



VERIFICATION/CERTIFICATION REPORT

Final


“Tungabhadra Wind Power Project In Karnataka”
in
India

Monitoring period: 01/11/2013 to 31/12/2014

Report N° 2015-IQ-11-MD

Revision N° 1.2 Aa

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Project Title: Tungabhadra Wind Power Project In Karnataka	Country: India	Estimated CERs (tCO₂e): 57,552 annual average (for 14 months as per the registered PDD)
CDM Registration Reference N°: 1268	Monitoring period: 01/11/2013 to 31/12/2014	Certified CERs (tCO₂e): 49,827
Client: M/s Wind World (India) Limited	Client contact: Mr. Puneet Katyal	
Report No.: 2015-IQ-11-MD	Revision: 1.2 Aa	Date of this report: 23/03/2015
Approved by (Final Report – Authorized officer signing for the DOE):  Laura Severino		Date of approval: 24/03/2015

Methodology

Number: ACM0002	Version: 06 of 19/05/2006	Title: Consolidated baseline methodology for grid-connected electricity generation from renewable sources	Scale Large	SS(s): 01
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RINA Services S.p.A. (RINA), commissioned by M/s Wind World (India) Limited (previously known as (Enercon (India) Ltd) , has verified the greenhouse gas emission reductions reported for the project activity “Tungabhadra Wind Power Project In Karnataka “ in India, CDM Registration Reference N° 1268, for the period 01/11/2013 to 31/12/2014, with regard to the relevant requirements for CDM activities. The verification shall ensure that reported emission reductions are complete and accurate in accordance with applicable CDM requirements in order to be certified.

The project was validated by Det Norske Veritas (validation report N° 2007-1022 issued on 21/10/2008) and it was registered on 27/10/2008 under the CDM registration reference N° 1268.

The GHG emission reductions were calculated on the basis of the approved methodology ACM0002, version 06, “Consolidated baseline methodology for grid-connected electricity generation from renewable sources” of 19/05/2006 and the monitoring plan included in the registered Project Design Document, version 05 of 01/10/2008, revised Monitoring Plan approved on 18/02/2011 and revised PDD, Version 06 of 04/06/2014 approved on 12/09/2014

In conclusion, it is RINA’s opinion that the project activity “Tungabhadra Wind Power Project In Karnataka”, in “India”, as described in the Monitoring Report version 02 of 03/03/2015, meets all relevant requirements for CDM activities and all relevant host Party criteria and correctly applies the baseline and monitoring methodology “ACM0002”, “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”, version 06 of 19/05/2006. Hence RINA is able to certify that the emission reductions from the project during the monitoring period 01/11/2013 to 31/12/2014 amount to 49,827 tCO₂e.

Work carried out by:

Champak Buragohain
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Strictly confidential



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Work verified by (Final Report)


Rita Valoroso

Keywords:

Climate Change, Kyoto Protocol, Clean Development Mechanism, Verification

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Abbreviations

BE	Baseline Emissions
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM M&P	Modalities and Procedures CDM
CEA	Central Electricity Authority
CER(s)	Certified Emission Reduction(s)
CH ₄	Methane
CL	Clarification Request
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
CRT	Coordination and Technical Control Staff
DCI	Certification Division of RINA Services Spa
DNA	Designated National Authority
DOE	Designated Operational Entity
EB	Executive Board
ER	Emission Reductions
FAR	Forward Action Request
GHG(s)	Greenhouse gas(es)
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
LoA	Letter of Approval
MESCOM	Mangalore Electricity Supply Company Limited
MoV	Means of Verification
MR	Monitoring Report
NABL	National Accreditation Board for Testing and Calibration Laboratories
NGO	Non-governmental Organization
ODA	Official Development Assistance
PDD	Project Design Document
PE	Project Emission
PP(s)	Project Participant(s)
Ref.	Document Reference
RINA	RINA Services Spa
SS(s)	Sectoral Scope(s)
TA(s)	Technical Area(s)
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard
WWIL	Wind World (India) Ltd

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Appendix A: Verification Protocol

VERIFICATION/CERTIFICATION REPORT

1 INTRODUCTION

M/s Wind World (India) Limited has commissioned RINA to carry out the verification and certification of emission reductions reported for the registered “Tungabhadra Wind Power Project In Karnataka” project in India, CDM Registration Reference N° 1268, for the period 01/11/2013 to 31/12/2014.

This report summarizes the findings of the verification of the project, performed on the basis of UNFCCC criteria for CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting.

1.1 Objective

The objective of the verification is to have an independent review 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 monitoring period. Certification is the written assurance by the DOE that, during a specific time period, a proposed CDM project activity achieved the reductions in anthropogenic emissions by sources of GHGs 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;
- to evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement;
- to verify that reported GHG emission data is sufficiently supported by evidence.

Verification shall ensure that reported emission reductions are complete and accurate in accordance with applicable UNFCCC criteria for CDM in order to be certified.

UNFCCC criteria for CDM refer to Article 12 of the Kyoto Protocol, the CDM modalities and procedures, for SSC project add the simplified modalities and procedures for small-scale CDM project activities and the subsequent decisions by the CDM Executive Board.

Verification is not meant to provide any consultancy towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the monitoring.

2 METHODOLOGY

Verification was conducted using RINA procedures in line with the requirements specified in the CDM M&P, the latest version of the CDM Validation and Verification Standard, and relevant decisions of the COP/MOP and the CDM EB and applying standard auditing techniques.

The verification consisted of the following three phases:

- Desk review;
- On-site assessment;
- The resolution of outstanding issues and the issuance of the final verification report and certification.

The following sections outline each step in more detail.

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2.1 Desk Review

The monitoring report, version 01 of 04/02/2015 and version 02 of 03/03/2015 /02/, the emission reduction calculations provided in the form of a spreadsheet, (1268_ER sheet_ Sept12 to Oct13_4th Verification_Version 3.xls) submitted on 16/02/2015 and (1268_ER Sheet 5th Verification.xls) submitted on 03/03/2015 /03/, were assessed as part of the verification. In addition the Project Design Document (PDD) /01/ in particular the baseline estimations and the monitoring plan, and the validation report no. report N° 2007-1022 issued on 21/10/2008 /04/ for the project was reviewed.

The monitoring report version 01 of 04/02/2015 /02/ was made publicly available on the CDM UNFCCC website on 04/02/2015.

The following table lists the documentation that was reviewed during the verification.

/01/	M/s Wind World (India) Limited: CDM-PDD for project activity “ Tungabhadra Wind Power Project In Karnataka ” in India, version 5.0 of 01/10/2008 and version 6.0 of 04/06/2014
/02/	M/s Wind World (India) Limited: Monitoring report for project activity “ Tungabhadra Wind Power Project In Karnataka” in India, version 01 of 04/02/2015 . M/s Wind World (India) Limited: Monitoring report for project activity “ Tungabhadra Wind Power Project In Karnataka” in India, version 2 of 03/03/2015 .
/03/	M/s Wind World (India) Limited: emission reduction calculations provided in the form of a spreadsheet, (1268_ER sheet_ Sept12 to Oct13_4 th Verification_Version 3.xls) version 01 submitted on 16/02/2015 M/s Wind World (India) Limited: emission reduction calculations provided in the form of a spreadsheet, (1268_ER sheet_ ER Sheet 5 th Verification.xls) version 01 submitted on 16/02/2015
/04/	Det Norske Veritas: validation report N° 2007-1022, Rev no 03 of 21/10/2008
/05/	SGS United Kingdom Limited: Verification/Certification report, rev.02 of 05/06/2014
/06/	CDM Executive Board: Clean Development Mechanism Project Cycle Procedure, version 07 of 01/06/2014
/07/	CDM Executive Board: Clean Development Mechanism Project Standard, version 07 of 01/06/2014
/08/	CDM Executive Board: Clean Development Mechanism Validation and Verification Standard, version 07 of 01/06/2014
/09/	CDM Executive Board: “ACM0002”, “ Consolidated baseline methodology for grid-connected electricity generation from renewable sources”, version 06 of 19/05/2006
/10/	CDM Executive Board: Monitoring report form(CDM-MR-FORM) , version 04.0 dated 25/06/2014
/11/	BESCOM(Bangalore Electricity Supply Company Ltd) : Joint meter readings (B FORM) for the period 01/11/2013 to 31/12/2014
/12/	Wind World (India) Ltd: Invoices for the period 01/11/2013 to 31/12/2014
/13/	Hubli Electricity Supply Company Ltd: Calibration meter test certificate Se. no : 6767626, dated 01/02/2014 and 22/12/2014 Se. no : 6767637 dated 01/02/2014 and 22/12/2014 Se. no : 6607369, dated 20/10/2014 Se. no : 6606801, dated 20/10/2014 Se. no : 6605135, dated 20/10/2014 Se. no : 6607373, dated 20/10/2014

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/14/	Wind World (India) Ltd: Training certificate for the period , dated 09/06/2014 to 22/11/2014.
/15/	Intertek: ISO 9001:2008 certificate, issue date: 18/02/2013 , valid untill 28/03/2015

2.2 On-site assessment

On 24/02/2015 RINA, visited Singatalur, Koralahalli and Hammigi at Mundargi in Gadag district of Karnataka state in India. During the on-site assessment of the project all the monitoring equipments and systems were accessible to RINA; and RINA has assessed the implementation and operation of the proposed project activity, reviewed the information flows for generating, aggregating and reporting the monitoring parameters, interviewed key personnel of the plant to confirm the operational and data collection procedures, cross-checked between information provided in the monitoring report and data plant, checked the monitoring equipment including calibration performance, reviewed calculations and assumptions made in determining the GHG data and emission reductions, checked the quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.

The key personnel interviewed and the main topics of the interviews are summarized in the table below.

	Date	Name and Role	Organization	Topic
/a/	24/02/2015	Mr. Navneet Kumar (Dy. Manager)	Wind World (India) Limited	Project description, implementation status of the project, Monitoring plan and ER calculations
/b/	24/02/2015	Mr. Utkash Saxena (Sr. Engineer)	Wind World (India) Limited	
/c/	24/02/2015	Mr. Manjunath A.K (Supervisor)	Wind World (India) Limited	Metering equipment accuracy / calibration performance-frequency (project boundaries-processes and equipments involved-possible leakages). Monitoring practices (against the requirements of the PDD and the selected methodology)
/d/	24/02/2015	Mr. Shivarudrappa. A (Technician)	Wind World (India) Limited	
				Cross-check between information provided in the monitoring report and data from other sources such as B forms , invoice and payment receipts.
				Operating staff competence and the risks for inappropriate operation and data collection procedures of the project (training needs).

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2.3 Resolution of outstanding issues

The objective of this phase of the verification is to resolve any outstanding issues which need to be clarified for RINA's positive conclusion on the monitoring report and emission reductions.

To guarantee transparency a verification protocol has been customized for the project. The protocol shows in a transparent manner the requirements, means of verification and the results from verifying the identified criteria.

The verification protocol consists of three tables; the different columns in these tables are described in the figure below (see Figure 1). The completed verification protocol is enclosed in Appendix A to this report.

A corrective action request (CAR) is raised if one of the following occurs:

- 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 that will impair the estimate of emission reductions;
- Issues identified in a FAR during validation to be verified during verification have not been resolved by the project participants.

A clarification request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

A forward action request (FAR) is raised during verification for actions if the monitoring and reporting require attention and/or adjustment for the next monitoring period.

CARs, CLs and FARs identified are included in the verification protocol in Appendix A of this report.

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Figure 1 Verification protocol tables

Verification Protocol, Table 1 - Requirement checklist				
Checklist Question	Ref.	MoV	Comments	Conclusion
The checklist is organized in four different sections.	Makes reference to documents where the answer to the checklist question or item is found.	Explain how conformance with the checklist question is investigated. Examples are document review (DR), interview or any other follow-up actions (I), cross checking (CC) with available information relating to projects, (N/A) means not applicable.	The discussion on how the conclusion is arrived at and the conclusion on the compliance with checklist question so far.	For CAR, CL and FAR see the definitions above. OK is used if the information and evidence provided is adequate to demonstrate compliance with CDM requirements.

Verification Protocol, Table 2 - Resolution of Corrective Action Requests and Clarification			
Corrective action requests and/or clarification requests	Reference to Table 1	Response by project participants	Verification conclusion
The CAR and/or CLs raised in table 1 are repeated here.	Reference to the checklist question number in Table 1 where the CAR or CL is explained.	The responses given by the project participants to address the CARs and/or CLs.	The verification team's assessment and final conclusion of the CARs and/or CLs.

Verification Protocol, Table 3 - Forward Action Requests (if no FAR table 3 is deleted)		
Forward action request	Reference to Table 1	Response by project participants Verification conclusion
The FAR raised in table 1 is repeated here.	Reference to the checklist question number in Table 1 where the FAR is explained.	Response by the project participants on how forward action request will be addressed.

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2.4 Internal quality control

All the revisions of the verification report before being submitted to the client were subjected to an independent internal technical review to confirm that all verification activities had been completed according to the pertinent RINA instructions.

The technical review was performed by a technical reviewer(s) qualified in accordance with RINA's qualification scheme for CDM validation and verification.

2.5 Verification team and the technical reviewer(s)

The verification team and the independent technical reviewer team have the collective competence necessary to perform the verification.

The verification team fulfills the following requirements:

- qualification for all technical area/s (TAs) related to the activity;
- technical experts who provides specific technical, methodological and sectoral knowledge and/or expertise and qualification for TAs can be involved;
- it includes one Team Leader that takes the responsibility to lead the team;
- it includes a Verifier;
- at least one member who performs the on-site visit is qualified for all TAs related to the activity;
- at least one member who performs the on-site visit is qualified as Team Leader, even if he/she does not cover this role for the specific activity;
- the same person can cover more than one roles.

The independent technical reviewer team fulfills the following requirements:

- qualification for the CDM scheme and attendance to specific training related to the independent technical reviewer activity;
- qualification for all technical area/s (TAs) related to the activity in case of Final Report;

The verification team members and the technical reviewers consist of the following personnel (refer to the relevant attachments to see the pertinent qualification certificates):

Role	Last Name	First Name	Site Visit (Yes/No)	Country
Team Leader & Technical Expert	Buragohain	Champok	Yes	India
Verifier	Menon	Rekha	No	India
Technical Reviewer	Valoroso	Rita	No	Italy

3 VERIFICATION FINDINGS

The findings of the verification related to the monitoring period from 01/11/2013 to 31/12/2014 as documented and described in the monitoring report version 01 of 04/02/2014 and version 02 of 03/03/2015/02/ are stated in the following sections.

The verification requirements, the means of verification and the results from verifying the identified criteria are documented in more detail in the verification protocol in Appendix A.

3.1 Description of the project activity

The main information of the project is summarized in the table below.

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Project Participant(s)	M/s Wind World (India) Limited		
Project Title	Tungabhadra Wind Power Project In Karnataka		
Location of the project	Singatalur, Koralahalli and Hammigi at Mundargi in Gadag district of Karnataka state, India		
Methodology(ies)	"ACM0002", " Consolidated baseline methodology for grid-connected electricity generation from renewable sources", version 06 of 19/05/2006 /09/		
Sectoral Scope(s)	01	RINA's Technical Area(s)	1.2
Registered PDD (revised)	Version 6.0 of 04/06/2014 /01/		
Date of registration	27/10/2008	CDM Registration Reference N°	1268
Starting date of the crediting period	27/10/2008		
Project's crediting period	27/10/2008 to 26/10/2018		
Monitoring period	01/11/2013 to 31/12/2014		
Project documentation link	http://cdm.unfccc.int/Projects/projsearch.html		
Purpose of the project activity	<p>The project activity consists of 38 WECs (600 kW) of Enercon make E-40 totalling to a capacity of 22.8 MW, in Karnataka state of India to provide reliable, renewable power to the Karnataka state electricity grid which is part of the Southern regional electricity grid. The Project will lead to reduced greenhouse gas emissions because it displaces electricity from grid connected fossil fuel based electricity generation plants.</p> <p>The main purpose of the project activity is to generate electrical energy through sustainable means using wind power resources, to utilize the generated output for selling it to the state electricity utility and to contribute to climate change mitigation efforts.</p>		

3.2 Remaining issues (FARs) from previous validation or verification

Based on the review of previous verification report /05/, no FAR was raised during the verification.

3.3 Monitoring Report

The Monitoring Report for the project activity " Tungabhadra Wind Power Project In Karnataka", in "India", version 01 of 04/02/2015 and version 02 of 03/03/2015 by M/s Wind World (India) Limited have been the basis for the verification process.

RINA confirms that the above MR is based on the currently valid MR template /10/ and is completed in accordance with the attached instructions to complete the monitoring /10/.

The main changes between the MR version 01 of 04/02/2015 published in the UNFCCC website on 04/02/2015 and the MR version 2 of 03/03/2015 submitted for registration are the following:

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Section of the MR	Description and reason for changing the information in that section
A.1 and E.4	Emission reductions revised from 49, 872 to 49, 827 tCO _{2e}
C	Calibration dates corrected. Details of replaced check meter added.

3.4 Project implementation

Actual implementation of the registered project activity

RINA has performed a site visit to verify the real implementation of the project against the description in its registered CDM PDD/01/ and found that the project implementation is in accordance with the registered PDD/01/. The project activity consists of 38 WECs (600 kW) of Enercon make E-40 totaling to a capacity of 22.8 MW, in Karnataka state of India to provide reliable, renewable power to the Karnataka state electricity grid which is part of the Southern regional electricity grid. The capacity of the project has been confirmed from the commissioning certificates, referred in the verification report /05/. The same was also cross checked during the site visit and confirmed to be in order. The quantum of energy exported to the grid and imported from the grid is confirmed from the Join meter reading reports issued to the PP/11/; this is in line with the registered PDD/01/. The same has been cross checked with the monthly electricity sales invoices raised by PP /12/.

The net electricity supplied to the grid by the project, expressed as EG_y is monitored by the energy meters.

During the site visit, no changes have been observed or identified which may impact the additionality as there was no change in the installed capacity, no addition of component nor extension of technology, no addition nor removal of project sites; no change has been observed or identified that may impact the scale of the project activity or applicability of baseline and monitoring methodology ACM0002, version 06 /09/. The net electricity generation by the project plant from 01/11/2013 to 31/12/2014, was taken into consideration.

Post registration changes

There is no post registration changes involved in the project activity.

3.5 Methodology for determining Emission Reductions.

According to the applied methodology "ACM0002", " Consolidated baseline methodology for grid-connected electricity generation from renewable sources /09/, the emission reductions have been calculated based on the following formula:

$$ER_y = BE_y - PE_y - LE_y$$

Where,

ER_y is the total emission reductions of the project activity during the year y;

BE_y is the baseline emissions for the project activity during the year y;

PE_y is the emissions for the project activity during the year y;

LE_y is the leakage emissions for the project activity during the year y;

$$BE_y = EG_y * EF_y$$

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Where:

BE_y Baseline Emission in year y (tCO_2)

EG_y Quantity of net electricity supplied to grid as a result of the implementation of the Project

EF_y CO_2 emission factor of the grid in year y (tCO_2/MWh)

Annual baseline emissions are calculated by multiplication of the annual quantity of net electricity supplied to the grid (as calculated above) with the grid emission factor.

baseline emission factor (EF_y) of the grid is calculated as a combined margin (CM), calculated as the weighted average of the operating margin (OM) and build margin (BM) factor. In case of wind power projects default weights of 0.75 for $EF_{OM,y}$ and 0.25 for $EF_{BM,y}$ are applicable as per ACM0002 /09/.

Project Emissions

$$PE_y = 0$$

Leakage emissions has to be considered only when energy generating equipment is transferred from another activity. Since the project activity employs a new set of equipment/11/, leakage emissions is neglected, which is as per the registered PDD/01/, /11/.

Hence:

$$LE_y = 0$$

Emission Reduction achieved is;

$$\begin{aligned} ER_y &= BE_y - PE_y - LE_y \\ &= (EG_y \times EF_y) - PE_y - LE_y \end{aligned}$$

3.5.1 Compliance of the monitoring plan with the monitoring methodology and applicable methodological tools

During this monitoring period, the validated and registered monitoring plan was found to be in accordance with the applied methodology, ACM0002 version 06 /09/. All monitoring parameters, monitoring and calibration procedures follow the methodology requirements. No recommendation was made during this verification.

3.5.2 Compliance of monitoring with monitoring plan

The following parameters have been monitored in accordance with the monitoring plan in the registered PDD /01/ and the monitoring report /02/.

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3.5.2.1 Data and parameters fixed ex-ante or at renewal crediting period

DATA/PARAMETER Unit	Source of data	Reported value for the project period	Assessment/Observation
EF_{OM,y} , Operating margin CO ₂ emission factor of the grid in year y	CO ₂ Baseline Database for the Indian Power Sector, Version 1.1, CEA /01/, /04/	1.0034 tCO ₂ /MWh	The value is ex-ante fixed for crediting period of 10 years as per the registered PDD /01/, which has been justified and validated by validation DOE /04/ to follow the applied methodology and tool and already approved by EB.
EF_{BM,y} , Build margin CO ₂ emission factor of the grid in year y	CO ₂ Baseline Database for the Indian Power Sector, Version 1.1, CEA /01/, /04/	0.7180 tCO ₂ /MWh	The value is ex-ante fixed for crediting period of 10 years as per the registered PDD /01/, which has been justified and validated by validation DOE /04/ to follow the applied methodology and tool and already approved by EB.
EF_{CM,y} , CO ₂ emission factor of the grid in year y	CO ₂ Baseline Database for the Indian Power Sector, Version 1.1, CEA /01/, /04/	0.93204 tCO ₂ /MWh	The value is ex-ante fixed for crediting period of 10 years as per the registered PDD /01/, which has been justified and validated by validation DOE /04/ to follow the applied methodology and tool and already approved by EB.

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3.5.2.2 Data and parameters monitored ex-post

Data/Parameter	Assessment																																				
Data Unit	EG _y in MWh																																				
Description	Net electricity supplied to the grid by the Project																																				
Source of data to be used	Electricity supplied to the grid as per two joint meter readings (Form B) taken at 33 kV metering point /11/.																																				
Value of monitored parameter for the monitoring period	53,472.663/03/																																				
Monitoring equipment	<p>Monitoring is performed by energy meters. The details of the meters are given below.</p> <table><tr><th>Type of meter</th><th>Meter description</th><th>Meter Serial No.</th><th>Make</th><th>Accuracy class</th></tr><tr><td rowspan="2">110 kV Bulk meter I</td><td>Main Meter</td><td>6607369</td><td>L&T</td><td>0.2</td></tr><tr><td>Check Meter</td><td>6606801</td><td>L&T</td><td>0.2</td></tr><tr><td rowspan="2">110 kV Bulk meter II</td><td>Main Meter</td><td>6605135</td><td>L&T</td><td>0.2</td></tr><tr><td>Check Meter</td><td>6607373</td><td>L&T</td><td>0.2</td></tr><tr><td rowspan="2">33 kV billing meter</td><td>Main Meter</td><td>6767626</td><td>L&T</td><td>0.2</td></tr><tr><td>Check Meter</td><td>6767637</td><td>L&T</td><td>0.2</td></tr></table>					Type of meter	Meter description	Meter Serial No.	Make	Accuracy class	110 kV Bulk meter I	Main Meter	6607369	L&T	0.2	Check Meter	6606801	L&T	0.2	110 kV Bulk meter II	Main Meter	6605135	L&T	0.2	Check Meter	6607373	L&T	0.2	33 kV billing meter	Main Meter	6767626	L&T	0.2	Check Meter	6767637	L&T	0.2
Type of meter	Meter description	Meter Serial No.	Make	Accuracy class																																	
110 kV Bulk meter I	Main Meter	6607369	L&T	0.2																																	
	Check Meter	6606801	L&T	0.2																																	
110 kV Bulk meter II	Main Meter	6605135	L&T	0.2																																	
	Check Meter	6607373	L&T	0.2																																	
33 kV billing meter	Main Meter	6767626	L&T	0.2																																	
	Check Meter	6767637	L&T	0.2																																	
Accuracy of the monitoring equipment	The main and check meters are of accuracy class of 0.2S which was seen during site visit observation and confirmed by meand of calibration test certificate.																																				
Measuring/Reading/Recording frequency	EG _y is recorded monthly. However, since the electricity export and import is continuously monitored and monthly recorded and EG _y is calculated based on the directly measured values of EG _{Import} and EG _{Export} , the same is acceptable.																																				
Calcualtion method (if applicable)	<p>The value is calculated using the directly measured values of EG_{Import} and EG_{Export}.</p> $EG_y = EG_{\text{export}} - 115\% * EG_{\text{import}} - \text{Transmission Loss (T}_E\text{)}$ <p>The electricity supplied to the grid is recorded by taking joint meter readings (Form B) at at 33kV metering point in the presence of representatives of state utility and WWIL. The joint meter readings (Form B) contains the value of energy exported, energy imported, transmission loss and net electricity supplied to the grid during the monitoring period. The net electricity supplied to the grid is calculated by the transmission/distribution utility by subtracting the transmission losses from recorded meter readings in accordance with the Power Purchase Agreement /05/. The joint meter readings (Form B) are certified by the Executive Engineer of the state utility and WWIL. These certified readings are then used to prepare the invoices to be raised on stateutility (MESCOM). Thus as discussed in the registered PDD, the net electricity supplied to the grid as mentioned in the joint meter readings (Form B) was crosschecked with the value mentioned in the invoices /12/ and the same was found to be acceptable.</p>																																				
Calibration																																					

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Calibration frequency/interval Is the calibration interval in line with the monitoring plan of the PD?	As per registered PD, all main and check meters are to be calibrated once in a year /01/. The monitoring period covers 01/11/2013 to 31/12/2014. Following is the table with calibration dates.					
	Type of meter	Meter description	Meter Serial No.	Dates of calibration	Due date	Covers the MP
	110 kV Bulk meter I	Main Meter	6607369	25/07/2013 /05/ (previous) 20/10/2014 /13/	19/10/2015	No
		Check Meter	6606801	25/07/2013 /05/ (previous) 20/10/2014 /13/	19/10/2015	
	110 kV Bulk meter II	Main Meter	6605135	25/07/2013 /05/ (previous) 20/10/2014 /13/	19/10/2015	No
		Check Meter	6607373	25/07/2013 /05/ (previous) 20/10/2014 /13/	19/10/2015	No
	33 kV billing meter	Main Meter	6767626	20/12/2012 /05/ (previous) 01/02/2014 /13/ 22/12/2014 /13/	21/12/2015	No
		Check Meter	6767637	20/12/2012 /05/ (previous) 01/02/2014 /13/ 22/12/2014 /13/	21/12/2015	No
Does the calibration cover the monitoring period? Has the calibration frequency been respected?	As discussed above , Meters are not calibrated as per the frequency mentioned in the registered PDD. Thus, based on the conservative approach the PP has applied error factor of (-) 0.2% on export and (+) 0.2% on import for the months 01/07/2014 to 31/10/2015 of the monitoring period as per paragraphs 283 (a) of VVS /08/. The same was cross checked with the ER spread sheets /03/ and accepted by RINA team.					
Calibration certificates	Please refer above table.					
Does the calibration of meters have been done by an accredited person or institution?	The calibration of the meters have been performed by an accredited institution.					

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Data/Parameter	Assessment																			
Data Unit	EG _{export} in MWh																			
Description	Electricity Export recorded at meters (one main and one check meters) connecting 38 machines of the project activity																			
Source of data to be used	Electricity export to the grid as per joint meter reading (Form B) issued by HESCOM, taken at 33 kV metering point /11/.																			
Value of monitored parameter for the monitoring period	54,867.876 /03/																			
Monitoring equipment	Monitoring is performed by energy meters. The details of the meters are given below. <table><tr><th>Type of meter</th><th>Meter description</th><th>Meter Serial No.</th><th>Make</th><th>Accuracy class</th></tr><tr><td rowspan="2">33 kV billing meter</td><td>Main Meter</td><td>6767626</td><td>L&T</td><td>0.2</td></tr><tr><td>Check Meter</td><td>6767637</td><td>L&T</td><td>0.2</td></tr></table>						Type of meter	Meter description	Meter Serial No.	Make	Accuracy class	33 kV billing meter	Main Meter	6767626	L&T	0.2	Check Meter	6767637	L&T	0.2
Type of meter	Meter description	Meter Serial No.	Make	Accuracy class																
33 kV billing meter	Main Meter	6767626	L&T	0.2																
	Check Meter	6767637	L&T	0.2																
Accuracy of the monitoring equipment	The main and check meters are of accuracy class of 0.2S which was seen during site visit observation.																			
Measuring/Reading/Recording frequency	continuously monitored and monthly recorded .																			
Calcualtion method (if applicable)	The electricity supplied to the grid is recorded by taking joint meter readings (Form B) at 33kV metering point in the presence of representatives of state utility and WWIL. The joint meter readings (Form B) contains the value of energy exported, energy imported, transmission loss and net electricity supplied to the grid during the monitoring period. The net electricity supplied to the grid is calculated by the transmission/distribution utility by subtracting the transmission losses from recorded meter readings in accordance with the Power Purchase Agreement /05/. The joint meter readings (Form B) are certified by the Executive Engineer of the state utility and WWIL. These certified readings are then used to prepare the invoices to be raised on MESCOM. Thus as discussed in the registered PDD, the net electricity supplied to the grid as mentioned in the joint meter readings (Form B) was crosschecked with the value mentioned in the invoices /12/ and the same was found to be acceptable.																			
Calibration																				
Calibration frequency/interval Is the calibration interval in line with the monitoring plan of the PD?	As per registered PD, all main and check meters are to be calibrated once in a year /01/. The monioring period covers 01/11/2013 to 31/12/2014. Following is the table with calibration dates. <table><tr><th>Parameter</th><th>Meter description</th><th>Meter Serial No.</th><th>Dates of calibration</th><th>Due date</th><th>Covers the MP</th></tr><tr><td>33 kV billing meter</td><td>Main Meter</td><td>6767626</td><td>20/12/2012 /05/ (previous) 01/02/2014 /13/ 22/12/2014 /13</td><td>21/12/2015</td><td>No</td></tr></table>						Parameter	Meter description	Meter Serial No.	Dates of calibration	Due date	Covers the MP	33 kV billing meter	Main Meter	6767626	20/12/2012 /05/ (previous) 01/02/2014 /13/ 22/12/2014 /13	21/12/2015	No		
Parameter	Meter description	Meter Serial No.	Dates of calibration	Due date	Covers the MP															
33 kV billing meter	Main Meter	6767626	20/12/2012 /05/ (previous) 01/02/2014 /13/ 22/12/2014 /13	21/12/2015	No															

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		Check Meter	6767637	20/12/2012 /05/ (previous) 01/02/2014 /13/ 22/12/2014 /13	21/12/2015	No.
Does the calibration cover the monitoring period? Has the calibration frequency been respected?	As discussed above , Meters are not calibrated as per the frequency mentioned in the registered PDD. Thus, based on the conservative approach the PP has applied error factor of (-) 0.2% on export and (+) 0.2% on import for the months 01/07/2014 to 31/10/2015 of the monitoring period as per paragraphs 283 (a) of VVS /08/. The same was cross checked with the ER spread sheets /03/ and accepted by RINA team.					
Calibration certificates	Please refer above table.					
Does the calibration of meters have been done by an accredited person or institution?	The calibration of the meters have been performed by an accredited institution.					

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Data/Parameter	Assessment																			
Data Unit	EG _{import} in MWh																			
Description	Electricity Import recorded at the meters (one main and one check) connecting 38 machines of the project activity.																			
Source of data to be used	Electricity import from the grid as per joint meter reading (Form B) issued by HESCOM, taken at 33 kV metering point /11/.																			
Value of monitored parameter for the monitoring period	33.021 /03/																			
Monitoring equipment	<div>Monitoring is performed by energy meters. The details of the meters are given below.</div> <table><thead><tr><th>Type of meter</th><th>Meter description</th><th>Meter Serial No.</th><th>Make</th><th>Accuracy class</th></tr></thead><tbody><tr><td rowspan="2">33 kV billing meter</td><td>Main Meter</td><td>6767626</td><td>L&T</td><td>0.2</td></tr><tr><td>Check Meter</td><td>6767637</td><td>L&T</td><td>0.2</td></tr></tbody></table>						Type of meter	Meter description	Meter Serial No.	Make	Accuracy class	33 kV billing meter	Main Meter	6767626	L&T	0.2	Check Meter	6767637	L&T	0.2
Type of meter	Meter description	Meter Serial No.	Make	Accuracy class																
33 kV billing meter	Main Meter	6767626	L&T	0.2																
	Check Meter	6767637	L&T	0.2																
Accuracy of the monitoring equipment	The main and check meters are of accuracy class of 0.2S which was seen during site visit observation.																			
Measuring/Reading/Recording frequency	continuously monitored and monthly recorded .																			
Calcualtion method (if applicable)	The electricity supplied to the grid is recorded by taking joint meter readings (Form B) at 33kV metering point in the presence of representatives of state utility and WWIL. The joint meter readings (Form B) contains the value of energy exported, energy imported, transmission loss and net electricity supplied to the grid during the monitoring period. The net electricity supplied to the grid is calculated by the transmission/distribution utility by subtracting the transmission losses from recorded meter readings in accordance with the Power Purchase Agreement /05/. The joint meter readings (Form B) are certified by the Executive Engineer of the state utility and WWIL. These certified readings are then used to prepare the invoices to be raised on MESCOM. Thus as discussed in the registered PDD, the net electricity supplied to the grid as mentioned in the joint meter readings (Form B) was crosschecked with the value mentioned in the invoices /12/ and the same was found to be acceptable.																			
Calibration																				
Calibration frequency/interval Is the calibration interval in line with the monitoring plan of the PD?	<div>As per registered PD, all main and check meters are to be calibrated once in a year /01/.</div> <div>The monioring period covers 01/11/2013 to 31/12/2014. Following is the table with calibration dates.</div> <table><thead><tr><th>Parameter</th><th>Meter description</th><th>Meter Serial No.</th><th>Dates of calibration</th><th>Due date</th><th>Covers the MP</th></tr></thead><tbody><tr><td rowspan="3">33 kV billing meter</td><td rowspan="3">Main Meter</td><td rowspan="3">6767626</td><td>20/12/2012 /05/ (previous)</td><td rowspan="3">21/12/2015</td><td rowspan="3">No</td></tr><tr><td>01/02/2014 /13/</td></tr><tr><td>22/12/2014 /13/</td></tr></tbody></table>						Parameter	Meter description	Meter Serial No.	Dates of calibration	Due date	Covers the MP	33 kV billing meter	Main Meter	6767626	20/12/2012 /05/ (previous)	21/12/2015	No	01/02/2014 /13/	22/12/2014 /13/
Parameter	Meter description	Meter Serial No.	Dates of calibration	Due date	Covers the MP															
33 kV billing meter	Main Meter	6767626	20/12/2012 /05/ (previous)	21/12/2015	No															
			01/02/2014 /13/																	
			22/12/2014 /13/																	

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		Check Meter	6767637	20/12/2012 /05/ (previous) 01/02/2014 /13/ 22/12/2014 /13	21/12/2015	No.
Does the calibration cover the monitoring period? Has the calibration frequency been respected?	As discussed above , Meters are not calibrated as per the frequency mentioned in the registered PDD. Thus, based on the conservative approach the PP has applied error factor of (-) 0.2% on export and (+) 0.2% on import for the months 01/07/2014 to 31/10/2015 of the monitoring period as per paragraphs 283 (a) of VVS /08/. The same was cross checked with the ER spread sheets /03/ and accepted by RINA team.					
Calibration certificates	Please refer above table.					
Does the calibration of meters have been done by an accredited person or institution?	The calibration of the meters have been performed by an accredited institution.					

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Data/Parameter	Assessment
Data Unit	T_E in MWh
Description	Transmission loss for export between the metering location at 33 kV point and the metering location at 110 kV at the WWIL substation.
Source of data to be used	As per the joint meter readings (Form B) taken at 33 kV metering point /11/.
Value of monitored parameter for the monitoring period	1,357.238 /03/
Monitoring equipment	Not applicable.
Accuracy of the monitoring equipment	Not applicable.
Measuring/Reading/Recording frequency	Monthly recorded .
Calculation method (if applicable)	The transmission losses are calculated by officials of electricity board (EB) and PP has no role in calculation of transmission loss. The calculation considers the export reading of meter at 110 kV and export readings at 33 kV. This is done as per the method discussed in section B.7.2 of the revised PDD /01/. The values are sourced directly from certified joint meter reading (Form B) recorded at 33kV metering point. The same was checked with the ER spread sheets /03/ and found to be acceptable.
Calibration	
Calibration frequency/interval Is the calibration interval in line with the monitoring plan of the PD?	Not applicable.
Does the calibration cover the monitoring period? Has the calibration frequency been respected?	Not applicable.
Calibration certificates	Not applicable.
Does the calibration of meters have been done by an accredited person or institution?	Not applicable.

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3.5.3 Assessment of data and calculation of emission reductions

Availability of the data

The data for all the monitoring parameters have been correctly measured, recorded according to the applied monitoring methodology “ACM0002” “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”, version 06 of 19/05/2006 /09/ and the registered PDD /01/. All the data are available for this monitoring period.

Cross-check reported data

No significant reporting risks have been identified for the data reported. The net electricity supplied to grid by the project and **EG_{export}** and **EG_{import}** are the only data required for emission reduction calculations and the same are continuously monitored and recorded on monthly basis /01/,/02/,/11/, /12/. These are then transferred to excel spread sheets /03/ which has been used for emission reduction calculations. RINA has been able to confirm that the project has operated within the design capacity during the current monitoring period which is confirmed from the monthly electricity generation records /11/. Further, the monthly generation export to grid data have been cross checked with the invoices raised to state utility /12/.

As discussed above, the calibration of monitoring equipment (energy meters) has to be done at least once in a year as per registered PDD. However, meters are not calibrated as per the frequency mentioned in the registered PDD. Thus, based on the conservative approach the PP has applied error factor of (-) 0.2% on export and (+) 0.2% on import for the months 01/07/2014 to 31/10/2015 of the monitoring period as per paragraphs 283 (a) of VVS /08/. The same was cross checked with the ER spread sheets /03/ and accepted by RINA team.

The net electricity supplied by the project activity during the current monitoring period is 53,472.663 MWh /03/, /11/, /12/. Thus, resulting in baseline emissions of 49,827 tCO_{2e} after multiplying with the southern grid emission factor of 0.93204 tCO₂/MWh, which is fixed ex-ante for 10 years. The total emission reduction estimated for the current monitoring period from 01/11/2013 to 31/12/2014 is 49,827 tCO_{2e} /03/.

The project emission is zero and is in line with the registered PDD /01/. RINA is able to confirm that appropriate methods and formulae for calculating baseline emissions, project emissions and leakage have been followed and the same have been verified.

RINA is of the opinion that the emission factors that have been applied in the calculations are conservative and justified based on the validated PDD /01/, /02/,/03/.

3.5.4 Accuracy of emission reduction calculations

The emission reduction calculations provided in the spreadsheet /03/ have been verified to be correct and in line with the registered PDD /01/.

The emission reductions from the project for the monitoring period as reported in the monitoring report version 02 of 03/03/2015 /02/ is equivalent to 49,827 tCO_{2e}. The reported emission reductions are 13.42% lower than the estimated emission reduction of 57,552 tCO_{2e} for the period as per the registered PDD/01/. The reason for the decreased emissions were due to the low PLF of 22.94% during the monitoring period (01/11/2013 – 31/12/2014), which is well below the annual PLF of 26.5% as discussed in the registered PDD. RINA checked the generation details and confirms that the justification provided by PP in section E.6 of the MR is acceptable /02/.

The data presented in the monitoring report /02/ were assessed by reviewing in detail project documentation, collection of monitored data, observation of established monitoring and reporting

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practices and assessment of the reliability of monitoring equipment. Sufficient evidence was presented and verified by RINA for the reported emission reductions as listed in the above Section 3.5.3.

3.5.5 Management system and quality control

Data was collected based on a data management procedure as described in the registered CDM-PDD/01/. The monitoring and reporting of electricity data is in accordance with well-established operational procedures mentioned in the monitoring plan of the registered PDD/01/. The site visit confirmed that the management system for the CDM project activity is in place and can be traced, such as the organizational structure with responsibilities, monitoring procedure and monitoring management, data handling and archiving and quality assurance and quality control /01/, /02/involved in the CDM project. The organizational structure, responsibilities/01/,/02/ have been detailed in the MR for the project activity and were found to be adequate as confirmed during the site visit. Thus, the management and operational system: the responsibilities and authorities for monitoring and reporting are in accordance with the responsibilities and authorities stated in the monitoring plan.

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4 VERIFICATION AND CERTIFICATION OPINION

RINA Service Spa (RINA) has performed verification of the emission reductions reported for the project activity “Tungabhadra Wind Power Project In Karnataka” in India, CDM Registration Reference N° 1268, for the period 01/11/2013 to 31/12/2014, with regard to the relevant requirements for CDM activities.

The project participants of the “Tungabhadra Wind Power Project In Karnataka” project are responsible for:

- the preparation of greenhouses gas emissions data and the reported greenhouse gas emission reductions from the project on the basis set out in the monitoring plan contained in the registered project design document version 06 of 04/06/2014.
- the development and maintenance of records and reporting procedures in accordance with that plan, including the calculation and determination of greenhouse gas emission reductions of the project

It is the responsibility of RINA to express an independent verification opinion about the project's conformity with the requirements of paragraph 62 of the CDM modalities and procedures and on the reported greenhouse gas emission reductions from the project.

Based on documented evidence and corroborated by an on-site assessment RINA can confirm that:

- the project has been implemented and operated as per the registered PDD;
- the monitoring report and other supporting documents provided are complete and verifiable and in accordance with the applicable CDM requirements;
- the monitoring is in place as per the applied baseline and monitoring methodology;
- the monitoring complies with the monitoring plan in the registered PDD;
- the monitoring plan in the registered PDD is as per the applied baseline and monitoring methodology.

It is RINA's opinion that the GHG emission reduction stated in the monitoring report version 2 of 03/03/2015 for the “Tungabhadra Wind Power Project In Karnataka” project in India for the period 01/11/2013 to 31/12/2014 are fairly stated. The GHG emission reductions were calculated correctly on the basis of the approved monitoring “ACM0002”, “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”, version 06 of 19/05/2006 and the monitoring plan contained in the registered.

Hence RINA is able to certify that the emission reductions from the project during the monitoring period 01/11/2013 to 31/12/2014 amount to 49,827 tCO₂e.

Genova, 24/03/2015



Laura SEVERINO

Authorized officer signing for the DOE

RINA Services S.p.A.

APPENDIX A

VERIFICATION PROTOCOL

TABLE 1 REQUIREMENTS CHECK LIST

Checklist Question		Reference	MoV ¹	Comments	Conclusion
A Monitoring Report					
A.1	Does the used project title clearly enable the reader to identify the unique CDM activity? Is there an indication of a revision number, the date of the revision and the monitoring period?	/01/, /02/	DR	Yes, the project title is “Tungabhadra Wind Power Project In Karnataka”, which clearly identifies the unique CDM activity. The monitoring report, version 1.0 of 04/02/2015 covers the monitoring period from 01/11/2013 – 31/12/2014.	OK
A.2	Does the project comply with the applicable requirements for completing the Monitoring Reports (latest version available)?	/01/, /10/	DR	Yes, the project complies with the applicable requirements for completing the Monitoring Report Form (CDM-MR-FORM), version 04.0 of 25/06/2014. The MR is completed in accordance to the instructions for filling out the Monitoring Report form. However, the date of completion of MR is not in the format dd/mm/yyyy. Also not clear if the, 01/11/2013 to 31/12/2014 of the monitoring period duration also covers both the above mentioned days.	CL-1 OK
A.3	Does the MR comply with the template available (latest version)?	/01/, /10/	DR	Please refer to the above section A.2	CL-1 OK
B Description of Project Activity					
B.1	Is the actual implementation and operation of the proposed project activity in accordance with the project activity in the registered PDD?	/01/, /02/, /04/, /05/, /09/, /11/	DR	The project activity is registered under CDM program with UNFCCC on 27/10/2008. The crediting period for the project activity is from 27/10/2008 to 26/10/2018 (both the dates are inclusive). The current monitoring period as mentioned in the monitoring report is 01/11/2013 to 31/12/2014 which is in line with the crediting period. As per the registered (revised) PDD, the project activity is installation of 38 WECs (600 kW) of Enercon make E-40 totaling to a capacity of 22.8	OK

¹ MoV: DR document review, I interview, CC cross checking

Checklist Question		Reference	MoV ¹	Comments	Conclusion
				<p>MW, in Karnataka state of India to provide reliable, renewable power to the Karnataka state electricity grid which is part of the Southern regional electricity grid. The Project will lead to reduced greenhouse gas emissions because it displaces electricity from grid connected fossil fuel based electricity generation plants.</p> <p>The commissioning dates of the WTGS were cross checked with the previous verification report and also during the site visit and the same is found to be acceptable.</p> <p>During site visit, it was checked that all components of the project activity as stated in the PDD were in operation. Further, the verification team also verified the technology and confirms that the technology is not substituted.</p>	
B.2	In case of deviation between the registered project and the actual implementation/operation, do they comply with the requirements of the Project Standards?	/01/, /02/, /04/	DR/ CC/ I/	Not applicable since the actual implementation of the project activity is in line with the registered PDD during this monitoring period.	OK
B.3	For project activity that consist of more than one site: describe the status of the implementation and starting date of opearation of each site; For project activity with phased implementation: describe the progress of the proposed project activity achieved in each phase number; if the phased implementaion is delayed, described the reasons and the expected impenetation dates.	/01/,/02/, /04/, /05/, /09/, /11/	DR, I	<p>The project involves the installation of installation of 38 WECs (600 kW) of Enercon make E-40 totaling to a capacity of 22.8 MW, in Karnataka state of India to provide reliable, renewable power to the Karnataka state electricity grid which is part of the Southern regional electricity grid.</p> <p>The machines under the project activity were commissioned on 23/04/2007, 12/09/2007 & 31/12/2007. The commissioning date of the WTGS were cross checked with the previous verification report and also during the site visit and the same is found to be acceptable.</p>	OK
B.4	Methodology and methodological tool applied for the	/01/, /02/,	DR, I	The project activity applies “ACM0002”, “	OK

Checklist Question		Reference	MoV ¹	Comments	Conclusion
	registered project activity	/09/		Consolidated baseline methodology for grid-connected electricity generation from renewable sources", version 06 of 19/05/2006	
C Compliance of the monitoring activities with the registered monitoring plan / Compliance of the monitoring plan with the monitoring methodology and methodological tool					
C.1 Monitoring plan					
C.1.1	Does the monitoring plan included in the registered CDM project activity comply with the applied methodology?	/01/, /02/ /09/	DR	Yes, the monitoring plan in the registered CDM PDD complies with the applied methodology ACM0002, version 06 of 19/05/2006.	OK
C.1.2	Does the monitoring comply with the monitoring plan in the registered PDD?	/01/, /02/	DR, I	Yes, the monitoring during this monitoring period complies with the registered PDD.	OK
C.2 Data and parameters fixed ex-ante or at renewal crediting period					
C.2.1	Which parameters were available at validation and how were they verified?	/01/, /02/ /09/	DR	<p>EF_{OM,y}: Operating margin Emission Factor of national electricity grids (Southern grid). The values for this parameter is 1.0038 tCO₂/MWh for Southern grid and fixed as per the registered CDM PDD; and the same was taken from the official data published by CEA, version 1.1. The correctness of the value has been confirmed by the validation team.</p> <p>EF_{BM,y}: Build Margin Emission factor of national electricity grids (NEWNE grid and Southern grid). The values for this parameter are 0.7180 tCO₂/MWh for Southern grid, which are available and fixed as per the registered CDM PDD; and the same was taken from the official data published by CEA. The correctness of the value has been confirmed by the validation team.</p> <p>EF_{CM,y}: Combined margin emission factor of national electricity grids (Southern grid). The values for this parameter is 0.93204 tCO₂/MWh, which are available and fixed as per the registered CDM PDD; and the same was taken from the official data published by the CEA. The correctness of the value</p>	OK

Checklist Question		Reference	MoV ¹	Comments	Conclusion														
				has been confirmed by the validation team. The value of the above parameters are derived from the registered PDD and is consistent with the value in the validation report, the value of the parameter will be fixed during the whole fixed crediting period.															
C.2.2	What default data were selected and applied?	/01/, /02/ /09/	DR	Please refer to section C.2.1 above.	OK														
C.3 Data and parameters monitored ex-post																			
C.3.1	Which parameter have been monitored during the monitoring period? (Data/Parameter monitored / Data unit / Description / Source of data to be used / Value data for the monitoring period)	/01/,/02/, /06/, /08/, /09/, /11/	DR	<div>The following parameters are being monitored during the current monitoring period which is in line with the registered CDM PDD:</div> <table><tr><td>Data/Parameter:</td><td>EG_y</td></tr><tr><td>Data unit:</td><td>MWh</td></tr><tr><td>Description:</td><td>Net electricity exported to the grid by the project.</td></tr><tr><td>Source of data:</td><td>Electricity supplied to the grid as per Joint Meter Readings (FormB) taken at 33kV metering point for each of the sub project included in the project activity</td></tr><tr><td>Value(s) of monitored parameter:</td><td>53518.599</td></tr></table> <table><tr><td>Data/Parameter:</td><td>EG_{export}</td></tr><tr><td>Data unit:</td><td>MWh</td></tr></table>	Data/Parameter:	EG _y	Data unit:	MWh	Description:	Net electricity exported to the grid by the project.	Source of data:	Electricity supplied to the grid as per Joint Meter Readings (FormB) taken at 33kV metering point for each of the sub project included in the project activity	Value(s) of monitored parameter:	53518.599	Data/Parameter:	EG _{export}	Data unit:	MWh	OK
Data/Parameter:	EG _y																		
Data unit:	MWh																		
Description:	Net electricity exported to the grid by the project.																		
Source of data:	Electricity supplied to the grid as per Joint Meter Readings (FormB) taken at 33kV metering point for each of the sub project included in the project activity																		
Value(s) of monitored parameter:	53518.599																		
Data/Parameter:	EG _{export}																		
Data unit:	MWh																		

Checklist Question	Reference	MoV ¹	Comments	Conclusion										
			<table><tr><td>Description:</td><td>Electricity Export recorded at meters (one main and one check meters) connecting 38 machines of the project activity</td></tr><tr><td>Source of data:</td><td>Electricity export to the grid as per joint meter reading (Form B) issued by HESCOM, taken at 33 kV metering point and can be sourced from JMR for 22.8 MW of the project activity.</td></tr><tr><td>Value(s) of monitored parameter:</td><td>54913.500</td></tr></table>	Description:	Electricity Export recorded at meters (one main and one check meters) connecting 38 machines of the project activity	Source of data:	Electricity export to the grid as per joint meter reading (Form B) issued by HESCOM, taken at 33 kV metering point and can be sourced from JMR for 22.8 MW of the project activity.	Value(s) of monitored parameter:	54913.500					
Description:	Electricity Export recorded at meters (one main and one check meters) connecting 38 machines of the project activity													
Source of data:	Electricity export to the grid as per joint meter reading (Form B) issued by HESCOM, taken at 33 kV metering point and can be sourced from JMR for 22.8 MW of the project activity.													
Value(s) of monitored parameter:	54913.500													
			<table><tr><td>Data/Parameter:</td><td>EG_{Import}</td></tr><tr><td>Data unit:</td><td>MWh</td></tr><tr><td>Description:</td><td>Electricity Import recorded at the meters (one main and one check) connecting 38 machines of the project activity.</td></tr><tr><td>Source of data:</td><td>Electricity import from the grid as per joint meter reading issued by HESCOM, taken at 33kV metering point and can be sourced from JMR for 22.8 MW of the project activity.</td></tr><tr><td>Value(s) of monitored parameter:</td><td>33</td></tr></table>	Data/Parameter:	EG _{Import}	Data unit:	MWh	Description:	Electricity Import recorded at the meters (one main and one check) connecting 38 machines of the project activity.	Source of data:	Electricity import from the grid as per joint meter reading issued by HESCOM, taken at 33kV metering point and can be sourced from JMR for 22.8 MW of the project activity.	Value(s) of monitored parameter:	33	
Data/Parameter:	EG _{Import}													
Data unit:	MWh													
Description:	Electricity Import recorded at the meters (one main and one check) connecting 38 machines of the project activity.													
Source of data:	Electricity import from the grid as per joint meter reading issued by HESCOM, taken at 33kV metering point and can be sourced from JMR for 22.8 MW of the project activity.													
Value(s) of monitored parameter:	33													

Checklist Question		Reference	MoV ¹	Comments	Conclusion										
				<table><tr><td>Data/Parameter:</td><td>T_E</td></tr><tr><td>Data unit:</td><td>MWh</td></tr><tr><td>Description:</td><td>Transmission loss for export between the metering location at 33 kV point and the metering location at 110 kV at the Wind World (India) Limited substation.</td></tr><tr><td>Source of data:</td><td>Transmission Loss for export will be sourced from the joint meter reading (Form B) issued by HESCOM, taken at 33kV metering point for the project activity.</td></tr><tr><td>Value(s) of monitored parameter:</td><td>1356.951</td></tr></table> <p>RINA checked the form –B and the corresponding invoices for all the months from 01/11/2013 to 31/12/2014. Noted that the values mentioned in the ER spread sheets are consistent with the invoice and B-forms.</p>	Data/Parameter:	T _E	Data unit:	MWh	Description:	Transmission loss for export between the metering location at 33 kV point and the metering location at 110 kV at the Wind World (India) Limited substation.	Source of data:	Transmission Loss for export will be sourced from the joint meter reading (Form B) issued by HESCOM, taken at 33kV metering point for the project activity.	Value(s) of monitored parameter:	1356.951	
Data/Parameter:	T _E														
Data unit:	MWh														
Description:	Transmission loss for export between the metering location at 33 kV point and the metering location at 110 kV at the Wind World (India) Limited substation.														
Source of data:	Transmission Loss for export will be sourced from the joint meter reading (Form B) issued by HESCOM, taken at 33kV metering point for the project activity.														
Value(s) of monitored parameter:	1356.951														
C.3.2	Is the measurement equipment described? Is the accuracy of the measurement equipment addressed and deemed appropriate?	/01/, /02/ /09/	DR	Yes, All main and check energy meters and all associated instruments, transformers installed at the Project are of 0.2% accuracy class. Each meter is jointly inspected and sealed on behalf of the Parties and is not to be interfered with by either Party except in the presence of the other Party or its authorized representatives. The same was also checked from calibration test reports and confirmed during the site visit	OK										
C.3.3	Is the measuring/reading/recording frequency adequate for all monitoring parameters? Is it in line with the	/01/, /02/ /09/	DR	Yes, the measurement is hourly and the recording is monthly. The same is in compliance with the	OK										

Checklist Question		Reference	MoV ¹	Comments	Conclusion																														
	registered monitoring plan?			registered PDD and the MR. Also confirmed during the site visit.																															
C.4 Calibration requirements																																			
C.4.1	Are the requirements for maintenance and calibration of measurement equipment described and deemed appropriate?	/01/,/02/, /06/, /08/, /09/, /11/, /13/	DR	<p>All main & check meters are tested for accuracy on annual basis by state utility and in case of error beyond permissible limit; meters will be calibrated immediately by the state utilities .</p> <p>Following are the meters involved in the project activity, same was also confirmed during the site visit .</p> <table><tr><th>Meter</th><th>SE.No</th><th>Calibration date</th></tr><tr><td>Bulk meter-1</td><td></td><td></td></tr><tr><td>Main Meter</td><td>6607369</td><td>25/07/2013</td></tr><tr><td>Check Meter</td><td>6606801</td><td>25/07/2013</td></tr><tr><td>Bulk meter-2</td><td></td><td></td></tr><tr><td>Main Meter</td><td>6605135</td><td>25/07/2013</td></tr><tr><td>Check Meter</td><td>6607373</td><td>25/07/2013</td></tr><tr><td>@33 KV</td><td></td><td></td></tr><tr><td>Main Meter</td><td>6767626</td><td>19/12/2013</td></tr><tr><td>Check Meter</td><td>6767637</td><td>19/12/2013</td></tr></table> <p>As per the above, the latest calibration dates are 25/07/2013 and 17/12/2013, which is not covering for the whole monitoring period of 01/11/2013 to 31/12/2014. As per the MR, in accordance with Para 238 (a) of VVS version 3 Annex 3, EB 70 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</p>	Meter	SE.No	Calibration date	Bulk meter-1			Main Meter	6607369	25/07/2013	Check Meter	6606801	25/07/2013	Bulk meter-2			Main Meter	6605135	25/07/2013	Check Meter	6607373	25/07/2013	@33 KV			Main Meter	6767626	19/12/2013	Check Meter	6767637	19/12/2013	CL-2 OK
Meter	SE.No	Calibration date																																	
Bulk meter-1																																			
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Check Meter	6767637	19/12/2013																																	

Checklist Question		Reference	MoV ¹	Comments	Conclusion
				<p>value of error of the instrument to the measured values.</p> <p>And since the latest test certificate shows that meters are operating within their accuracy class 0.2%. In accordance with Para 238 (a) of VVS version 3 Annex 3, EB 70 , the PP have applied a correction factor of +0.2% for imports and -0.2% for exports for the months 01/07/2014 to 31/10/2015 of the monitoring period and the correction factor applied to meter reading can be validated from calculation of emission reductions provided in spread sheet and section D of the MR. However, the same is not transparent in the ER sheets and section D of the MR.</p> <p>Furthe, noted that the calibration dates of meter 6767626 and 6767637 is not consistent with the dates mentioned in the MR. PP is requested provide calibration terst certificates of all the meters included in the project boundary.</p>	
C.4.2	Does the calibration cover the monitoring period?	/01/,/02/, /06/, /08/, /09/, /11/, /13/	DR	Please refer to section C.4.1 above.	CL-2 OK
C.4.3	Has the calibration frequency been respected?	/01/,/02/, /06/, /08/, /09/, /11/, /13/	DR	Please refer to section C.4.1 above.	CL-2 OK
C.4.4	Does the calibration of meters have be done by an accredited person or institution?	/01/,/02/, /06/, /08/, /09/, /11/, /13/	DR	Please refer to section C.4.1 above.	CL-2 OK
C.4.5	In case of delay, describe the applied maximum permissible error	/01/,/02/, /06/, /08/, /09/, /11/, /13/	DR	Please refer to section C.4.1 above.	CL-2 OK

Checklist Question		Reference	MoV ¹	Comments	Conclusion
C.5 Monitoring of the sustainable indicators					
C.5.1	Is the monitoring of sustainable development indicators/environmental impacts warranted by legislation in the host Country?	/01/, /02/, /06/, /11/	DR	The monitoring of sustainable development indicators/environmental impacts is not required by legislation of the host country, nor required by the applied methodology ACM0002, version 06 of 19/05/2006	OK
C.6 Management system and quality control					
C.6.1	How has it been assessed that the monitoring arrangements described in the monitoring plan are feasible within the project design?	/01/, /02/, /09/, /11/	DR/I	As checked during the site visit, RINA confirms that the monitoring arrangements described in the monitoring plan are feasible within the project design which further follows the methodology requirements.	OK
C.6.2	Are procedures identified for day-to-day record handling (including what records to keep, storage area of records and how to process performance documentation)? Will all monitored data required for verification and issuance be kept for two years after the end of the crediting period or the last issuance of CERs, for this project activity, whichever occurs later?	/01/, /02/, /09/, /11/	DR	Data to be used for emission reductions calculation is recorded on a daily basis and aggregated, summarized and calculated on a monthly basis. All monitored data required for verification and issuance will be kept for at least two years after the end of the crediting period.	OK
C.6.3	Are the data management and quality assurance and quality control procedures sufficient to ensure that the emission reductions achieved by/resulting from the project can be reported ex post and verified?	/01/,/02/, /06/, /08/, /09/, /11/, /13/	DR/CC	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. The joint meter readings (Form B) at 33kV metering point contains the value of energy exported, energy imported, transmission loss and net electricity supplied to the grid during the recording period. This joint meter readings (Form B) is certified by the Executive Engineer of the state utility and WWIL. These certified readings are then used to prepare the invoices to be raised on State utility. RINA checked the net electricity supplied to the grid by means of joint meter readings (Form B). The same was crosschecked with the value mentioned in the invoices and found to be appropriate. RINA, thus confirms that the data management and	OK

Checklist Question		Reference	MoV ¹	Comments	Conclusion
				quality assurance and quality control procedures are sufficient to ensure that the emission reductions achieved by/resulting from the project can be reported ex post and verified	
C.6.4	Are the responsibilities and authorities for monitoring and reporting in accordance with the responsibilities and authorities stated in the monitoring plan?	/01/, /02/, /09/, /11/	DR	<p>Yes, the responsibilities and authorities for monitoring and reporting lie with Wind World (India) Limited. The same was confirmed through the onsite visit and interviews with O&M staff.</p> <p>PP is requested to provide details of the training planned and provided during this monitoring period and submit relevant records</p> <p>PP is requested to provide the records of internal audits if any conducted on the CDM monitoring system.</p>	CL-3 OK
C.6.5	Does data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions?	/01/, /02/, /09/, /11/	DR, CC, I	As confirmed by the on-site visit, the operational and management structure set up by the project developer can ensure the correct transfer of data and ER reporting.	OK
D.1 Assessment of data and calculation of emission reductions/Accuracy of emission reduction calculations					
D.1.2	How were the values in the monitoring report verified and cross-checked?	/01/, /02/, /09/, /11/	DR	Please refer to section C.4.1	CL-2 OK
D.1.3	If only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	/01/, /02/, /09/, /11/	DR/ CC	Not applicable since all the data has been correctly measured, recorded according to the applied monitoring methodology ACM0002, version 06. and the registered PDD for this monitoring period.	OK
D.1.4	Emission reductions reported	/01/, /02/, /09/, /11/	DR/ CC	Please refer to section C.4.1	CL-2 OK
D.1.5	Difference between the emission reductions estimated in the registered PDD and the emission reductions reported for the monitoring period.	/01/, /02/, /09/, /11/	DR/ CC	Please refer to section C.4.1	CL-2 OK

TABLE 2 RESOLUTION OF CORRECTIVE ACTION REQUESTS AND CLARIFICATION REQUESTS

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Verification Conclusion																														
CL 1 the date of completion of MR is not in the format dd/mm/yyyy. Also not clear if the, 01/11/2013 to 31/12/2014 of the moniotirng period duration also covers both the above mentioned days.	A.2, A.3	PP has changed the date format as required in the MR and also specified that dates include first and last days of monitoring period.	PP has revised the MR as per the instructions attached to CDM-MR-FORM. Thus CL 1 is closed.																														
CL 2 Following are the meters involved in the project activity, same was also confirmed during the site visit . <table border="1"><thead><tr><th>Meter</th><th>SE.No</th><th>Calibration date</th></tr></thead><tbody><tr><td>Bulk meter-1</td><td></td><td></td></tr><tr><td>Main Meter</td><td>6607369</td><td>25/07/2013</td></tr><tr><td>Check Meter</td><td>6606801</td><td>25/07/2013</td></tr><tr><td>Bulk meter-2</td><td></td><td></td></tr><tr><td>Main Meter</td><td>6605135</td><td>25/07/2013</td></tr><tr><td>Check Meter</td><td>6607373</td><td>25/07/2013</td></tr><tr><td>@33 KV</td><td></td><td></td></tr><tr><td>Main Meter</td><td>6767626</td><td>19/12/2013</td></tr><tr><td>Check Meter</td><td>6767637</td><td>19/12/2013</td></tr></tbody></table> As per the above, the latest calibration dates are 25/07/2013 and 17/12/2013, which is not covering for the whole monitoring period of 01/11/2013 to 31/12/2014. As per the MR, in accordance with Para 238 (a) of VVS version 3 Annex 3, EB 70 where calibration is not carried out in line with the	Meter	SE.No	Calibration date	Bulk meter-1			Main Meter	6607369	25/07/2013	Check Meter	6606801	25/07/2013	Bulk meter-2			Main Meter	6605135	25/07/2013	Check Meter	6607373	25/07/2013	@33 KV			Main Meter	6767626	19/12/2013	Check Meter	6767637	19/12/2013	C.4.1, C.4.2, C.4.3, C.4.4, C.4.5, D.1.2, D.1.4, D.1.5	Supporting to the annual Calibration of meters (main and check meters), for both Karnataka and rajasthan site, is provided in the MR. DOE is requested to refer the same. PP has submitted all the test reports to the DOE. PP has also revised the ER sheet & MR.	PP has submitted the calibration records, which is found appropriate. It is also checked that the calibration was not carried on the due date and as per the calibration procedure as per VVS, the PP has applied error factor of (-) 0.2% on export and (+) 0.2% on import for the months 01/07/2014 to 31/10/2015 of the monitoring period in the ER sheet. The same is accepted by RINA. Thus, CL 2 is closed. Hence CL 2 is closed.
Meter	SE.No	Calibration date																															
Bulk meter-1																																	
Main Meter	6607369	25/07/2013																															
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Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Verification Conclusion
<p>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.</p> <p>And since the latest test certificate shows that meters are operating within their accuracy class 0.2%. In accordance with Para 238 (a) of VVS version 3 Annex 3, EB 70 , the PP have applied a correction factor of +0.2% for imports and -0.2% for exports for the months 01/07/2014 to 31/10/2015 of the monitoring period and the correction factor applied to meter reading can be validated from calculation of emission reductions provided in spread sheet and section D of the MR. However, the same is not transparent in the ER sheets and section D of the MR.</p> <p>Furthe, noted that the calibration dates of meter 6767626 and 6767637 is not consistent with the dates mentioned in the MR. PP is requested provide calibration terst certificates of all the meters included in the project boundary.</p>			
<p>CL 3</p> <p>PP is requested to provide details of the training planned and provided during this monitoring period and submit relevant records</p> <p>PP is requested to provide the records of internal audits if any conducted on the CDM monitoring system.</p>	C.6.4	<p>Training programs to the employees is the periodic activity and is done as per schedule. The detail of the training program is incorporated in the MR. PP has submitted the sample training certificate to the DOE as documentry evidence.</p> <p>PP confirms that no internal audits has been conducted during the monitoring period.</p>	<p>RINA checked the sample certificate on the basic training course provided by Wind world India to the new employees, for the period dated 09/06/2014 to 22/11/2014.</p> <p>During the site visit , it was confirmed that the as such no internal audits are carried out for CDM monitoring system . However, the WWIL is an ISO 9001:2008 certified company and the</p>

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Verification Conclusion
			same was checked from the certificate issued by intertek, valid upto 28/03/2015. CL 3 is closed.

TABLE 3 FORWARD ACTION REQUEST

Forward action request	Reference to Table 2	Response by project participants Verification Conclusion
FAR 1		



RINA

CERTIFICATO DI QUALIFICA QUALIFICATION CERTIFICATE

Si attesta che il sig./sig.ra:
We declare that Mr/Mrs/Ms:

Champok Buragohain

è qualificato come¹:
is qualified as:

CDM -TEC, -VAL, -VER, -TL

per le seguenti aree tecniche:
for the following technical areas:

1.2, 2.1, 13.1, 13.2

AREE TECNICHE TECHNICAL AREAS	DESCRIZIONE DELL'AREA TECNICA TECHNICAL AREA DESCRIPTION	SCOPO SETTORIALE SECTORAL SCOPE
1.2	Renewables	1
2.1	Electricity distribution	2
13.1	Solid waste and wastewater	13
13.2	Manure	13

in accordo alle istruzioni della Divisione Certificazione.
in accordance with the instructions of the Certification Division.

REVISIONE REVISION	DATA DATE	MOTIVAZIONI PER LA REVISIONE REASON FOR THE REVISION
0	19-01-2011	-
10	22-12-2014	Updated according to AS ver 6.0

Il Resp. QPT
Head of QPT

¹ Legend:

VAL: Validator
VER: Verifier
TEC: Technical Expert
TL: Team Leader
FIN-EXP: Financial Expert
DET: Determiner

CDM: Clean Development Mechanism
VCS : Verified Carbon Standard:
GS: Gold Standard
SCS: SocialCarbon Standard
JI: Joint Implementation

RINA Services S.p.A. è accreditato da UNFCCC, quale Entità Operativa Designata (DOE), per condurre la Validazione e la Verifica di Progetti CDM, da VCSA per condurre la Validazione e la Verifica di Progetti VCS, da GS Foundation, per condurre la Validazione e la Verifica di Progetti GS, da Ecologica Institute per condurre la Validazione e la Verifica di rapporti SCS

RINA Services S.p.A. is accredited by the UNFCCC, as Designated Operational Entity (DOE), to carry out Validation and Verification of CDM Projects, by the VCSA, to carry out Validation and Verification of VCS Projects, by the GS Foundation, to carry out Validation and Verification of GS Projects and by the Ecologica Institute, to carry out Validation and Verification of SCS Reports



RINA

CERTIFICATO DI QUALIFICA QUALIFICATION CERTIFICATE

Si attesta che il sig./sig.ra:
We declare that Mr/Mrs/Ms:

Rekha Menon

è qualificato come¹:
is qualified as:

CDM-TEC, -VAL, -VER, -TL

per le seguenti aree tecniche:
for the following technical areas:

1.2, 2.1, 13.1, 13.2, 14.1

AREE TECNICHE TECHNICAL AREAS	DESCRIZIONE DELL'AREA TECNICA TECHNICAL AREA DESCRIPTION	SCOPO SETTORIALE SECTORAL SCOPE
1.2	Renewables	1
2.1	Energy Demand	2
13.1	Solid Waste and wastewater	13
13.2	Manure	13
14.1	Afforestation and reforestation	14

in accordo alle istruzioni della Divisione Certificazione.
in accordance with the instructions of the Certification Division.

REVISIONE REVISION	DATA DATE	MOTIVAZIONI PER LA REVISIONE REASON FOR THE REVISION
0	06-03-2008	-
10	22-12-2014	Update qualification according to AS ver.6.0

Il Resp. QPT
Head of QPT

¹ Legend:

VAL: Validator
VER: Verifier
TEC: Technical Expert
TL: Team Leader
FIN-EXP: Financial Expert
DET: Determiner

CDM: Clean Development Mechanism
VCS : Verified Carbon Standard:
GS: Gold Standard
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RINA Services S.p.A. is accredited by the UNFCCC, as Designated Operational Entity (DOE), to carry out Validation and Verification of CDM Projects, by the VCSA, to carry out Validation and Verification of VCS Projects, by the GS Foundation, to carry out Validation and Verification of GS Projects and by the Ecologica Institute, to carry out Validation and Verification of SCS Reports



RINA

CERTIFICATO DI QUALIFICA QUALIFICATION CERTIFICATE

Si attesta che il sig./sig.ra:
We declare that Mr/Mrs/Ms:

Rita Valoroso

è qualificato come1:
is qualified as:

CDM -TEC, -VAL, -VER, -TL
TECHNICAL REVIEWER

per le seguenti aree tecniche:
for the following technical areas:

1.2, 13.1

AREE TECNICHE TECHNICAL AREAS	DESCRIZIONE DELL'AREA TECNICA TECHNICAL AREA DESCRIPTION	SCOPO SETTORIALE SECTORAL SCOPE
1.2	Renewables	1
13.1	Solid Waste and waste water	13

in accordo alle istruzioni della Divisione Certificazione.
in accordance with the instructions of the Certification Division.

REVISIONE REVISION	DATA DATE	MOTIVAZIONI PER LA REVISIONE REASON FOR THE REVISION
0	18-01-10	-
9	22-12-2014	Update qualification according to AS ver.6.0

Il Resp. QPT
Head of QPT

¹ Legend:

VAL: Validator
VER: Verifier
TEC: Technical Expert
TL: Team Leader
FIN-EXP: Financial Expert
DET: Determiner

CDM: Clean Development Mechanism
VCS : Verified Carbon Standard:
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RINA Services S.p.A. is accredited by the UNFCCC, as Designated Operational Entity (DOE), to carry out Validation and Verification of CDM Projects, by the VCSA, to carry out Validation and Verification of VCS Projects, by the GS Foundation, to carry out Validation and Verification of GS Projects and by the Ecologica Institute, to carry out Validation and Verification of SCS Reports