power generation by all Wind turbine generators installed in the project activity is estimated as 8732 MWh per operational year. The generated electricity is being sold to TNEB (under EPA conditions /P11/) through state grid which is interconnected to Southern regional grid of India. The project activity will thus reduce Greenhouse gas (GHG) emissions associated with the Southern grid, which is connected with predominantly fossil fuel based power plants. The PLF of all WEGs have been assessed from the third party (True Wind International Certification India) and meets the requirement of § 3 (b) of annex 11 of EB 48 and is deemed to be realistic. The total emission reductions due to the project activity works out to be 7,833 tCO₂e per year based on the net annual exportable power generation. This net annual exportable power generation is ex-ante estimated by deducting the net imports of electricity imported from the grid.

Parameter	Commercial operation start date (YYYY)-MM-DD)	Plant Load factor (%)
M/s Peethambra Granites Pvt Ltd	2012-03-31 (WTG 1)	25.02%
M/s Neha Sharma	2012-03-27(WTG 2)	24.82%
	2012-03-31 (WTG 3)	24.82%
M/s Atul Sharma	2011-09-30(WTG 4)	25.12%
	2012-03-31(WTG 5)	24.82%

M/s. Peethambra Granites Pvt. Ltd, M/s Atul sharma and M/s Neha sharma are the project owners of individual Wind turbine Generators whereas M/s Peethambra Granites Pvt. Ltd is chosen as the the Project Participant for the proposed CDM project activity and the same was confirmed by letter of approval /P03/ obtained from DNA of India and from the MOC/P04/.The project owners are confirmed with the project commissioning certificate issued by TANGEDCO /P09/.

The technology used in the project is indigenously available in India and no transfer of technology is envisaged. The technology applied is deemed correctly good practice and is not expected to be replaced with in the crediting period. The project activity contributes to the sustainable development criteria of the host country in terms of social, economic, technological and environmental benefits achieved due to the project activity.

Starting date of project	Expected project operational lifetime	Crediting period
2011-06-16 (Date of purchase order placed on ENERCON India Limited by M/s. Atul Sharma & M/s. Neha Sharma). This can be treated as the earliest date on which the PP has committed expenditures related to project specific implementation and construction as per the Glossary of CDM Terms version 07.	20 years	Renewable crediting period starting from 2012-12-31 or the date of registration, Date of submission of complete request for registration by the DOE whichever is later.

The validation team verified the starting date from the date of purchase order /P08/ dated 2011-06-16 between the PP and ENERCON India Ltd and expected project operational lifetime from the equipment manufacturer /P17/.This was also cross checked with Annex 15 of EB 50 by the validation team and found comparable (=20 years).

There is no registered small-scale project activity under the CDM or an application to register another small-scale CDM project activity by the project participant within the previous two years with the same project category and technology within 1 km of the project boundary of the proposed project. This is confirmed by the validation team during the on-site interview with the representative of PP/I-iii/. In addition, the validation team has checked up with the UNFCCC website/B06-f/, CDM Pipeline by UNDP⁴ and not identified other small-scale project being developed by the project participant. In addition to that PP has also submitted the undertaking letter declaring that PP do not have other registered CDM projects and not planning to register another CDM project with the same technology within 1 km of proposed CDM project activity/P19/. Therefore, DOE confirmed that the proposed project is not deemed to be a de-bundled component of a large project activity.

This grid connected wind power plant has obtained all local and sectoral statutory clearances /P12/ as specified under Indian Electricity Act 2003 required to install the project. DOE has verified all documents and found to be authentic.

Based on the information furnished by the project participants, no diversion of ODA contributes to the financing of the project /P05/. Geographical and temporal boundaries of the project are clearly defined and has been confirmed from the undertaking submitted by the WEG supplier/P18/.

According to clause 64 of VVM version 1.2/B01/ by means of document review and onsite Interviews with stakeholders, the validation team considers the project description in PDD /P02/ Version 03 dated 2012 -12-12 is accurate and complete.

Nevertheless, CL-01, CL-02, CL-03, CL-04, CL-06, CL-10, CL-11 were raised and successfully closed during the course of validation.

Herewith, the Validation Team summarizes major changes between webhosted PDD and final version of PDD for submission as follows:

Subject	Webhosted PDD	Correction to webhosted PDD in the final PDD submission for registration with DOE assessment and reason of acceptance.
PDD (project title / participants involved/ project location /project technology etc)	Project Title: Bundled Wind Power Project by Peethambra Granites Pvt Ltd (EKIESL-CDM. November -11-01) Project Participant: Peethambra Granites Pvt. Ltd Technology: Wind Power harnessing by WEG Implementation: started commercial Operation Project Location: Tirunelveli and Tuticorin districts of Tamilnadu Model: Enercon E-53 Version: 01 Date: 2012-03-05	Project Title: No change Project Participant: No change Technology: No change Operation Project Location: No change Model: No change Version: 03 Date: 2012-12-12
Methodologies and tools applied (scope and version numbers)	AMS.I.D version 17, "Grid connected Renewable energy generation" valid from 2011-06-03	No changes in the methodology
CER calculations (formula applied/ amount of emission reduction)	$BE_y = EG_{BL,y} * EF_{CO_2,grid,y}$ 7833 tonnes of CO2 e	No changes in the formula applied No changes in the emission reductions

⁴ <http://www.cdmpipeline.org/>

TÜV Rheinland validation team considers the project description of the project contained in the PDD to be complete and accurate. The PDD complies with the relevant methodology, tools, forms and guidance at the time of PDD submission for registration.

3.4.1 Applicability of the selected methodology to the project activity

Approved baseline and monitoring methodology AMS .I.D “Grid connected renewable electricity generation” (version 17) /B02/ has been applied for the proposed project activity. At the time of GSP of the PDD (version 01, dated 2012-03-05 and methodology (AMS.I.D “Grid connected renewable electricity generation”) version 17 applied was the latest one.

The validation team determined the applicability of methodology AMS I.D (version 17) as follows:

Applicability criteria of the methodology (AMS I.D), Version 17	Criteria fulfilled	Determination by the validation team
1. This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass: ¹ (a) Supplying electricity to a national or a regional grid; or (b) Supplying electricity to an identified consumer facility via national/regional grid through a contractual arrangement such as wheeling.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	The project activity is a wind power plant of 4 MW capacity and has been checked from the document review mainly from the commissioning certificate /P09/ and Energy Purchase agreement /P11/. Furthermore, the electricity generated by the project activity will be supplied to the Tamil Nadu Electricity Board (TNEB) which is part of electricity generation system and comes under Southern region grid of India as per the delineation of CEA /B04/ and this has been checked from the Energy Purchase Agreement /P11/ signed between the PP and TNEB which explicitly mention that the generated electricity from the project activity will be sold to the TNEB.
Illustration of respective situations under which each of the methodology (i.e. AMS-I.D, AMS-I.F and AMS-I.A) applies is included in Table 2.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Project supplies electricity to the regional grid. AMS – I.D. is applicable as per Table 2 of methodology AMS I.D. Ver 17, EB 61, and the project qualifies for using the methodology. It has also been noted by the validation team that since the project activity does not displace electricity from an electricity distribution system that is or would have been supplied by at least one fossil fuel fired generating unit hence methodology AMS-I.F. is not applicable for the present case.
This methodology is applicable to project activities that: (a) Install a new power plant at a site where there was no renewable energy power plant operating prior to the implementation of the project activity (Greenfield plant); (b) Involve a capacity addition; ⁵ (c) Involve a retrofit ⁶ of (an) existing plant(s); or (d) Involve a replacement ⁷ of (an) existing plant(s).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Bullet no. (a) of the paragraph 2 of the applied methodology is applicable for the present case as project activity install a new power plant at a site where there was no renewable energy power plant operating prior to the implementation of the project activity i.e. a Greenfield plant, the same has been checked from the document review /P02/, /P09/, /P11/ and from the onsite visit.

⁵ A capacity addition is an increase in the installed power generation capacity of an existing power plant through: (i) The installation of a new power plant besides the existing power plant/units; or (ii) The installation of new power units, additional to the existing power plant/units. The existing power plant/units continue to operate after the implementation of the project activity.

⁶ Retrofit (or rehabilitation or refurbishment). It involves an investment to repair or modify an existing power plant/unit, with the purpose to increase the efficiency, performance or power generation capacity of the plant, without adding new power plants or units, or to resume the operation of closed (mothballed) power plants. A retrofit restores the installed power generation capacity to or above its original level. Retrofits shall only include measures that involve capital investments and not regular maintenance or housekeeping measures.

⁷ Replacement. It involves investment in a new power plant or unit that replaces one or several existing unit(s) at the existing power plant. The installed capacity of the new plant or unit is equal to or higher than the plant or unit that was replaced.

Applicability criteria of the methodology (AMS I.D), Version 17	Criteria fulfilled	Determination by the validation team
<p>Hydro power plants with reservoirs⁸ that satisfy at least one of the following conditions are eligible to apply this methodology:</p> <ul style="list-style-type: none"> • The project activity is implemented in an existing reservoir with no change in the volume of reservoir; • The project activity is implemented in an existing reservoir,⁹ where the volume of reservoir is increased and the power density of the project activity, as per definitions given in the project emissions section, is greater than 4 W/m²; • The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the project emissions section, is greater than 4 W/m². 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<p>The present CDM project activity is not a Hydro power plant; hence this paragraph is not applicable for the subject project case.</p>
<p>If the new unit has both renewable and non-renewable components (e.g. a wind/diesel unit), the eligibility limit of 15 MW for a small-scale CDM project activity applies only to the renewable component. If the new unit co-fires fossil fuel, the capacity of the entire unit shall not exceed the limit of 15 MW.</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<p>The project activity is a 4 MW wind power plant and it does not involve any non-renewable component and verified from the documents /P02/, /P08/, /P09/, /P11/.</p>
<p>Combined heat and power (co-generation) systems are not eligible under this category.</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<p>The project activity is a 4 MW wind power plant and is not a co-generation project; hence paragraph is not applicable for the project</p>
<p>In the case of project activities that involve the addition of renewable energy generation units at an existing renewable power generation facility, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct¹⁰ from the existing units.</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<p>The project activity is a Greenfield project being implemented at a site where no wind power plant exists and this is not a capacity addition project and verified from documents /P02/, /P09/, /P11/ Hence this paragraph is not applicable to the project.</p> <p>Furthermore, the capacity of the Greenfield project is below 15 MW and falls under small scale project activity.</p>
<p>In the case of retrofit or replacement, to qualify as a small-scale project, the total output of the retrofitted or replacement unit shall not exceed</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<p>As stated above the project is a green field project and hence this paragraph is not applicable. The capacity of the Greenfield</p>

⁸ A reservoir is a water body created in valleys to store water generally made by the construction of a dam.

⁹ A reservoir is to be considered as an “existing reservoir” if it has been in operation for at least three years before the implementation of the project activity.

¹⁰ Physically distinct units are those that are capable of generating electricity without the operation of existing units, and that do not directly affect the mechanical, thermal, or electrical characteristics of the existing facility. For example, the addition of a steam turbine to an existing combustion turbine to create a combined cycle unit would not be considered “physically distinct”.

Applicability criteria of the methodology (AMS I.D), Version 17	Criteria fulfilled	Determination by the validation team
the limit of 15 MW.		project is below 15 MW and falls under small scale project activity.

The assessment of the project's compliance with the applicability criteria of the methodology AMS I.D (version 17) as documented in the PDD part B and annex 3, which are evaluated in detail under the validation protocol in Appendix A to this report based from the webhosted PDD.

Being a wind power project and according to the applied baseline and monitoring methodology AMS I. D. version17 /B02/, the validation team did not observe any fossil fuel fired equipment for on-grid connection or power supply to the project site. Apart from this, the validation team confirms that there would be no sources of project emission which are not addressed by the AMS.I.D/Version17 /B02/.

3.4.2 Project Boundary:

The geographical and physical project boundary of the project activity was determined according to the paragraph 10 of the methodology AMS I.D version 17/B02/. The project has been confirmed by the validation team during the on-site assessment conducted on 2012-05-29. The coordinates were correctly documented in the PDD. The sources and sinks of greenhouse gas identified in the PDD are deemed to be appropriate. The coordinates were confirmed by the validation team through <http://www.satsig.net/maps/sat-view-of-lat-long.htm>

Emissions	GHGs involved	Description
Baseline emissions	CO ₂	Major emission source, which is emitted from the electricity generation by fossil fuel-fired power plants connected to the Southern grid.
Project emissions	N/A	Project emission is regarded as zero as the project is a renewable energy (wind power plant) project.
Leakage	N/A	As per the applied methodology /B02/, leakage is to be considered in case of transfer of energy generating equipment from another activity. As this project activity is a green field project (as described in section 3.4.1 above) and there is no transfer of equipment from another activity (as the equipments used in the project activity is newly purchased /P08/) , leakage is not considered for this project activity as per the methodology.

In summary, the project boundary was correctly identified in accordance with the methodology AMS I.D (version 17). All greenhouse gas emissions occurring within the proposed project activity boundary as a result of the implementation of the proposed CDM project activity have been appropriately addressed in the PDD.

The identified project boundary and selected sources of emissions are justified for the project activity. The validation of the project activity did not reveal other greenhouse gas emissions occurring within the proposed CDM project activity boundary as a result of the implementation of the proposed project activity which are expected to contribute more than 1% of the overall expected average annual emission reduction, with respect to the methodology applied.

3.4.3 Baseline Identification:

As per the applied methodology AMS I.D (version 17), "The baseline scenario is that the electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid." and "baseline emission is calculated as the product of electrical energy baseline $EG_{BL,y}$ (Quantity of net electricity supplied to TNEB which is the part of Southern grid as a result of the implementation of the CDM project activity in year y) expressed in MWh of electricity produced by the renewable generating unit multiplied by the grid emission factor in accordance with § 10,11, 12 of AMS I.D version 17 /B02/".

According to AMS I.D. version 17 /B02/ § 12, the Emission Factor can be calculated in a transparent and conservative manner as follows:

a) A combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the 'Tool to calculate the Emission Factor for an electricity system'.

OR

b) The weighted average emissions (in t CO₂e/MWh) of the current generation mix. The data of the year in which project generation occurs must be used.

PP has opted option "a)" and adopts the ex-ante calculation of emission factor of the grid. The combined margin emission factor for Southern grid of India has been calculated to be 0.8971 tCO₂e / MWh. This has been calculated using the source from the Central Electricity Authority CO₂ Baseline Database /B04/. Central electricity Authority (CEA) (under Ministry of Power, Government of India) have worked out baseline emission factor for various grids in India and made them publicly available. The DNA of the host party (India) has also given a reference link of the CEA on their official website. The data from CO₂ Baseline Database for the Indian Power Sector User Guide - Version 7.0 /B04/ is the most recent data at the time of submission of CDM-PDD for validation (Cp p5 of tool to calculate emission factor of an electricity system, version 02.2.1 /B03/). Validation team has checked the calculation of the combined margin grid emission factor and confirmed that the applied value of the emission factor follows the tool /B03/. And the values of OM and BM incorporated in the PDD /P02/ is taken from publically available database i.e. by CEA (Govt of India) /B06/.

Nevertheless, following steps (step numbers correspond to tool to calculate emission factor of an electricity system, version 02.2.1) demonstrate the calculation of combine margin emission factor in accordance with "tool to calculate emission factor of an electricity system", version 02.2.1.

Step 1 - In line with the requirements specified in the tool /B03/, the PP has used a regional grid definition as applicable for large countries like India having layered electricity dispatch systems. The Indian power system is divided in two grids, the Northern, Eastern, Western and North- Eastern (NEWNE) Grid and Southern Grid. The project activity is connected to Southern Grid and hence for the purpose of estimation of baseline emission factor the consideration of Southern Grid is appropriate and correct.

Step 2 - of the tool gives an option to include off-grid power plants in the project electricity system. CEA in its database for the Indian Power Sector User Guide - Version 7.0 /B06/ has considered only grid power plants for the analysis.

Step 3 - Simple OM method, out of the four methods provided in the tool /B03/ for calculating the operating margin ($EF_{grid,OM,y}$) is selected. The tool /B03/ specifies that the simple OM method can only be used if the low-cost/must-run resources constitute less than 50% of total grid generation in :1) average of the five most recent years, or 2) based on long-term averages for hydroelectricity production. The Simple OM method selected is justified and appropriate as the average proportion of low-cost/must run resources is less than 50%. The ex-ante option for determining the simple OM is opted by the PP.

Step 4 - The PP has considered the national published data (CEA database, ver 07 /B04/) for simple OM (This is in conformation with the § 2, section B.6.1 of Specific guidelines for completing CDM-SSC-PDD, version 5 /B05/). The simple OM emission factor calculated by the CEA is the generation weighted average CO₂ emissions per unit net electricity generation (tCO₂/MWh) of all generating power plants serving the system, not including low-cost/must power plants (Cp page 6, User Guide – CO₂ Baseline Database, ver-7 for the Indian power sector /B04/).

The value of simple operating margin for each year and the data for the calculation of EF grid, simple OM_y is published by the CEA /B04/ and is publically available. However, validation team has cross checked the published value of simple OM from the data available in CEA, version 7 /B04/ and found that PP has rightly calculated the generation weighted average value and this is in line with the tool /B03/ and arrived at the following summary:

Year	OM emission factor (tCO ₂ /MWh)	Net Generation including imports(GWh)
2010-11	0.9419	145,076
2009-10	0.9415	135,773
2008-09	0.9729	127,797

EF_{gridOM,y}=0.9515 tCO₂/MWh

Hence validation team confirms that the PP has rightly followed the CEA database version 07 /B04/ and the EF_{gridOM} for the southern grid is based on three year generation weighted average is inconformity with the tool to calculate emission factor, version 02.2.1 /B03/.

Step 5 - Option (b) the set of power capacity additions in the electricity system that comprise 20% of the system generation (in MWh) and that have been built most recently has been considered by CEA and the same has been selected in the PDD.

Validation team checked independently and confirm that the selection of the options is correct. This conclusion has been made based on the analysing both the options and it was found that the set of power as per option (b) comprises of larger annual generation and hence confirm the requirement of the tool /B03/. In validating this step, validation team further confirms that:

- (i) the identified power capacity additions comprise 20% of the system generation for the year under consideration.
- (ii) none of the considered power capacity additions considered under (i) above have been built more than ten years earlier.

PP has fixed the Build Margin emission factor as ex-ante for the whole crediting period.

Step 6 - The PP has considered the national published data (CEA database, ver 07 /B04/) for BM (This is in conformation with the § 2, section B.6.1 of Specific guidelines for completing CDM-SSC-PDD, version 5 /B05/).

The CEA database /B06/ provides a BM value for the Southern grid as **0.7339 tCO₂/MWh** .As part of validation of Step 6 of the tool /B03/, Validation team has checked the BM for the year 2010-11 and found the same correct and in line with the tool.

Step 7 of the tool /B03/ requires calculation of the combined margin emission factor as per the following equation:

$$EF_{grid,CM,y} = EF_{grid,OM,y} \times w_{OM} + EF_{grid,BM,y} \times w_{BM}$$

According to the tool /B03/ on selecting alternative weights, the default weights applicable for Wind and Solar projects are $w_{OM} = 0.75$ and $w_{BM} = 0.25$ for the first and subsequent crediting period have been applied. The combined margin emission factor has been calculated as; **EF_{grid,CM,y} = EF_{CO₂,grid,y} = 0.8971 tCO₂e/MWh**. (The official published data for simple OM and BM is considered for calculation of CM). The CM for the crediting period is fixed ex-ante. Hence the validation team confirms that the PP has correctly calculated the combined margin grid emission factor and is in line with the tool to calculate emission factor, version 02.2.1 /B03/.

The validation team confirms that the proposed project activity meets the above requirement. Therefore, the baseline scenario as prescribed in the AMS I.D (version 17) is applicable to the proposed project activity. The validation took cognizance of § 105 of VVM (version 01.2).

The approved baseline methodology applicable to the project explicit criteria implicit criteria (e.g. available scenarios, applicability of formulas for BE/PE/LE calculations)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	As per clause 11,12 of the AMS-I.D. /Version 17 /B02/, the simplified baseline is prescribed. Please refer Section 3.4.1 for details.
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PDD includes all assumptions and data used by project participants	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	As per clause 11,12 of the AMS-I.D. /Version 17 /B02/, the simplified baseline is prescribed. Please refer Section 3.4.1 for details.
All the references and documents used are relevant for establishing the baseline scenario	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	As per clause 11,12 of the AMS-I.D. /Version 17 /B02/, the simplified baseline is prescribed. Please refer Section 3.4.1 for details.
All the references and documents used are correctly quoted and conservatively interpreted in the PDD	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	As per clause 11,12 of the AMS-I.D. /Version 17 /B02/, the simplified baseline is prescribed. Please refer Section 3.4.1 for details.
All relevant policies / regulations considered are listed in the PDD	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	As per clause 11, 12 of the AMS-I.D. /Version 17 /B02/, the simplified baseline is prescribed. Please refer Section 3.4.1 for details.
Identified potential baseline scenarios reasonably represent what would/could occur in the absence of the proposed project activity	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	As per clause 11, 12 of the AMS-I.D. /Version 17 /B02/, the simplified baseline is prescribed. Please refer Section 3.4.1 for details.
The baseline scenario selection is appropriate and determined according to the methodology	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	As per clause 11,12 of the AMS-I.D. /Version 17 /B02/, the simplified baseline is prescribed. Please refer Section 3.4.1 for details.
The approved methodology used is applicable to the identified baseline scenario	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	As per clause 11,12 of the AMS-I.D. /Version 17 /B02/, the simplified baseline is prescribed. Please refer Section 3.4.1 for details.

In addition to this, in accordance to Annex 3 of EB 22, there are no relevant national or sectoral policies and circumstances which have impact in the identification of the baseline scenario. The same is rightly explained in section B.5 of the PDD for this type of project sectors. Thus the baseline determination is accepted and complies with paragraphs 81 and 82 of VVM version 1.2./B01/

The approved baseline methodology has been correctly applied to identify a realistic and credible baseline scenario, and the identified baseline scenario most reasonably represents what would occur in the absence of the proposed CDM project activity.

All the assumption and data used by the project participants are listed in the PDD and/or supporting documents. All documentation relevant for establishing the baseline scenario is correctly quoted and interpreted in the PDD. Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence and can be deemed reasonable. Relevant national and/or sectoral policies and circumstances are considered and listed in the PDD.

Nevertheless CL-01,CL-04,CAR-06 and CAR-07 were raised and closed during the course of validation

3.4.4 GHG Emission Reductions:

The Emission reduction calculations are transparently described and all the assumptions used for the estimation of baseline and project emissions are appropriate. All the calculations and formulas used for the estimation of baseline and emission reductions are in line with the methodology AMS-I.D version 17/B02/.

Baseline Emissions:

According to the PDD/P02/ baseline emissions are calculated as the net electricity generated by the project activity, multiplied with the baseline emission factor for the project grid which is in line with the paragraph 11 of the methodology /B02/. Formula used for the estimation of baseline emissions is as below

$$BE_y = EG_{BL,y} * EF_{CO_2,grid,y}$$

Parameters	Description	Source and appropriateness of parameters
BE _y	Baseline Emissions in year y (t CO ₂)	As per paragraph 11 of AMS-I.D version 17
EG _y	Quantity of net electricity supplied to the grid in Year y (MWh)	Monthly statement issued by TNEB The energy generation from the WEG installed in Tamil Nadu has been estimated as 8732 MW per year. Validation team has verified the PLF assessment report/P14/ and concluded that generation has been correctly estimated in the project region.
EF _{grid,CM,y}	Combined Margin Emission Factor of the Southern Electricity Grid	As per the tool to calculate emission factor for an electricity system/B03/ CO ₂ baseline database for Indian power sector user guide, version 07 /B04/ The value has been calculated as 0.8971 t CO ₂ /MWh

Project emissions:

As per para 20 of AMS I.D. version 17 for most renewable energy project activities project emission is zero. Since the project activity is a wind power project PP has considered project emissions as zero.

Leakage:

As per the applicable approved methodology AMS I.D. (version 17), leakage is to be considered if the energy generating equipment is transferred from another activity. The project activity is a green field power wind power generation facility and the energy generating equipment used in the project activity has not been transferred from any other activity. Hence, leakage is not considered as zero.

Emission Reductions:

Thus, ER_y = BE_y - PE_y - LE_y has been calculated. The data not to be monitored are valid and correct. The values to be monitored for the ER calculation are plausible and explained further in section 5.2.7 of this report.

The estimated average annual ER is 7833 tCO₂e/annum/P10/.

In summary, the calculation of emission reductions was correctly demonstrated by the PP according to the methodology AMS I.D (version 17) and its tool “Tool to calculate emission factor for an electricity system/B03/” version 2.2.1. The table below summaries validation team’s determination of emission reduction:

The table below summaries validation team’s determination of emission reduction:

All assumptions made for estimating GHG are listed in the PDD	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	All the assumptions made for estimating GHG are listed in the PDD. Please refer section B.6 of the final PDD. For detailed assessment of all the assumptions, please refer above Baseline emission, project emission and leakage in section 3.4.4.
All data used by project participants are listed in the PDD	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	All the data required by AMS-I.D, version 17 are listed in the PDD. Please refer section B.6 of the final PDD. For detailed assessment of each value listed in the PDD, please refer above Baseline emission, project emission and leakage in section 3.4.4.
Their references and sources are also listed in the PDD	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	All the references are correctly referred in the PDD. The major references are from “CO ₂ baseline

		database for Indian power sector user guide, version 07 /B04/" and "tool to calculate emission factor for an electricity system/B03/".
Formulas, parameters, values are complete, accurate, transparent and conservative	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Assumptions made for estimating GHG are listed in the PDD. Please refer section B.6 of the final PDD. For detailed assessment and validity of the reference and sources, please refer above Baseline emission, project emission and leakage in section 3.4.4.
All the references and documents used are correctly quoted and conservatively interpreted in the PDD	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	All the formulas, parameters, values are complete, accurate, transparent and conservative. Please refer section B.6 of the final PDD. For detailed assessment please refer above Baseline emission, project emission and leakage in section 3.4.4.
Methodology has been applied correctly to calculate project emissions, baseline emissions, leakage emissions and emission reductions	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	All the references and documents are correctly quoted and conservatively interpreted in the PDD. Please refer section B.6 of the final PDD. For detailed assessment please refer above Baseline emission, project emission and leakage in section 3.4.4.
All the emissions of baseline emissions can be replicated using information provided in the PDD	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Methodology has been correctly referred and quoted in the PDD. Please refer section B.6 of the final PDD. For detailed assessment please refer above Baseline emission, project emission and leakage in section 3.4.4.
		Yes, all the emissions of the baseline can be replicated using the information provided in the PDD. Please refer section B.6 of the final PDD. For detailed assessment please refer above Baseline emission, project emission and leakage in section 3.4.4.

Based on the calculations and results presented in the sections above the implementation of the project activity will result in an average ex-ante estimation of emission reduction conservatively calculated to be 7833 tCO₂e per year for the selected crediting period. All values used in the PDD are considered reasonable and conservative in the context of the proposed CDM project activity. The baseline methodology has been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions. All estimates of the baseline, project and leakage emissions can be replicated using the data and parameter values provided in the PDD.

3.5 Additionality:

The project is small scale in size i.e. below 15 MW in line with the requirement of "General Guidelines to SSC CDM methodologies version 17"/B05-04/. The additionality of the project activity has been demonstrated using Annex 27 of EB 68, "Guidelines on the demonstration of additionality of small-scale project activities", Version 09.0 /B05-06/. As all requirements specified vide § 28 of the simplified modalities and procedures are compiled by the project activity, this approach has been assessed to be appropriate for the additionality assessment for this project activity

Nevertheless CAR-02 & CAR-03 were raised and successfully closed during the course of validation

3.5.1 CDM consideration:

The project developers had stated the start date of the project activity is 2011-06-16 and has submitted a copy of the purchase order/P08/ for the WEGs released to M/s ENERCON India Ltd., as evidence. The project developers have not undertaken any construction or any real action on the implementation of the project activity (for all sub bundles) prior to this date. Since the real action of the project activity had begun on 2011-06-16, as per Glossary of CDM terms (version 07 /B05-5/, this date has been treated as the start date of the project

activity. Since the real action of the project activity had begun after 02 August 2008, the project activity falls under the category of new project activity as per paragraph 100 of VVM 1.2 /B01/.

The PDD was web-hosted for public comments on 2012-04-19, i.e., after the start date of the project activity. Since the start date of the project activity was after 2nd August 2008 and the PDD was web-hosted after the start date, as per paragraph 2 of Annex 13, EB 62, /B05-10/ project participant is required to inform the Host Party DNA and the UNFCCC secretariat in writing of the commencement of the project activity and of their intention to seek CDM status and such notification must be made within six months of the project activity start date. Accordingly, the project developers had informed UNFCCC on 2011-12-01 (start date being 2011-06-16) about the commencement of the project activity and their intention to seek CDM status. Copies of correspondence with UNFCCC have been submitted to validation team /P06/. Besides, validation team also checked the UNFCCC website¹¹ (as required vide paragraph 101 of VVM) and satisfied itself that the project developer had informed UNFCCC within the stipulated 6 months period.

Timeline	Milestone	Determination by the validation team
2011-06-15	Investment decision taken by Atul Sharma and Neha Sharma – Internal board minutes	Serious CDM consideration
2011-06-16	Order placed with Enercon India Limited by Atul Sharma and Neha Sharma for purchase of 04 numbers of 0.8 MW Wind turbines (considered as start date of CDM project activity)	Start date of the CDM project
2011-08-30	Investment decision taken by Peethambra granites Pvt. Ltd - Internal board note.	Serious CDM consideration
2011-11-20	Order placed on Enercon India Limited by Peethambra granites Pvt. Ltd for purchase of 0.8 MW Wind Turbine.	Start date of Peethambra granites Pvt. Ltd
2011-12-01	Submission of Prior Consideration of the CDM form for expressing the intention to seek CDM status to Indian DNA and UNFCCC for the bundled project activity.	Serious CDM Consideration

It is TÜV Rheinland validation team opinion that the proposed CDM project activity complies with the requirements of the latest version of the guidance on prior consideration of CDM./B05-8/ validation team concludes that there was a prior consideration of CDM and CDM was seriously considered in the decision to implement the project activity.

Nevertheless CAR-08 & CAR-09 is raised and successfully closed during the course of validation.

3.5.2 Alternatives:

This is a wind power project and is based on the methodology AMS I.D Version 17. The methodology states that

“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.

¹¹ <http://cdm.unfccc.int/Projects/PriorCDM/notifications/index.html>

Validation Team, therefore, concludes that the PDD and the validation report conforms to the guidance given by EB vide paragraph 105 of VVM 1.2. /B01/

TÜV Rheinland validation team considers the selected baseline is credible and complete.

3.5.3 Investment analysis:

The Investment analysis has been carried out as per the “Guidelines on the demonstration of additionality of small-scale project activities” (Version 9.0, Annex 27 of EB 68) /B05-06/

According to the guideline

Project participants shall provide an explanation to show that the project activity would not have occurred anyway due to at least one of the following barriers:

- a) **Investment barrier:** a financially more viable alternative to the project activity would have led to higher emissions;
- b) **Technological barrier:** a less technologically advanced alternative to the project activity involves lower risks due to the performance uncertainty or low market share of the new technology adopted for the project activity and so would have led to higher emissions;
- c) **Barrier due to prevailing practice:** prevailing practice or existing regulatory or policy requirements would have led to implementation of a technology with higher emissions;
- d) **Other barriers:** without the project activity, for another specific reason identified by the project participant, such as institutional barriers or limited information, managerial resources, organizational capacity, financial resources, or capacity to absorb new technologies, emissions would have been higher.

PP has chosen Investment barrier to prove the additionality of the project activity and investment analysis has been carried out in compliance with the latest version (5.0) of the “Guidance on the Assessment of Investment Analysis”. /B05-12/

As per the paragraph 108 of the VVM version 1.2/B01/ if the investment analysis is used to demonstrate the additionality of the proposed project activity, PDD shall determine the proposed project activity would not be;

- a) The most economically or financially attractive alternative; or
- b) Economically or financially feasible without the revenue from the same of CERs.

PDD /P02/ demonstrates that the project would not be financially feasible, without the revenue from the sale of certified emission reductions (CERs) and the financial returns of the proposed CDM project activity would be insufficient to justify the required investment which is in line with the option (c) of paragraph 109 of VVM version 1.2 /B01/. 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., proves that

- 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.

The Investment Analysis has been assessed for compliance with the latest version (09) of the “Guidelines on the demonstration of additionality of small-scale project activities” /B05-06/.

3.5.3.1 Choice of approach:

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 (01.2) /B01/]. 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 05 of EB 62 /B04/.

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 (01.2 /B01/).

Benchmark selection:

The project developer has chosen Equity IRR to demonstrate the additionality of the project. Considering the equity part of the project investment and guidance 12 of Annex 05 EB 62 /B05-12/ permits the use of equity IRR as one of the financial indicators to demonstrate the additionality, equity IRR has been considered as appropriate financial indicator for the project type and decision making context.

As per guidance 12 of Annex 05, EB 62 /B05-12/ “Required/expected returns on equity are appropriate benchmarks for an equity IRR. Benchmarks supplied by relevant national authorities are also appropriate if the DOE can validate that they are applicable to the project activity and the type of IRR calculation presented”. Project developer had selected post tax Equity IRR as financial indicator of the project and used Capital Asset Pricing Model (CAPM) for deciding benchmark (return on equity) for this project. CAPM is a model of linear general equilibrium return. In the CAPM theory, investors are assumed to have homogeneous expectations during the decision-making period. Investors make their decision only on the basis of the expected returns, standard deviations and covariance of all pairs of security. According to CAPM, all investors hold only the market portfolio and riskless securities. The market portfolio is a portfolio comprised of all stocks in the market.

The required rate of return is given by the following formula -

$$\text{Required rate of return} = \text{RF} + \beta \times (\text{RM} - \text{RF})$$

Where-

RF = Risk free rate

β = Beta which shows risk

RM = Market return

Risk free rate:

The risk free rate is the return on a security (or a portfolio of securities) that is free from default risk. Typically, the rate of long term government bonds is used to determine the risk free rate. In the context of the present project activity PP had considered YTM (Yield to Maturity) at primary issues over a period of 05 years has been considered to represent the risk free rate which is inline with the guidance 16 of the Annex 05 EB 62 /B05-12/.

Expected Market rate of return:

PP had considered BSE-200, well established share market in the host country, as Market index for the determination of return on well-diversified market portfolio. BSE-200 comprises of 30 large companies, based on their market capitalization. It is the major index of India that is being monitored at the international market. It had tracked the Indian stock market for a long time period. Thus large number of data points is available which provide a better estimate of expected market return. The index can therefore be considered as relatively stable with low random fluctuations and thus is in line with the assumptions of the CAPM model and it is reasonable to refer to BSE-200 for determining the average market return.

Market Risk Premium

The market risk premium is calculated as the difference between the expected market rate of return and the average risk free rate and is measured by looking at the average of the historical returns on a market portfolio. In the context of the present project activity, the period selected to calculate the expected market return has been calculated from the inception of BSE Sensex until the decision making date.

Thus the market risk premium estimated is

$$\text{Market risk premium} = R_M - R_F$$

$$\text{Beta} = \text{Covariance}(R, R_M) / \text{Variance}(R_M)$$

Beta is the measure of the expected volatility of a particular stock relative to a well-diversified market portfolio. It measures the systematic risk of a stock, i.e. the risk that cannot be eliminated in a well-balanced, diversified portfolio. The beta is calculated as the covariance between its return and the return on a well-diversified market portfolio, divided by the variance of the return on a well-diversified market portfolio.

The beta is determined by referring beta values of publicly listed companies that are engaged in similar types of business. Once there was no exclusive wind energy companies listed on any stock exchange in India PP has considered beta values of the power companies in India. The group of companies considered includes renewable as well as conventional power generating companies. Risky businesses are likely to have higher cost of equity than safer businesses; projects in riskier businesses will have to cover these higher costs. Hence, investors demand a higher return from renewable energy projects than from conventional energy ones, given the higher risks in renewable, including risks of technology, risks from significantly varying and unpredictable resource availability (e.g. wind), and a lower established support base for such projects relative to that for conventional power (e.g. grid connections, bank finance, suppliers, etc.). The use of this Beta value is therefore considered conservative, as it does not add for the higher risk of non-conventional energy.

In the context of project activity PP had taken average of unlevered beta of the Companies which are included in Power - Generation/Distribution sector categorized by money control & have trading data of 3 years at the time of investment decision date. Project Proponent had taken the average of unlevered Beta value arrived for six power companies (TATA Power, Neyveli Lignite, Reliance Infra, CESC, GIPCL, BF Utilises) listed on Bombay Stock Exchange (BSE) available at the time of investment decision.

Beta value has been calculated from the below formula

$$\beta_a = \text{Unlevered Beta or Asset Beta} = \beta_e / \{1 + (1 - T) * (D/E)\}$$

where -

β_a = Asset Beta or Unlevered Beta of the stock

β_e = Equity Beta or Levered Beta of individual stock

T = Marginal Tax Rate

D/E = Debt/Equity

The equity IRR is compared with the expected return on equity (ROE) prevalent during the time of investment decision of the project. Equity IRR and its respective benchmark at the time of investment decision are provided in the below table. DOE found the values are appropriate. Therefore, ROE as benchmark conforms to guidance 12 of Annex 05, EB 62/B05-12/. Moreover, since the BSE-200 is publicly available and can be validated by DOE, it also conforms to guidance 13 of Annex 05, EB 62 /B05-12/.

Therefore, the Validation Team concludes that the benchmarks calculated by the project developer are suitable for the financial indicator, equity IRR.

The Below table provides the comparison of benchmark and the IRR of each subproject in the bundle.\

Name of the Project owner	Equity IRR	Benchmark (ROE)
Peethambra granites Pvt. Ltd	7.65%	17.06%
Neha Sharma (WTG3&4)	7.45%	17.00%
Atul Sharma WTG 4	7.98%	17.00%
Atul Sharma WTG 5	7.45%	17.00%

DOE has also cross verified the calculated benchmark values with the ROE arrived with default ROE provided in the guidelines for the assessment of investment analysis. EB 62 Annex 05

Return on equity arrived through the default Value + inflation rate through the following formula

$$\text{Return on equity}_{\text{Nominal}} = (1 + \text{Return on equity}_{\text{Real}}) * (1 + \text{Inflation rate}_{\text{Host country}}) - 1$$

$$\text{Return on equity}_{\text{Nominal}} = (1 + 11.75\%^{12}) * (1 + 5.9\%^{13}) - 1 = 18.34\%$$

By comparing the both the benchmark values of 18.34% through default value approach and 17% through CAPM model It can be concluded that the benchmark values calculated for all the individual subprojects in the bundle as per CAPM model are more conservative and hence accepted.

Validation Team considers that it is reasonable to assume that the investment would not have taken place and the CDM benefits were decisive factor in taking the investment decision. Therefore, the selected benchmark is appropriate and conforms to paragraph 112 (a) and (c) of VVM (01.2) /B01/.

Input parameters:

The three important parameters, which determine the IRR of the project, are project cost, financing pattern and profitability estimates.

The source for various input parameters used in the financial indicator calculations and their assessment by referring to § 110(a),(b) and (c) of VVM version 01.2 are discussed below in subsequent paragraphs, which also reveals that the input parameters considered in the financial indicator calculations conform to guidance 6 of Annex 05, EB 62 /B05/ or conservative.

Project Cost: Project cost comprises of capital cost and running costs. Capital cost includes machinery, land and civil cost. Running costs includes Operation & maintenance cost and administrative costs.

Financing pattern: The project is funded by partly by debt and partly by equity. The loan sanction letter was verified by the validation team and found that part of the finance was obtained from long term loan sanctioned by Saraswat Bank /P13/. The debt: equity ratio has been considered as 70:30 from the TNERC Order “Comprehensive Tariff Order on WIND ENERGY” dated 2009-03-20 page No. 54 which was available at the time of decision making.

The profitability estimates of the project, which forms the basis for IRR calculation is based on installed capacity, PLF, power tariff, O&M cost, depreciation and taxation.

The source of the input parameters used in the financial indicator calculation for the project reveals that the input parameters considered in the financial indicator calculations conform to guidance 6 of Annex 05, EB 62 are conservative as indicated in the tables below:

Parameter:	Installed capacity
Value applied for the IRR calculation:	4 MW Peethambra Granites Pvt Ltd - 0.8 MW Atul Sharma - 1.6 MW Neha Shamra - 1.6 MW
Source of the value:	Statutory clearances /P12/ and from EPAs /P11/, Purchase Orders /P08/ and Commissioning Certificates /P09/

¹² Default real ROE given by Appendix A of Annex5 EB 62

¹³ <http://rbi.org.in/scripts/SPF18.aspx>

Consistency of the value:	Same in Web-hosted and final version of PDD
Validity of input value at the time of investment decision making:	Installed capacity proposed at the time of decision making (i.e. internal management decision) and post decision making (actual implementation) is same.
Justification by the validation team according to §113 of VVM: (cross checking and comparison as applicable)	The project rated capacity i.e. 4 MW (=5*0.8 MW) was further cross checked through document review namely all statutory clearances /P12/ and from EPA /P11/, Purchase Order /P08/ and Commissioning Certificates /P09/ and found to be 4 MW, hence correct and acceptable.

Parameter:	Project cost (includes WEGs, tower, transformer, electrical, erection and commissioning cost)									
Value applied for the IRR calculation:	<table><tr><td>Name of the project owner</td><td>Project cost</td></tr><tr><td>Peethambra granites Pvt. Ltd</td><td>46 INR Million for 0.8 MW</td></tr><tr><td>Atul Sharma</td><td>92 INR Million for 1.6 MW</td></tr><tr><td>Neha Sharma</td><td>92 INR Million for 1.6 MW</td></tr></table>		Name of the project owner	Project cost	Peethambra granites Pvt. Ltd	46 INR Million for 0.8 MW	Atul Sharma	92 INR Million for 1.6 MW	Neha Sharma	92 INR Million for 1.6 MW
	Name of the project owner	Project cost								
	Peethambra granites Pvt. Ltd	46 INR Million for 0.8 MW								
	Atul Sharma	92 INR Million for 1.6 MW								
	Neha Sharma	92 INR Million for 1.6 MW								
Average cost of each WTG is INR 46 million/WEG (0.8 MW)										
Source of the value:	The project cost has been considered from the offer letters which were provided by WEG supplier ENERCON India Limited /P14-01//P14-07/, /P4-11/									
Consistency of the value:	Same in Web-hosted and final version of PDD									
Validity of input value at the time of investment decision making:	Project cost is considered from the offer letters submitted by WEG supplier to the project owners which were available at the time of investment decision making									
Justification by the validation team according to §113 of VVM: (cross checking and comparison as applicable)	The project cost has been considered from the offer letters submitted by WEG supplier to each PP in the bundle, which were available at the decision making time and DOE found it in accordance with EB-62 Annnex-05. DOE has cross checked the actual project cost with Purchase orders submitted by individual project owners /P08/- to the WEG supplier and it was found that variation in the project cost is 2.4%, which is acceptable as the same is covered in the +10% range of sensitivity analysis.									
	Moreover, TNERC recommended project cost as per the tariff order 2012-07-31 is INR 5.75 Crores/MW which is similar to the project cost considered for the project activity (which is 5.75 Crores per MW).									
	Validation team also cross checked the total project cost with registered project costs of CDM wind power projects in the same region and found the cost of proposed project is less than the registered projects.									
	<table><tr><td>Ref. No.</td><td>Capital Cost/ MW WEG (INR Million)</td></tr><tr><td>Project activity</td><td>57.5</td></tr></table>	Ref. No.	Capital Cost/ MW WEG (INR Million)	Project activity	57.5					
Ref. No.	Capital Cost/ MW WEG (INR Million)									
Project activity	57.5									

	5790	71.4
	6198	64.2
	6521	65
<p>The validation team found the value to be correct.</p> <p>Sensitivity analysis has been done for the project cost and it shows that IRR is below benchmark with $\pm 10\%$ variation.</p> <p>Taking into consideration all these factors and based on the local and sectoral expertise, the validation team concludes that the project cost is reliable and appropriate for the given project activity.</p>		

Parameter:	O&M cost to TNEB With Annual Escalation
Value applied for the IRR calculation:	INR 0.14 million per WEG with 5% annual escalation applicable for all the WTGs in the bundle.
Source of the value:	Offer letter from the supplier. Supplier has provided the O&M expenses towards TNEB to Project owner separately through e-mail./P14-6/.
Consistency of the value:	Same in Web-hosted and final version of PDD
Validity of input value at the time of investment decision making:	O&M cost towards TNEB and its escalation are considered from the Supplier's offer letter. Supplier has provided the O&M expenses towards TNEB to Project owner separately through e-mail also. DOE has cross checked the date of email sent by supplier and found the date is as same as offer letter date. Hence the value is available at the time of decision making.
Justification by the validation team according to §113 of VVM: (cross checking and comparison as applicable)	<p>The O&M cost towards TNEB and its escalation have been considered from the offer submitted by WEG supplier, which has been communicated through the email, which was available at the decision making time and DOE found it in accordance with EB-62 Annex-05. DOE has cross verified the date of email and found that the date is same as offer letter of WEG supplier and input value of O&M cost for project and found to be correct.</p> <p>DOE has cross checked the O&M cost from the amendment document by TANGEDCO dated 2010-11-16/B06-j/ and found that the value is same as INR 0.16 million per MW which is equal to the O&M cost considered in the project activity i.e INR 0.14 million per 0.8 MW include service tax. The 5% annual escalation rate is also cross verified from the amendment document by TANGEDCO dated 2010-11-16/ and hence accepted.</p> <p>DOE found that O&M cost to TNEB with its escalation considered by PP is appropriate.</p> <p>Moreover sensitivity analysis has been done for the O&M and it shows that IRR is below benchmark with $\pm 10\%$ variation.</p> <p>Taking into consideration all these factors and based on the local</p>

	and sectoral expertise, the validation team concludes that the O&M cost is reliable and appropriate for the given project activity
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Parameter:	PLF								
Value applied for the IRR calculation:	<table border="1"> <tr> <td>Name of the Project owner</td><td>PLF</td></tr> <tr> <td>M/s. Peethambra Granites (P) Ltd</td><td>25.02%</td></tr> <tr> <td>M/s Atoll Sharma</td><td>25.12%/WEG1 24.82%/WEG2</td></tr> <tr> <td>M/s. Neha Sharma</td><td>24.82% (for both WEG)</td></tr> </table>	Name of the Project owner	PLF	M/s. Peethambra Granites (P) Ltd	25.02%	M/s Atoll Sharma	25.12%/WEG1 24.82%/WEG2	M/s. Neha Sharma	24.82% (for both WEG)
Name of the Project owner	PLF								
M/s. Peethambra Granites (P) Ltd	25.02%								
M/s Atoll Sharma	25.12%/WEG1 24.82%/WEG2								
M/s. Neha Sharma	24.82% (for both WEG)								
Source of the value:	The PLF of each WEG has been considered from the third party PLF assessment reports./P14-02/,/P14-08/,/P14-12/.								
Consistency of the value:	Same in Web-hosted and final version of PDD								
Validity of input value at the time of investment decision making:	The PLF has been considered from the third party PLF assessment reports prepared by True Wind International Certification which were available at the time of investment decision. The consideration of the PLF is also in accordance with Annex 11 of EB 48								
Justification by the validation team according to §113 of VVM: (cross checking and comparison as applicable)	<p>All Project owners in the bundle had considered the PLF from the third party PLF assessment reports /P14/ which meets the requirement of Annex 11 of EB 48./B05-11/ and also found to be more appropriate as it is estimated with respect to particular location of WTG. Moreover the third party reports were available with each PP in the bundle before their investment decisions.</p> <p>The statistics of all registered similar kind of Wind CDM projects in Tamil Nadu with similar output capacity per WEG (0.8 MW) were checked and found that PP has considered the PLF on conservative side than the similar registered projects.</p> <p>Moreover, sensitivity analysis has been carried out by subjecting the PLF to maximum variation of +/-10% in each PP case, where the IRR does not cross the benchmark. The Publicly available PLF of 27.6% as per TNERC order which was prevailing before investment decision is also covered under the above range of variation.</p> <p>Thus the DOE found that PLFs chosen by PPs in the bundle are appropriate.</p>								

Parameter:	Tariff								
Value applied for the IRR calculation:	<table> <tr> <th>Name of the project owner</th><th>Tariff INR/kWh</th></tr> <tr> <td>Peethambra granites Pvt. Ltd</td><td>3.39</td></tr> <tr> <td>Atul Sharma</td><td>3.39</td></tr> <tr> <td>Neha Sharma</td><td>3.39</td></tr> </table>	Name of the project owner	Tariff INR/kWh	Peethambra granites Pvt. Ltd	3.39	Atul Sharma	3.39	Neha Sharma	3.39
Name of the project owner	Tariff INR/kWh								
Peethambra granites Pvt. Ltd	3.39								
Atul Sharma	3.39								
Neha Sharma	3.39								
Source of the value:	The Tariff has been considered from the TNERC order/P14/								
Consistency of the value:	Same in Web-hosted and final version of PDD								
Validity of input value at the time of investment decision making:	The Tariff has been considered from the TNERC order which was available at the time of decision making.								
Justification by the validation team according to §113 of VVM: (cross checking and comparison as applicable)	<p>Tariff is based on the TNERC Order of 2009/03/20 /P14/, which provides for a tariff of INR 3.39/kWh. Since this was the rate which was available at the investment decision time and is in line with the paragraph 6 of Annex 05 EB 62.</p> <p>The project activity is already commissioned and Energy purchase agreement /P14/ has been signed by the PP with the state electricity utility. The validation team has cross checked the tariff from the EPA and found that the EPA has been signed under the Renewable Energy certificate (REC) scheme which comprises the the tariff structure as a combination of fixed price + floating price</p> <p>The fixed price or average pool procurement cost (APPC) has been fixed at INR 2.37/kWh for the project activity in the EPA/P11/ and the floating price ranges from INR 1.50 to INR 3.90¹⁴ depending on the trade price which the PP gets on sale of RECs.</p> <p>The validation team also concludes its opinion that the REC mechanism is clearly an E- policy as it encourages less emission intensive technology over emission-intensive technology and the mechanism was launched much after 11/11/2001 and hence the effect of such mechanism should not be considered while demonstrating additionality of the project activity which is in line with the EB guideline EB 53 annex 32. The tariff rate of INR 3.39/kWh is correct and appropriate for the project activity.</p>								

Parameter:	O&M cost						
Value applied for the IRR calculation:	<table> <tr> <th>Project Owner</th><th>O&M cost (INR million)</th></tr> <tr> <td>Peethambra Granites Pvt. Ltd</td><td>0.72 (for 0.8* MW WTG)</td></tr> <tr> <td>Atul Sharma</td><td>1.43 (for 2 *0.8 MW WTGs)</td></tr> </table>	Project Owner	O&M cost (INR million)	Peethambra Granites Pvt. Ltd	0.72 (for 0.8* MW WTG)	Atul Sharma	1.43 (for 2 *0.8 MW WTGs)
Project Owner	O&M cost (INR million)						
Peethambra Granites Pvt. Ltd	0.72 (for 0.8* MW WTG)						
Atul Sharma	1.43 (for 2 *0.8 MW WTGs)						

¹⁴ <http://www.iexindia.com/>

	Neha Sharma	1.43 (for 2 *0.8 MW WTGs)
Source of the value:	O&M cost for all the WTGs in the bundle have been considered from the offer letters submitted by the manufacturer to the project owners/P14/ which were available at the time of decision making	
Consistency of the value:	The value is same in the webhosted PDD and the final PDD.	
Validity of input value at the time of investment decision making:	O&M cost for all the WTGs in the bundle has been considered from the offer letters submitted by the manufacturer to the project owners/P14/ which were available at the time of decision making	
Justification by the validation team according to §113 of VVM: (cross checking and comparison as applicable)	<p>The O&M cost has been considered from the offer submitted by WTG supplier, which was available at the decision making time and DOE found it in accordance with EB-62 Annex-05. DOE has verified the offer of WTG supplier and input value of O&M cost for project and found to be correct.</p> <p>Moreover, according to the statistic of all registered similar kind of Wind CDM projects in Tamilnadu with similar output capacity per WTG (0.85 MW), as per table below, the O&M cost of the registered project (ref No: 5871) has been considered as 0.73 Million INR/ 0.85 MW WTG which is same as the project activity.</p> <p>DOE found that O&M cost taken by PP is appropriate.</p> <p>Moreover sensitivity analysis has been done for the O&M and it shows that IRR is below benchmark with $\pm 10\%$ variation.</p> <p>Taking into consideration all these factors and based on the local and sectoral expertise, the validation team concludes that the O&M cost is reliable and appropriate for the given project activity</p>	

Parameter:	O&M cost escalation
Value applied for the IRR calculation:	6% per annum from second year onwards for all the WTGs in the bundle.
Source of the value:	The escalation in O&M cost has been considered from the offer letters/P14/ which have been submitted by WTG supplier.
Consistency of the value:	Same in the webhosted and final PDD.
Validity of input value at the time of investment decision making:	Escalation in the O&M cost is considered from the offer letters/P14/ submitted by WTG supplier which was available at the time of investment decision.

<p>Justification by the validation team according to §113 of VVM: (cross checking and comparison as applicable)</p>	<p>The escalation in O&M cost has been considered from the offer submitted by WTG supplier, which was available at the decision making time and DOE found it in accordance with EB-62 Annex-05. DOE has cross verified the offer of WTG supplier and input value of escalation in O&M cost found to be correct.</p> <p>Moreover, TNERC tariff order dated 2012/07/31 also recommends the escalation in the O&M cost of 5%.</p> <p>It is also observed by the DOE that in the host country Escalation rate is changed from supplier to supplier, However the parameter for the project case is in the acceptable range.</p> <p>Taking into consideration all these factors and based on the local and sectoral expertise, the validation team concludes that the escalation in O&M cost is reliable and appropriate for the given project activity.</p>
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Parameter:	Debt: Equity
Value applied for the IRR calculation:	70:30 (for all sub bundles in the project)
Source of the value:	TNERC Tariff order dated 2009-03-20 http://tnerc.tn.nic.in/orders/draft%20order%2020-3-2009%20complete%20final.pdf
Consistency of the value:	Same in the webhosted PDD and final version of PDD.
Validity of input value at the time of investment decision making:	The source document considered is available at the time of investment decision making
Justification by the validation team according to §113 of VVM: (cross checking and comparison as applicable)	The debt equity ratio is based on the TNERC tariff order dated 2009-03-20 which was available at the time of investment decision of each PP in the bundle. Normally, the infrastructure projects are given loan between 60 to 80% of the project cost in India. Hence the debt equity ratio considered is acceptable.

Parameter:	Interest Rate
Value applied for the IRR calculation:	All the Project owners of the bundle has considered the interest rate as 12%
Source of the value:	TNERC Tariff order dated 2009-03-20./P14-06/ http://tnerc.tn.nic.in/orders/draft%20order%2020-3-2009%20complete%20final.pdf
Consistency of the value:	Yes

Validity of input value at the time of investment decision making:	Yes
Justification by the validation team according to §113 of VVM: (cross checking and comparison as applicable)	<p>The cost of debt is based on the TNERC Tariff order dated 2009-03-20./P14-06/ for all WTGs of the bundle.</p> <p>DOE has crosschecked the Loan sanction letter/P14-05/ and found that the interest rate is 13.75% per annum but the interest rate considered is 12% as per TNERC tariff order available during investment decision. However even with the interest rate of 13.75% there is no major impact on IRR and it is well below the benchmark.</p> <p>Thus the interest rate of 12% is found to be appropriate.</p>

Parameter:	Loan Repayment Tenure
Value applied for the IRR calculation:	10 years repayment including 12 months moratorium (all project proponents in the bundle have considered the same value)
Source of the value:	TNERC Tariff order dated 2009-03-20./P14-05/ http://tnerc.tn.nic.in/orders/draft%20order%2020-3-2009%20complete%20final.pdf
Consistency of the value:	Same in the webhosted PDD and the final PDD..
Validity of input value at the time of investment decision making:	Yes
Justification by the validation team according to §113 of VVM: (cross checking and comparison as applicable)	<p>DOE has cross checked the loan repayment with the actual loan sanction letter of the proposed project activity and is found to be 7 years with 6 months moratorium. However with the 7 years repayment period also IRR is below the benchmark.</p> <p>DOE has also cross checked the repayment with the other registered project (Ref: 6498) in the same region and found that the repayment period considered as 10 years which is same as the registered project activity.</p>

Parameter:	Salvage Value
Value applied for the IRR calculation:	10% of asset
Source of the value:	TNERC Tariff order dated 2009/03/20 http://tnerc.tn.nic.in/orders/draft%20order%2020-3-2009%20complete%20final.pdf
Consistency of the value:	Yes

Validity of input value at the time of investment decision making:	Yes
Justification by the validation team according to §113 of VVM: (cross checking and comparison as applicable)	The salvage value considered is based on the TNERC renewable energy tariff order date 2009/03/20/P14/, which was available at the time of investment decision. Though all the book value is depreciated in the 20 years the 10% of book value is considered as salvage value at the end of 20 year which is conservative. Hence the salvage value considered in the project is appropriate and conservative.

Parameter:	Income Tax rate (FY 2011-12)								
Value applied for the IRR calculation:	<table border="1"> <thead> <tr> <th>Name of the Project owner</th><th>Income tax rate %</th></tr> </thead> <tbody> <tr> <td>Peethambra Granites Pvt. Ltd</td><td>32.45% (FY 2011-12)</td></tr> <tr> <td>Atul Sharma (WTG4 & 5)</td><td>32.45% (FY 2011-12)</td></tr> <tr> <td>Neha Sharma (WTG2 & 3)</td><td>32.45% (FY 2011-12)</td></tr> </tbody> </table>	Name of the Project owner	Income tax rate %	Peethambra Granites Pvt. Ltd	32.45% (FY 2011-12)	Atul Sharma (WTG4 & 5)	32.45% (FY 2011-12)	Neha Sharma (WTG2 & 3)	32.45% (FY 2011-12)
Name of the Project owner	Income tax rate %								
Peethambra Granites Pvt. Ltd	32.45% (FY 2011-12)								
Atul Sharma (WTG4 & 5)	32.45% (FY 2011-12)								
Neha Sharma (WTG2 & 3)	32.45% (FY 2011-12)								
Source of the value:	Since the decision for all the subprojects in the bundle has been taken in the same financial year FY 2011-12 the income tax rate has been taken from the publicly available data (web-link) http://indiabudget.nic.in/ub2011-12/fb/bill91.pdf								
Consistency of the value:	Same in Web-hosted and final version of PDD								
Validity of input value at the time of investment decision making:	The value has been considered from the Income Tax Act of 2011 and India budget bill for 2011-2012 which was available at the time of decision making.								
Justification by the validation team according to §113 of VVM: (cross checking and comparison as applicable)	This rate pertains to Financial year 2011-2012 (year in which decision was taken) has been cross verified from the below reference and found to be correct. http://www.taap.co.in/index.php?option=com_content&view=article&id=86:budget-2011-new-income-tax-rates-fy-2011-12-ay-2012-13&catid=41:income-tax&Itemid=80								

Parameter:	Service Tax (FY 2011-12)								
Value applied for the IRR calculation:	<table border="1"> <thead> <tr> <th>Name of the Project owner</th><th>Income tax rate %</th></tr> </thead> <tbody> <tr> <td>Peethambra Granites Pvt. Ltd</td><td>32.45% (FY 2011-12)</td></tr> <tr> <td>Atul Sharma (WTG4 & 5)</td><td>32.45% (FY 2011-12)</td></tr> <tr> <td>Neha Sharma (WTG2 & 3)</td><td>32.45% (FY 2011-12)</td></tr> </tbody> </table>	Name of the Project owner	Income tax rate %	Peethambra Granites Pvt. Ltd	32.45% (FY 2011-12)	Atul Sharma (WTG4 & 5)	32.45% (FY 2011-12)	Neha Sharma (WTG2 & 3)	32.45% (FY 2011-12)
Name of the Project owner	Income tax rate %								
Peethambra Granites Pvt. Ltd	32.45% (FY 2011-12)								
Atul Sharma (WTG4 & 5)	32.45% (FY 2011-12)								
Neha Sharma (WTG2 & 3)	32.45% (FY 2011-12)								
Source of the value:	Since the decision for all the subprojects in the bundle has been taken in the same financial year FY 2011-12 the income tax rate has been taken from the publicly available data (web-link) http://indiabudget.nic.in/ub2011-12/fb/bill2.pdf								
Consistency of the value:	Same in Web-hosted and final version of PDD								
Validity of input value at the time of investment decision making:	The value has been considered from the Union Budget of 2011-2012 which was available at the time of decision making.								

Justification by the validation team according to §113 of VVM: (cross checking and comparison as applicable)	This rate pertains to Financial year 2011-2012 (year in which decision was taken). http://indiabudget.nic.in/ub2011-12/fb/bill2.pdf
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Parameter:	Book Depreciation
Value applied for the IRR calculation:	1.83 INR million (for all sub projects in the bundle) Book depreciation has been calculated as per the Straight line method and is depreciated the 90% of the asset value over the life of the plant 20 years.
Source of the value:	As per companies act Publicly available data (web link) http://www.caalley.com/gn/gn_dep.html
Consistency of the value:	Yes
Validity of input value at the time of investment decision making:	Yes
Justification by the validation team according to §113 of VVM: (cross checking and comparison as applicable)	The book depreciation considered is based on the company's act ^{B06/} in the SLM method. Validation team checked book depreciation provided in the companies act and found it to be correct. Hence, the input parameter is valid, correct and appropriate.

Parameter:	I.T. Depreciation (FY 2011-2012)
Value applied for the IRR calculation:	40%
Source of the value:	Publicly available data (web-link)
Consistency of the value:	Same in Web-hosted and final version of PDD
Validity of input value at the time of investment decision making:	The value for each sub bundle in the project activity has been considered from the Income Tax Rules of 2011 which was available at the time of decision making.
Justification by the validation team according to §113 of VVM: (cross checking and comparison as applicable)	This rate is based on Income Tax Rules. There has been no change in the depreciation rate since the time of decision making. Same has been cross checked with following link http://law.incometaxindia.gov.in/DIT/File_opener.aspx?page=ITRU&schT=rul&csId=4a23cee1-1818-45d6-ab19-f155e08ed789&rNo=&sch=&title=Taxmann%20-%20Direct%20Tax%20Laws

Parameter:	Benchmark(Return on Equity)
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Value applied for the IRR calculation:	<table><tr><th>Name of the Project owner</th><th>Benchmark</th></tr><tr><td>Peethambra Granites Pvt. Ltd</td><td>17.06%</td></tr><tr><td>Neha Sharma (WTG 2&3)</td><td>17%</td></tr><tr><td>Atul Sharma (WTG 4)</td><td>17%</td></tr><tr><td>Atul Sharma (WTG 5)</td><td>17%</td></tr></table>	Name of the Project owner	Benchmark	Peethambra Granites Pvt. Ltd	17.06%	Neha Sharma (WTG 2&3)	17%	Atul Sharma (WTG 4)	17%	Atul Sharma (WTG 5)	17%
	Name of the Project owner	Benchmark									
	Peethambra Granites Pvt. Ltd	17.06%									
	Neha Sharma (WTG 2&3)	17%									
	Atul Sharma (WTG 4)	17%									
Atul Sharma (WTG 5)	17%										
Source of the value:	Calculated through the Capital Asset Pricing Model by considering the BSE-200 track record of similar type of listed projects from the year 2006 to 2011/P13/.										
Consistency of the value:	Same as in the webhosted PDD and final PDD.										
Validity of input value at the time of investment decision making:	Benchmark has been calculated through the Capital Asset Pricing Model) by considering the BSE-200 track record of similar type of listed projects from the year 2006 to 2011. This data was available at the time of decision making										
Justification by the validation team according to §113 of VVM: (cross checking and comparison as applicable)	The benchmark has been cross checked with the TNERC tariff order dated 2009-03-20/P14-05/ which is 19.85% more than the ROE considered in the project case.										
	DOE has verified the benchmark calculation sheet provided in the IRR sheet/P13/ and found that the CAPM model applied for the calculation is in line with the accounting standards and the data considered for calculation has been chosen from the publicly available sources and is standard in the market.										
	DOE has also cross verified the calculated ROE with the ROE arrived with default ROE provided in the guidelines for the assessment of investment analysis. EB 62 Annex 05										
	Return on equity arrived through the default Value (11.75) + inflation rate (5.9%) ¹⁵ which comes as 18.34%. is more than the ROE considered for the project case.										
	Hence the Benchmark considered for all the individual subprojects in the bundle are deemed appropriate.										
	Hence Validation team concluded that the benchmark considered is conservative and appropriate for the project activity										

Financial calculation and conclusion

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 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.

Since the input parameters have been sourced either from the offers, purchase orders, 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.

The result of the analysis is as follows—

¹⁵ <http://rbi.org.in/scripts/SPF18.aspx>

Sr. No.	WEG Owner	Equity IRR without CDM	Benchmark (Equity IRR)
1	Peethambra Granites Pvt. Ltd – WEG1	7.65%	17.06%
2	Neha Sharma – WEG2 & WEG3	7.45%	17.00%
3	Atul Sharma – WEG4	7.98%	17.00%
4	Atul Sharma – WEG5	7.45%	17.00%

The investment analysis for this project activity has been done as per the “Guidelines on the demonstration of additionality of small-scale project activities”, Version 09.0./B05-06/. The financial analysis is in accordance with the “Guidelines on the assessment of investment analysis” version 05/B05-12/. All input parameters used in the IRR calculation were valid at the time of investment decision making. The validation team confirms that the equity IRR (post tax) without any CDM revenue in each PP case, works out below benchmark. It is clearly demonstrated that the proposed project activity without CER revenues is financially unattractive. The validation took cognizance of § 97, 112 and 113 of VVM (version 01.2).

Nevertheless CAR-03 and CAR-04 were raised and successfully closed during the course of validation

3.5.3.2 Sensitivity analysis

According to the “Guidelines on the assessment of investment analysis” (version 05), only variables including the initial investment cost, that constitute more than 20% of either total project costs or total project revenues should be subjected to reasonable variation and the results of this variation should be presented in the PDD and be reproducible in the associated spread sheets. The validation team thus confirms that the following parameters meet the requirement and these parameters have been subjected to variations in the range of +10% and -10% in the PDD.

- Project costs,
- Annual O&M cost,
- Electricity tariff and
- PLF

Equity IRR	Peethambra Granites Pvt. Ltd – WEG1			
Input Values	-10%	0%	10%	Breaching Value
PLF	3.95%	7.65%	11.87%	21.70%
O&M	8.40%	7.65%	6.97%	-144.59%
Project Cost	11.29%	7.65%	4.97%	-21.59%
Tariff Rate	3.95%	7.65%	11.87%	21.70%

Equity IRR	Neha Sharma – WEG2 & WEG3			
Input Values	-10%	0%	10%	Breaching Value
PLF	3.72%	7.45%	12.03%	19.64%
O&M	8.20%	7.45%	6.69%	-134.46%
Project Cost	11.43%	7.45%	4.74%	-19.82%
Tariff Rate	3.72%	7.45%	12.03%	19.64%

Equity IRR	Atul Sharma – WEG4			
Input Values	-10%	0%	10%	Breaching Values
PLF	-10%	Normal	10%	18.21%
O&M	4.07%	7.98%	12.68%	-126.19%
Project Cost	8.74%	7.98%	7.22%	-18.60%
Tariff Rate	12.08%	7.98%	5.09%	18.21%

Equity IRR	Atul Sharma – WEG5			
Input Values	-10%	0%	10%	Breaching Value
PLF	3.72%	7.45%	12.03%	19.63%
O&M	8.20%	7.45%	6.69%	-134.46%
Project Cost	11.43%	7.45%	4.74%	-19.82%

Tariff Rate	1.03%	7.45%	12.03%	19.63%
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The validation took cognizance of § 111 (e) of VVM (version 01.2). The table below summaries the situation where the IRR would reach the benchmark:

Input value	Variation	Validation team's opinion
Project cost	M/s.Peethambra Granites Pvt. Ltd If the project cost decrease by 21.59 % the IRR of M/s Peethambra granites Pvt. Ltd reaches the benchmark	For each sub project in the bundle the actual project cost incurred is INR 44.91 INR Million per 0.8 MW WTG which is 97.63 % of the project cost (46 INR Million) considered in the calculation of financial indicator. Since purchase orders have already been placed and the payment has already been made, the cost, therefore, represents firm cost and as such the question of any further reduction in the cost is hypothetical.
	M/s.Neha Sharma (WTG 2 &3) If the project cost decrease by 19.82 % the IRR of M/s Neha Sharma reaches the benchmark	
	M/s. Atul Sharma (WTG 4) If the project cost decrease by 18.60 % the IRR of M/s Atul Sharma reaches the benchmark	
	M/s. Atul Sharma (WTG 5) If the project cost decrease by 19.82 % the IRR of M/s Atul Sharma reaches the benchmark	
O&M Cost	M/s.Peethambra Granites Pvt. Ltd If the O&M cost decrease by 144.59 % the IRR of M/s Peethambra granites Pvt. Ltd reaches the benchmark	For each sub project in the bundle it is observed that O&M cost is not a critical factor at all in as much as only a 144%,134%,126% and 134% reduction in O&M cost would render the project non-additional. Such reduction in O&M cost,. Moreover, the O&M cost is also confirmed by the WEG supplier and tariff order by TANGEDCO order submitted by project developers, therefore, represents firm cost and as such the question of any reduction in the cost is hypothetical
	M/s.Neha Sharma (WTG 2 &3) If the O&M cost decrease by 134.46 % the IRR of M/s Neha Sharma reaches the benchmark	
	M/s. Atul Sharma (WTG 4) If the O&M cost decrease by 126.19 % the IRR of M/s Atul Sharma reaches the benchmark	
	M/s. Atul Sharma (WTG 5) If the O&M cost decrease by 134.46 % the IRR of M/s Atul Sharma reaches the benchmark	
Electricity tariff	M/s.Peethambra Granites Pvt. Ltd If the tariff increases by 21.70 % the IRR of M/s Peethambra granites Pvt. Ltd reaches the benchmark	For each subproject in the bundle the considered tariff is as per the TNERC tariff order (3.39/kWh).at the time decision making. However later, the tariff is signed with a state utility for twenty years for Pooled cost of INR 2.37 per kWh/P11/ which is fixed for twenty years. Thus, increase in tariff is only a hypothetical situation
	M/s.Neha Sharma (WTG 2 &3) If the tariff increases by 19.64 % the IRR of M/s Neha Sharma reaches the benchmark	

Input value	Variation	Validation team's opinion
	M/s. Atul Sharma (WTG 4) If the tariff increases by 18.21% the IRR of M/s Atul Sharma reaches the benchmark	
	M/s. Atul Sharma (WTG 5) If the tariff increases by 19.63 % the IRR of M/s Atul Sharma reaches the benchmark	
PLF	M/s.Peethambra Granites Pvt. Ltd If the PLF increases by 21.70 % the IRR of M/s Peethambra granites Pvt. Ltd reaches the benchmark	The PLF has been reported as per the Third Party PLF assessment report made by True Wind International Certification/P14/ based on long term data and hence a PLF fluctuation of more than 10% is unlikely to happen.
	M/s.Neha Sharma (WTG 2 &3) If the PLF increases by 19.64 % the IRR of M/s Neha Sharma reaches the benchmark	
	M/s. Atul Sharma (WTG 4) If the PLF increases by 18.21 cost decrease by 18.21 % the IRR of M/s Atul Sharma reaches the benchmark	
	M/s. Atul Sharma (WTG 5) If the PLF increases by 19.63 % the IRR of M/s Atul Sharma reaches the benchmark	

The validation team thus confirms that the sensitivity analysis is in accordance with the “Guidelines on the demonstration of additionality of small-scale project activities”, Version 09.0 and “Guidelines on the assessment of investment analysis” version 05. All input parameters used for sensitive analysis constitute more than 20% of either total project costs or total project revenues. The justifications provided by the PP with the variations of these parameters are been analysed, clarified and accepted by the DOE.

3.5.4 Barrier analysis

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

3.5.5 Common practice analysis

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

3.5.6 Conclusion of assessment of Additionality

The CDM was seriously considered by the PP. The evidences were transparently reviewed by the validation team and considered to be effective. Investment analysis clearly demonstrates that the proposed project activity is financially unattractive. Therefore, the proposed project activity is not business-as-usual, i.e. the proposed project activity is additional.

3.6 Monitoring

The monitoring plan is included in Section B.7 of the PDD /P02/ based on the approved monitoring methodology AMS I.D/Version 17 /B02/ titled “Grid connected renewable electricity generation” and is correctly applied to the CDM project activity. This methodology /B02/ stipulates that monitoring shall consist of

monitoring of Quantity of net electricity supplied to the grid in year y. This confirms the requirement of § 122 of VVM ver 01.2 /B01/.

3.6.1 Parameters determined ex-ante

The project adopts the ex-ante calculation of emission factor of the grid. The OM and BM are calculated as fixed factors for the first renewable crediting period by choosing data vintage based on ex-ante data published by CEA /B06-d/.

The parameters for determining the GHG emissions reductions have been clearly demonstrated in section B.6.2. of the PDD /P02/. The combined margin emission factor for the Southern grid of India has been calculated to be 0.8971 tCO₂ / MWh.

The validation team has verified the value used against the sources and conclude that all relevant parameters to calculate the GHG emissions reductions of the project have been sufficiently considered and the value of the parameters are real, measureable and conservative.

The validation team confirms that all relevant parameters have been sufficiently considered and the values of the parameters are real, measureable and conservative.

3.6.2 Parameters monitored ex-post

According to the approved methodology AMS I.D “Grid connected renewable electricity generation” version 17, the following parameters will be monitored:

Sl. No.	Parameters	Description
1	EG _{BL,y}	Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year y

In summary, the validation team is convinced of compliance of the monitoring plan with the requirements of the monitoring methodology of AMS ID (version 17). During the on-site assessment, the validation team interviewed the PP that the monitoring arrangements described in the monitoring plan are feasible within the project design. The emission reductions resulting from the proposed CDM project activity can be reported ex post and verified.

3.6.3 Management system and quality assurance

Steps undertaken to assess the monitoring plan

Compliance of the monitoring plan with the approved methodology

According to the PDD /P02/, the project’s monitoring plan outlines the followings:-

- Monitoring parameters: the monitoring parameter of the project includes quantity of net electricity supplied to the grid in year y (= Total export – Total import) by the project activity as described in section B.7.1 of the PDD /P02/.
- Operational and management structure: management structure is illustrated for the CDM project monitoring;
- Monitoring Equipment and Relative Location: metering equipment to monitor export and import of electricity (to calculate Quantity of net electricity supplied to the grid in year y by the project activity)

Quality Control and Data Archive: arrangement of meter calibration; archiving of the data collected during monitoring; and collection of monitored data and report preparation.

The Project is operated and managed by Enercon India Limited (EIL). Enercon India Limited (EIL) will have a designated Site-In-Charge (O&M) on site, who will be responsible for monitoring the electricity exported from the project activity. Export and import electricity is measured by calibrated energy meters. The net electricity supplied to the grid is calculated as difference of export and import electricity which is recorded in the monthly Joint Meter Readings (JMRs). The electricity export and import values are calculated as the product of difference of current and previous TNEB meter readings multiplied with the multiplying factor of the meter. The approach adopted by the PP is conservative and hence accepted.

Quantity of net electricity supplied to the grid in year y is monitored as per the requirement of § 22 bullet (5) of the monitoring methodology /B02/ applied for the project activity and hence confirms compliance of § 123(a) of VVM ver 01.2 /B01/.

Implementation of the plan

According to document review in the PDD and on-site interviews with the representatives of the PP /I-iii/, it is confirmed that detailed monitoring procedures, monitoring structure, management team, monitoring items and functions are clearly demonstrated in the PDD which will enable subsequent verification of the project's emission reductions in line with the applied methodology. The validation team confirms that as per § 24 of EB 23, the specific uncertainty levels, methods and associated accuracy level of measurement instruments and calibration procedures used for various parameters and variables are identified in the PDD /P02/, along with detailed quality assurance and quality control procedures. The accuracy class of 0.5s and the method and frequency of calibration of the electricity meters confirm to the national standards /B06/. All the monitored data will be archived until 2 years after the crediting period to facilitate cross-checking during the crediting period.

Hence the validation team considers that the PP is capable to implement the monitoring plan and hence confirms compliance of § 123(b) of VVM ver 01.2 /B01/.

Nevertheless CL-07 and CAR-10 were raised and successfully closed during the course of validation

3.7 Sustainable Development

The host party's DNA, Ministry of Environment and Forests of India has confirmed the contribution of the project to the sustainable development in India according to the Letter of Approval for the Project /P03/, which was checked by the validation team to be valid.

The project activity is in compliance with all current applicable legislations. As the project activity does not lead to generation of liquid or gaseous effluents and will partly displace fossil fuel based electricity generation, there are only benefits derived out of the project and no adverse effects are envisaged. Moreover, the location of the project activity is in remote and economically backward region and hence largely contributes to the social wellbeing of the region.

In conclusion, the Validation Team is of the opinion that the project activity is in full compliance with all applicable requirements for the CDM by leading to emission reductions additional to what would have otherwise occurred, providing for reliable and measurable emission reductions with sustainable development in India through improvement of environmental condition, reduction of air pollutants.

3.8 Environmental Impacts

The project activity is expected to have positive impacts and no significant adverse environmental impact due to project activity is foreseen since the proposed project is a renewable energy (wind energy) project with no project emissions. There is no mandatory legal requirement for carrying out EIA for wind power projects, which was verified by means of EIA notification dated 14 September 2006, of MoEF /B06-c/. However, the validation team has verified all the clearances like statutory clearances; commissioning certificates and Energy Purchase Agreements for all the 5WEGs. The validation team confirms that all the clearances obtained are in accordance with the procedures required by the host party.

3.9 Local Stakeholder Consultation

A Local Stakeholders meeting was carried out by the project proponent on 2012-01-12 which was prior to the publication of PDD on the UNFCCC website 2012-04-19 to 2012-05-18. The validation team noted that all the relevant stakeholders were identified are in line with the definition of stakeholders as per latest version of CDM Glossary of terms /B05/. The PP has utilized appropriate media to invite these stakeholders, invited them by sending personnel invitation prior to 10 days of meeting /P15/. Stakeholders were directly asked to comment on the project through in an open meeting conducted on 2010-01-12 among local stakeholders. A summary of the comments received and a note on how due account was taken of the concerns raised in the above public consultation are included in section E of the PDD. This also states that appropriate immediate responses were provided to them. From the background of the stakeholders, it was reasonably believed that the general attitude

of the local residents, who were likely to be affected by the project, was positive towards the project and same has been verified from the onsite visit interviews with the local stakeholders. Validation team reviewed all relevant information of local stakeholder consultation meeting /P15/ and confirms that the LSC meeting meets to the requirement of § 128 of VVM, ver 01.2 /B01/. The validation team confirms that the process for conducting the local stakeholders meeting is adequate and credible.

During the onsite visit, representatives from the local community were interviewed. In general, the interviewees showed adequate understanding of the nature of the project and felt that there would be no adverse impacts on the environment arising from the project activity. The interviewees also considered that the local economy would be benefitted from the project activity.

The validation team confirms that the process for conducting the local stakeholders meeting is adequate and credible.

Nevertheless CAR-05 and CL-08 was raised and successfully closed during the course of validation

3.10 Comments by Parties, Stakeholders and NGOs

The PDD version 01 of “2012-03-05” was made publicly available on (<http://cdm.unfccc.int/Projects/Validation/DB/JHQYQFG1WZ1YOOBMYNN0CTTMVD120F/view.html>) from “2012-04-19” to “2012-05-18” in order to invite comments from public stakeholders. No public comments have been received during that period.

Appendix A

CDM Validation Protocol

Bundled Wind Power Project by Peethambra Granites Pvt Ltd (EKIESL-CDM. November -11-01)

Report No. 01 997 9105069632

Table 1: Validation requirements

(based on § 37 of the CDM Modalities and Procedures and on CDM Validation and Verification Manual version 1.2)

Checklist question	Ref.	MoV16	Findings, comments, references, data sources	Draft conclusion	Final conclusion
1. Approval(VVM V E.1)					
1.1 Have Letters of Approval have been provided from all involved Parties?	/unfccc/ /P03/ /P02/ /B06/	DR,I	As per the webhosted PDD this is a unilateral project with India as a host country. The Letter of Approval from the host party has not been submitted. Hence CAR-01 is raised.	CAR-01	OK
1.2 Are all Parties, who issued the LoA, Parties to the Kyoto Protocol and is this stated in the LoA?	/unfccc/ /P03/ /P02/ /B06/	DR,I	The Letter of Approval from the host party has not been submitted. Hence CAR-01 is raised	CAR-01	OK
1.3 Is every LoA from the Parties involved issued by an organisation listed as Designated National Authority (DNA) on the UNFCCC web site? <i>Indicate the official name of the DNA and contact person name.</i>	/unfccc/ /P03/	DR,I	The Letter of Approval from the host party has not been submitted. Hence CAR-01 is raised.	CAR-01	OK
1.4 Is the participation in the CDM project activity voluntary and is this stated in all LoAs? <i>Indicate the source of proof.</i>	/ unfccc/ /P03/ /P02/ /B01/	DR,I	The Letter of Approval from the host party has not been submitted. Hence CAR-01 is raised.	CAR-01	OK
1.5 Is the LoA unconditional with respect to 1.2 to 1.4?	/B01/ /P03/	DR,I	The Letter of Approval from the host party has not been submitted. Hence CAR-01 is raised.	CAR-01	OK
1.6 Is the title of the CDM project activity as given in the PDD identical with the title given in all LoAs and Modalities of Communication? <i>Provide Yes/No answer, and include details into Tables 2, 3 and 4 accordingly.</i>	/ unfccc/ /P03/ /P02/	DR,I	The Letter of Approval from the host party has not been submitted. Hence CAR-01 is raised.	CAR-01	OK

¹⁶ MoV = Means of Verification, DR = Document Review, I = Interview, www = internet search.

1.7 If any of provided LoAs contains additional specification of the CDM project activity (PDD version number, validation report version number, amount of ER, etc.) are those specifications valid and consistent with other documents?	/P03/	DR,I	The Letter of Approval from the host party has not been submitted. Hence CAR-01 is raised.	CAR-01	OK
1.8 Does the project activity involve any public funding from Annex I Parties? If yes, has Annex I Party provided a written confirmation that the use of such funding does not lead to the diversion of the official development assistance.	/P02/ /P05/	DR,I	No, Project activity does not getting any public funding from Annex 1 Party. Moreover as per the PDD no Annex 1 parties are participating in the project activity	OK	OK
1.9 Is the MOC provided in line with the latest template available from the UNFCCC	/P04/	DR,I	MOC is not provided to the DOE. Hence CAR-01 is raised	CAR-01	OK
1.10 Is MOC correctly filled and signed by authorized signatories identifying the focal point?	/P04/	DR,I	MOC is not provided to the DOE. Hence CAR-01 is raised	CAR-01	OK
1.11 Is the written confirmation obtained by the PP's stating the authorization, specimen signatures and personal details are valid and accurate?	/P04/	DR,I	MOC is not provided to the DOE. Hence CAR-01 is raised	CAR-01	OK
2. Participation (VVM V E.2)					
2.1 Are the Parties and project participants (PP) listed in the section A.3 of the PDD correctly and is this information consistent with the contact details provided in Annex 1 of the PDD?	/P02/	DR	Yes, The parties and project participants (PP) listed in the section A.3 of the PDD and is consistent with the contact details provided in Annex 1 of the PDD.	OK	OK
2.2 Has every Party involved approved the participation of each corresponding PP, either by means of a LoA or by a separate written document? <i>Indicate Yes / No answer and describe all inconsistencies in the Tables 2, 3 and 4 accordingly.</i>	/unfccc/ /P03/	DR,I	As explained in point 1 India is the only host party involved in the project activity. Letter of approval from the host part approving the PP is yet to receive from the project participant. CAR-01	CAR-01	OK

2.3 Do all participating Parties fulfil the participation requirements as follows: a) Party has ratified the Kyoto Protocol b) Party has designated a Designated National Authority c) The assigned amount has been determined	/unfccc/ /P03/	DR,I	Yes, Host party has ratified the Kyoto Protocol. It has designated Ministry of Environment and Forests (MoEF) as a Designated National Authority. It is ratified as a Non Annex 1 party.	OK	OK
2.4 Do the letters of approval meet the following requirements? a) LoA confirms that Party has ratified the Kyoto Protocol b) LoA confirms that participation is voluntary c) The LoA confirms that the project contributes to the sustainable development of the host country? d) The LoA refers to the precise project activity title in the PDD	/unfccc/ /P02/	DR,I	LoA is yet to be received by Project proponent-CAR-01	CAR-01	OK
3. Project Design Document (VVM V E.3)					
3.1 Is the PDD presented for validation based on the latest template available at the UNFCCC website?	/P01/ /P02/ /B05/	DR,I	Yes, PP has presented the PDD by using the latest CDM-SSC-PDD form Version 03. This is valid at the time of webhosting the PDD for GSC.	OK	OK
3.2 Has the PDD been established in accordance with the CDM requirements for completing PDDs issued by the CDM EB?	/P02/ /B05/	DR,I	Yes, PDD has been established in accordance with the CDM requirements for completing the Small scale CDM PDD.	OK	OK
4. Project Description (VVM V E.4)					
4.1 Does the PDD contain a description, which provides the reader with a clear understanding of the precise nature of the project activity and the technical aspects of its implementation? 4.1b) Is the description (incl. any process flow-charts, Spread sheets etc.) complete, coherent and consistent with the provisions of the monitoring plan? 4.1c) Is the project's location clearly defined?	/P02/ /B05/	DR,I	Yes, PP has clearly demonstrated the nature and technology of the proposed project activity in section A.2 as well as A.4.2 sections of the PDD. Project location is clearly mentioned in the PDD and unique identification of project location been provide in the PDD. However few mistakes were identified in the project description and clarification requests have been raised to correct them. Hence CL-	CL-01 CL-02 CL-03 CL-04 CL-05 CL-10 CL-11	OK

			01, CL-02, CL-03, CL-04, CL-05, CL-10 & CL-11 are raised.		
4.2 In the case of greenfield project activity, is the project design described sufficiently by means of specifications, drawings and manuals?	/P02/	DR,I	<p>Yes this is the green field project activity. PP has obtained all the statutory clearances from the concerned authorities and sufficiently justified the project design, specifications and implementation schedule.</p> <p>PP has submitted all the documents for the verification; validation team has reviewed all the documents and found authentic.</p>	OK	OK
<p>4.3 Does the project activity reflects current good practices, uses state of the art technology or would the technology result in a significantly better performance, than any commonly used technologies in the host country?</p> <p><i>Provide the description of how validation has been carried out and what comparisons have been made.</i></p>	/P02/	DR,I	<p>Referred to the power generation practices in the host country the proposed project activity reflects good practices uses renewable energy technology results in a significant better performance rather than other fossil fuel based power generation technologies.</p> <p>However as per CDM-SSC-PDD filling guidelines PP needs to describe how the proposed technology environmentally safe and sound technology and knowhow is being applied by the project activity in section A.4 of the PDD</p> <p>CL-06 is raised in this context</p>	CL-06	OK
4.4 In cases where the project activity involves the alteration of an existing installation or process, does the PDD provide a clear description of the differences between the project and the pre-project scenario?	/P02/ /B02/	DR,I	This is the green filed project activity and does not involve the alteration of an existing installation or process.	OK	OK
<p>4.5 What type is the project?</p> <p>i) Project in existing facility or utilizing existing equipment(s)</p> <p>ii) Project is either a large scale project or a non-bundled small scale project with emission reductions</p>	/P02/	DR,I,	This is a bundled small scale project, with each project in the bundle with emission reductions not exceeding the 15,000 tCO ₂ per year.	OK	OK

<p>exceeding 15 000 tCO₂e per year. In this case, a site visit must be performed.</p> <p>iii) Project is a bundled small scale project, with each project in the bundle with emission reductions not exceeding 15,000 tCO₂e per year. In such case the number of physical site visits may be based on sampling, if the sampling size is appropriately justified through statistical analysis.</p> <p>iv) The project is an individual small scale project activity with emission reductions not exceeding 15 000 tCO₂e per year. In this case, DOE may not conduct a physical site visit as appropriate.</p> <p>v) Greenfield project</p>			Physical site visit has been conducted for all the individual units in the bundle.		
<p>4.6 How was the design of the project assessed?</p> <p>i) Physical site inspection</p> <p>ii) Reviewing available designs and feasibility studies</p>	/P02/	DR,I,	<p>Design of the project has been assessed with the physical site visit and review of project implementation clearances such as Purchase order, commissioning certificate and Energy Purchase agreement etc.</p> <p>However CAR-03 is raised to submit the Third party report on PLF</p>	CAR-03	OK
4.7 Does the project qualify as a small scale CDM project activity as defined in paragraph 6(c) of decision 17/CP.7 on the modalities and procedures for the CDM?	/P02/ /B05/ /B06/	DR,I	Yes, the installed capacity of the project capacity is 4 MW less than the 15 MW, qualifying limit of small scale CDM project activity.	OK	OK
4.8 Is the small scale project activity a debundled component of a larger project activity in accordance with the rules defined in appendix C of the simplified modalities and procedures for small-scale CDM project activities?	/P02/	DR,I	<p>Yes, PP has demonstrated the occurrence of debundling as per the "GUIDELINES ON ASSESSMENT OF DEBUNDLING FOR SSC PROJECT ACTIVITIES,"(Version 3) in section A.4.5 of the PDD.</p> <p>Validation team also cross checked with the DNA and UNFCCC and found there is no registered or on going CDM projects with the same project participant in the project region.</p>	OK	OK

5. Baseline and Monitoring methodology(VVM V E.5)					
5.1 General requirements					
5.1.1 Is the methodology used in the project activity approved by the CDM EB and is the selected version still valid?	/unfccc/ /P02/ /B02/	DR	Yes, PP has used the Approved Small Scale CDM methodology AMS I.D version 17. which is available and valid at the time of validation.	OK	OK
5.2 Applicability of the selected methodology					
5.2.1 Does the project activity qualify under the criteria for small-scale CDM project activities set out in § 6 (c) of decision 17/CP.7 and Annex II of the Modalities and Procedures for the CDM?			Yes as explained in point 4.7 project activity qualify under the criteria for small-scale CDM project activities set out in the § 6 (c) of decision 17/CP.7 and Annex II of the Modalities and Procedures for the CDM		
5.2.1a) If the project applies a small-scale methodology, does the project also comply with the general guidelines to SSC CDM methodologies, which provides guidelines on equipment capacity, equipment performance/lifetime, baseline identification for type-II/III Greenfield project activities, sampling and other monitoring-related issues?	/P02/ /B05-4/	DR,I	Yes this is a small scale project activity with capacity 4 MW comes under the Type I category of the small scale methodology AMS I.D version 17 complies with the general guidelines to SSC CDM methodologies.	OK	OK
5.2.1.1 If yes, does the PDD extensively demonstrates and confirms that the small-scale project activity is not a debundled component of a larger project?	/P1/ /B05-08/ /P05/	DR,I	Yes in section A.4.5 of the PDD PP has demonstrated the debundling of the proposed small scale project activity and confirms that the small scale project activity is not a debundled component of a large project activity.	OK	OK
5.2.2 Are all applicability conditions of the selected baseline and monitoring methodology and all tools involved satisfied by the project activity?	/P02/ /B02/ /B03/ /B05/	DR,I	Yes, Project activity satisfies all applicability conditions of the selected small scale methodology and used all the tolls suggested by the chosen methodology. PP has also justified the choice of project category under the selected methodology and its applicability in section B.2 of the PDD.	OK	OK

5.2.3 Is the selection of the applied baseline and monitoring methodology justified?	/P02/ /B02/	DR	Yes selection and choice of applied baseline and monitoring methodology is been justified in section B.2 of the PDD	OK	OK
5.2.4 Is the selected methodology correctly quoted in all related documents?	/P02/ /B02/	DR	Yes it is correctly quoted throughout the PDD and related documents	OK	OK
5.2.5 Does the PDD sufficiently describe all the GHG emission sources or sinks occurring as a result of project activity, which have not been accounted for under the selected methodology and are expected to contribute more than 1% of the overall expected average annual emission reductions?	/P02/ /B02/	DR	Yes, in section B.3 PDD described all the GHG emission sources and sinks occurring as a result of project activity. PP considered CO ₂ as major emission source in the baseline and excluded the CH ₄ and N ₂ O for the simplification.	OK	OK
5.3 Project boundary					
5.3.1 Does the PDD correctly describe the project boundary? Are they clearly defined and in accordance with the methodology?	/P02/ /B02/	DR	Yes, PP has clearly defined the project boundary as per the chosen methodology in section B.3 of the PDD.	OK	OK
5.3.2 Does the PDD correctly indicate and describe the emission sources and sinks of GHG gases that are included in the project boundary?	/P01/ /B02/	DR	Yes, in section B.3 PDD described all the GHG emission sources and sinks occurring as a result of project activity. PP considered CO ₂ as major emission source in the baseline and excluded the CH ₄ and N ₂ O for the simplification.	OK	OK
5.3.3 In cases where the methodology allows project participants to choose whether a source or gas is to be included in the project boundary, is the choice explained and justified by PPs?	/P02/ /B02/	DR	Yes, in section B.3 PDD described all the GHG emission sources and sinks occurring as a result of project activity. PP considered CO ₂ as major emission source in the baseline and excluded the CH ₄ and N ₂ O for the simplification.	OK	OK
5.3.4 Does the project involve other emissions sources not foreseen by the methodologies that may question the applicability of the methodology? Do these sources contribute with more than 1% of the estimated emission reductions of the project?	/P02/ /B02/	DR	No, Project activity involves reduction of CO ₂ in the baseline and not involved in any other emissions not foreseen by the methodology.	OK	OK
5.4 Baseline identification					

5.4.1 Has the procedure contained in the selected methodology to identify the most reasonable baseline scenario been applied correctly and documented in the PDD?	/P02/ /B02/	DR	The baseline for the project activity has been provided by the methodology AMS I.D. As per the chosen methodology baseline scenario is the equivalent amount of electricity would have otherwise been generated from the grid connected power plants. PP has applied the same baseline to the proposed project activity which is plausible and reasonable in the host country.	OK	OK
5.4.1.1 Is the identified baseline scenario plausible?	/P02/ /B02/	DR	Yes, The identified baseline scenario is most plausible in the project region. In the absence of project activity same amount of electricity would have been generated from the grid connected power plants. However CL-05 is raised in this context	CL-05	OK
5.4.1.2 Are all assumptions stated in a transparent and conservative manner?	/P02/	DR	As per the SSC- CDM-PDD filling guidelines section B.4 shall explain and justify the key assumptions and rationale. Illustrate in a transparent manner all data used to determine the baseline emissions (variables, parameters, data sources etc.) preferably in a tabular form. CAR-06 is raised in this context	CAR-06	OK
5.4.2 Does the selected methodology require the use of tools and does PDD reflects that correctly?	/P02/ /B02/ /B03/	DR	Yes, As per the methodology PP should refer the tool to calculate the emission factor for electricity system. Same tool has been applied in the calculation of emission factor.	OK	OK
5.4.2.1 Were all the tools applied correctly?	/P02/ /B03/ /B05/	DR	Yes all required tools were applied correctly in the PDD.	OK	OK
5.4.3 In case the methodology requires several alternative scenarios to be considered in the identification of the most reasonable baseline scenario, have all scenarios been considered and have no reasonable alternative scenario been	/P02/ /B02/	DR	As per the paragraph 10 of the approved methodology AMS I.D, Version 17, the baseline scenario for new installation facility is described as: <i>“the electricity delivered to the grid by the project activity that otherwise</i>	OK	OK

excluded?			<p>would have been generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid”</p> <p>No other alternative has been suggested by the methodology</p>		
5.4.3.1 Has the choice of the baseline scenario been done using conservative assumptions?	/P02/ /B02/	DR	PP has applied the fixed baseline scenario which is referred by the selected baseline methodology.	OK	OK
5.4.4 Is the identified baseline scenario reasonable according to the assumptions, calculations and rationales used in the PDD and other reference sources?	/P02/ /B02/	DR	Same as above	OK	OK
5.4.6 Does the PDD describe how the national and sectoral policies, macro-economic trends and political aspirations relevant to the baseline scenario have been identified and considered in the PDD?	/P02/ /B05-12/	DR	PP has described the national and sectoral policies relevant to the baseline scenarios per EB 22 Annex 3 which is found not relevant to the project case.	OK	OK
5.4.7 Does the PDD provide 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 project activity?	/P02/ /B02/	DR	As per the methodology AMS I.D baseline 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 into the grid” which is verifiable and in compliance with the Indian electricity act.	OK	OK
5.5 Algorithm and/or formulae used to determine emission reductions					

<p>5.5.1 Are all calculations applied and documented according to the selected methodology and in a complete and transparent manner to calculate emission reductions from the project activity?</p> <p>5.5.1b) Are correct units applied and consistency between parameter dimensions and parameter value ensured?</p>	/P02/ /B02/ /P10/	DR	<p>No, Ex-ante emission reduction calculations were not demonstrated transparently in section B.6.3 of the PDD.</p> <p>CAR-07 is raised in this context</p>	CAR-07	OK
5.5.2 In case the methodology allows a selection between different options for equations or parameters, has adequate justification been given and have the correct equations and parameters been used, in accordance with the methodology selected?	/P02/ /B02/	DR	<p>PP has applied the correct equations for the emission reduction calculations as specified in the selected baseline methodology.</p> $BE_y = EG_{PJ,Y} * EF_{CO2, grid,y}$	OK	OK
5.5.3 In case some data and parameters will not be monitored throughout the crediting period, but have already been determined and fixed, are all data sources, assumptions and calculations correct, applicable to the proposed CDM project activity and conservative?	/P02/ /B02/	DR	<p>Yes, PP has chosen the ex-ante option for the build and operating margin emission factors used in the estimation of emission reductions. These parameters have been determined and fixed for the crediting period. PP has used the Emission factor Tool version 2.2.1 and CEA database version 07 for the calculation of these parameters.</p>	OK	OK
5.5.4 In case data and parameters will be monitored on implementation and hence become available only after validation of the project activity, are the estimates provided in the PDD for these data and parameters reasonable?	/P02/ /B02/	DR	<p>Yes, Since the proposed project activity is the grid connected Wind power plant, emission reductions will be estimated based on the quantity of Net electricity supplied to the grid. This parameter will be monitored on the implementation and will be available only after validation of project activity. PP has provided the correct estimates of net electricity generation based on the Plant load factor. Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity will be determined</p>	OK	OK

			after implementation of the project activity. PP has estimated 8732 MWh electricity which is found feasible based on the given PLF at the project region.		
5.5.5 Have the major risks and uncertainties, which can influence the emission reduction estimates, been identified and addressed in the PDD?	/P02/	DR	No, PP is requested to address the major risks factors and uncertainties which influence the emission reductions in the PDD. CL-07	CL-07	OK
5.5.6 Are the calculations documented according to the approved methodology and in a complete and transparent manner in calculating the project emissions? Have conservative assumptions been used when calculating the project emissions?	/P02/ /B02/	DR	As per the methodology AMS I.D project emissions are zero for the wind power projects.	OK	OK
5.5.7 Are uncertainties in the project emission estimates properly addressed?	/P02/	DR	Not applicable	OK	OK
5.6 Leakage					
5.6.1 Has the leakage been identified and calculated according to the approved methodology?	/P02/ /B02/	DR	As per the PDD No leakage is identified in the project activity. Which is found authentic as per the approved methodology AMS I.D	OK	OK
5.6.2 Have the leakage been addressed in complete, conservative and substantiated manner?	/P02/ /B02/	DR	Same as above	OK	OK
5.6.3 Are uncertainties in the leakage emission estimates properly addressed?	/P02/ /B02/	DR	Same as above	OK	OK
6. Methodology-related issues for afforestation or reforestation CDM project activities					
<i>Add specific A/R requirements – if applicable!</i>			<i>Not applicable for this CDM project activity</i>	<i>O.K.</i>	<i>O.K.</i>
7. Additionality (VVM V E.6)					

7 a) What approach/tool does the project use to assess additionality? Is this in line with the methodology? In case of small-scale CDM project activities, is Attachment A to Appendix B of the simplified modalities and procedures for small-scale CDM project activities applied considering also the “Non-binding best practice examples to demonstrate additionality for SSC project activities”.	/P02/ /B02/ /B05-6/ /B05-07/	DR	<p>Since this is the small scale project activity PP has applied Attachment A to Appendix B of the simplified modalities and procedures for the assessment of additionality and used Annex 34 of EB 35 “Non-binding best practice examples to demonstrate additionality for SSC project activities.” And “Tool for the demonstration and assessment of additionality”, (Version- 06, Annex 21, EB- 65) in demonstrating additionality</p> <p>However one uncertainty was found during the review of PDD. CAR-02 is raised in this context</p>	CAR-02	OK
7 b) Have the regulatory requirements correctly been taken into account to evaluate the project activity and the alternatives? Is sufficient evidence provided to support the relevance of the arguments made?	/P02/ /B02/	DR	<p>As per the chosen small scale methodology AMS I.D the baseline scenario is electricity grid. So PP has not taken any other baseline alternatives to demonstrate the additionality. However the chosen baseline scenario i.e grid is in compliance with all the regulatory conditions and policies in the host country. Hence this condition is justified</p>	OK	OK
7 c) What is the project additionality mainly based on (Investment analysis or barrier analysis)?	/P02/ /B05-06/ /B05-11/	DR	<p>According to the submitted PDD version 01 the demonstration of additionality is mainly based on the investment analysis. PP has selected Investment barrier to prove the additionality.</p>	OK	OK
7.1 Prior consideration of the CDM (VVM V E.6.III.a)					
7.1.1 Is there documented evidence provided by the project participants on how and when the decision to proceed with the project activity was taken?	/P07/	DR,I	<p>No, such evidence was provided by the project participant on how and when the decision to proceed with the project activity was taken.</p> <p>CAR-08 is raised in this context</p>	CAR-08	OK

7.1.2 Is the starting date of the project activity, reported in the PDD, in accordance with the “Glossary of CDM terms” and CDM VVM (§99)?	/P02/ /P08/ /B05-05/	DR	Yes, PP has mentioned the start date of the project a activity as per the glossary of CDM terms. PP has considered 2011-06-16 (Purchase Order date placed for WEG by Neha Sharma & Atul Sharma) as the start date.	OK	OK
7.1.3 Is the date stated in the provided evidence consistent with other available evidence (e.g. dates of construction, purchase orders for equipment)?	/P02/ /P08/	DR	Yes, the start date provided is consistent with the date of purchase orders of Neha Sharma & Atul Sharma which is the first real action in the bundle	OK	OK
7.1.4 If the project was not published and the starting date is on or after 2nd August 2008, was it possible to receive from UNFCCC secretariat and DNA a written confirmation that PPs previously informed the above entities on commencement of the project activity and of their intention to seek CDM status? <i>Note: in case where PP has only informed DNA or UNFCCC, check if the project start date was under the first version of the “prior consideration of the CDM guidelines”</i>	/P02/ /P06/ /P08/ /B05-09/	DR	<p>The project start date is 2011-6-16 which is after august 2008. PP has sent prior intimation to the DNA and UNFCCC about the commencement of the project activity and their intention to seek CDM status.</p> <p>During the assessment of prior consideration inconsistency has been identified in the receiving date of prior consideration. Tough PP has provide the acknowledgement from the UNFCCC on 2011-12-01 such notification is not available in the UNFCCC on closest of dates of intimation date. Notification is available on 10 April 2012 whereas start date is on 16/06/2011. It seems intimation has been done after six months from the start date which is not meeting the CDM requirements.</p> <p>PP is requested to justify the reason for the delay in intimation and provide the authentic evidence for the prior consideration. CAR-09 is raised in this context</p>	CAR-09	OK

7.1.5 For the project activities with a starting date before 2nd August 2008 and before the actual publication, was there enough evidence presented to prove that PPs were previously aware of CDM?	/P02/ /P06/ /P08/ /B05-09/	DR	This is not applicable since the project start date is after 2 nd August 2008.	OK	OK
7.1.6 For the project activities with a starting date before 2nd August 2008 and before the actual publication, was there enough evidence presented to prove that CDM benefits have been a decisive factor in the decision to proceed with the project activity?	/P02/ /P06/ /B05-09/	DR	Not applicable	OK	OK
7.1.7 Does the individual or body that took the decision to proceed with the project activity have/had the authority to do so?	/P02/ /P07/ /P08/	DR,I	Subjected to closure of CAR-08	CAR-08	OK
7.1.8 For the project activities with a starting date before 2nd August 2008 and before the actual publication, was there enough evidence presented to prove that PPs were taking continuing and real actions to secure CDM status for the project in parallel with its implementation?	/P02/ /P08/	DR	Not applicable	OK	OK
7.1.9 In case there is a significant gap between the start date of the project activity and the commencement of validation, how was it possible for the project participant to commit funds to the project in advance of receiving a positive validation opinion?	/P02/ /P17/	DR	This is not applicable since the project start date is after 2 nd August 2008.	OK	OK
7.1.10 How has the starting date of the project activity been determined? What are the dates of the first contracts for the project activity? When was the first construction activity?	/P02/	DR	PP has considered 2011-06-16 (Purchase Order date placed for WEG by Neha Sharma & Atul Sharma) as the start date.	OK	OK
7.1.9 Is the stated expected operational lifetime of the project activity reasonable?	/P02/ /P17/	DR	Yes, expected operational life time is stated as 20 years.	OK	OK

7.1.10 Is the crediting period start date, the type (renewable/fixed) and the length of the crediting period clearly defined and reasonable?	/P02/	DR	PP has chosen the Renewable crediting. Considering the project life time of 20 years, chosen crediting period is reasonable for this project activity	OK	OK
7.2 Identification of alternatives(VVM V E.6.III.b)					
7.2.1 Does the PDD identify and list credible alternatives to the CDM project activity in order to determine the most realistic baseline scenario, unless selected approved methodology prescribes/identifies the baseline scenario and no further analysis is required?	/P02/ /B02/		As per the chosen small scale methodology AMS I.D the baseline scenario is electricity grid. So PP has not taken any other baseline alternatives to demonstrate the additionality. However the chosen baseline scenario i.e grid is in compliance with all the regulatory conditions and policies in the host country. Hence this condition is justified	OK	OK
7.2.2 Does the list of alternatives include as one of the options that the project activity is undertaken without being registered as a CDM project activity?	/P02/ /B02/		Please see the above check list point i.e 7.2.1	OK	OK
7.2.3 Does the list contain all realistic/credible alternatives that the DOE, on the basis of its local and sectoral knowledge, considers to be viable means of supplying the outputs or services that are to be supplied by the project activity?	/P02/ /B02/	DR	Refer checklist point 7.2.1 above	OK	OK
7.2.4 Is the exclusion of the alternatives for legal reasons justified?	/P02/ /B02/	DR	Not applicable	OK	OK
7.3 Investment Analysis(VVM V E.6.III.c)					
7.3.1 Are all sources of revenues (including savings) have been considered in the PDD and all calculations?	/P02/ /P13/ /B05-11/	DR	Yes, all sources of revenues have been considered in the financial additionality calculations	OK	OK
7.3.2 Is the type of investment analysis selected correctly in the PDD? Is the choice of benchmark analysis, investment comparison or simple cost analysis correct?	/P02/ /P13/ /B05-11/	DR	PP has selected benchmark analysis for the demonstration of additionality as per the guidelines on the assessment of investment analysis this is reasonable for the project activity	OK	OK

7.3.3 Is the selected financial indicator chosen and applied correctly? Is it on equity/project basis? Before/after tax? Is the financial indicator in correspondence with the benchmark?	/P02/ /P13/ /B05-11/	DR	Yes, PP has chosen the post-tax Equity IRR as a financial indicator which is in line with annex 05 EB 62.	OK	OK
7.3.4 Is the guidance on IRR calculation and assessment correctly applied?	/P02/ /P13/ /B05-11/	DR	Though the IRR calculation was correctly applied few clarification requests are raised to evidence the authenticity of the input parameters. CAR-03and CAR-04 are raised.	CAR-03 CAR-04	OK
7.3.5 In case project participants use values from Feasibility Study Reports (FSR) is it possible to verify that the period between the FSR date and investment decision was reasonably short and FSR values did not change materially?	/P02/ /P13/ /B05-11/	DR	Yes PP has considered the PLF from the Third party assessment report. In this regards CAR-03 is raised to submit the PLF determination report for the verification	CAR-03	OK
7.3.6 Are all the values consistent between FSR and PDD and are inconsistencies properly justified?	/P02/ /P13/ /B05-11/	DR	Subjected to the closure of CAR-03	CAR-03	OK
7.3.7 Were all the values from FSR applicable and valid at the time of the investment decision?	/P02/ /P13/ /B05-11/	DR	Subjected to the closure of CAR-03	CAR-03	OK
7.3.8 Is it reasonable to assume that no investment would be made at a rate of return lower than the benchmark by, for example, assessing previous investment decisions by the project participants or some verifiable circumstances that have lead to a change in the benchmark?	/P02/ /B05-11/	DR	Yes, PP has applied reasonable benchmark (ROE) which is found to be appropriate for the project case	OK	OK
7.3.9 Is the Investment Analysis prepared in compliance with the latest version of the "Guidance on the Assessment of Investment Analysis" as provided by the CDM EB?	/P02/ /P13/ /B05-11/	DR	Yes, It is prepared according to the guidelines on the assessment of investment analysis annex05 EB 62.	OK	OK

<p>7.3.10 Do the project include all the data sources used (input & output / loss & profit) and list all the projects that have been used for cross-checking in accordance with VVM paragraph 95.</p> <p>Does the income tax calculation take depreciation into account? Is the depreciation year in accordance with normal accounting practice in the host country?</p> <p>Has salvage value been taken into account? Is working capital returned in the last year of operation?</p> <p>How are the PLF of the project assessed?</p> <p>How are output price assessed?</p> <p>How are O&M cost assessed?</p>	/P02/ /P13/ /B05-11/	DR	<p>Yes, all the data sources used are authentic and been available for cross checking.</p> <p>Yes PP has added back the book depreciation to the profit in calculating the income tax and all the tax calculations and assessment years are in accordance to the host country accounting practice. Salvage value has been taken into account in calculating the depreciation.</p> <p>However this is subjected to the closure of CAR-03</p>	CAR-03	OK
<p>7.3.11 Sensitivity analysis: Have the key parameters contributing to more than 20% of the revenue/costs during operating or implementation been identified? Has possible correlation between the parameters been considered?</p> <p>Is the range of variations (10% in default) is reasonable in the project context?</p> <p>Have the key parameters been vary to reach or cross the benchmark and have the likelihood of this to happen been justified?</p>	/P02/ /P13/ /B05-11/	DR	<p>Yes sensitivity analysis has been applied for the following parameters with +/- 10 variations and found that the IRR is below the benchmark.</p> <ol style="list-style-type: none"> 1. PLF 2. O &M costs 3. Tariff rate 4. Project cost <p>PP has also justified the situation to happen this scenario in the PDD.</p>	OK	OK
7.4 Barrier analysis(VVM V E.6.III.d)					
<p>7.4.1 Are there any issues addressed in the barrier analysis that have a clear impact on the financial viability of the project activity and that shall be assessed by an investment analysis?</p>	/P02/ /B05-6/	DR	Not applicable	OK	OK

7.4.2 Do the listed barriers exist and is their existence substantiated? <i>Note:</i> <i>(a) by independent sources of data such as relevant national legislation, surveys of local conditions and national or international statistics and/or</i> <i>(b) by interviews with relevant individuals: including members of industry associations, government officials or local experts if necessary?</i>	/P02/ /B05-6/	DR	Not applicable	OK	OK
7.4.3 Would any of the identified barriers prevent the implementation of the project activity but not equally prevent the implementation of the possible alternatives, in particular the implementation of the identified baseline scenario?	/P02/ /B05-6/	DR	Not applicable	OK	OK
7.5 Common practice analysis(VVM V E.6.III.e)					
7.5.1 If the PPs claim in the PDD that CDM project activity is the “first of its kind”, is it justified?	/P02/ /B05-6/	DR	Not applicable	OK	OK
7.5.2 Are the geographical boundaries of the project activity identified correctly?	/P02/ /B05-6/	DR	Not applicable	OK	OK
7.5.3 Does the PDD provide an explanation why this region was selected and deemed more appropriate and is this explanation traceable and reliable?	/P02/ /B05-6/	DR	Not applicable	OK	OK
7.5.4 Are there similar operational project activities, other than CDM activities, “widely observed and commonly carried out” in the defined region? <i>Note: Use official sources and local and industry expertise.</i>	/P02/ /B05-6/	DR	Not applicable	OK	OK

7.5.5	In case there are similar commercially operated project activities, other than CDM activities, already “widely observed and commonly carried out” in the defined region, are there essential distinctions between the CDM project activity and the other similar activities?	/P02/ /B05-6/	DR	Not applicable	OK	OK
8. Monitoring plan (VVM V E.7)						
8.1	Are all parameters required by the selected approved methodology or tool identified and listed in the PDD? Note: not all methodologies indicate monitoring parameters in tabular form or by reference to the variables used in formulae; Nonetheless, all parameters indicated in the methodology and applicable to the project must be listed in the PDD, omissions due to non-applicability be justified.	/P02/ /B02/	DR	Yes, all parameters required by the selected approved methodology are listed in the PDD	OK	OK
8.2	Is the measurement method clearly stated for each value to be monitored and deemed appropriate? Does the monitoring plan record data in the original form as generated, providing QA/QC procedures to be used on the measurement method?	/P02/ /B02/	DR	Measurement method for each monitoring parameter is clearly mentioned in the PDD and deemed appropriate. Energy meters located will record the data as generated. Meters will be calibrated once for two years for accuracy.	OK	OK
8.3	Are values of the ex-ante parameters / monitoring parameters selected correctly and conservative in accordance to methodology or tools? See the NOTE in section 3.6.1 above!	/P02/ /B02/	DR	The values are correctly applied in the PDD. Values mentioned in the PDD are consistent with the ER sheet	OK	OK
8.4	Is the measurement equipment for each parameter described and deemed appropriate? Are the locations of all measurement equipment clearly identified and consistently described, incl.	/P02/ /B02/	DR	Yes, Meters were installed for the measurement of net electricity exported to the grid.	OK	OK

	process flow-charts contained in the PDD?				
8.5	Is the measurement accuracy addressed and deemed appropriate?	/P02/ /B02/	DR	All the meters installed are 0.5 s accuracy and is transparently documented in the PDD.	OK OK
8.6	Are procedures in place on how to deal with erroneous measurements and are the corrective actions identified?	/P02/ /B02/	DR	PP has clearly described the measurement methods, Data collection and calculations along with the uncertainties are clearly described in section B.7 of the PDD.	OK OK
8.7	Is the frequency of measurement identified and deemed appropriate?	/P02/ /B02/	DR	Yes, date will be continuously monitored and recorded monthly for invoicing	OK OK
8.8	Is the monitoring plan documented according to the approved methodology and in a complete and transparent manner?	/P02/ /B02/	DR	Yes, Monitoring plans is documented as per the methodology and is in complete and transparent manner	OK OK
8.9	Are the sampling, measurement methods and procedures defined?	/P02/ /B02/	DR	Not applicable	OK OK
8.10	Are procedures identified for maintenance of monitoring equipment and installations?	/P02/ /B02/	DR	Yes, the procedures for maintenance of monitoring equipment are identified and explained in the PDD.	OK OK
8.11	Are the equipment calibration intervals identified and justified?	/P02/ /B02/	DR	Yes, the energy meter will be calibrated once for every two years. The same is explained in the PDD	OK OK
8.12	Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)?	/P02/ /B02/	DR	Yes, the recoding will be done by the state utility in presence of the PP every month. This is inline with the EPA requirements. The details regarding the recording keeping, storage of records & processing of performance documentations are clearly explained in the PDD.	OK OK

8.13 Are the monitoring arrangements described in the monitoring plan feasible within the project design?	/P02/ /B02/	DR	Yes, the monitoring arrangement mentioned in the PDD is inline with the EPA requirement. The monitoring is not just for CDM purpose but also for the electricity billing purpose which is the every month activity. Moreover the monitoring arrangements were checked during site visit and found to be in operation. Hence it is confirmed that the monitoring arrangements described in the PDD are feasible in this project activity.	OK	OK
8.14 Are the means of implementation of the monitoring plan, including the data management and quality assurance and quality control procedures, sufficient to ensure that the emission reductions achieved by / resulting from the project activity can be reported ex post and verified?	/P02/ /B02/	DR	Since the project is already implemented, the monitoring plan including data management and quality assurance and quality control procedures followed in the site are verified in the site and found that it is sufficient to ensure quality of the emission reduction.	OK	OK
8.15 Do the PPs make provisions for personnel training needs?	/P02/ /B02/	DR	No, PP has not mentioned the training provisions in the PDD. Hence CAR-10 is raised	CAR-10	OK
8.16 Is the authority and responsibility of overall project management clearly described?	/P02/ /B02/	DR	Yes, PP will employ dedicated O&M team with trained personnel after the free O&M period of the WTG supplier.	OK	OK
8.17 Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	/P02/ /B02/	DR	Yes, the procedures are identified for emergency preparedness is explained in the PDD.	OK	OK
8.18 Are procedures identified for review of reported results/data?	/P02/ /B02/	DR	The source for "Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh)" is the monthly energy statements from TNEB for the electricity supplied which is the basis for the electricity billing. This statement is prepared by TNEB a state government body and hence the data to be considered in the monitoring is	OK	OK

			more authentic.		
8.19 Is the data archiving period for this project activity stated in the PDD and appropriate?	/P02/ /B02/	DR	Yes, all the data records will be archived till 2 years after the end or the crediting period which is inline with the UNFCCC requirement	OK	OK
8.20 Is the monitoring parameters for all project emissions captured ?	/P02/ /B02/	DR	Not applicable	OK	OK
8.21 Will all monitored data required for verification and issuance be kept for two years after the end of the crediting period or the last issuance of CERs, for this project activity, whichever occurs later?	/P02/ /B02/	DR	Not applicable	OK	OK
8.22 Are the data management and quality assurance and quality control procedures sufficient to ensure that the emission reductions achieved by/resulting from the project can be reported ex post and verified?	/P02/ /B02/	DR	Not applicable	OK	OK
8.2 Monitoring of the leakage					
8.2.1 Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining leakage?	/P02/ /B02/	DR	Not applicable	OK	OK
8.2.2 Is the choice of project leakage indicators made according to selected methodology in a reasonable and conservative manner? <i>Note: local knowledge and sectoral expertise shall also be considered.</i>	/P02/ /B02/	DR	Not applicable	OK	OK
8.2.3 Is the measurement method clearly stated and deemed appropriate for each leakage value?	/P02/ /B02/	DR	Not applicable	OK	OK
9. Sustainable development(VVM V E.8)					

9.1	Does the LoA from the Host country DNA contain the confirmation that the proposed CDM project activity contributes to the sustainable development of the host Party?	/P02/ /P03/	DR	LoA is not yet submitted by PP CAR-01	CAR-01	OK
9.2	If PDD indicates any additional environmental benefits of the project, other than GHG emission reductions, were those benefits properly substantiated?	/P02/	DR	Yes, the additional environmental benefit of the project activity has been described in the section A.2 of the PDD	OK	OK
10. Stakeholders' consultation and comments (VVM V E.9)						
10.1	Were the stakeholders identified in appropriate and complete manner?	/P02/ /P15/	DR,I	Yes, All the relevant stakeholders have been identified and invited for the stakeholder meeting. However CAR-05 is raised	CAR-05	OK
10.2	Are the identified stakeholders plausible?	/P02/ /P15/	DR,I	Yes, Stakeholders have been invited through personal invitation letters sent to local authorities. However CL-09 is raised	CL-09	OK
10.3	Does PDD describe the means being used to invite local stakeholder's comments?	/P02/ /P15/	DR,I	Though the PDD has described the means of communication used to invite the stakeholders in the PDD CL-08 is raised.	CL-08	OK
10.4	Were those means appropriate?	/P02/ /P15/	DR,I	Subject to closure of CL-08	CL-08	OK
10.5	Was the project presented to the stakeholders in unbiased manner?	/P02/ /P15/	DR,I	Yes, Project has been transparently projected to all the stakeholders during the stakeholder meeting.	OK	OK
10.6	If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	/P02/ /P15/	DR,I	LSC meeting is not a requirement of host government for wind power project.	OK	OK
10.7	Is a summary of the stakeholder comments provided in the PDD?	/P02/ /P15/	DR,I	No adverse comments were received for the project.	OK	OK

10.8	Has due account of any stakeholder comments been taken by PPs and reflected in the PDD?	/P02/ /P15/	DR,I	Yes, PP has documented due account of stakeholder comments in the PDD.	OK	OK
11. Environmental impacts(VVM V E.10)						
11.1	Is the documentation supplied by the PPs regarding environmental impacts relevant and accurately reflected in the PDD?	/P02/ /B06/	DR,I	According to Indian regulation, the implementation of the wind park does not require an Environmental Impact Assessment (EIA) study. Environmental Impact Assessment (EIA) studies need not to be conducted for the projects which comes under the list i.e. S.O. 60 (E). Since the Wind projects are not included in this list, the project activity doesn't call for EIA study.	OK	OK
11.2	Is an environmental impact assessment (EIA) required for the CDM project activity?	/P02/ /B06/	DR,I	Please refer the above checklist point	OK	OK
11.3	In case an EIA is required, has the EIA has been approved by local authorities and is the outcome accurately reflected in the PDD?	/P02/ /B06/	DR	There are no negative environmental effects envisaged for the project. Wind turbines are considered as zero GHG emitting projects, so there will be no pollution caused by this project. Hence the proposed project does not fall under the list of activities requiring EIA as it will not involve any negative environmental impacts. Thus no EIA study was conducted.	OK	OK
11.4	Does the PDD include a brief description of the environmental effects of the project, including transboundary?	/P02/ /B06/	DR	Yes, however no adverse environment effects were identified due to the proposed project activity	OK	OK
11.5	Are those effects properly addressed in the design of the project activity?	/P02/ /B06/	DR	Not applicable	OK	OK
11.6	Does the project comply with environmental legislation in the host country?	/P02/ /B06/	DR	Yes, the project comply with the environmental legislation in India	OK	OK

Table 2: List of Requests for Corrective Action (CAR) and Clarification (CL)					
No.	CAR/CL	Observation (CAR/CL)	Reference	Summary of project owner response	Validation team conclusion
1	CL-01	<p>In section A.2 under baseline scenario PP has mentioned that “Electricity delivered to the grid as reflected in the combined margin (CM) calculations described in the “ Tool to calculate the emission factor for an electricity system”</p> <p>But tool is useful to calculate the grid emission factor it does not describe the baseline as mentioned in PDD. PP is requested to give the proper justification in line with the methodology.</p>	/4.1/	<p>PP Response#1: The statement has now been appropriately phrased in the revised PDD. Kindly refer the same.</p>	<p>DOE Assessment#1: DOE has reviewed the revised PDD/P02/ and found that the PP has corrected the sentence and found to be inline with the methodological tool /B03/</p> <p>Hence CL-01 is closed.</p>
2	CL-02	<p>In section A.2 PP mentioned that wind energy “which displaces approximately 7,833 tonnes of CO₂ equivalent” but as per the DOE understanding project activity will displace electricity thereby reduces the greenhouse gas emissions please correct the sentence appropriately</p>	/4.1/	<p>PP Response#1: The same has been appropriately phrased in the revised PDD. Kindly refer the same.</p>	<p>DOE Assessment#1: DOE has reviewed the revised PDD/P02/ and found that the PP has corrected the sentence and found to be inline with the methodology /B02./</p> <p>Hence CL-02 is closed.</p>
3	CL-03	<p>Specify the name of specific state electricity board in the PDD</p>	/4.1/	<p>PP Response#1: The same has been specified in the revised PDD. Kindly refer the same.</p>	<p>DOE Assessment#1: DOE has verified the revised PDD/P02/, PP has mentioned that the electricity is exported to Tamil Nadu Electricity Board (TNEB) which has been cross checked from the Commissioned certificate /P09/ and Energy Purchase Agreement /P11/ and found to be correct.</p> <p>Hence CL-03 is closed.</p>

4	CL-04	<p>In section A.4.2 PP has written “this project actually displaces the electricity grid” which is not appropriate and clear. Correct the sentence</p> <p>It was written in the PDD that “equivalent amount of fossil-fuel dominated grid can be displaced due to the project activity” As per the DOE understanding grid cannot be displaced. Please correct the sentence appropriately</p>	/4.1/	<p>PP Response#1: The same has been appropriately phrased in the revised PDD. Kindly refer the same.</p>	<p>DOE Assessment#1: DOE has reviewed the revised PDD/P02/ and found that the PP has corrected the sentence and found to be appropriate and in line with the methodology /B02./</p> <p>Hence CL-04 is closed.</p>
5	CL-05	<p>In section B.4 the following sentence is not clear. The baseline methodology has followed the one specified under Project category I.D in Appendix B of the Simplified M&P for small scale CDM project activities</p>	/4.1/ /5.4.1.1/	<p>PP Response#1: The concerned statement intends to say that baseline methodology has been taken as the one specified as under Project category I.D, in Appendix B of the Simplified M&P for small scale CDM project activities. However the same has been rephrased to make it lucid. Kindly refer the same.</p>	<p>DOE Assessment#1: DOE has reviewed the updated PDD/P02/ and found that PP intends to say that the baseline methodology has been considered from the approved methodologies listed under appendix B of the Simplified M&P for small scale CDM project activities. Hence DOE has concluded that the description is deemed appropriate and is in line with the methodological requirements.</p> <p>Hence CL-05 is closed.</p>
6	CL-06	<p>As per the guidelines for filling the CDM-SSC-PDD section A.4.2 should also include a description of how environmentally safe and sound technology and knowhow is being applied by the project activity.</p>	/4.3/	<p>PP Response#1: The same has been incorporated in the revised PDD. Kindly refer the same.</p>	<p>DOE Assessment#1: In the revised PDD PP has mentioned that «The project activity is the installation of an environmentally safe and sound technology since there are no GHG emissions associated with the electricity generation»</p>

					DOE verified the same and concluded the technology applied does not results any GHG emissions due to the implementation of the project activity. It is also confirmed from the onsite visit that the Project is not using any fossil fuels at the project site and hence the PPs claim as environmental friendly technology is deemed appropriate. Hence CL-06 is closed.
7	CL-07	PP is requested to address the risk factors which influence the emission reductions in the PDD.	/5.5.5/	PP Response#1: There are no risk factor associated with the proposed project activity which influence the emission reductions and the same has now being explicitly stated in section A.4.2 of the revised PDD.	DOE Assessment#1: In the revised PDD it has been mentioned that there do not stand any risk factors which influence the emission reductions. Which is found correct in project case? Hence CL-07 is closed
8	CL-08	PP is requested to justify the reason for not considering the newspaper for inviting the stakeholders.	/10.3/	PP Response#1: PP believes that the Local Stakeholder's concerns are important to be taken into consideration and to make it effective & interactive, proper channel of communication should be used. Hence, PP has considered personal invitation letters as a medium of communication to the Local stakeholders to be very conclusive. The PP believed that newspaper may not prove to be that	DOE Assessment#1: According to the PPs explanation DOE understood that distribution of personal invitations to the stakeholders is more effective that the paper advertisement. PP has distributed personal invitations prior to ten (10) days before the consultation

				<p>effective a medium to communicate to the Local stakeholders.</p>	<p>meeting date. PP has also posted the invitation letters along with the agenda at the important locations such as panchayat office, Temples, and other main areas of the villages.</p> <p>During the onsite visit DOE also observed that the project location is surrounded by rural villages where the newspaper is the poor media of communication and not so effective. Hence DOE is also feels that the means of communication followed by the PP is effective.</p> <p>PP has provided the copies of invitation letters, feedback forms and minutes of meeting for the verification and found that the meeting was successful and local stakeholders were effectively participated in the meeting and provided their inputs. During the onsite interview it is also confirmed from the interview of stakeholder and confirmed that PP has provided transportation facilities for all the stakeholders whoever is attending the meeting.</p> <p>Hence CL-08 is successfully</p>
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					closed.
9	CL-09	PP is requested to clarify that whether authorities from the renewable energy, host country DNA have been invited for LSC if so update the PDD with the information and provide the evidence	/10.2/	<p>Local Stakeholders to the project-activity has been invited.</p> <p>However the application for an approval from Host Country, against sustainable development & other parameters defined by DNA, is under NCDMA consideration, where all evidences have been submitted.</p>	<p>DOE Assessment1:</p> <p>However as per the submitted Minutes of meeting MoM and invitation letters, the details of the LSC meeting are not clear. Documentation has been provided for the LSC conducted at. Kalagumalai site whereas Invitation letters reflects that LSC will be conducted for each project location on the same date. Also</p> <p>Document the information in order with date and location and outcome of the LSC for each project involved in the bundle. Provide the Minutes and participants list for all LSCs conducted at project sites</p> <p>CL is Open</p>
				<p>PP Response #2:</p> <p>The proposed project activity is at Kalagumalai site – developed by Enercon India Limited (WEG supplier), covers villages namely Pallankotai, Kalagumalai, and Subramaniyapuram. Nevertheless, invitation letter has been sent to Local stakeholders to notify that the meeting would be held on the project site which is the wind farm as developed by WEG supplier, whereas venue as mentioned in the invitation</p>	<p>DOE Assessment 2:</p> <p>DOE has reviewed the project location and found that all the WEGs are located nearby which is located in single wind farm. It is also confirmed during the onsite visit that all the WEGs comes under the single wind farm and located nearer to each other. Hence DOE confirms that the</p>

				<p>letters clearly refers to a location within the geographical boundaries of the wind farm.</p> <p>Moreover the summary of the comments as received from Local stakeholders has been clearly mentioned in the Minutes of meeting already submitted. Kindly refer the same.</p> <p>Also feedback forms have been submitted to DOE along with minutes of meeting document. DOE is requested to refer the same.</p>	<p>stakeholder meeting covers all the WEG sites installed in the project activity. Same has been confirmed from the correspondence documents/P15/ submitted for verification and from the onsite interviews with the stakeholders.</p> <p>Hence CL-09 is closed.</p>
10	CL-10	Inconsistency has been identified in section A.4.1.3. PP has not quoted the Details of WEG consistently in the tables. Make it consistent and update the PDD.	/4.1/	<p>PP response#1: The same has been made consistent in the revised PDD. Kindly refer.</p>	<p>DOE Assessment#1: DOE has reviewed the revised PDD/P02/ and found that the WEG details have been corrected in the revised PDD. DOE has cross checked the commissioning certificates/P09/ and Energy Purchase Agreement/P11/ with the PDD/P02/ and confirmed that the details mentioned in the PDD/P02/ are correct and consistent with the clearances accorded to the PP.</p> <p>Hence CL-10 is closed.</p>
11	CL-11	During the Onsite visit it has been found that all the WEG are located nearer to Sankarankovil Railway station and Tuticorin airport. But PP has mentioned different locations. Make it correct as appropriate.	/4.1/	<p>PP response#1: Appropriate corrections have now been incorporated in the revised PDD. Kindly refer the same.</p>	<p>DOE Assessment#1: In all clearances (NOC and commissioning certificate) of M/s Atul Sharma village name is mentioned as Karadikulam Village. Whereas in the PDD</p>

					and EPA it is mentioned as Kalagumalai clarify? CL is Open
				PP response#2: All the clearances including EPA, for M/s Atul Sharma reflects the same village i.e, Karadikulam, and the same has now been revised in the PDD.	DOE Assessment#2: PP has changed the location to Karadikulam in the revised PDD/P02/ which is found to be consistent with the Commissioning certificates/P09/ and EPA/P11/. Hence CL-11 is closed.
12	CAR-01	Letter of approval from the host country is the prerequisite for the request for registration of a CDM project. LoA from the DNA is not yet submitted by PP.	11.1/,1.2/ /1.3/,1.4/ /1.5/,1.6/ /1.7/,2.2/ /2.4/,9.1/	PP response#1: LoA will be submitted to the DOE once received from DNA.	DOE Assessment#1: Letter of Approval has been received from the project proponent is found to be authentic. The name of the project participant and the location of project is consistent with the PDD. LOA clearly mentions that the participation by the party is voluntary and the project contributes to the sustainable development. The Authenticity of the LOA has been verified from the NCDMA website ¹⁷ and found to be authentic./P03/
13	CAR-02	Under the demonstration of additionality PP mentioned that “ additionality tool requires the PP to identify the financial indicator, such as	/7 (a)/	PP response#1: Appropriate procedure suitable for the Benchmark analysis has been	DOE Assessment#1: According to the PDD/P02/ additionality has been

¹⁷ www.cdmindia.in

		<p>IRR, NPV, cost benefit ratio, or unit cost of service suitable for the project type and decision-making context.”</p> <p>As per the additionality tool this is suitable if the PP considered the Investment comparison analysis. PP needs to document the appropriate procedure suitable for the Benchmark analysis.</p>		<p>incorporated in the revised PDD. Kindly refer the same.</p>	<p>demonstrated using the latest EB guidelines annex 27, EB 68/B05-06/ and the investment analysis has been done using the guideline on assessment of investment analysis/B05-12/. PDD demonstrates that PP has chosen equity IRR as financial indicator and Expected Return on equity (ROE) as the benchmark which has been verified from the investment guideline and found to be inline with the guidance 12 of the Annex 05 EB 62.</p> <p>PP has clearly applied all the issues of investment analysis and clearly documented the appropriate procedure relevant to the guideline in the revised PDD/P02/. DOE reviewed the PDD and confirmed the procedure applied and documented is in line with the EB guidelines/B05-06/ and /B05-11/.</p> <p>Hence CAR-02 is closed.</p>
14	CAR-03	<p>Regards to the IRR calculation following documents needs to be submitted for the</p> <ol style="list-style-type: none"> 1. Offer letter from the WEG manufacturer 2. Third party report on the PLF determination 3. CA certificate 	<p>/4.6/,/7.3.4/ /7.3.5/, /7.3.6/, /7.3.7/, /7.3.10/</p>	<p>PP Response #1: Required documents are being furnished to the DOE. Since the Admin cost has been removed to be conservative CA certificate is not required for the project.</p>	<p>DOE Assessment #1: 1. PP has submitted the offer letters/P14-01/ for all the WEG of the project activity. DOE has reviewed the documents and confirmed that submitted offer</p>

					<p>letters provided by Enercon India Limited is available at the time of investment decision making and confirms to the requirement of guidance 6 of annex05, EB 62. Hence DOE concludes that the documents are found to be authentic and valid.</p> <p>2. The PLF report prepared by True Wind International Certification India has been verified/P14/. TWIC is a third party company has conducted wind resource assessment study at the project sites and calculated the expected PLF for these sites. Hence PLF considered in this project activity is in line with the EB 48, annex 11 and the guidance 6 of investment guidance (EB 62, annex 5)</p> <p>DOE has reviewed the IRR sheets and found to be appropriate.</p> <p>Hence CAR-03 is closed.</p>
15	CAR-04	<p>1. Provide the proper evidence for the O&M Expenses towards TNEB considered in IRR sheet.</p> <p>2. Salvage value should not be included in</p>	/7.3.4/	<p>PP response#1:</p> <p>1. The same has now been furnished to the DOE.</p> <p>2. The same has been corrected in the revised PDD and supporting</p>	<p>DOE Assessment#1:</p> <p>1. O&M expenses have been considered from the offer submitted by the WEG supplier, Enercon India</p>

		<p>the calculation of IT depreciation. PP needs to rectify the same in the IRR sheet.</p> <p>3. Justify how appropriate it is to calculate the beta value for five years period only.</p> <p>4. as per the DOE assessment and practices in the REC mechanism in the host country consultant share in the REC revenue is in between 0.5% - 1 %. 40 % seems very high and not appropriate</p> <p>5. Justify how conservative it is to consider the weighted average traded price of REC data for the IRR calculation. In conservative approach PP needs to consider the forbearance price for the purpose of IRR calculation</p>		<p>Financials.</p> <p>3. In practice, most investment analysis deploy Beta calculation for a period ranging from 3 to 5 years. The PP has chosen a 5 year period keeping in mind below point:</p> <ul style="list-style-type: none"> As the investment is being done in India wherein the companies engaged in similar business lines(as that of concerned project) may have significant changes in business and financial risks over the chosen period. Thus calculating Beta for a longer period may not give updated estimates. Reference: pg.no. 09, on the link http://pages.stern.nyu.edu/~adamodar/pdfiles/papers/beta.pdf <p>4. Supporting evidences for revenue sharing of 40% are being furnished to the DOE.</p> <p>5. The PPs have not considered REC benefits at the time of decision making. Thus REC benefits have been covered in sensitivity with respect to Tariff rates appropriately. Thus deploying forbearance price for REC benefits, to be conservative, neither stand applicable nor suitable to the project activity.</p> <p>The major benefit of deploying weighted average for REC certificates is that it smoothest out</p>	<p>Limited. PP has submitted the e-mail communication from the supplier as evidence. DOE has verified the mail communication/P14-6/ and found that the date of e-mail is as same as offer letter/P14-01/. Hence it is concluded that the data is available at the time of investment decision making</p> <p>DOE also cross checked the input parameter considered from the TANGEDCO amendment document/B06-j/ confirms that the value is same as the value considered for the investment analysis.</p> <p>2. IRR calculation has been updated accordingly without considering the salvage value. DOE has reviewed the IRR sheets and found to be correct.</p> <p>3. DOE has reviewed the investment analysis sheets and found that the PPs argument regarding the maturity period of 5 years found reasonable and deemed appropriate.</p> <p>4. Although the Contract has been submitted for the REC benefit sharing, DOE cannot</p>
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				<p>fluctuations in the market. The normal average may be a bad indicator of REC certificates trends, as it does not include volume of certificates traded at that price .The weighted average takes into account the volume of certificates traded at a particular price thus it serves as a better indicator to measure the value of the certificates. In simple words it indicates the price at which the market is mostly inclined to trade REC certificate. Thus using weighted average is an appropriate and suitable way of ascertaining true value of REC certificates, in line with valuation principles.</p>	<p>accept the 40 % towards consultant as it is not conservative and not complying the general practice in the REC market.</p> <p>5. It has been found that Weighted average has been taken for only 7 months period. Calculate the parameter for the complete year 2011 and recheck the sensitivity analysis with new value.</p> <p>CAR is Open.</p>
				<p>PP Response#2:</p> <p>4. In accordance with the guidance by EB with respect to clarification titled “Applicability of guidance on E+/E-policy (EB 53 Annex 32) in the context of REC regime in India”, the ensuing incentives of REC have been removed from the financial analysis.</p> <p>5. In accordance with the guidance by EB with respect to clarification titled “Applicability of guidance on E+/E-policy (EB 53 Annex 32) in the context of REC regime in India”, the ensuing incentives of REC have been removed from the financial analysis.</p>	<p>DOE Assessment#2:</p> <p>Apart from Annex 32 and EB 53 validation team also referred EB clarification on “Applicability of guidance on E+/E- policy (EB 53 Annex 32)/B05-16/ in the context of REC regime in India” according to the clarification referred above It is confirmed that considering REC benefits for the investment analysis is not a mandatory requirement Hence DOE has accepted the removal of REC benefits from the financial calculations.</p> <p>Hence CAR-04 is successfully closed.</p>

16	CAR-05	<p>PP needs to the following documents to evidence the LSC meeting</p> <ol style="list-style-type: none"> 1. Paper cuttings 2. Invitation letters 3. Participants list 4. Minutes of meeting of LSC 	/10.1/	<p>PP Response#1: The relevant documents reference to LSCM has now been furnished to the DOE.</p>	<p>DOE Assessment#1: PP. has submitted all relevant documents such as invitation letters, feedback forms and minutes of the meeting for the verification/P15/. DOE has reviewed all he documents. The location of the project mentioned is consistent with the PDD/P02/ and other statutory clearances/P09/. From the minutes of the meeting it is also confirmed that the PP. has presented the transparent description about the project activity to the stakeholders. Hence DOE confirms that the LSC conducted is complete and meets all the requirements of CDM and NCDMA.</p> <p>Hence CAR-05 is closed.</p>
17	CAR-06	<p>As per the SSC- CDM-PDD filling guidelines section B.4 shall explain and justify the key assumptions and rationale. Illustrate in a transparent manner all data used to determine the baseline emissions (variables, parameters, data sources etc.) preferably in a tabular form. Electrical energy generation parameters and its data sources are missing in the table which are important in the estimation of baseline emissions.</p>	/5.4.1.2/	<p>PP Response#1: The same has been illustrated transparently in section B.4. Kindly refer the same.</p>	<p>DOE Assessment#1: DOE has reviewed the revised PDD/P02/ and confirmed that PP has included all the parameters and its sources have been documented and meets the requirements of the SSC -CDM -PDD filling guidelines.</p> <p>Hence CAR-06 is closed.</p>
18	CAR-07	<p>Section B.6.3 is not described as per the SSC- CDM-PDD guidelines. Provide a transparent ex-ante calculation of</p>	/5.5.1/	<p>PP Response#1: The same has now been incorporated in the revised PDD. Kindly refer the same.</p>	<p>DOE Assessment#1: PP has documented all the emission reduction calculation</p>

		<p>project emissions, baseline emissions (or, where applicable, direct calculation of emission reductions) and leakage emissions expected during the crediting period, applying all relevant equations.</p> <p>Document how each equation is applied, in a manner that enables the reader to reproduce the calculation.</p>			<p>equations in section B.6 of the PDD/P02/. DOE has reviewed the revised PDD and found that the equations are transparent and is inline with the CDM requirements.</p> <p>Hence CAR-07 is closed.</p>
19	CAR-08	<p>PP is requested to provide the evidence document on how and when the decision to proceed with the project activity was taken?</p>	<p>/7.1.1/, /7.1.7/</p>	<p>PP Response#1: The requested documents in the form of Board Resolutions/note have now been furnished to the DOE.</p>	<p>DOE Assessment#1: PP has submitted the extracts of the minutes of board meeting/P07/. DOE has cross checked the same and confirmed that the documents are authentic. The capacity and location considered at the decision making time is consistent with the PDD/02/ and other statutory documents.</p> <p>Hence DOE concludes that the evidence provided is found to be correct and appropriate.</p> <p>Hence CAR-08 is closed.</p>
20	CAR-09	<p>During the assessment of prior consideration inconsistency has been identified in the receiving date of prior consideration. Though the PP has provided the acknowledgement from the UNFCCC on 02/12/2011 such notification is not available in the UNFCCC on nearest dates of intimation date. Notification is available on 10 April 2012 whereas start date is on 16/06/2011. It seems intimation has been done</p>	<p>/7.1.4/</p>	<p>PP Response#1: The prior intimation of CDM of the proposed project activity, to UNFCCC & NCDMA in F-CDM, had been sent to UNFCCC & NCDMA as well on 01/12/2011, and the acknowledgement had also been received on 02/12/2011 & 05/12/2011, and the same is reflecting over UNFCCC web.</p>	<p>DOE Assessment#1: PP has submitted both prior consideration emails sent to the UNFCCC and NCDMA in both the dates. From the information provided by PP/P06/ it has been identified that during the initial intimation made on 2011-12-01</p>

		<p>after six months from the start date which is not meeting the CDM requirements.</p> <p>Justify and provide the authentic evidence for the prior consideration.</p>		<p>However the title is different as it's been taken from the mail body, rather from the F-CDM attached.</p> <p>The later one available on 10/04/2012 is a voluntary resubmission of the same, and has no relevance then, in this context.</p> <p>The evidence for the same has been submitted.</p>	<p>Since the name was wrongly mentioned in subject of the mail body UNFCCC has considered the title from the same mail content as «Bundled Wind Power Project by EnKing International (EKIESL-CDM. November -11-01)» and the PP as M/s. EKI Energy Services Ltd. However PP correctly mentioned the title in the attached prior consideration of the CDM form attached F-CDM form. DOE has reviewed checked the mail and the attached form to the mail and found that the title and name of the PP is consistent with PDD.</p> <p>Hence PP has resent the prior consideration again on 2012-04-10 with the correct details which has been verified by the DOE and found correct. Due to this both the intimations are visible in the CDM website http://cdm.unfccc.int/Projects/PriorCDM/notifications/index.html</p> <p>From the above clarifications and reference reviewed DOE has confirmed that the PP has intimated the UNFCCC about project with in the six months and confirms to the requirement of guidelines of Annex 13 EB</p>
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					62./B05-10/ Hence CAR-09 is closed.
21	CAR-10	Mention the training needs of the personnel in the PDD.	/8.14/	PP Response#1: The same has been incorporated in the revised PDD. Kindly refer the same.	DOE Assessment#1: DOE has reviewed the revised PDD/P02/ and found that PP has documented the training needs of the personnel working in the plant in section B.7 of the PDD. Hence CAR-10 is closed.

Appendix B

Certificates of Competence

Qualification

Bellapu, Nagaraju /

Emission Trading

United Nations Framework Convention on Climate Change

Auditor No.:
(AuditorenRegNr)

Appointed: (Zugelassen)	ja	Qualification Level: (Qualifikationsstufe)	Trainee
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External: (Externer)	Add. reviewer: (Zusätzlicher Prüfer)
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EAC Scopes: (EAC Branchen)	CDM 01 - Energy industries (renewable - / non-renewable sources) CDM 03 - Energy demand
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Add.
qualification:
(zus. Qualifikation)

First Appointment: (Erstberufung)	14-03-2012	Valid to: (Gültig bis)	13-03-2015
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Remarks: TA 1.2, 3.1

Languages: English
Hindi

Qualification

R, Narendra Kumar /

Emission Trading

United Nations Framework Convention on Climate Change

(The following data is set by the certification body)

Auditor No.:

(AuditorenRegNr)

Appointed:

(Zugelassen)

ja

Qualification

Level:

(Qualifikationsstufe)

Lead Auditor

External:

(Externer)

Add. reviewer:

(Zusätzlicher Prüfer)

EAC Scopes:

(EAC Branchen)

CDM 03 - Energy demand

CDM 01 - Energy industries (renewable - / non-renewable sources)

Add.

qualification:

(zus. Qualifikation)

First

Appointment:

(Erstberufung)

15-05-2012

Valid to:

(Gültig bis)

14-05-2015

Remarks:

TA. 1.2, 3.1

Languages:

Tamil

English

Hindi

Qualification

C, Indumathi /

Emission Trading

United Nations Framework Convention on Climate Change

Auditor No.:

(AuditorenRegNr)

Appointed:
(Zugelassen)

☒ ja

Qualification Level:
(Qualifikationsstufe)

Lead Auditor

External:
(Externer)

☐ ja

Add. reviewer:
(Zusätzlicher Prüfer)

☒ yes

EAC Scopes:
(EAC Branchen)

CDM 01 - Energy industries (renewable - / non-renewable sources)

Add. qualification:
(zus. Qualifikation)

First Appointment:
(Erstberufung)

06/06/2012

Valid to:
(Gültig bis)

05/06/2015

Remarks:

TA 1.2

Languages:

Tamil
English
Hindi

Experience Exchange

Date

Location

Remarks

Accreditation(s)

Monitoring

Latest Monitoring:
(letzte Beurteilung)

Next Monitoring:
(nächste Beurteilung)

Remarks:

History of scope allocation