VERIFICATION / CERTIFICATION REPORT

15.4 MW WIND FARM AT SATARA DISTRICT, MAHARASTRA

(CDM Registration Reference No. 0593)

VERIFICATION PERIOD:

01 April 2002 to 31 March 2007.

REPORT NO. 2007-2043

REVISION NO. 02

DET NORSKE VERITAS AS

VERIFICATION / CERTIFICATION REPORT

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Approved by: Michael Lehmann Technical Director	Organisational unit: DNV Certification, International Climate Change Services
Client: Ellora Times Limited	Client ref.: Anilkumar D Maiar. Manager Accounts.

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Summary:

Det Norske Veritas Certification AS has performed a verification of the emission reductions reported from the "15.4 MW Wind Farm at Satara District, Maharastra" project (Registration Ref. No. 0593) managed by Ellora Times Limited for the period 01 April 2002 to 31 March 2007.

In our opinion, the GHG emissions reductions reported for the project in the revised monitoring report version 04 of 10 December 2007 are fairly stated.

The GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodology, ACM0002, version 6, and the monitoring plan and formulae provided in the validated PDD of 18 October 2006.

Hence, Det Norske Veritas Certification AS is able to certify that the emission reductions from the "15.4 MW Wind Farm at Satara District, Maharastra", managed by Ellora Times Limited for the period 01 April 2002 to 31 March 2007 amount to 99 414 tCO_2 equivalent.

Report No.: 2007-2043	Subject Group: Environment	
Report title: "15.4 MW Wind Farm at Satara District, Maharastra" in India		
Work carried out by: Murali Govindarajulu Ramesh Ramachandran		
Work verified by: K.Venkata Raman		
Date of this revision: 2007-12-10	Rev. No.: 02	Number of pages: 10

Indexing terms

Key words Climate Change Kyoto Protocol Validation Clean Development Mechanism	Service Area Verification Market Sector Energy Industry

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Abbreviations

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CEF	Carbon Emission Factor
CER	Certified Emission Reduction(s)
CMS	Central Monitoring Station
CO_2	Carbon dioxide
CO_{2e}	Carbon dioxide equivalent
DNV	Det Norske Veritas
ETL	Ellora Time Limited
FAR	Forward Action Request
GHG	Greenhouse gas(es)
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
JMR	Joint Meter Reading
MP	Monitoring Plan
MR	Monitoring Report
MSEB	Maharastra State Electricity Board
NGO	Non-governmental Organisation
ODA	Official Development Assistance
PDD	Project Design Document
UNFCCC	United Nations Framework Convention for Climate Change
WEG	Wind Electricity Generators

1 INTRODUCTION

Ellora Time Limited (ETL) has commissioned Det Norske Veritas Certification AS (DNV) to carry out the verification of emission reductions reported for the "15.4 MW Wind Farm at Satara District, Maharastra" project in India for the period 01 April 2002 to 31 March 2007. This report contains the findings from the verification and a certification statement for the certified emission reductions. This revised verification report has been prepared to address the clarifications required by the CDM Executive board as part of the request for review of the initial request of issuance.

1.1 Objective

Verification is the periodic independent review and ex-post determination by a Designated Operational Entity (DOE) of the monitored reductions in GHG emissions that have occurred as a result of the registered CDM project activity during a defined verification period.

Certification is the written assurance by the DOE that, during a specific period in time, a project activity achieved the emission reductions as verified.

1.2 Scope

The verification scope is:

- To verify that actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan for the project activity,
- To evaluate the GHG emission reduction data and express a conclusion with a high level of assurance about whether the reported GHG emission reduction data is free from material misstatement,
- To verify that the reported GHG emission data is sufficiently supported by evidence

The verification shall ensure that the reported emission reductions are complete and accurate in order to be certified.

The verification team has, based on the recommendations in the Validation and Verification Manual / 5/, employed a risk based approach, focussing on the identification of significant reporting risks and verifying the mitigation measures for these.

1.3 Description of the Project Activity

Project Party	India.
Title of the project activity:	"15.4 MW Wind Farm at Satara District, Maharastra"
UNFCCC Registration reference No	0593
Project Participants:	Ellora Time Limited (ETL)
Location of the project activity:	Site I: Village Chikhali: 14 WEGs of 0.350 MW each. Site II: Village Nivkhane:15 WEGs of 0.350 MW each. Site III: Village Bhambe: 15 WEGs of 0.350 MW each in Satara District, Maharastra, India.

Crediting period start date: 01 April 2002 (Fixed crediting period of 10 years)
Verification period: 01 April 2002 to 31 March 2007.

The project activity comprises of 44 wind electricity generators (WEGs) of 350 kW capacity each aggregating to 15.4 MW, connected to the Maharastra state electricity grid. The project started with the commissioning of the first WEG on 29 March 2000 and the remaining machines were installed and commissioned in phases. The last machine was commissioned on 30 March 2002. The project activity utilises the wind potential in the Satara region of Maharastra for generation of electricity. The electricity generated from the machines is evacuated through the nearest sub-station along a 33 kV supply line and fed into the grid after stepping up to 132 kV.

The project's emission reductions are determined as the product of the net electricity generated by the project in a year and the grid emission factor calculated ex-post for the year of generation, as the combined margin of the operating and build margin for the western regional grid of India. The combined margin is determined using a weight of 50% : 50 %. The data for the operating margin and the build margin has been sourced from the official CEA website. Though the protocol of the validation report indicates that the grid emission factor is fixed ex-ante, the monitoring plan in the registered PDD indicates an ex-post monitoring of the grid emission factor. Also based on the EB guidelines on preferred usage of ex-post values for grid emission factor for projects claiming retroactive credits, the project has adopted ex-post monitoring of the emission factor. According to the validated project design, there are no project emissions and leakage effects associated with the project.

2 METHODOLOGY

The verification of the emission reductions has assessed all factors and issues that constitute the basis for emission reductions from the project. As the CDM Executive Board has not yet formally endorsed the application of any materiality principle for verification of emission reductions from CDM projects - implying that emphasis should be on the significant contributors to emission reductions - the DNV team has for this assignment decided to check all factors and issues with the same emphasis. The verification of the emission reductions has assessed all factors and issues that constitute the basis for emission reductions from the project.

The verification process was guided by a verification checklist

Verification team

Raemsh Ramachnadran	DNV Chennai	Team Leader
Murali Govindarajulu	DNV Chennai	GHG Auditor
Einar Telnes	DNV Oslo	Energy Sector Expert
K. Venkata Raman	DNV Bangalore	Technical Reviewer

Duration of verification

Preparations:	From 09 May 2007 to 15 May 2007
On-site verification:	From 17 May 2007 to 18 May 2007
Completion of Reporting:	09 June 2007

2.1 Review of Documentation

The monitoring reports / 1/ and the emission reduction calculations, provided in the form of spreadsheets submitted by Ellora Time Limited, were assessed as a part of the verification. In addition the Project Design Document / 2/, the monitoring plan contained in the PDD as well as the validation report / 3/ were also assessed. Other operational documents were also assessed as evidence.

2.2 Site Visits

On 17-18 May 2007, DNV carried out a site visit at Ellora Time Limited. During the site visit, DNV verified the actual operation of the project as described in the PDD. The instruments used for monitoring electricity in all the three sub stations were checked, including the calibration records for these instruments and these were found to be in order. Evidence for the reported net generation of electricity was verified i.e., the electricity supplied to the grid minus the electricity consumption of the project (electricity imported from the grid).

2.3 Assessment

The data presented in the monitoring report were assessed in detail through a review of the detailed project documentation and production records, interviews with personnel at Ellora Time Limited, collection of measurements, observation of established monitoring and reporting practices and assessment of the reliability of monitoring equipment. This has enabled the verification team to assess the accuracy and completeness of reported monitoring results and verify the correct application of the approved monitoring methodology. Data from other sources include the operating margin and build margin emission factor which is calculated ex-post based on electricity generation mix in the western regional grid have been assessed and verified.

2.4 Reporting of Findings

Findings established during the verification may be that:

i) the verification is not able to obtain sufficient evidence for the reported emission reductions or part of the reported emission reductions. In this case these emission reductions shall not be verified and certified;

ii) the verification has identified material misstatements in the reported emission reductions. Emission reductions with material misstatements shall be discounted based on the verifiers' ex-post determination of the achieved emission reductions.

A forward action requests (FAR) should be issued, where:

a. the actual project monitoring and reporting practices requires attention and /or adjustment for the next consecutive verification period, or
b. an adjustment of the MP is recommended.

In the context of FARs, risks have been identified, which may endanger the delivery of high quality CERs in the future, i.e. by deviations from standard procedures as defined by the MP. As a consequence, such aspects should receive a special focus during the next consecutive verification. A FAR may originate from lack of data sustaining claimed emission reductions.

3 VERIFICATION FINDINGS

3.1 Remaining Issues, CARs, FARs from Previous Validation or Verification

According to the validation report / 3/, no CAR or CL's were required to be closed out during verification. This has again been confirmed by DNV.

An assessment on CAR raised during the initial verification of the project, carried out voluntarily by DNV on the request of the project proponent is described in the following table:

FAR/CAR of initial verification	Description of finding	Response	Conclusion
CAR1	The basis for the selection of emission factor is not clear. The monitoring plan of the registered PDD indicated ex-post monitoring of the BM and the OM, where as the protocol of the validation report mentions the fixing of the grid emission factor ex-ante. The project proponent has considered the OM and the BM to be ex-ante and needs to rework the grid emission factor. Also the monitoring report also has not used the latest data on OM (calculated according to ACM0006 version 06) published by the CEA. This latest data needs to be applied in the calculation of the grid emission factor.	The Operating Margin and the Build Margin Emission Factors for the purpose of this project has been updated based on ex-post monitoring, using the data vintage for the year in which the project generation occurs. And the most recent data publicly available data on the build margin emission factor has been taken. The Baseline emission factor EF_y of the has been calculated as a combination of the ex post updated Operating Margin emission factor ($EF_{OM,\ y}$) and the Build Margin emission factor ($EF_{BM,y}$): $\mathbf{EF_y = w_{OM}\, EF_{OM,y} + w_{BM}\, .EF_{BM,y}}$	Accepted.
CAR 2	The project has been registered based on version 06 of ACM0002 which	As per version 06 of ACM0002, the default weights for wind and solar projects are as follows: w_{OM} = 0.75 and	Accepted. However in subsequent verifications the

	requires that "For wind and solar projects, the default weights are as follows: w_{OM} = 0.75 and w_{BM} = 0.25 (owing to their intermittent and non-dispatchable nature)." The registered PDD and the monitoring report states that the w_{OM} = w_{BM} = 50%. This needs to be clarified.	w_{BM} = 0.25. However, while writing the PDD and the subsequent monitoring report, w_{OM} and w_{BM} were taken to be 50% as it was coming out to be more conservative as compared to the other option. By calculating CERs based on w_{OM} = w_{BM} = 50%, the amount of CERs generated are coming out to be 99,414 which are ~7.5% less than the amount of CERs that would have been generated using w_{OM} : w_{BM} = 75 : 25.	continued use of 50% weightage will be checked for conservativeness.

3.2 Project Baseline

The approved baseline methodology ACM0002, version 6 - "Consolidated baseline methodology for grid connected electricity generation from renewable sources", has been adopted for the proposed project activity.

ETL has used the CO_2 Baseline data for emission factor, published in the CEA* data base. The central electricity authority, Ministry of Power, Government of India has published a database of carbon dioxide emission factors from the power sector in India based on detailed authenticated information obtained from all operating power stations in the country. This database i.e. the CO_2 baseline database provides information about the OM factors of all the regional electricity grids in India. DNV confirms that the database is an official publication of the Government of India for the purpose of CDM baselines and the OM in the CEA database is calculated using the simple OM approach as described in ACM0002. The OM for the years 2002-03, 2003-04, 2004-05 and 2005-06 has been verified to be 983.0 tCO_2e/GWh, 990.3tCO_2e/GWh, 1012.0 tCO_2e/GWh and 993.4 tCO_2e/GWh, respectively. In response to the CAR raised the grid emission factor has been calculated ex-post for the year of generation. For the year 2006-07 grid emission factor was calculated using the ex-post data of operating margin sourced from the latest data available on the CEA website, i.e. the data for 2005-06 (in accordance with the Meth Panel response to DNV's request for clarification AM_CLA_0038).

Eventhough the approved baseline methodology ACM0002, version 6 indicates a default weightage of 75:25 for the operating and build margins for hydro and wind projects, ETL has considered a weighting of 50% for the operating and build margin, in line with the registered PDD. This has been accepted as the 50% weightage adopted by ETL is conservative and results in lower emission reduction (around 7.5%).

3.3 Project Implementation

The project is implemented as planned and stated in the registered PDD. The 15.4 MW wind farm comprises wind turbines commissioned between March 2000 and March 2002. The commissioning certificates for the wind turbines were verified against the commissioning

* CO_2 Baseline Database, http://cea.nic.in/planning/c%20and%20e/Government%20of%20India%20website.htm

capacity details and found to be correct. DNV has also verified the nameplate capacity of the wind generators to be 350 kW.

Though the commissioning dates of the turbines varied from March 2000 and March 2002, the crediting period is chosen as starting from 1 April 2002. These data have been verified with the generation details in the 'B-Form' and as certified by the MSEB. The calibration certificates of the main meter and check meter have been verified and found to be in order.

3.4 Completeness of Monitoring

As required by the monitoring methodology ACM0002 version 06 monitoring of parameters essentially comprises:

- Electricity generation - net export to grid,
- Generation of electricity from individual wind turbine.

The parameters reported, including source, frequency and review criteria as indicated in the monitoring plan were verified to be correct and in line with the validated monitoring plan of the PDD. Necessary management system procedures including responsibility and authority of monitoring activities have been verified to be consistent with the PDD. Knowledge of personnel associated with the project activity was also found to be satisfactory.

3.5 Accuracy of Emission Reduction Calculations

The project activity has a set of main meter and check meter exclusively at each of the three bundles located at Site I-Village Chikhali: 14 WEGs of 0.350 MW each, Site II-Village Nivkhane:15 WEGs of 0.350 MW each and Site III - Village Bhambe: 15 WEGs of 0.350 MW each.The main meter has been installed and owned by MSEB, the check meters are owned by the ETL. The primary recording of the electricity fed to the state utility grid are carried out jointly at the incoming feeder of the state government power utility (MSEB). The joint measurement is being carried out once in a month in presence of both parties (the developer's representative and officials of the state government power utility). This reading is then translated into a "Monthly credit note" and forwarded by MSEB to ETL which clearly indicates the net electricity exported and becomes the basis for calculations of the emission reductions. These readings are double checked with the debits notes raised by ETL to the third party using the electricity generated from the project activity and debit notes raised towards MSEB.

Each meter is jointly inspected and sealed on behalf of the parties and is not interfered with by either party except in the presence of the other party or its accredited representatives. As the meters are maintained by MSEB, metering, recording, meter readings, meter inspections, test & checking and communication are as per the regulations and standard procedures laid by MSEB., If during any of the monthly meter readings, the variation between the main meter and the check meter is more than the permissible limit of the installed meters, all the meters are retested and calibrated. Calibration certificates have been verified by DNV.

The emission reductions from the project for the period from 01 April 2002 to 31 March 2007 as reported in the revised monitoring report of 7 June 2007 and actually verified at site equals to 99 414 tonnes of CO_2 equivalent. The reported emission reductions of 99 414 tCO_2e are less (-11.06 %) than the estimated emission reduction of 111 785 tCO_2e (estimated for the same period as per the registered PDD of 18 October 2006) and less by 613.5 CERs from the initial monitoring report published. The difference is due to the fact that the emission factor applied in

the initial monitoring report was not as per the monitoring plan of the registered PDD. This has been corrected in the revised monitoring report.

Year	Registered PDD, CERs	Initial Monitoring Report, CERs	Revised Monitoring Report, CERs
01 April 2002–31 March 2007	111785	100027.5	99414
% Deviation from PDD	0	-10.52	-11.06

3.6 Quality of Evidence to Determine Emission Reductions

The emission reductions reported for the period under monitoring, that is, 1 April 2002 to 31 March 2007 was verified to be 99 414 tCO_2e.

Sufficient evidence was presented for the reported net emission reductions.

3.7 Management System and Quality Assurance

ETL has established management procedures and implemented effectively to ensure that the process is consistent. The procedures cover management responsibilities, data monitoring procedures, training procedures, periodical internal audits, management reviews and corrective actions in case of any deviations effectively. Calibration process is followed as per defined procedures and carried out annually and the calibration certificates of the instruments used for data monitoring and recording were also verified during the site visit.

4 VERIFICATION STATEMENT

Det Norske Veritas Certification AS (DNV) has been engaged by Ellora Time Limited to verify the greenhouse gas (GHG) emission reductions reported for the "15.4 MW Wind Farm at Satara District, Maharastra" project (CDM registration reference no. 0593) for the period 1 April 2002 to 31March 2007, reported to be 99 414 tonnes of CO_2 equivalents.

The project has applied the approved baseline and monitoring methodologies ACM0002, version 06, and emissions reductions are reported in the revised monitoring report of version 04 dated 10 December 07. We express no opinion on the baseline neither of the project or on the validated and registered PDD.

Responsibilities of Ellora Time Limited and DNV.

The management of "15.4 MW Wind Farm at Satara District, Maharastra" project is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions on the basis set out within the project's monitoring plan. The development and maintenance of records and reporting procedures in accordance with that plan, including the calculation and determination of GHG emission reductions from the project is the responsibility of the management of the project.

It is DNV's responsibility to express an independent verification statement on the reported GHG emission reductions from the project for the period 01 April 2002 to 31 March 2007.

Basis of GHG verification opinion

Our verification approach was based on the requirements as defined under the Kyoto Protocol, Marrakech Accords, as well as those defined by the CDM Executive Board.

Our approach is risk-based, drawing on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these. Our examination includes assessment, on a test basis, of evidence relevant to the amounts and disclosures in relation to the project's GHG emissions for the period from 01 April 2002 to 31 March 2007.

We planned and performed our work to obtain the information and explanations that we considered necessary to provide sufficient evidence for us to give reasonable assurance that the amount of GHG emission reductions for the period 01 April 2002 to 31 March 2007 are fairly stated.

We conducted our verification on the basis of the monitoring methodology ACM0002, version 06, and the monitoring plan included in the PDD of the project. The verification included:

- *collection and assessment of evidence supporting the reported data,*
- *checking whether the provisions of the monitoring methodology ACM0002, version 06, and the monitoring plan in the PDD were consistently and appropriately applied.*

We have verified whether the information included in the revised monitoring report of version 04 of 10 December 2007 is correct and that the emissions reductions achieved have been determined correctly.

Opinion

In our opinion, GHG emissions reported for the project in the revised monitoring report version 04 of 10 December 2007 are fairly stated.

The GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodology ACM0002 version 06 and the monitoring plan and formulae provided in the validated PDD of 18 October 2006.

Det Norske Veritas Certification AS is able to certify that the emission reductions from the "15.4 MW Wind Farm at Satara District, Maharastra" project for the period 01 April 2002 to 31 March 2007. amount to 99 414 ton CO_2 equivalent.

Bangalore & Oslo, 15 October 2007

Chandrashekara Kumaraswamy
Manager (South Asia)
Climate Change Services
Det Norske Veritas Certification AS

Michael Lehmann
Technical Director
International Climate Change Services
Det Norske Veritas Certification AS

5 REFERENCES

Documents provided by the Project Participants that relate directly to the GHG components of the project.

/ 1/ Ellora Time Limited : Monitoring report for the "15.4 MW Wind Farm at Satara District, Maharastra" project, version 01 of 15 May 2007, version 03 of 11 September 2007 and version 4 of 10 December 2007.

/ 2/ Ellora Time Limited: CDM PDD for the "15.4 MW Wind Farm at Satara District, Maharastra" project, version 04 dated 18 October 2006.

/ 3/ BVQi Validation report for the "15.4 MW Wind Farm at Satara District, Maharastra" project. Report No. BVQi/India/23.49 dated 18 October 2006.

/ 4/ CDM Executive Board: ACM0002 – "Approved Consolidated Baseline Methodology for grid connected electricity generation from renewable sources", Version 06.

Background documents related to the design and/or methodologies employed in the design or other reference documents.

/ 5/ International Emission Trading Association (IETA) & the World Bank's Prototype Carbon Fund (PCF): *Validation and Verification Manual*. http://www.vvmanual.info

/ 6/ Copies of MSEB generation Certificates for all months

/ 7/ Test certificate for Energy meters for all three meters (Main meter and check meter) from Maharastra State Distribution Company Ltd.

/ 8/ Daily generation reports including down times.

/ 9/ Snap shots of Monthly generation from CMS, Maintenance records, Internal calibration records, Internal audit reports.

/ 10/ Debit notes raised from ETL for the Sale of power to the Third party.

/ 11/ Record of Invoice raised from ETL for the Sale of power towards MSEB.

/ 12/ Energy meter calibration test reports from the Executive engineer (Testing), MSEB,

/ 13/ Letter from MSEDCL dtd 10 December 2007 on the upgradation of the meters.

Persons interviewed during the verification.

/ 14/

Mr. Anilkumar D.Maniar	Manager Accounts, Ellora Time Limited
Mr. Shivaji Shinde	Dy.Manager Safety, Suzlon Limited
Mr. Sanjay Shete	Section In-charge, Suzlon Limited

APPENDIX A

INITIAL VERIFICATION CHECKLIST

This document contains a generic Initial Verification Checklist for CDM and JI projects, which must be seen in conjunction with the Validation and Verification Guidelines and the Initial Verification Report Template.

This initial verification checklist serves the following purposes:

- *It organises, details and clarifies the requirements a CDM/JI project is expected to meet straight before starting its operation; and*
- *It ensures a transparent initial verification process by inducing the verifier to document how a particular requirement has been verified and which conclusions have been reached;*

This checklist contains a table with generic aspects for initial verification of a CDM or JI project. Project specific aspects set by the approved PDD have to be amended as a result of the review of the monitoring plan and the validation report. The use of initial verification and this check-list may not be applicable for all investors, and should not be viewed as mandatory for all projects. Where a finding is issued as a consequence of the initial verification, a corrective action request, a forward action request or clarification request should be stated.

Before this generic checklist can be applied for the initial verification of a specific project, the verifier must review and adjust/amend the checklist to make it applicable to individual project characteristics and circumstances as well as individual investor criteria. The application of the verifier's professional judgement and technical expertise should ensure that checklist amendments cover all necessary specific project requirements that have impact on project performance. Given the above, the checklist is neither exhaus-tive nor prescriptive.

Initial Verification Checklist

OBJECTIVE	Ref.	COMMENTS	Concl.(incl FARs/CARs)
A. Opening Session			
A.1. Introduction to audits		Outline of the Initial verification process was presented by Team Leader. • Objectives • Verification team, plan • Confirmation of participation • Definition of FAR/CAR • Obligation to confidentiality	OK
A.2. Clarification of access to data archives, records, plans, drawings etc.		Activities related to the project at all locations, eg. Measurement, calculation, reporting, calibration, control of documentation and records is planned and covered as per procedures defined. Access to these was verified to be clear and implementation was verified to be effective.	OK
A.3. Contractors for equipment and installation works *Who has installed the equipment? Who was contracted for planning etc.?*		All the WEGs were supplied by M/s Suzlon, the installation and the commissioning of the WEGs have also been done by M/s Suzlon.	OK
A.4. Actual status of installation works *Project installation should be finished at time of initial verification in so far as the project should be ready to generate emission reductions afterwards.*		The project started with the commissioning of the first WEG on 29 March 2000 and other WEGs got installed in Phases. The last WEG got commissioned during 30 March 2002. So, project considered generation of emission reductions from 01 April 2002 to 31 March 2007 as a part of this monitoring period.	OK

OBJECTIVE	Ref.	COMMENTS	Concl.(incl FARs/CARs)
B. Open issues indicated in validation report *Especially in projects which are not yet registered at CDM-EB or JI-SB, there might be some outstanding issues which should have been indicated by the validation report.*			
B.1. Missing steps to final approval		According to the validation report all the CAR's and CL's are closed. This was verified during verification, by DNV	OK
C. Implementation of the project *This part is covering the essential checks during the on-site inspection at the project's site, which is indispensably for an initial verification*			
C.1. Physical components *Check the installation of all required facilities and equipment as described by the PDD.*		The project activity comprises of 44 nos of 350 kW capacity WEGs installed in phases and spread across three villages namely a.Chikhali, b.Nivkhane, c.Bhambe, in the district of Satara in Maharastra. The electricity generated from the WEGs are evacuated through the nearest grid sub-station along a 33 kV supply line and fed into the grid after stepping up to 132 kV.	OK
C.2. Project boundaries *Check whether the project boundaries are still in compliance with the ones indicated by the PDD.*		The project boundaries and key equipments for the project activity are in line with the PDD encompassing the physical, geographical site of the renewable generation source. The project boundary covers the WEGs and the evacuation systems.	OK
C.3. Monitoring and metering systems *Check whether the required metering systems have been installed. The meters have to comply with appropriate quality standards applicable for the used technology.*		The metering system as envisaged in the PDD has been verified to be installed and in place. The metering of generated and exported power happens through three meters, which are calibrated periodically by MSEB. The calibration process is in place as defined in procedures. The metering by CMS as envisaged in the PDD has been verified to be installed and in place. The calibration process is in place as defined in procedures.	OK

OBJECTIVE	Ref.	COMMENTS	Concl.(incl FARs/CARs)
C.4. Data uncertainty *How will data uncertainty be determined for later calculations of emission reductions? Is this in compliance with monitoring and metering equipment?*		All equipment used for measurement and metering are calibrated as per procedures defined and certificates of calibration are in place.	OK
C.5. Calibration and quality assurance *Check how monitoring and metering systems are subject to calibration and quality assurance routines* *a) with installation* *b) during future operation*		The calibration status of metering and monitoring equipment is up to date and the procedures defined cover the process of calibration. The meters used for power monitoring are calibrated by MSEB authorities. The certificates of calibration are verified during site inspection.	OK
C.6. Data acquisition and data processing systems *Check the eligibility of used systems.*		As above.	OK
C.7. Reporting procedures *Check how reports with relevance for the later determination of emission reductions will be generated*		Project Management system procedures, including responsibility and authority of monitoring and reporting activities, have been verified to be as per that indicated in the registered validation report.	OK
C.8. Documented instructions *Check whether the personnel performing tasks with sensitivity for the monitoring of emission reductions have access and knowledge of documented instructions, forming a part of the project's management system.*		All the activities have been performed as per the defined procedures and are satisfying the requirements needed to monitor emission reductions effectively.	OK
C.9. Qualification and training *Check whether the personnel performing tasks with sensitivity for the monitoring of emission reductions has the appropriate competences, capabilities and qualifications to ensure the required data quality.*		Tasks have been performed as per procedures defined and by competent personnel. The procedures defined take care of required competence for performing tasks as per documented instructions.	OK

OBJECTIVE	Ref.	COMMENTS	Concl.(incl FARs/CARs)
C.10. Responsibilities *Check whether all tasks required to gather data and prepare a monitoring report with the necessary quality have been allocated to responsible employees.*		Responsibility and authority of monitoring and reporting activities have been verified to be as per that indicated in the registered PDD and allocated to the responsible employees.	OK
C.11. Troubleshooting procedures *Check whether there are possibilities of redundant data monitoring in case of having problems with the used monitoring equipment. Such procedures may reduce risks for the buyers of emission reductions (e.g. the Client)*		The data redundancy is maintained by multi stage monitoring as the export power is monitored by both project team and also MSEB officials. This would reduce risk for the buyers on emission reductions.	OK
D. Internal Data *Identifying the internal GHG data sources and ways in which the data have been collected, calculated, processed, aggregated and stored should be part of initial verification to assess accuracy and reliability of the internal GHG data..*			
D.1. Type and sources of internal data *Acquire information on type and source of internal GHG data, which is used in calculations of emission reductions. E.g.." continuous direct measurements", "site-specific correlations", "periodic direct measurements", "use of models" and/or "use of default emissions factors".*		Western grid emission factor has been used in the calculation of the emission reductions. But it has not been clearly indicated that the emission factor of the western grid has been fixed ex-ante or will be taken ex-post for the emission reduction calculations. The power exported to the grid is monitored on daily basis by project team and on monthly basis by MSEB officials. This daily monitoring also includes the monitoring of the power imported from the grid during plant shutdowns and annual maintenance.	OK
D.2. Data collection *How is data collected and processed? What are the means of quantifying emissions from the different data sources?*		Each WEG is equipped with an integrated electronic meter. These meters are connected to the Central Monitoring Station (CMS) of the entire wind farm. The generation data of individual machine can be monitored as a real-time entity at CMS. The snapshot of generation by individual meters will be kept as a record both in electronic as well as printed (paper) form.	OK

OBJECTIVE	Ref.	COMMENTS	Concl.(incl FARs/CARs)
D.3. Quality assurance *Does internal data collection underlie sufficient quality assurance routines?*		Yes. The data undergoes multiple checks through operating team and plant management as a part of quality assurance.	OK
D.4. Significance and reporting risks *Assess the significance and reporting risks related to the different internal data sources. Potential reporting risks may be related to the calculation methods, accuracy of data sources and data collection and/or the information systems from which data is obtained. The significance of and risks associated with the data source indicate the level of verification effort required at a later stage.*		The recording of the net electricity exported by the MSEB official is through data logger system and hence no significant reporting risks are foreseen. These data will be cross verified through the readings captured by CMS. The data related to baseline emissions is based in CEA data hence uncertainty is less through out the crediting period.	OK
E. External Data *Especially for data of baseline emissions there might be the necessity to include external data sources. The access to such data and a proof of data quality should be part of initial verification. If it is deemed to be necessary, an entity delivering such data should be audited.*			
E.1. Type and sources of external data *Acquire information on type and source of external data, which is used in calculations of emission reductions*		The external data sources used is mainly data for calculation of Western grid emission factor based on CEA annual reports. The audit of these external data may not be required as these are independent and authorised sources of data.	OK
E.2. Access to external data *How is data transferred? How can reproducibility of data set be ensured?*		Transfer and compilation of data will be done manually. The reproducibility of data will be through redundant data captured.	OK
E.3. Quality assurance *Does external data underlie any quality assurance routines?*		Yes the external data are subjected to quality assurance routines as CO2 emission factor for grid (as per Central Electricity Authority reports) is calculated ex-post for entire crediting period.	OK

OBJECTIVE	Ref.	COMMENTS	Concl.(incl FARs/CARs)
E.4. Data uncertainty *Is it possible to assess the data uncertainty of external data? Are such routines included in reporting procedures?*		The actual generation and heat rates are obtained from CEA reports. Carbon emission factors (CEF) for fuels are taken form IPCC default emission factors. This is been verified and found reasonable as the uncertainty impact is very negligible.	OK
E.5. Emergency procedures *Are there any procedures which will be applicable if there is no access to relevant external data?*		No such emergencies are fore seen.	OK
F. Environmental and Social Indicators *A Monitoring Plan may comprise environmental and/or social indicators which could be necessary to monitor for the success of the project activity.*			
F.1. Implementation of measures *A project activity may demand for the installation of measures (e.g. filtering systems or compensation areas), which are exceeding the local legal requirements. A check of the implementation or realization of such measures should be part of the initial verification.*		The project activity is not expected to lead to any adverse environmental impacts.	OK
F.2. Monitoring equipment *Check where necessary whether the required metering systems have been installed. The meters have to comply with appropriate quality standards applicable for the used technology.*		As on F.1.	OK
F.3. Quality assurance procedures *What quality assurance procedures will be applied for such data?*		As on F.1.	OK
F.4. External data *Check the quality, reproducibility and uncertainty*		As on F.1.	OK

OBJECTIVE	Ref.	COMMENTS	Concl.(incl FARs/CARs)
of external data.			
G. Management and Operational System *In order to ensure a successful operation of a Client project and the credibility and verifiability of the ERs achieved, the project must have a well defined management and operational system.*			
G.1. Documentation *The system should be documented by manuals and instructions for all procedures and routines with relevance to the quality of emission reductions. The accessibility of such documentations to persons working on the project has to be secured.*		The procedures are documented, controlled and available for personnel working for the project.	OK
G.2. Qualification and training *The system should describe the requirements on qualification and the need of training programs for all persons working on the emission reduction project. Performed training programs and certificates should be archived by the system.*		Defined procedures ensure the methodology and criteria for training of personnel working on emission reductions. And the mechanism of evaluation of effectiveness for the training imparted is clear in the procedures defined.	OK
G.3. Allocation of responsibilities *The allocation of responsibilities should be documented in written manner.*		Roles and responsibilities are defined in procedures and are in place.	OK
G.4. Emergency procedures *The system should contain procedures which provide emergency concepts in case of unexpected problems with data access and/or data quality.*		The system procedures define the back up mechanism for data protection	OK
G.5. Data archiving *The system should provide routines for the archiving of all data which is required for verifying the project's performance in the context of*		All the data required by the methodology were made available to DNV and the effectiveness of document control was satisfactory.	OK

OBJECTIVE	Ref.	COMMENTS	Concl.(incl FARs/CARs)
consecutive verifications.			
G.6. Monitoring report *The system includes procedures for the calculation of emission reductions and the preparation of the monitoring report.*		Yes, the mechanism for the calculation of emission reductions and preparation of monitoring report is in place. The basis for the selection of emission factors used in the emission reduction calculations requires further clarification and substantiation.	CAR1
G.7. Internal audits and management review *The system includes internal control procedures, which allow the identification and solution of problems at an early stage.*		The procedures are defined	OK

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