



Verification Report

- 2ND PERIODIC –

ENERCON (INDIA) LIMITED

TUNGABHADRA WIND POWER PROJECT IN KARNATAKA

UNFCCC REF. No. : 1268

Monitoring Period: 2009-12-01 to 2011-08-31
(incl. both days)

Report No: 8108229015 – 11/472 V02

Date: 2011-12-08

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Verification Report:	Report No. 8108229015 – 11/472 V02	Rev. No. 0	Date of 1st issue: 2011-12-08	Date of this rev. 2011-12-08
Project:	Title: Tungabhadra Wind Power Project in Karnataka	Registration date: 2008-10-27		UNFCCC-No.: 1268
	Host Country: India	Verification No.: 2nd periodic verification		
	Crediting period: <input type="checkbox"/> Renewable (7y) <input checked="" type="checkbox"/> Fixed (10y)	From: 2008-10-27	To.: 2018-10-26	
	Project Scale: <input checked="" type="checkbox"/> Large Scale <input type="checkbox"/> Small Scale			
	Project Participant(s):	Host Party: India	Other involved Parties: none	
	Client: Enercon (India) Limited	Project Owner: Enercon (India) Limited		
	Applied methodology/ies:	Title: Consolidated monitoring methodology for grid-connected electricity generation from renewable sources	No.: ACM0002 ver.6	Scope(s)/ TA(s) 01/1.2
Monitoring:	Monitoring period (MP): 2009-12-01 to 2011-08-31 (both days incl.)	No. of days: 639	MP No. 2nd	
Monitoring report:	Title: Tungabhadra Wind Power Project in Karnataka	Draft version: 2011-09-06	Final version: 2012-12-01	
Verification team / Technical Review and Final Approval	Verification Team: Prasad Jakkaraju (TL/TE) Sukanta Das (TM) Jimmy Sah (TM/TE) Ajay Thakur (TM)	Technical review: Heiner Lenzian	Final approval: Ingo Klein	
Emission reductions: [t CO_{2e}]	Verified amount 82,502 t	As per draft MR: 82,502 t CO ₂	As per PDD: 86,329 tCO ₂ /a	
Summary of Verification Opinion:	<p>Enercon (India) Limited has commissioned the TÜV NORD JI/CDM Certification Program to carry out the 2nd periodic verification of the project: "Tungabhadra Wind Power Project in Karnataka", with regard to the relevant requirements for CDM project activities.</p> <p>As a result of this verification, the verifier confirms that:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> all operations of the project are implemented and installed as planned and described in the validated project design document, <input checked="" type="checkbox"/> the monitoring plan is in accordance with the applied approved CDM methodology, <input checked="" type="checkbox"/> the installed equipment essential for measuring parameters required for calculating emission reductions are calibrated appropriately, <input checked="" type="checkbox"/> the monitoring system is in place and functional. The project has generated GHG emission reductions, and <input checked="" type="checkbox"/> the GHG emission reductions are calculated without material misstatements in a conservative and appropriate manner. <p>TÜV NORD JI/CDM CP herewith confirms that the project has achieved emission reductions in the above mentioned reporting period as follows:</p> <p>Emission reductions: 82,502 t CO_{2e}</p>			
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Abbreviations:

CA	Corrective Action / Clarification Action
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CO₂	Carbon dioxide
CO_{2eq}	Carbon dioxide equivalent
CL	Clarification Request
EIL	Enercon (India) Limited
ER	Emission Reduction
FAR	Forward Action Request
GHG	Greenhouse gas(es)
JMR	Joint Meter Reading
KPTCL	Karnataka Power Transmission Corporation Limited
MP	Monitoring Plan
MR	Monitoring Report
PA	Project Activity
PDD	Project Design Document
PP	Project Participant
QA/QC	Quality Assurance / Quality Control
UNFCCC	United Nations Framework Convention on Climate Change
XLS	Emission Reduction Calculation Spread Sheet
WECs	Wind Energy Converters

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1. INTRODUCTION

Enercon (India) Limited has commissioned the TÜV NORD JI/CDM Certification Program (CP) to carry out the 2nd periodic verification of the project

“Tungabhadra Wind Power Project in Karnataka”

with regard to the relevant requirements for CDM project activities. The verifiers have reviewed the implementation of the monitoring plan (MP) in the registered CDM project.

GHG data for the monitoring period was verified in detailed manner applying the set of requirements, audit practices and principles as required under the Validation and Verification Manual ^{/VVM/} of the UNFCCC.

This report summarizes the findings and conclusions of this 2nd periodic verification of the above mentioned UNFCCC registered project activity.

1.1. Objective

The objective of the verification is the review and ex-post determination by an independent entity of the GHG emission reductions. It includes the verification of the:

- implementation and operation of the project activity as given in the PDD,
- compliance with applied approved methodology and the provisions of the monitoring plan,
- data given in the monitoring report by checking the monitoring records, the emissions reduction calculation and supporting evidence,
- accuracy of the monitoring equipment,
- quality of evidence,
- significance of reporting risks and risks of material misstatements.

1.2. Scope

The verification of this registered project is based on the validated project design document ^{/PDD/}, the monitoring report ^{/MR/}, emission reduction calculation spreadsheet ^{/XLS/}, supporting documents made available to the verifier and information collected through performing interviews and during the on-site assessment. Furthermore publicly available information was considered as far as available and required.

The verification is carried out on the basis of the following requirements, applicable for this project activity:

- Article 12 of the Kyoto Protocol ^{/KP/},
- guidelines for the implementation of Article 12 of the Kyoto Protocol as presented in the Marrakech Accords under decision 3/CMP.1 ^{/MA/}, and subsequent decisions made by the Executive Board and COP/MOP,

- other relevant rules, including the host country legislation,
- CDM Validation and Verification Manual ^{/VVM/}
- monitoring plan as given in the registered PDD ^{/PDD/} and the approved revised monitoring plan
- Approved CDM Methodology “*Consolidated methodology for grid-connected electricity generation from renewable sources*”, ACM0002 Version 6

2. GHG PROJECT DESCRIPTION

2.1. Technical Project Description

The objective of this 22.8 MW wind power project is to reduce GHG emissions by replacing electricity of the southern Grid of India which predominantly uses fossil fuels. The project introduces wind power generation of capacity of 22.8 MW which consists of 38 Wind Energy converters of 600 kW each in the state of at village Singatalur, Koralahalli and Hammigi at Mundargi in Gadag district in the state of Karnataka, India

The project activity includes windmills installed at the project site of Enercon make (600 kW E-40) with internal electrical lines connecting the Project with local evacuation facility. The WECs generates 3-phase power at 400V, which is stepped up to 33 KV. The Project can operate in the frequency range of 47.5–51.5 Hz and in the voltage range of 400 V \pm 12.5%. All WECs are operated and maintained by Enercon India Limited which is also the technology and equipment supplier /O&M/.

At the 33 kV metering points there are provision for main and check meters for the measurement of electricity export and import. The electricity generated from the project activity is being exporting to KPTCL.

As the Wind Energy is a carbon neutral fuel, the project reduces CO₂ emissions to the extent of equivalent net electricity generated by mostly fossil fuel based power plants connected to the southern regional grid of India which is now a part of Southern grid.

The net electricity supplied by the project activity in the monitoring period is 88531.166 MWh which leads to emission reductions of 82,502 tCO₂ in the monitoring period.

The other salient features of the state-of-art technology are:

- Gearless Construction - Rotor & Generator Mounted on same shaft eliminating the Gearbox.
- Variable speed function – has the speed range of 18 to 33 RPM thereby ensuring optimum efficiency at all times.
- Variable Pitch functions ensuring maximum energy capture.
- Near Unity Power Factor at all times
- Minimum drawl (less than 1% of kWh generated) of Reactive Power from the grid.
- No voltage peaks at any time.
- Operating range of the WEC with voltage fluctuation of -20 to +20%.
- Less Wear & Tear since the system eliminates mechanical brake, which are not needed due to low speed generator which runs at maximum speed of 33 rpm and uses Air Brakes.
- Three Independent Braking Systems.
- Generator achieving rated output at only 33 rpm.

- Incorporates lightning protection system, which includes blades.
- Starts generation of power at wind speed of 3 m/s.

2.2. Project Verification History

Essential events since the registration of the project are presented in the following Table 2-1.

Table 2-1: Project verification history

#	Item	Time	Status
1	Date of registration	2008-10-27	-
2	Start of crediting period	2008-10-27	Fixed
3	1 st Monitoring period	2008-10-27 to 2009-11-30	In period for requesting review
4	Request for revision of / deviation from the monitoring plan	2011-02-18	Approved
5	2 nd Monitoring period	2009-12-01 to 2011-08-31	Ongoing

2.3. Involved Parties and Project Participants

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

Table 2-2: Project Parties and project participants

Characteristic	Project Participant	Party
Host party	Enercon (India) Limited	India
Other involved party/ies	-	none

2.4. Project Location

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

Table 2-3: Project Location

No.	Project Location
Host Country	India
Region:	Karnataka
Project location address:	Village Singatalur, Koralahalli and Hammigi
Latitude:	Provided in table below for each WEC
Longitude:	Provided in table below for each WEC

The project area extends between latitude 15° 3' 0.6" to 15° 5' 58.1" – North and 75° 50' 0.7" to 75° 52' 58.9" – East.

The Project is connected to the KPTCL 110/33/11 kV substation at Bannikoppa village. The project activity is located at village Singatalur, Koralahalli and Hammigi at Mundargi in Gadag district in the state of Karnataka, India. The information in regard of the Wind Energy Generators i.e. unique identification number, location number, location details & latitude & longitude are defined in the table as follows:

The details of the project location are given in table 2-4

Unique Identification Number	Loc. No.	Latitude			Longitude		
		Degree	Minutes	Seconds	Degree	Minutes	Seconds
EILKGS 1	1	15	3	27.4	75	52	4.0
EILKGS 2	2	15	3	30.0	75	52	2.0
EILKGS 3	3	15	3	29.9	75	51	57.9
EILKGS 4	4	15	3	32.4	75	51	51.3
EILKGS 5	5	15	3	36.1	75	51	43.0
EILKGS 6	6	15	3	37.3	75	51	39.6
EILKGS 7	7	15	3	38.3	75	51	34.1
EILKGS 8	8	15	3	45.3	75	51	40.0
EILKGS 9	9	15	3	49.2	75	51	39.1
EILKGS 10	10	15	3	52.2	75	51	36.7
EILKGS 11	11	15	3	54.1	75	51	32.7
EILKGS 12	12	15	3	54.3	75	51	16.4
EILKGS 13	13	15	3	58.1	75	51	15.3
EILKGS 14	14	15	4	4.2	75	51	17.2
EILKGS 15	15	15	4	7.5	75	51	14.4
EILKGS 16	16	15	4	5.7	75	51	4.8
EILKGS 17	17	15	4	9.5	75	51	1.6
EILKGS 18	18	15	4	20.9	75	51	0.7
EILKGS 19	19	15	4	23.2	75	50	58.1
EILKGS 20	20	15	4	27.2	75	50	54.0
EILKGS 21	21	15	4	34.3	75	51	5.4
EILKGS 22	22	15	4	36.7	75	50	58.9
EILKGS 23	23	15	4	38.9	75	50	51.6
EILKGS 24	24	15	4	38.1	75	50	40.6
EILKGS 25	25	15	4	37.1	75	50	30.2
EILKGS 26	26	15	4	42.4	75	50	38.5
EILKGS 27	27	15	4	45.6	75	50	35.0
EILKGS 28	28	15	4	48.0	75	50	30.7
EILKGS 29	29	15	4	51.0	75	50	26.8
EILKGS 30	30	15	4	54.5	75	50	22.4
EILKGS 31	31	15	4	57.0	75	50	19.9
EILKGS 32	32	15	5	0.6	75	50	16.6
EILKGS 33	33	15	4	16.5	75	51	3.5
EILKGS 34	34	15	5	4.8	75	50	33.7

Unique Identification Number	Loc. No.	Latitude			Longitude		
		Degree	Minutes	Seconds	Degree	Minutes	Seconds
EILKGS 35	35	15	5	8.0	75	50	30.8
EILKGS 36	36	15	5	11.5	75	50	26.1
EILKGS 37	37	15	5	12.7	75	50	19.3
EILKGS 38	38	15	5	15.5	75	50	16.3

3. METHODOLOGY AND VERIFICATION SEQUENCE

3.1. Verification Steps

The verification consisted of the following steps:

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

The sequence of the verification is given in the Table 3-1 below:

Table 3-1: Verification Sequence Table

Topic	Time
Assignment of verification	2011-08-29
Publication of Monitoring Report	2011-09-12
On-site visit	2011-09-30
Draft reporting finalised	2011-09-30
Final reporting finalised	2011-10-10
Technical review finalised	2011-12-08

3.2. Contract review

To assure that

- the project falls within the scopes for which accreditation is held,

- the necessary competences to carry out the verification can be provided,
- Impartiality issues are clear and in line with the CDM accreditation requirements

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

3.3. Appointment of team members and technical reviewers

On the basis of a competence analysis and individual availabilities a verification team, consisting of one team leader and 3 additional team members, was appointed.

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

Table 3-2: Involved Personnel

	Name	Company	Function ¹⁾	Qualification Status ²⁾	Scheme competence ³⁾	Technical competence ⁴⁾	Verification competence ⁵⁾	Host country Competence	On-site visit
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Prasad Jakkaraju	TUV India Pvt. Ltd.	TL/TE	LA	<input checked="" type="checkbox"/>	1.2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Jimmy Sah	TUV India Pvt. Ltd.	TM ^{A)}	LA	<input checked="" type="checkbox"/>	1.2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Sukanta Das	TUV India Pvt. Ltd.	TM ^{A)}	LA	<input checked="" type="checkbox"/>	-	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Ajay Thakur	TUV India Pvt. Ltd.	TM ^{A)}	A	<input checked="" type="checkbox"/>	-	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Heiner Lenzian,	TN Cert	TR ^{B)}	A	<input checked="" type="checkbox"/>	1.2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Ingo Klein	TN Cert	FA ^{B)}	SA	<input checked="" type="checkbox"/>	1.2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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

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

³⁾ GHG auditor status (at least Assessor)

⁴⁾ As per S01-MU03 or S01-VA070-A2 (such as 1.1, 1.2, ...)

⁵⁾ In case of verification projects

^{A)} Team Member: GHG auditor (at least Assessor status), Technical Expert (incl. Host Country Expert or Verification Expert), not ETE

^{B)} No team member

All team members contributed to the review of documents, the assessment of the project activity and to the preparation of this report under the leadership of the team leader.

Technical experts contributed to the assessment of special aspects of the project activity, e.g. technical or host country aspects.

In order to qualify further personnel the project team was accompanied by observers and/or trainees as indicated in the table above. They are usually not considered as team members.

Statements of competence for the above mentioned team members are enclosed in annex 6 of this report.

3.4. Publication of the Monitoring Report

In accordance with the CDM M&P (§ 62) the draft monitoring report, as received from the project participants, has been made publicly available on the dedicated UNFCCC CDM website prior to the verification activity commenced. Comments received are taken into account in the course of the verification, if applicable.

3.5. Verification Planning

In order to ensure a complete, transparent and timely execution of the verification task the team leader has planned the complete sequence of events necessary to arrive at a substantiated final verification opinion.

Various tools have been established in order to ensure an effective verification planning.

Risk analysis and detailed audit testing planning

For the identification of potential reporting risks and the necessary detailed audit testing procedures for residual risk areas table A-1 is used. The structure and content of this table is given in Table 3-3 below.

Table 3-3: Table A-1; Identification of verification risk areas

Table A-1: GHG calculation procedures and management control testing / Detailed audit testing of residual risk areas and random testing				
Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing performed	Conclusions and Areas Requiring Improvement (including Forward Action Requests)

Table A-1: GHG calculation procedures and management control testing / Detailed audit testing of residual risk areas and random testing

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing performed	Conclusions and Areas Requiring Improvement (including Forward Action Requests)
<i>The following potential risks were identified and divided and structured according to the possible areas of occurrence.</i>	<i>The potential risks of raw data generation have been identified in the course of the monitoring system implementation. The following measures were taken in order to minimize the corresponding risks. The following measures are implemented:</i>	<i>Despite the measures implemented in order to reduce the occurrence probability the following residual risks remain and have to be addressed in the course of every verification.</i>	<i>The additional verification testing performed is described. Testing may include:</i> <ul style="list-style-type: none"> - Sample cross checking of manual transfers of data - Recalculation - Spreadsheet 'walk throughs' to check links and equations - Inspection of calibration and maintenance records for key equipment - Check sampling analysis results <i>Discussions with process engineers who have detailed knowledge of process uncertainty/error bands.</i>	<i>Having investigated the residual risks, the conclusions should be noted here. Errors and uncertainties are highlighted.</i>

The completed table A-1 is enclosed in the Annex 1 (table A-1) to this report.

Project specific periodic verification checklist

In order to ensure transparency and consideration of all relevant assessment criteria, a project specific verification protocol has been developed. The protocol shows, in a transparent manner, criteria and requirements, means and results of the verification. The verification protocol serves the following purposes:

- It organises, details and clarifies the requirements a CDM project is expected to meet for verification
- It ensures a transparent verification process where the verifying DOE documents how a particular requirement has been proved and the result of the verification.

The basic structure of this project specific verification protocol for the periodic verification is described in Table 3-4.

Table 3-4: Structure of the project specific periodic verification checklist

Table A-2: Periodic verification checklist				
Checklist Item	Reference	Verification Team Comments	Draft Conclusion	Final Conclusion
<i>The checklist items in Table A-2 are linked to the various requirements the monitoring of the project should meet. The checklist is organised in various sections as per the requirements of the topic and the individual project activity. It further includes guidance for the verification team.</i>	<i>Gives reference to the information source on which the assessment is based on.</i>	<i>The section is used to elaborate and discuss the checklist item in detail. It includes the assessment of the verification team and how the assessment was carried out. The reporting requirements of the VVM shall be covered in this section.</i>	<i>Assessment based on evidence provided if the criterion is fulfilled (OK), or a CAR, CL or FAR (see below) is raised. The assessment refers to the draft verification stage.</i>	<i>In case of a corrective action or a clarification the final assessment at the final verification stage is given.</i>

The periodic verification checklist (verification protocol) is the backbone of the complete verification starting from the desk review until final assessment. Detailed assessments and findings are discussed within this checklist and not necessarily repeated in the main text of this report.

The completed verification protocol is enclosed in the annex (table A-2) to this report.

3.6. Desk review

During the desk review all documents initially provided by the client and publicly available documents relevant for the verification were reviewed. The main documents are listed below:

- the last revision of the PDD including the monitoring plan^{/PDD/},
- the last revision of the validation report^{/VAL/},
- documentation of previous verifications^{/VER/}
- the monitoring report, including the claimed emission reductions for the project^{/MR/}, the approved revised monitoring plan
- the emission reduction calculation spreadsheet^{/XLS/}.

Other supporting documents, such as publicly available information on the UNFCCC website and background information were also reviewed.

3.7. On-site assessment

As most essential part of the verification exercise it is indispensable to carry out an inspection on site in order to verify that the project is implemented in accordance with the applicable criteria. Furthermore the on-site assessment is necessary to check the monitoring data with respect to accuracy to ensure the calculation of emission reductions. The main tasks covered during the site visit include, but are not limited to:

- The on-site assessment included an investigation of whether all relevant equipment is installed and works as anticipated.
- The operating staff was interviewed and observed in order to check the risks of inappropriate operation and data collection procedures.
- Information processes for generating, aggregating and reporting the selected monitored parameters were reviewed.
- The duly calibration of all metering equipment was checked.
- The monitoring processes, routines and documentations were audited to check their proper application.
- The monitoring data were checked completely.
- The data aggregation trails were checked via spot sample down to the level of the meter recordings.

Before and during the on-site visit the verification team performed interviews with the project participants to confirm selected information and to resolve issues identified in the document review.

Representatives of Enercon (India) Limited and including the operational staff of the plant were interviewed. The main topics of the interviews are summarised in Table 3-5.

Table 3-5: Interviewed persons and interview topics

Interviewed Persons / Entities	Interview topics
<p>1. Projects & Operations Personnel, Enercon (India) Limited; India; Mr. Ashok P. Shintre Mr. Ravi Kumar A. M. Ms. Anushree Mishra</p>	<ul style="list-style-type: none"> - General aspects of the project - Technical equipment and operation - Changes since validation / previous verification - Monitoring and measurement equipment - Calibration procedures - Quality management system - Involved personnel and responsibilities - Training and practice of the operational personnel - Implementation of the monitoring plan - Monitoring data management - Data uncertainty and residual risks - GHG emission reduction calculation - Procedural aspects of the verification - Maintenance of the project equipment - Environmental aspects

3.8. Draft verification reporting

On the basis of the desk review, the on-site visit, follow-up interviews and further background investigation the verification protocol is completed. This protocol together with a general project and procedural description of the verification and a detailed list

of the verification findings form the draft verification report. This report is sent to the client for resolution of raised CARs, CLs and FARs.

3.9. Resolution of CARs, CLs and FARs

Nonconformities raised during the verification can either be seen as a non-fulfilment of criteria ensuring the proper implementation of a project or where a risk to deliver high quality emission reductions is identified.

Corrective Action Requests (CARs) are issued, if:

- Non-conformities with the monitoring plan or methodology are found in monitoring and reporting, or if the evidence provided to prove conformity is insufficient;
- Mistakes have been made in applying assumptions, data or calculations of emission reductions which will impair the estimate of emission reductions;
- Issues identified in a FAR during validation or previous verifications requiring actions by the project participants to be verified during verification have not been resolved.

The verification team uses the term Clarification Request (CL), which is issued if:

- information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

Forward Action Requests (FAR) indicate essential risks for further periodic verifications. Forward Action Requests are issued, if:

- the monitoring and reporting require attention and / or adjustment for the next verification period.

For a detailed list of all CARs, CLs and FARs raised in the course of the verification pl. refer to chapter 4.

3.10. Final reporting

Upon successful closure of all raised CARs and CLs the final verification report including a positive verification opinion can be issued. In case not all essential issues could finally be resolved, a final report including a negative verification opinion is issued.

The final report summarizes the final assessments w.r.t. all applicable criteria.

3.11. Technical review

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

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

3.12. Final approval

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

After this step the request for issuance can be started.

4. VERIFICATION FINDINGS

In the following paragraphs the findings from the desk review of the monitoring report^{/MR/}, the calculation spreadsheet^{/XLS/}, PDD^{/PDD/}, the Validation Report^{/VAL/} and other supporting documents, as well as from the on-site assessment and the interviews are summarised.

The summary of CAR, CL and FAR issued are shown in Table 4-1:

Table 4-1: Summary of CAR, CL and FAR

Verification topic	No. of CAR	No. of CL	No. of FAR
A – General description of the project activity	01	0	0
B – Implementation of the project activity	01	0	0
C – Description of the monitoring system	02	0	0
D – Data and parameters monitored	01	0	0
E - Emission Reductions Calculation	0	0	0
SUM	05	0	0

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

Table 4-2: MR versions used for assessments

Version Nr.	Assessment Round
MR v. 1 (Published)	Findings raised
MR v. 2 (Final)	DOE Assessment # 1

Finding:	A1		
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	A.5 section of the MR requires the reference of all the tools applicable to the project.		
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The same has been incorporated in the MR under section A.5 of the MR.		
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-2. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The revised MR version 02 has been checked and the reference of all the tools applicable to the project has been made available in section A.5 of the MR. CAR is closed		
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements		

Finding:	B1		
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>The information regarding actual operations of the project activity during this MR such as downtime, exchange of any equipment etc is not provided in the section B.1</p> <p>Furthermore the PP need to describe all the events that occurred during the monitoring period which may impact the applicability of the methodology as well as the issues resulting from these events in this section, in line with EB 54 annex 34</p>		
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The same has been incorporated in the MR under section B.1 of the MR.		
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-2. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The information regarding actual operations of the project activity as well as the events that occurred during the monitoring period which may impact the applicability of the methodology has been incorporated in the revised MR version 02. The same is assessed by the verification team and found correct. Hence CAR is closed.		

Finding:	B1
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

Finding:	C1
Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	The PP needs to describe the organizational structure, roles and responsibilities of personnel and emergency procedures for the monitoring system in section C of MR as per EB 54 annex 34.
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The same has been incorporated in the MR under section C of the MR.
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-2. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The PP has mentioned the organizational structure, the roles & responsibilities of personnel and the emergency procedures for the monitoring system in the MR. This leads the CAR closed.
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

Finding:	C2
Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	The PP needs to explain the archiving procedures of data and all the records of monitoring parameters in section C of MR. Hence correction is sought in this context.
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The same has been described under section C of the MR.
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-2. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The archiving procedure has been incorporated in the revised MR section C hence CAR is closed.

Finding:	C2
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

Finding:	D1
Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	The procedure for delay in calibration as per EB 52 annex 60 has been applied, however in case of Bulk main meters (6607369 & 6605135) the procedure shall also be applied to the month of May 2011.
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The correction factor has been applied for the month May 2011 in ER sheet.
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-2. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	In case of Bulk meter, the procedure for the delay in calibration has been applied for the month MAY 2011 also as per EB 52 annex 60 in the revised MR version 02 and ER sheet. Thus the total months for which the delay is applied are 2010 for months of March, April & May and for 2011 months of May, June and July. CAR is closed.
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

5. SUMMARY OF VERIFICATION ASSESSMENTS

The following paragraphs include the summary of the final verification assessments after all CARs and CRs are closed out. For details of the assessments pl. refer to the discussion of the verification findings in chapter 4 and the verification protocol (Annex 1).

5.1. Implementation of the project

During the verification a site visit was carried out. On the basis of this site visit and the reviewed project documentation it can be confirmed that w.r.t. the realized technology, the project equipments, as well as the monitoring and metering equipment, the project has been implemented and operated as described in the registered PDD and the monitoring is in accordance to the monitoring plan.

5.2. Project history

During validation, the validating DOE has not raised any FAR. Hence no remaining issues are pending in the validation report. As this is the 2nd periodic verification, there was no issues from former verifications which are to be considered.

5.3. Special events

No special events with effect on the monitoring of the project have been observed during the monitoring period. However regular maintenance and operational shut downs were observed for the WECs in the project activity.

5.4. Compliance with the monitoring plan

The monitoring system and all applied procedures are completely in compliance to the registered monitoring plan.

5.5. Compliance with the monitoring methodology

The monitoring system is in compliance with the applied monitoring methodology “*Consolidated methodology for grid-connected electricity generation from renewable sources*”, ACM0002 Version 6.

All other requirements of the applied methodology are met. Furthermore it can be confirmed that information from other sources (CEA) ^{/CEA/} has been applied correctly.

5.6. Monitoring parameters

During the verification all relevant monitoring parameters (as listed in chapter B.7.1 of the PDD) have been verified with regard to the appropriateness of the applied measurement / determination method, the correctness of the values applied for ER calculation, the accuracy, and applied QA/QC measures.

As per the registered PDD the electricity exported to the grid is monitored based on which the net electricity exported values are arrived after deducting the electricity imported by the project activity.

There is one main and check meter dedicated to project activity at 33 kV metering point for the project activity. In addition to this there are two main and check meters (bulk meters) at 110 kV metering point at the Enercon substation and are connected to the machines of the project activity and the machines commissioned by the other project developers. Therefore in order to determine the electricity supplied to the grid by the project at 110 kV at the Bannikoppa substation, the state utility applies the transmission loss to the meter reading recorded at the 33 kV metering point. The transmission loss calculated by the state utility is endorsed / confirmed jointly by the representatives of Enercon and the state utility. The transmission loss applied to the project activity by the state utility is reflected in the JMR (Form B) recorded at 33kV metering point. Electricity supplied to the grid is calculated by applying transmission loss to the meter readings taken at 33 kV metering location of the project activity.

The Joint meter reading noted at 33 kV metering location contains the following data:-

Electricity Export (EGexport)

Electricity Import (EGimport)

Transmission Loss (TE) between 33 kV metering point and 110 kV metering point (two bulk meters) at Enercon substation

Electricity supplied to the Grid $[EG_{\text{export}} - 115\% \cdot EG_{\text{import}} - TE]$

The meter readings (both export and import), transmission loss and electricity supplied to the grid are recorded in the JMR (33 kV metering point). Hence all these values have been reproduced from the JMR for calculation of emission reductions.

All main and check energy meters installed at the Project are of 0.2% accuracy class.

All main and check meters are tested for accuracy with reference to a portable standard meter. The portable standard meter is owned by state utility and are calibrated by the State Electricity officials.. During testing and calibration, the main and check meters are deemed to be working satisfactorily if the errors are within specifications for meters of 0.2 accuracy class. The consumption registered by the main meters alone holds good for the purpose of metering electricity supplied to the grid as long as the error in the main meters is within the permissible limits. All the meters are tested / calibrated for accuracy annually, in case the annual frequency is not met, the procedures as per EB 52 annex 60 have been applied as follows.

As per revised Monitoring plan, the meters shall be tested for accuracy once annually. However it was observed that the consecutive calibrations for the bulk meter are not performed annually. Therefore in accordance with “Guidelines For Assessing Compliance With The Calibration Frequency Requirements”–Annex 60 to EB 52, Paragraph 4(a) where calibration is not carried out in line with the frequency mentioned in the registered PDD, as a conservative approach, the energy export and import values (as mentioned in the JMR) can be considered after applying the maximum possible value of error of the instrument to the measured values. Since the latest test certificate shows that meters are operating within their accuracy class 0.2%. In accordance with Annex 60, EB 52 we have applied a correction factor of +0.2% for transmission loss. The delay in calibration is applicable only to bulk meters based on which the only parameter calculated is transmission losses. The correction factor has been applied for calculation of emission reductions as provided in spreadsheet.

The details of the meters and calibration are as follows:

Table 5.6.1:

Meter description	Serial No.	Make	Accuracy class	Metering point	Calibration for 2009	Calibration for 2010	Calibration for 2011
Main meter (Bulk Meter I)	6607369	L&T	0.2	Bannikoppa S/s 110 KV	30-Mar-09	25-May-10	14-Jul-11
Check meter (Bulk Meter I)	6606801	L&T	0.2	Bannikoppa S/s 110 KV	30-Mar-09	25-May-10	14-Jul-11
Main meter (Bulk Meter II)	6605135	L&T	0.2	Bannikoppa S/s 110 KV	30-Mar-09	25-May-10	14-Jul-11
Check meter (Bulk Meter II)	6607373	L&T	0.2	Bannikoppa S/s 110 KV	30-Mar-09	25-May-10	14-Jul-11
Main meter at 33 KV	6767626	L&T	0.2	Kapathgudda South 33KV	28-Feb-09	8-Dec-09	5-Oct-10
Check Meter at 33 KV	6767637	L&T	0.2	Kapathgudda South 33KV	28-Feb-09	8-Dec-09	5-Oct-10

The delay in calibration was observed for the bulk meter (6607369) thus the delay factor has been applied for the months of March, April and May 2010 and for the months of May, June and July 2011. CAR D1 had been raised for application of the error factor and was subsequently closed out.

After appropriate corrections were carried out by the project participant it can be confirmed that all monitoring parameters have been measured / determined without

material misstatements and in line with all applicable standards and relevant requirements.

5.7. Monitoring report

A draft monitoring report was submitted to the verification team by the project participants. The team has made this report publicly available prior to the start of the verification activities. No comments were received.

During the verification, mistakes and needs for clarification were identified. The PP has carried out the requested corrections so that it can be confirmed that the Monitoring report is complete and transparent and in accordance with the registered PDD and other relevant requirements. Further, CAR A1, CAR B1, CAR C1 and CAR C2 were raised and satisfactorily closed by the assessment team. Please refer section 4 of this report for the details of same.

5.8. ER Calculation

The calculation of emission reductions is estimated as the difference of baseline emissions and the sum of project emissions and leakage emissions.

and

Baseline emission reduction calculation is given as:

$$\begin{array}{ccccc} \text{Baseline emissions} & = & \text{Emission coefficient} & \times & \text{Net electricity exported to the grid} \\ (\text{tCO}_2) & & (\text{tCO}_2/\text{MWh}) & & (\text{MWh}) \end{array}$$

As per applied methodology, leakage is considered as zero. Thus for the project activity the emission reductions equals to the baseline emissions. The baseline emissions are calculated as the product of net electricity supplied to the grid and the ex-ante fixed emission factor of NEWNE grid.

The electricity exported and electricity imported is directly sourced from the meters installed onsite. The cumulative reading of electricity export and electricity import forms the part of the JMR sheets which is checked by the verification team and found correct. The approach adopted to calculate the net electricity exported to the grid is assessed correct by the assessment team as the approach is line with the approved revised monitoring plan. The emission factor was fixed *ex ante* and the value was cross checked from the PDD and found to be correct. The approach to calculate the baseline emission is as per the registered PDD and thus the calculation is considered to be correct. The input values for electricity export and electricity import value in the emission reduction calculation^{/XLS/} sheet is checked from the JMR reports and cross-checked from the sales invoice^{/INV/} thus the calculation of net electricity export is found appropriate.

The calibration for the meters have not been carried out at the annual frequency as mentioned in the approved revised monitoring plan, thus the procedures as per EB 52 annex 60 have been applied, the revised emission reduction calculation sheet transparently presents the calculation which is cross checked by the verification team and found correct. Hence, CAR was closed successfully.

Stepwise approach to estimate the emission reduction is described below:

Baseline Emissions:

The baseline is the kWh produced by the renewable generating unit multiplied by an emission coefficient (measured in kg CO₂e/kWh) calculated in a transparent and conservative manner as the weighted average emissions (in kg CO₂e/kWh) as described in registered PDD.

$$BE_y = EG_y * EF_y$$

Where,

BE is baseline emissions in year y, tCO₂e

EG_y is the net electricity supplied to the grid in year y and is applied directly from JMR (Form B) certified by state utility. This value can also be cross checked from the invoice.

EF_y is the CO₂ emission factor of the grid (932.04 tCO₂e/GWh fixed ex-ante)

The net electricity supplied to grid by the project activity for this monitoring period is (EG_y) = 88,530,925 kWh

Thus, Baseline emissions (BE_y) = 82,502 tCO₂e

Project Emission:

As per the approved methodology ACM0002, Version 06, for most renewable power generation project activities,

Hence, PE_y = 0 tCO₂e

Leakage:

As per ACM0002 Version.6, no leakage emissions are considered.

Hence, Leakage (LE_y) = 0 tCO₂e

Emission reductions calculation

Total emission reductions is done based on following formula:

$$\text{Emission reduction (ER}_y\text{)} = \text{Baseline Emissions (BE}_y\text{)} - \text{Project Emissions (PE}_y\text{)} - \text{Leakage (LE}_y\text{)}$$

$$\text{Total baseline emissions} = 82,502 \quad \text{tCO}_2\text{e}$$

$$\text{Total project emissions} = 0 \quad \text{tCO}_2\text{e}$$

$$\text{Total leakage} = 0 \quad \text{tCO}_2\text{e}$$

$$\text{ER}_y = 82,502 - 0 - 0 \text{ tCO}_2\text{e}$$

$$\text{Thus, ER}_y = 82,502 \quad \text{tCO}_2\text{e}$$

During the verification, mistakes and inconsistencies in the ER calculation were identified and finding D1 was raised. All raised issues were addressed appropriately. Hence, all corresponding CARs could be closed. Thus it is confirmed that the ER calculation is overall correct.

5.9. Quality Management

Enercon (India) limited is responsible for operation and maintenance activities for this project. Enercon (India) limited operation and maintenance activities are ISO 9001:2008 certified and all the events are recorded in the log book available at the project site. Referring to the data available it can be inferred that there have not been any major special events for any of the WECs that are included in the project activity. As a part of regular maintenance the WECs are stopped for mechanical and electrical maintenance for 16 to 18 hours annually and for visual inspection for 6 to 7 hours quarterly.

The reading is monitored continuously by the online monitoring station (online monitoring station is located at the project site where all the data [historical and instantaneous] from panel meters of all WECs is retrieved) at the project site. In case of data loss, the data can be archived from this online monitoring system.

The data (electricity supplied to the grid) will be archived on electronic media as well as on paper. The archive will be kept for the period up to two years after the completion of the crediting period.

Enercon (India) Limited has a separate training facility, called Enercon Training Academy, which gives training to the persons who are to be deployed On-Site to take care of all the activities starting from project construction to operation to maintenance. Thus the requirements for training and regular maintenance is taken care by the O&M Contractor.

As per revised Monitoring plan, the meters shall be tested for accuracy once annually. However it was seen that the consecutive calibrations are not done for the bulk meter annually on time. Thus the procedures for delay in calibration as per EB 52 annex 60 have been applied for calculation of emission reductions.

All internal data are been subjected to QA/QC measures under established management systems by the O&M contractor Enercon

No significant deviations thereof have been observed during this verification.

5.10. Comparison with ex-ante estimated emission reductions

The start date of the monitoring period is 01/12/2009 and the end date is 31/08/2011. PP is claiming emission reduction from 2009-12-01 for 639 days. The MR includes a comparison of the calculated actual emission reductions with the ex-ante calculated values in the registered PDD.

Values applied in ex-ante calculation of the registered CDM-PDD is 86,329 (21 months equivalent of annually 49,331 emission reductions estimated in the registered PDD) and actual values reached during the monitoring period is 82,502.

The calculated value was found to be proportionally lower than the ex-ante determined value. This is due to less wind than anticipated. No further justification is required.

5.11. Overall Aspects of the Verification

All necessary and requested documentation was provided by the project participants so that a complete verification of all relevant issues could be carried out.

Access was granted to all installations of the plant which are relevant for the project performance and the monitoring activities.

No issues have been identified indicating that the implementation of the project activity and the steps to claim emission reductions are not compliant with the UNFCCC criteria and relevant guidance provided by the COP/CMP and the CDM EB (clarifications and/or guidance).

5.12. Hints for next periodic Verification

No FAR has been raised during the course of 2nd periodic verification.

6. VERIFICATION OPINION

Enercon (India) Limited has commissioned the TÜV NORD JI/CDM Certification Program to carry out the 2nd periodic verification of the project: “Tungabhadra wind power project in Karnataka”, with regard to the relevant requirements for CDM project activities. The project reduces GHG emissions due to generation of electricity from wind energy. This verification covers the period from 01/12/2009 to 31/08/2011 (including both days).

In the course of the verification 5 Corrective Action Requests (CAR) were raised and successfully closed. The verification is based on the draft monitoring report, revised monitoring report, the monitoring plan as set out in the registered PDD, the validation report, emission reduction calculation spreadsheet and supporting documents made available to the TÜV NORD JI/CDM CP by the project participant.

As a result of this verification, the verifier confirms that:

- All operations of the project are implemented and installed as planned and described in the validated project design document.
- The monitoring plan is in accordance with the applied approved CDM methodology ie, 'Consolidated baseline methodology for grid-connected electricity generation from renewable sources'(ACM0002), Version6
- The installed equipment essential for measuring parameters required for calculating emission reductions are calibrated appropriately.
- The monitoring system is in place and functional. The project has generated GHG emission reductions.

As the result of the 2nd periodic verification, the verifier confirms that the GHG emission reductions are calculated without material misstatements in a conservative and appropriate manner. TÜV NORD JI/CDM CP herewith confirms that the project has achieved emission reductions in the above mentioned reporting period as follows:

Emission reductions: **82,502 t** CO_{2e}

Mumbai, 2011-12-08



Prasad Jakkaraju

TÜV NORD JI/CDM Certification
Program

Verification Team Leader

Essen, 2011-12-08



Ingo Klein

TÜV NORD JI/CDM Certification
Program

Final Approval

7. REFERENCES

Table 7-1: Documents provided by the project participant(s)

Reference	Document
/BR/	Breakdown details for the project activity WECs
/CAL/	Calibration certificates for the meters under the project activity as per Table 5.6.1
/CC/	Commissioning certificate of the WECs involved in the project activity dated 2007-04-23, 2007-09-12 and 2007-12-31 of 10 WEGs, 19 WEGs and remaining 9 WEGs respectively.
/GEN/	Generation at the Online meter for individual WEC for specific months
/INV/	Invoices raised to the state electricity board (SEB) KPTCL for the project activity covering the entire monitoring period.
/ISO/	Copy of ISO 9001:2008 dated 2010-02-08 valid till 08-02-2013
/JMR/	Copy of the JMR sheets covering the monitoring period.
/LS/	Layout of the project site, describing the metering positions.
/MR/	MR Version 01 dated 2011/09/06 based on which project assessment is carried out MR Version 02 dated 2011/12/01 based on which Verification opinion is provided.
/PPA/	Power purchase agreement between the PP and KPTCL dated 2006-08-16 for the 22.8 MW windmill power project at Singatalur, Koralahalli and Hammigi Villages in Mundarsi Taluk, Gadag District.
/TR/	Training records of the personal working onsite for the project activity.
/TS/	1. Technical specification of the Online meter along with the serial numbers 2. Technical specifications of the WECs on site.
/XLS/	Emission reduction calculation sheet for the project activity

Table 7-2: Background investigation and assessment documents

Reference	Document
/ACM0002/	ACM0002 ver.6, "Consolidated monitoring methodology for grid-connected electricity generation from renewable sources"
/CPM/	TÜV NORD JI / CDM CP Manual (incl. CP procedures and forms)
/IPCC/	1. 1996 IPCC Guidelines for National Greenhouse Gas Inventories: work book 2. 2006 IPCC Guidelines for National Greenhouse Gas Inventories: work book
/KPI/	Kyoto Protocol (1997)
/MA/	Decision 3/CMP. 1 (Marrakesh – Accords)
/PDD/	Project Design Document for CDM project: " <i>Tungabhadra Wind Power Project in Karnataka</i> " UNFCCC no 1268
/RFR/	Request for revision in Monitoring Plan (Approved: 18 Feb 11) http://cdm.unfccc.int/filestorage/H/6/8/H68FLYQ524EMJ7ZP91NAX3UCVOBIDW/Tungabhadra%20Revised%20Monitoring%20plan.pdf?t=OWZ8bHJ3djK2fDBt4xk3W5urkF6Dap0Pre4F
/VAL/	Validation Report for CDM project " <i>Tungabhadra Wind Power Project in Karnataka</i> " UNFCCC no 1268
/VER/	Documents of previous verifications (Monitoring report, verification report, ER calculation sheet)
/VVM/	UNFCCC Validation and Verification Manual (Version 01.2, EB 55)

Table 7-3: Websites used

Reference	Link	Organisation
/unfccc/	http://cdm.unfccc.int	UNFCCC
/ipcc/	www.ipcc-nggip.iges.or.jp	IPCC publications

Table 7-4: List of interviewed persons

Reference	Mol ¹		Name	Organisation / Function
/IM01/	V	<input type="checkbox"/> Mr. <input checked="" type="checkbox"/> Ms	Anushree Mishra	Assistant Manager (CDM), Enercon India Limited
/IM02/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Ravi Kumar A. M.	Site Engineer, Enercon India Limited
/IM03/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Ashok P. Shintre	Manager Enercon India Limited

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

ANNEX

- A1:** Verification Protocol
- A2:** Appointment / Authorisation
statements

ANNEX 1: VERIFICATION PROTOCOL

Table A-1: GHG calculation procedures and management control testing / detailed audit testing of residual risk areas and random testing

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing	Conclusions and Areas Requiring Improvement (including <i>Forward Action Requests</i>)
Raw data generation				
<ul style="list-style-type: none"> • Installation of measuring equipment • Dysfunction of installed equipment • Maloperation by operational personnel • Downtimes of equipment • Exchange of equipment • Change of measurement equipment characteristic • Insufficient accuracy • Change of technology 	<ul style="list-style-type: none"> • Installation of modern and state of the art equipment • Process control automation • Internal data review • Regular visual inspections of installed equipment • Only skilled and trained personnel operates the relevant equipment • Daily raw data checks • Immediate exchange of dysfunctional equipment • Stand-by duty is 	<ul style="list-style-type: none"> • Inadequate installation / operation of the monitoring equipment • Inadequate exchange of equipment • Change of personnel • Undetected measurement errors • Inappropriateness of Management system procedures w.r.t. monitoring plan requirements (e.g. substitute value strategies) • Non-application of management system procedures • Insufficient accuracy • Inappropriate QA/QC 	<ul style="list-style-type: none"> • Site – visit • Check of equipment • Check of technical data sheets • Check of suppliers information / guarantees • Check of calibration records, if applicable • Check of maintenance records • Counter-check of raw data and commercial data • Check of CDM management system • Check of CDM related procedures 	<ul style="list-style-type: none"> • See Table A-2

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing	Conclusions and Areas Requiring Improvement (including <i>Forward Action Requests</i>)
<ul style="list-style-type: none"> Accuracy of values supplied by Third Parties 	<ul style="list-style-type: none"> organized Training Internal audit procedures Internal check of QA/QC measures of involved Third Parties 	measures of Third Parties	<ul style="list-style-type: none"> Application of CDM management system procedures Check of trainings Check of responsibilities Check of QA/QC documentation / evidences of involved Third Parties 	
Raw data collection and data aggregation				
<ul style="list-style-type: none"> Wrong data transfer from raw data to daily and monthly aggregated reporting forms IT Systems Spread sheet programming Manual data transmission Data protection Responsibilities 	<ul style="list-style-type: none"> Cross-check of data Plausibility checks of various parameters. Appropriate archiving system Clear allocation of responsibilities Application of CDM Management system procedures Usage of standard software solutions 	<ul style="list-style-type: none"> Unintended usage of old data that has been revised Incomplete documentation Ex-post corrections of records Ambiguous sources of information Non-application of management system procedures Manual data transfer mistakes 	<ul style="list-style-type: none"> Check of data aggregation steps Counter-calculation Data integrity checks by means of graphical data analysis and calculation of specific performance figures Check of management system certification Check of data archiving system 	<ul style="list-style-type: none"> See Table A-2

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing	Conclusions and Areas Requiring Improvement (including <i>Forward Action Requests</i>)
	(Spreadsheets) <ul style="list-style-type: none"> Limited access to IT systems Data protection procedures 	<ul style="list-style-type: none"> Unintended change of spread sheet programming or data base entries Problems caused by updating/upgrading or change of applied software 	<ul style="list-style-type: none"> Check of application of Management system procedures 	
Other calculation parameters				
<ul style="list-style-type: none"> Emission factors, oxidation factors, coefficients 	<ul style="list-style-type: none"> The values and data sources applied are defined in the PDD and monitoring plan 	<ul style="list-style-type: none"> Unintended or intended Modification of calculation parameters Wrong application of values Misinterpretations of the applied methodology and/ or the PDD Missing update of applicable regulatory framework (e.g. IPCC values) 	<ul style="list-style-type: none"> Update-check of regulatory framework Countercheck of the applied MP in the MR against the methodology and the PDD 	<ul style="list-style-type: none"> See Table A-2
Calculation Methods				

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing	Conclusions and Areas Requiring Improvement (including <i>Forward Action Requests</i>)
<ul style="list-style-type: none"> Applied formulae Miscalculation Mistakes in spread-sheet calculation 	<ul style="list-style-type: none"> Advanced calculation and reporting tools A CDM coordinator is in charge of the CDM related calculations Usage of tested / counterchecked Excel spreadsheets Involvement of external consultants 	<ul style="list-style-type: none"> The danger of miscalculation can only be minimized. 	<ul style="list-style-type: none"> Countercheck on the basis of own calculation. Spread sheet walk-through. Plausibility checks Check of plots 	<ul style="list-style-type: none"> See Table A-2
Monitoring reporting				
<ul style="list-style-type: none"> Data transfer to the author of the monitoring report Data transfer to the monitoring report Unintended use of outdated versions 	<ul style="list-style-type: none"> An experienced CDM consultant is responsible for monitoring reporting. CDM QMS procedures are defined 	<ul style="list-style-type: none"> The danger of data transfer mistakes can only be minimized Inappropriate application of QMS procedures 	<ul style="list-style-type: none"> Counter check with evidences provided. Audit of procedure application 	<ul style="list-style-type: none"> See Table A-2

Table A-2: (Project specific) Periodic Verification Checklist

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
A. General Description of the project activity				
A.1. Brief description of the project activity (EB 54 Annex 34, A.1) Check if section A.1 of the MR includes the following: <ul style="list-style-type: none"> - Purpose of the PA and the measures taken to reduce GHG emissions - Brief description of the installed technology and equipments - Relevant dates for the project activity (e.g. construction, commissioning, continued operation periods etc. - Total emission reductions achieved in this monitoring period 	/MR/	The verification team has checked section A.1 of the MR and confirms that the information provided is complete and correct with regards to the following: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Purpose of the PA and the measures taken to reduce GHG emissions <input checked="" type="checkbox"/> Brief description of the installed technology and equipments <input checked="" type="checkbox"/> Relevant dates for the project activity (e.g. construction, commissioning, continued operation periods etc <input checked="" type="checkbox"/> Total emission reductions achieved in this monitoring period In this context the following findings have been identified: N/A	OK	OK
A.2. Project Participants (EB 54 Annex 34, A.2) Check if section A.2 of the MR includes the following: <ul style="list-style-type: none"> - All PPs as displayed on the UNFCCC website 	/MR/	The verification team has checked section A.2 of the MR and confirms that the information provided is complete and correct with regards to the following: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> All PPs as displayed on the project related UNFCCC website are correctly listed In this context the following findings have been identified: N/A	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
A.3. Location of the Project Activity (EB 54 Annex 34, A.3) <i>Check if section A.3 of the MR reflects correctly the following:</i> <ul style="list-style-type: none"> - Address of the project location - Latitude and Longitude 	/MR/ /PDD/ /IM01/	<p>The verification team has checked section A.3 of the MR and confirms by means of comparison with the information given in the PDD and information gathered during the site visit that the information provided is complete and correct with regards to the following:</p> <p><input checked="" type="checkbox"/> The address has been correctly given in the MR</p> <p><input type="checkbox"/> Latitude and Longitude are in line with the information given in the PDD and reflects the actual location of the PA.</p> <p>In this context the following findings have been identified:</p> <p>The PDD provides a range for latitude and longitude of the project location, however the MR describes the actual location of each WECs.</p>	OK	OK
A.4. Technical description of the project (EB 54 Annex 34, A.4) <i>Check if section A.4 of the MR correctly describes / includes the following:</i> <ul style="list-style-type: none"> - Detailed description of the technology applied - Diagrams 	/MR/ /PDD/ /IM/	<p>The verification team has checked section A.4 of the MR and confirms by means of comparison with the information given in the PDD and information gathered during the site visit that the information provided is complete and correct with regards to the following:</p> <p><input checked="" type="checkbox"/> The description of the technology applied is complete and appropriate</p> <p><input type="checkbox"/> Appropriate diagrams have been included in the description</p> <p>In this context the following findings have been identified:</p> <p>N/A</p>	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
A.5. Title, reference and version of the baseline and monitoring methodology applied to the project (EB 54 Annex 34, A.5) <i>Check if section A.5 of the MR correctly describes / includes the following:</i> <ul style="list-style-type: none"> - Reference to the applicable version of the methodology - Reference to the applicable version(s) of relevant methodological tools - Relevant EB decisions, if applicable 	/MR/ /PDD/ /unfccc/	<p>The verification team has checked section A.5 of the MR and confirms by means of comparison with the information given in the PDD and displayed on the UNFCCC website that the information provided is complete and correct with regards to the following:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Name and version of the applicable CDM Methodology <input checked="" type="checkbox"/> Name and version of applicable CDM methodological tools <input type="checkbox"/> Relevant EB decisions <p>In this context the following findings have been identified:</p> <p>The applicable tools for the project activity shall be described, thus CAR A1 has been raised.</p>	CAR A1	OK
A.6. Registration date of the project activity (EB 54 Annex 34, A.6) <i>Check if section A.6 of the MR correctly includes the following:</i> <ul style="list-style-type: none"> - Registration date 	/MR/ /unfccc/	<p>The verification team has checked section A.6 of the MR and confirms by means of comparison with the information displayed on the UNFCCC website that the information provided is complete and correct with regards to the following:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Registration date <p>In this context the following findings have been identified:</p> <p>N/A</p>	OK	OK
A.7. Crediting period of the PA and related information (EB 54 Annex 34, A.7) <i>Check if section A.7 of the MR correctly includes the</i>	/MR/ /unfccc/	<p>The verification team has checked section A.7 of the MR and confirms by means of comparison with the information displayed on the UNFCCC website that the information provided is complete and correct with regards to the following:</p>	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<p>following:</p> <ul style="list-style-type: none"> - Start date of the crediting period. In this context please check, if applicable, whether post registration changes to the start date have been accepted by the EB. - Length and type of the crediting period 		<input checked="" type="checkbox"/> Start date of the crediting period. <input checked="" type="checkbox"/> Type and length of the crediting period In this context the following findings have been identified: N/A		
<p>A.8. Name of the responsible person(s) / entity/(ies) (EB 54 Annex 34, A.8)</p> <p>Check if section A.8 of the MR correctly includes the following:</p> <ul style="list-style-type: none"> - Contact information of the person(s)/entity(ies) responsible for completing the MR. 	/MR/ /IM/	<p>The verification team has checked section A.8 of the MR and confirms by means of interviews with the PP that the information provided is complete and correct with regards to the following:</p> <input checked="" type="checkbox"/> Contact information of the person(s) / entity/(ies) responsible for completing the MR.. In this context the following findings have been identified: N/A	OK	OK
B. Implementation of the project activity				
B.1. Implementation status of the project				
<p>B.1.1. Initial project implementation (EB 55 Annex 1, §§ 182, 195-201)</p> <p>Assess whether the project has been implemented and operated as per the registered PDD and are all physical features of the project in place?</p> <p>Further focus on the potential phase wise implementation and check the reporting on the</p>	/IM01/ /PDD/	<p><i>Description:</i> The project is implemented as described in the PDD as well as all the physical features of the project are in place. The project WECs have been commissioned in they year 2007 which is confirmed from the registered PDD and commissioning certificates.</p> <p><i>Justification of evidences:</i> Crosschecked with the physical implementation of project during</p>	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<p><i>corresponding status and starting dates accordingly.</i></p> <p><i>Also, discuss – if applicable – any approvals of the necessary request of notification or request for approval of changes from the project activity as described in the registered PDD (EB 48 Annex 66/67).</i></p>		<p>the site visit. Also the commissioning dates have been confirmed from the registered PDD and commissioning certificates.</p> <p><i>Conclusion:</i> There is no change in project implementation since registration of the project activity.</p>		
<p>B.1.2. Technical equipment changes (EB 55 Annex 1, § 187)</p> <p><i>Check if relevant technical equipment of the project activity has been exchanged or modified during the monitoring period. Further ensure that consistent notations of key equipment (meters etc.) in PDD, MR and calculation spreadsheet are applied</i></p> <p><i>Consider e.g. interviews with operational personnel, QMS records, maintenance records, instrument specifications.</i></p> <p><i>In case of changes, check whether the project is still in line with the registered PDD and assure that these changes have been considered in the monitoring report and the emission reduction calculation.</i></p> <p><i>Also, discuss –if applicable- any approvals of the necessary request of notification or request for approval of changes from the project activity as described in the registered PDD (EB 48 Annex 66/67).</i></p>	/IM01/	<p><i>Description:</i></p> <p>The project activity consists of 38 WECs of 600 kW capacity each. Technical equipment of the project activity has not been exchanged or modified during the monitoring period. The project is in line with the registered PDD in terms of operation.</p> <p><i>Justification of evidences:</i> According to the discussions carried out with plant personnel onsite and subsequent document review it was confirmed that the project technical lifetime is 20 years.</p> <p><i>Conclusion:</i> The technical equipment in the project have not been changed / replaced.</p>	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
B.1.3. Operation of the project activity (EB 55 Annex 1, § 195) <i>Check if relevant operation modes of the project activity have been exchanged or modified during the monitoring period.</i> <i>Consider e.g. interviews with operational personnel, operation log sheets, data management system records.</i> <i>In case of changes, check whether the project is still in line with the registered PDD and assure that these changes have been considered in the monitoring report and the emission reduction calculation.</i> <i>Also, discuss – if applicable – any approvals of the necessary request of notification or request for approval of changes from the project activity as described in the registered PDD (EB 48 Annex 66/67).</i>	/IM01/	<i>Description:</i> The project activity consists of 38 WECs of 600 kW capacity each, and the operation of the project activity is in line with the revised monitoring plan in terms of operation. The operation mode of the project have not been changed / replaced during the monitoring period. <i>Justification of evidences:</i> As stated in the interview with the operational personnel no change in the project equipment is observed. <i>Conclusion:</i> All the operation modes are as per the registered PDD. During the onsite visit the subsequent documents are cross checked and found ok.	OK	OK
B.1.4. Incidents (EB 55 Annex 1, § 187, 208a) <i>Identify if there have been any significant incidents, deviant operation modes and / or downtimes of the equipment?</i> <i>Consider e.g. interviews with operational personnel, operational log sheets, analysis of performance data.</i>	/IM01/	<i>Description:</i> Information regarding any of the incidents or any operation modes of the equipment is not mentioned in the monitoring report. CAR B1 is pending. <i>Justification of evidences:</i> CAR B1 is pending. <i>Conclusion:</i> CAR B1 is pending.	CAR B1	OK
B.1.5. Legislation	/IM01/	<i>Description:</i>	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
Find out whether relevant legislation with effect on the project activity in the host country has been changed. Assess, in case of changes, whether consequences for the PA with regard to relevant CDM requirements have been accounted for. In case of changes data sources shall be referenced.		The legislation has not changed w.r.t projects for which the PPA is already signed and is valid for a period of 10 years from commissioning. No regulation with impact on the project could be identified. Justification of evidences: The legislation for projects already implemented remains as described in the PPA. Conclusion: No change in the legislation.		
B.1.6. Open issues from validation <i>(EB 55 Annex 1, §§ 181-183, 188c, 190c)</i> <i>Check (esp. in case of 1st periodic verification) whether there are any open issues indicated in the validation report (e.g. FAR)?</i>	/VAL/	<input checked="" type="checkbox"/> There were no open issues addressed in the validation report <input type="checkbox"/> All open issues from the validation have been appropriately addressed. <input type="checkbox"/> The following issues related to the validation have not yet been appropriately addressed:	OK	OK
B.1.7. Open issues from previous verification <i>(EB 55 Annex 1, § 193)</i> <i>Check in case of further periodic verifications whether there are any open issues indicated in previous verification reports (FAR) and take into consideration</i>	/VER/	<input checked="" type="checkbox"/> There were no open issues addressed in the previous verification report <input type="checkbox"/> All open issues from the previous verification have been appropriately addressed. <input type="checkbox"/> The following issues related to the previous verification have not yet been appropriately addressed:	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.																	
<i>the guidance as specified in VVM.</i>																					
B.1.8. Publication of the Monitoring Report <i>Check if the monitoring report has been made publicly available on the UNFCCC website before the verification commenced.</i> <i>Check if comments have been received and if yes, how they have been addressed.</i>	/unfccc/	<p>Description: The monitoring report has been webhosted on the UNFCCC website at the project page, the verification activity commences after the web-hosting.</p> <p>Justification of evidences: http://cdm.unfccc.int/filestorage/9/Z/5/9Z50EHUFX7I8Q1NWL23RJDAB6PY4/1268%20%20MR.pdf?t=UU98bHJ0MXo1fDCQF08Dihp_LDzPa5blRgd</p> <p>Conclusion: The draft monitoring report, as received from the project participants, has been made publicly available before the start of the verification activities.</p>	OK	OK																	
B.2. Requests for Revisions of MP (EB 55 Annex 1, §§ 201, 203, 219) <i>Check (i) if there have been any requests for revisions of the monitoring plan in the past.and/or (ii) if there is a need for a RfRev. Make sure that the monitoring report reflects the application of the revision as approved by the EB, where applicable. Check in case of approved revisions if the date of approval has been included.</i>	/unfccc/	<table><tr><td><input type="checkbox"/></td><td colspan="3">No requests for revisions of the MP have been submitted to the UNFCCC prior to the current monitoring period</td></tr><tr><td rowspan="4"><input checked="" type="checkbox"/></td><td colspan="3">The following RfRev have been approved or are under approval by the UNFCCC</td></tr><tr><td>1</td><td>Title</td><td>Tungabhadra wind power project in Karnataka</td></tr><tr><td></td><td>Status</td><td><input type="checkbox"/> under approval; <input checked="" type="checkbox"/> approved</td></tr><tr><td></td><td>Appr.date</td><td>18/02/2011</td></tr></table>	<input type="checkbox"/>	No requests for revisions of the MP have been submitted to the UNFCCC prior to the current monitoring period			<input checked="" type="checkbox"/>	The following RfRev have been approved or are under approval by the UNFCCC			1	Title	Tungabhadra wind power project in Karnataka		Status	<input type="checkbox"/> under approval; <input checked="" type="checkbox"/> approved		Appr.date	18/02/2011	OK	OK
<input type="checkbox"/>	No requests for revisions of the MP have been submitted to the UNFCCC prior to the current monitoring period																				
<input checked="" type="checkbox"/>	The following RfRev have been approved or are under approval by the UNFCCC																				
	1	Title	Tungabhadra wind power project in Karnataka																		
		Status	<input type="checkbox"/> under approval; <input checked="" type="checkbox"/> approved																		
		Appr.date	18/02/2011																		

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)				Draft Concl.	Final Concl.	
			2	Title				
				Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved			
				Appr.date				
		<input checked="" type="checkbox"/>	During the verification of the current MP no need for a RfRev has been identified. The monitoring plan is in accordance with the approved methodology applied by the PA					
		<input type="checkbox"/>	The following revisions of the MP are to be requested from the EB for the current MP					
			1	Issue				
		In this context the following findings have been identified: N/A						
B.3. Requests for Deviations applied to this MP (EB 55 Annex 1, §§ 203, 211-219) <i>Check (i) if there have been any requests for deviations in the past.and/or (ii) if there is a need for a RfDev. Make sure that the monitoring report reflects the application of the deviation as approved by the EB, where applicable. Check in case of approved deviations if the approval date and reference number has been included.</i> <i>Further check in case of approved RfDev whether the MR appropriately reflects the application of the EB</i>	/unfccc/	<input checked="" type="checkbox"/>	No requests for deviations have been submitted to the UNFCCC prior to the current monitoring period				OK	OK
		<input type="checkbox"/>	The following RfDev have been approved or are under approval by the UNFCCC					
			1	Title				
				Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved			
				Ref. No.				
				Appr.date				

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)				Draft Concl.	Final Concl.	
guidance.			2	Title				
				Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved			
				Ref. No.				
				Appr.date				
		<input type="checkbox"/>	In case of approved guidance of the EB: The monitoring report reflects the application of the EB guidance regarding the RfDev.					
		<input checked="" type="checkbox"/>	During the verification of the current MP no need for a RfDev has been indentified					
		<input type="checkbox"/>	The following deviations are to be requested from the EB for the current MP					
			1	Issue				
		In this context the following findings have been identified: N/A						
		B.4. Initial verification <i>In case an initial verification has been carried out, check if all FARs, recommendations etc. can be confirmed as existent for the periodic verification.</i>	/IM01/	<input checked="" type="checkbox"/>	No initial verification has been carried out.			
<input type="checkbox"/>	There are no open issues, recommendations etc. pending from the initial verification							
<input type="checkbox"/>	The following issues related to the initial verification have to be addressed:							

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
C. Description of the monitoring system				
C.1. Management System (EB 55 Annex 1, § 184 a (iii)) <i>Check if the GHG data monitoring system can be assessed as appropriate.</i> <i>In case reference is made to a (certified) company quality management system, check if all CDM related monitoring procedures have been fully integrated in the project participant's quality management system.</i> <i>In case of a stand-alone system, check how the GHG management system has been implemented and effectiveness is ensured.</i>	/ISO/ /CAL/	<i>Description:</i> Monitoring, recording, reporting and archiving the data is done by Enercon (India) Limited which is ISO 9000 certified and have proper procedures for data management. The metering is done by KPTCL and Enercon, and the MR and emission reductions sheets are prepared by Enercon. <i>Justification of evidences:</i> ISO certificate of Enercon is crosschecked along with the calibration reports to confirm that proper Management systems are being followed. <i>Conclusion:</i> Data monitoring system is appropriate.	OK	OK
C.2. Metering diagram (EB 54 Annex 34, C) <i>Check first if the MR includes a metering diagram showing all relevant monitoring points..</i> <i>Check further if this diagram reflects the actual situation and is in line with the registered PDD and with the requirements of the applied methodology.</i>	/SLD/	<i>Description:</i> The metering positions for the project activity involve common metering for the project WECs and in addition to this there are two bulk meters (two main and check meter) at the Bannikoppa sub-station involving the project and other WECs of the location. The same has been described in the metering diagram in Appendix I of MR, which is I in line with the approved revised monitoring plan. <i>Justification of evidences:</i> The metering positions have been confirmed during the site visit and found ok.	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		<p><i>Conclusion:</i> The diagram presented in the MR reflects the actual situation and is in line with the revised monitoring plan.</p>		
<p>C.3. Roles and Responsibilities (EB 54 Annex 34, C)</p> <p><i>Check if all roles and positions of each person in the GHG data management process are clearly defined and implemented as stated in the monitoring plan. Please consider the complete data trail from raw data generation to submission of the final data.</i></p> <p><i>Identify, if relevant personnel w.r.t. monitoring has been exchanged?</i></p> <p><i>If so, have appropriate training measures been carried out.</i></p> <p><i>In case of changes, assure that the implemented monitoring procedures have not been affected.</i></p>	/MR/	<p><i>Description:</i> The roles and responsibilities is not described in the MR, hence CAR C1 is pending.</p> <p><i>Justification of evidences:</i> Pending CAR C1</p> <p><i>Conclusion:</i> Pending CAR C1</p>	CAR C1	OK
<p>C.4. Emergency procedures for the monitoring system (EB 54 Annex 34, C)</p> <p><i>Check, as appropriate, whether relevant emergency procedures for the monitoring system have been included in the MR and assess whether these procedures have been implemented, when required</i></p>	/MR/	<p><i>Description:</i> No emergency procedures are given in the MR hence CAR C1 is raised.</p> <p><i>Justification of evidences:</i> Pending CAR C1</p> <p><i>Conclusion:</i> Pending CAR C1</p>	CAR C1	OK
<p>C.5. Data archive and data protection Check whether all records of monitoring parameters</p>	/MR/	<p><i>Description:</i></p>	CAR C2	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
are archived according to the monitoring plan. Assess further whether appropriate measures have been taken in order to avoid unintended or intended manipulation or loss of the measured data.		<p>The data archiving procedure and duration is not specified in the MR, thus CAR C2 is raised.</p> <p>The data for the project activity is measured every month, jointly in the presence of O&M contractor Enercon personnel and Officials from the State grid. The JMR sheet is an authentic document based on which the PP raise monthly invoices to SEB for the net electricity supplied to the grid. Thus data manipulation for the project activity is unlikely.</p> <p><i>Justification of evidences:</i></p> <p>Pending CAR C2</p> <p><i>Conclusion:</i> Pending CAR C2</p>		
D. Data and parameters monitored				
D.1. EG_{EXPORT}		Description: Electricity export recorded at meters (one main and one check)		
<p>a) Measurement / Determination method (EB 55 Annex 1, §§ 184-185, 202-203)</p> <p><i>Describe how the monitoring parameter was measured / determined.</i></p> <p><i>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.</i></p>	/IM01/ /PDD/ /RFR/ /JMR/ /INV/ /XLS/	<p><i>Description:</i></p> <p>The total electricity exported from all the WECs is recorded by the meters (one main & one check meter) at 33 kV point and the relevant equipment is in line with the revised monitoring plan. The total electricity exported is metered and jointly monitored in presence of KPTCL and Enercon officials every month. A JMR sheet is prepared every month and is available with the O&M contractor i.e. Enercon for verification.</p>	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.		<p><i>Justification of evidences:</i></p> <p>The total electricity exported is confirmed with the JMR sheets and cross-checked with the invoices. Data cross-check is pending</p> <p><i>Conclusion:</i></p> <p>The approach described in the MR is assessed to be correct and in line with the revised monitoring plan.</p>		
<p>b) Accuracy (EB 55 Annex 1, §§ 205c, 206a)</p> <p>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</p>	/CAL/ /MM/	<p><i>Description:</i></p> <p>The total electricity exported from all the WECs are metered at the sub-station. The measurement is carried out monthly in presence of KPTCL/MESCOM officials and O&M contractor Enercon officials. The Joint meter reading report is available with the O&M contractor for verification. The meters are calibrated annually by KPTCL a government body which is the authorized body to carry out the same.</p> <p>The electricity export value is accurately monitored, the meters are of 0.2 accuracy class.</p> <p><i>Justification of evidences:</i></p> <p>JMR sheets are checked during the site visit.</p> <p><i>Conclusion:</i></p> <p>The values described in the MR is assessed to be correct and in line with the revised monitoring plan.</p>	OK	OK
c) QA/QC Procedure	/CAL/	<p><i>Description:</i></p>	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
(EB 55 Annex 1, §§ 184b (vii), 205c, 206) <i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i>	/MR/ /ISO/	<p>QA/QC procedures are taken care by the O&M contractor Enercon which has proper procedures for data handling and storage. Further Enercon is ISO 9000 certified and the QA/QC procedures are in place.</p> <p>The calibrations for the meters are carried out by KPTCL at an annual frequency. <i>Justification of evidences:</i> The calibration certificates are checked and found acceptable. ISO certificate for Enercon is available and is valid till 08/02/2013. .</p> <p><i>Conclusion:</i> Proper QA/QC procedures are in place.</p>		
d) Correctness (EB 55 Annex 1, §§ 202, 206, 221e) <i>Determine whether the value given in the monitoring report is correct or determined in a conservative manner.</i> <i>In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.</i> <i>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i>	/MR/ /JMR/ /INV/ /RFR/ /XLS/	<p><input checked="" type="checkbox"/> Correct <input type="checkbox"/> Not correct</p> <p><i>Description:</i> The total electricity exported from all the WECs is metered at a single metering point with provision for main and check meters. The same is in line with approved revised monitoring plan. The values in the CER calculation sheet are confirmed with the JMR sheets, further they have been cross-checked with the invoices (sales receipt) and no inaccuracies are observed.</p> <p><i>Justification of evidences:</i> The electricity export from the project WECs is crosschecked with the values mentioned in the JMR and invoices.</p> <p><i>Conclusion:</i> The electricity export follows the revised monitoring plan. Further the values are matching with the JMR and sales receipt.</p>	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
D.2. EG_{IMPORT}		Description: Electricity import recorded at meters (one main and one check) connecting 38 machines of the project activity		
a) Measurement / Determination method (EB 55 Annex 1, §§ 184-185, 202-203) <i>Describe how the monitoring parameter was measured / determined.</i> <i>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.</i> <i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i>	/IM01/ /PDD/ /RFR/ /JMR/ /INV/ /XLS/	Description: <p>The total electricity imported by all the WECs is metered. The same is in line with the revised monitoring plan. The total electricity imported is metered and jointly monitored in presence of KPTCL and Enercon officials every month. A JMR sheet is prepared every month and is available with the O&M contractor for verification. Further the values have been cross-checked with the monthly sales invoice raised by Enercon to KPTCL.</p> <p>Justification of evidences: The total electricity imported is checked with the JMR sheets and cross-checked with the sales invoices.</p> <p>Conclusion: The determination methods described in the MR are correct.</p>	OK	OK
b) Accuracy (EB 55 Annex 1, §§ 205c, 206a) <i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i>	/CAL/ /O&M/ /XLS/	Description: <p>The total electricity imported is metered. The measurement is carried out monthly in presence of KPTCL officials and O&M contractor Enercon officials. The Joint meter reading report has been checked to confirm the values. The metering also consists for the provision of main and check meter. The procedure for metering is as per the PPA. Also the calibration has been done annually which is confirmed and found acceptable for the main and check meter at 33Kv metering point. The meters are of 0.2 accuracy class.</p>	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		<i>Justification of evidences:</i> The total electricity imported is checked with the JMR sheets and cross-checked with the sales invoices. <i>Conclusion:</i> The electricity import value as mentioned in the MR matches with the JMR sheet.		
c) QA/QC Procedure (EB 55 Annex 1, §§ 184b (vii), 205c, 206) Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.	/CAL/ /MR/ /ISO/	<i>Description:</i> QA/QC procedures are taken care by the O&M contractor Enercon which has proper procedures for data handling and storage. Further Enercon is ISO 9000 certified and the QA/QC procedures are in place. The calibrations for the meters are carried out by KPTCL at an annual frequency. <i>Justification of evidences:</i> The calibration certificates are checked and found acceptable. ISO certificate for Enercon is available and is valid till 08/02/2013. <i>Conclusion:</i> Proper QA/QC procedures are in place.	OK	OK
d) Correctness (EB 55 Annex 1, §§ 202, 206, 221e) Determine whether the value given in the monitoring report is correct or determined in a conservative manner. In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should	/MR/ /JMR/ /INV/ /RFR/ /XLS/	<input checked="" type="checkbox"/> Correct <input type="checkbox"/> Not correct <i>Description:</i> The total electricity imported from all the WECs is metered at a single metering point with provision for main and check meters. The same is in line with approved revised monitoring plan. The values in the CER calculation sheet are confirmed with the JMR sheets, further they have been cross-checked with the invoices (sales receipt) and no inaccuracies are observed. <i>Justification of evidences:</i> The electricity import from the project	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<p><i>be given.</i></p> <p><i>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i></p>		<p>WECs is crosschecked with the values mentioned in the JMR and invoices.</p> <p><i>Conclusion:</i> The electricity import follows the revised monitoring plan. Further the values are matching with the JMR and sales receipt.</p>		
D.3. T_E		Transmission loss for export between the metering location at 33Kv point and the metering location at 110 kV at Enercon substation.		
<p>a) Measurement / Determination method (EB 55 Annex 1, §§ 184-185, 202-203)</p> <p><i>Describe how the monitoring parameter was measured / determined.</i></p> <p><i>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.</i></p> <p><i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i></p>	<p>/IM01/ /PDD/ /RFR/ /JMR/ /INV/ /XLS/</p>	<p><i>Description:</i></p> <p>Transmission loss between metering location at 33 kV and the metering location at 110 kV (bulk meters) at Enercon substation is applied to the meter reading taken at meters connected at 33 kV point for the project activity. The transmission loss is applied by the state utility as reflected in the JMR taken at 33 kV. The measurement method is in line with the approved revised monitoring plan.</p> <p>The calibration of the bulk meter was not carried out at annual frequency, thus the procedure as per EB 52 annex 60 has been applied, however the procedure needs to be applied for the month of May 2011 also.</p> <p>Thus CAR D1 is raised</p> <p><i>Justification of evidences:</i> Pending CAR D1</p> <p><i>Conclusion:</i> The measurements of the transmission loss are in line with the revised Monitoring plan. However pending CAR D1.</p>	CAR D1	OK CAR D1 closed

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
b) Accuracy (EB 55 Annex 1, §§ 205c, 206a) <i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i>	/CAL/ /O&M/ /XLS/	<p>Description: The total transmission loss is calculated based on the metered values, the JMR and Monthly reports are cross-checked, no inaccuracies were observed. The meters at the 110 kV (bulk meters) are not being calibrated annually. Thus the meters are assessed to be inaccurate due to delay in calibration. Therefore CAR D1 is pending.</p> <p>Justification of evidences: The calibration is not done according to the calibration frequency requirement specified in the monitoring plan i.e. annually. Thus procedure as per EB 52 Annex 60 has been applied, however pending CAR D1.</p> <p>Conclusion: The values are calculated based on measured, however pending CAR D1</p>	CAR D1	OK CAR D1 closed
c) QA/QC Procedure (EB 55 Annex 1, §§ 184b (vii), 205c, 206) <i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i>	/CAL/ /MR/ /ISO/	<p>Description: The O&M contractor (Enercon) is ISO certified and has proper QA/QC procedures for data handling and storage. The JMR sheets are prepared jointly by KPTCL and Enercon officials, and further a copy is available with the O&M contractor. The meters (bulk meters) should be calibrated annually by KPTCL which is a Government body and is authorized for the same but the calibration is not done annually as per mentioned. Thus CAR D1 is raised.</p>	CAR D1	OK CAR D1 closed

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		<p><i>Justification of evidences:</i> The ISO certificate for Enercon (O&M contractor) has been checked and is acceptable. However CAR D1 is pending.</p> <p><i>Conclusion:</i> The QA/QC procedures are as per the revised Approved Monitoring Plan. However, Pending CAR D1</p>		
<p>d) Correctness (EB 55 Annex 1, §§ 202, 206, 221e)</p> <p><i>Determine whether the value given in the monitoring report is correct or determined in a conservative manner.</i></p> <p><i>In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.</i></p> <p><i>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i></p>	/MR/ /JMR/ /INV/ /RFR/ /XLS/	<p><input checked="" type="checkbox"/> Correct <input type="checkbox"/> Not correct</p> <p><i>Description:</i> The transmission loss is calculated with the procedures as given in the PPA which is in line with revised monitoring plan however the calibration of the meters at 110 point (bulk meter) is not in accordance with the given calibration frequency i.e. annually. Hence CAR D1 is pending.</p> <p><i>Justification of evidences:</i> Pending CAR D1</p> <p><i>Conclusion:</i> The transmission loss is calculated based on the measure value from 33 kV meter and the bulk meter readings. However Pending CAR D1</p>	CAR D1	OK CAR D1 closed
D.4. EG_y		Net electricity supplied to the grid by the project		
a) Measurement / Determination method	/IM01/ /PDD/	<i>Description:</i>	CAR	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
(EB 55 Annex 1, §§ 184-185, 202-203) <i>Describe how the monitoring parameter was measured / determined.</i> <i>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.</i> <i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i>	/RFR/ /JMR/ /INV/ /XLS/	<p>The net electricity from the WECs is calculated based on the export values, import values and the transmission loss. The approach is as per the PPA and in line with the approved revised monitoring plan.</p> <p>The value for net electricity has been confirmed from the JMR sheets and cross-checked with the Invoices raised by PP to KPTCL.</p> <p>However the calibration of the bulk meter is not in accordance with the PDD on which the transmission loss is based, therefore the CAR D1 is pending.</p> <p><i>Justification of evidences:</i></p> <p>Pending CAR D1</p> <p><i>Conclusion:</i></p> <p>Pending CAR D1</p>	D4	CAR D1 closed
b) Accuracy (EB 55 Annex 1, §§ 205c, 206a) <i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i>	/CAL/ /O&M/ /XLS/	<p><i>Description:</i></p> <p>This is a calculated value, thus the calibration procedures are not directly applicable.</p> <p>However the calibration for the bulk meter is not as per the specified frequency, thus pending CAR D1.</p> <p><i>Justification of evidences:</i></p> <p>The calibration reports have been checked.</p> <p><i>Conclusion:</i></p> <p>Pending CAR D1</p>	CAR D4	OK CAR D1 closed
c) QA/QC Procedure	/CAL/ /MR/	<p><i>Description:</i></p> <p>The net electricity from the project WECs is calculated based on</p>	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
(EB 55 Annex 1, §§ 184b (vii), 205c, 206) <i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i>	/ISO/	<p>the revised monitoring plan. Calibration of the meter is carried out annually by KPTCL. All the required data is archived by the O&M contractor (Enercon), which is an ISO certified and has proper procedures for data handling and storage. The value for net electricity has been confirmed from the JMR sheets and cross-checked with the Invoices raised by PP to KPTCL.</p> <p><i>Justification of evidences:</i> Enercon is ISO certified and has proper QA/QC procedures established. ISO certificate for Enercon is available and checked.</p> <p><i>Conclusion:</i> Proper QA/QC procedures are in place and the same is being followed.</p>		
d) Correctness (EB 55 Annex 1, §§ 202, 206, 221e) <i>Determine whether the value given in the monitoring report is correct or determined in a conservative manner.</i> <i>In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.</i> <i>In case of mistakes / deviations pl. provide details</i>	/MR/ /JMR/ /INV/ /RFR/ /XLS/	<p><input checked="" type="checkbox"/> Correct <input type="checkbox"/> Not correct</p> <p><i>Description:</i> The values in the MR are calculated based on the electricity export, electricity import and the transmission loss in the JMR. However due to the calibration inaccuracies the correction is required in the parameter of net electricity exported. Pending CAR D1. The value for net electricity has been confirmed from the JMR sheets and cross-checked with the Invoices raised by PP to KPTCL.</p> <p><i>Justification of evidences:</i></p>	CAR D1	OK CAR D1 closed

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<i>and descriptions of the CARs raised.</i>		The JMR and Invoice copy have been checked and is acceptable. However, pending CAR D1 <i>Conclusion:</i> Pending CAR D1		
E. Emission reductions calculation				
E.1. Traceability (EB 55 Annex 1, § 182) <i>Assess if the calculation is fully traceable. In case of complex calculations an Excel calculation spreadsheet shall be used. All applied formulae must be visible.</i>	/MR/ /RFR/ /XLS/	<i>Description:</i> The calculation approach is traceable as per the approach in the revised monitoring plan. All the formulae are visible and traceable. <i>Justification of evidences:</i> The emission reductions sheet is checked and found acceptable. <i>Conclusion:</i> The calculations follow the Revised Monitoring plan as per which the Net electricity exported to grid is cross-checked with the credit note. The CER emission reductions are fully traceable.	OK	OK
E.2. Parameter consistency (EB 55 Annex 1, § 186; EB 54 Annex 34 Pt.1) <i>Assess whether all internal and external parameters and data used for calculation are applied consistently in the monitoring report and the calculation spreadsheet?</i> <i>Consider only the correct data exchange between the</i>	/XLS/	<i>Description:</i> The external parameter used is the grid emission factor which has been fixed <i>ex ante</i> , while the internal parameters are monitored and are applied consistently. <i>Justification of evidences:</i> The values can be traced to JMR readings and electricity export readings monitored by Enercon. The emission	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<i>monitoring report and the calculation spreadsheet (if any). Further ensure the consistency of notations for all parameters in the PDD, MR, calculation spreadsheet.</i>		factor value is consistent throughout the PDD and the MR. <i>Conclusion:</i> The values described in the MR are correct.		
E.3. Parameter presentation (EB 54 Annex 34 Pt.1) <i>Check if all values included in the MR are presented as per international standards</i> <ul style="list-style-type: none"> - <i>Format: Standard format (e.g. 1,000 representing one thousand and 1.0 representing one).</i> - <i>Units: Values shall be directly given in SI units – or additionally to original units transferred to SI.</i> - <i>Short scale naming system: (Only) million = 10⁶ and billion 10⁹ shall be used.</i> 	/MR/ /XLS/	<i>Description:</i> All the values included in the MR are presented as per international standards. The units used are SI units. <i>Justification of evidences:</i> Every format, units etc. is crosschecked with the monitoring report and confirmed as the international standard. <i>Conclusion:</i> Each parameter in the monitoring report is presented as international presentation.	OK	OK
E.4. Correctness of calculation (EB 55 Annex 1, §§ 204-206) <i>Check if the applied formulae and methods for calculating baseline emissions, project emissions and leakage are in accordance with the monitoring plan and / or the approved methodology.</i> <i>Assess whether the provided calculations are complete and reflect all requirements of the</i>	/XLS/ /MR/ /PDD/	<i>Description:</i> The applied formulae and methods for calculating baseline emissions are as per the revised Monitoring plan. Further project emissions and leakage are zero as per the registered PDD. . <i>Justification of evidences:</i> The formulae in the MR are crosschecked with the approved Revised Monitoring plan. <i>Conclusion:</i>	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<i>monitoring plan.</i> <i>Check especially that no standard or old values have been used for calculation where calculations based on up-to-date data is required.</i>		The emission reduction calculation follows the Revised Monitoring plan as per which the Net electricity exported to grid is cross-checked with the sales receipt.		
E.5. Emission reductions table (EB 54 Annex 34, E.4) <i>Check if the MR includes a summary table of the emission reductions calculation specifying separately</i> <ul style="list-style-type: none"> - Total baseline emissions - Total project emissions: - Total leakage - Total emission reductions. <i>Assess whether the values are correct or need to be revised as a consequence of issues identified above.</i>	/MR/ /RFR/ /XLS/	<input checked="" type="checkbox"/> The MR includes in section E.4 a summary table of the emission reductions calculation. <input checked="" type="checkbox"/> The summary table specified the total baseline, project and leakage emissions as well as the total emission reductions separately. <input type="checkbox"/> The values as specified in the ER summary table are correct; no issues have been identified during the verification which requires changes in the ER calculation. <input checked="" type="checkbox"/> During the verification issues with impact on the ER calculation have been identified. Thus subject to the closure of above listed findings the summary table in E.4 needs to be revised. In this context the following additional findings have been identified: Pending CAR D1.	CAR D1	OK CAR D1 closed
E.6. Comparison with ex-ante determined emission reductions (EB 54 Annex 34, E.5; E.6) <i>Check if the MR includes a comparison of actual values of the monitoring period with the estimations in</i>	/XLS/ /MR/ /PDD/	<i>Description:</i> The MR includes the comparison of actual values of the monitoring period with the estimations in the registered PDD. The emission reductions during the current monitoring period are lower than the PDD estimates.	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<p><i>the registered PDD.</i></p> <p><i>Check further whether in case of an increase an appropriate explanation is included in the MR.</i></p> <p><i>Assess in case of a significant increase whether this is due to technical or organisational changes within or outside the control of the PP which might require a notification / approval of changes (as per EB 48 Annex 66/67).</i></p>		<p><i>Justification of evidences:</i> It has been crosschecked with the monitoring report and found to be correct.</p> <p><i>Conclusion:</i> The decrease of the emission reduction achieved during the monitoring period compare the ex-ante estimation is due to less wind. This is deemed a reasonable explanation.</p>		

ANNEX 2: STATEMENTS OF COMPETENCE OF ALL INVOLVED PERSONNEL

TÜV NORD Certification		
<p>Statement of Competence Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program</p>		
<p>Mr. Prasad Jakkaraju</p>		
SCHEME	STATUS	VALID UNTIL
CDM	Lead Assessor	2014-02-02
VCS	Lead Assessor	2014-02-02
<p>Authorization status for technical areas within sectoral scopes:</p>		
CODE	TECHNICAL AREA	
1.2	Renewable Energies	
2.1	Electricity Distribution	
<p>103 – Rev. 0, Date: 2011-03-25</p>		
<p>103_S01-F003_2011-03-25_rev0</p>		

TÜV NORD Certification		
<p>Statement of Competence Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program</p>		
<p>Mr. Jimmy Sah</p>		
SCHEME	STATUS	VALID UNTIL
CDM	Lead Assessor	2014-02-03
VCS	Lead Assessor	2014-02-03
<p>Authorization status for technical areas within sectoral scopes:</p>		
CODE	TECHNICAL AREA	
1.2	Renewable Energies	
<p>091 – Rev. 1, Date: 2011-07-27</p>		
<p>091_S01-F003_2011-07-27_rev1</p>		

TÜV NORD Certification		
<p>Statement of Competence Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program</p>		
<p>Mr. Sukanta Das</p>		
SCHEME	STATUS	VALID UNTIL
CDM	Lead Assessor	2014-03-08
VCS	Lead Assessor	2014-03-08
<p>089 – Rev. 0, Date: 2011-03-17</p>		
<p>089_S01-F003_2011-03-17_rev0</p>		

TÜV NORD Certification		
<p>Statement of Competence Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program</p>		
<p>Mr. Ajay Singh Thakur</p>		
SCHEME	STATUS	VALID UNTIL
CDM	Assessor	2014-07-04
VCS	Assessor	2014-07-04
<p>152 – Rev. 1, Date: 2011-07-05</p>		
<p>152_S01-F003_2011-07-05_rev1</p>		

TÜV NORD Certification		
<p>Statement of Competence Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program</p>		
<p>Mr. Heiner Lenzian</p>		
SCHEME	STATUS	VALID UNTIL
CDM	Assessor (Validation, Verification) Technical Reviewer	2013-12-12
VCS	Assessor Technical Reviewer	2013-12-12
<p>Authorization status for technical areas within sectoral scopes:</p>		
CODE	TECHNICAL AREA	TR SUBCATEGORIES
1.2	Renewable Energies	1.2.1 Hydro 1.2.2 Wind 1.2.3 Geothermal 1.2.4 Solar 1.2.5 Tidal
<p>210 - Rev. 1, Date: 2011-08-15</p>		
<p>210_S01-F003_2011-08-15_rev1</p>		

TÜV NORD Certification		
<p>Statement of Competence Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program</p>		
<p>Mr. Ingo Klein</p>		
SCHEME	STATUS	VALID UNTIL
CDM	Lead Assessor (Validation, Verification) Technical Reviewer	2013-10-17
VCS	Lead Assessor Technical Reviewer	2013-10-17
<p>Authorization status for technical areas within sectoral scopes:</p>		
CODE	TECHNICAL AREA	TR SUBCATEGORIES
1.2	Renewable Energies	1.2.1 Hydro 1.2.2 Wind 1.2.3 Geothermal 1.2.4 Solar 1.2.5 Tidal
<p>122 - Rev. 1, Date: 2011-08-08</p>		
<p>122_S01-F003_2011-08-08_rev1</p>		