



# VERIFICATION/CERTIFICATION REPORT

**Final**


“Nallakonda wind farm in Andhra Pradesh”  
in  
India

Monitoring period: 22/03/2013 to 24/02/2015

Report N°2015-IQ-22-MD

Revision N°2.1 Aa

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<b>Project Title:</b> Nallakonda wind farm in Andhra Pradesh	<b>Country:</b> India	<b>Estimated CERs (tCO<sub>2e</sub>):</b> 100,630 tCO <sub>2e</sub> annual average
<b>CDM Registration Reference N°:</b> 8791	<b>Monitoring period:</b> 22/03/2013 to 24/02/2015 (both days included)	<b>Certified CERs (tCO<sub>2e</sub>):</b> 191,890 tCO <sub>2e</sub>
<b>Client:</b> Tadas Wind Energy Private Limited	<b>Client contact:</b> Mr. Dipan Bhuptani	
<b>Report No.:</b> 2015-IQ-22-MD	<b>Revision:</b> 2.1 Aa	<b>Date of this report:</b> 23/11/2015
<b>Approved by (Final Report – Authorized officer signing for the DOE):</b>   Laura Severino		<b>Date of approval:</b> 25/11/2015

### Methodology

<b>Number:</b> ACM0002	<b>Version:</b> 13.0.0. of 11/05/2012	<b>Title:</b> Consolidated baseline methodology for grid-connected electricity generation from renewable sources	<b>Scale</b> Large	<b>SS(s):</b> 01
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RINA Services S.p.A. (RINA), commissioned by Tadas Wind Energy Private Limited, has verified of the greenhouse gas emission reductions reported for the project activity “Nallakonda wind farm in Andhra Pradesh” in India, CDM Registration Reference N° 87 91, for the period 22/03/2013 to 24/02/2015, 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 LRQA (validation report N° CDM-MUM-0061930, version no. 03.2 issued on 13/06/2013) and it was registered on 22/03/2013 under the CDM registration reference N° 8791.

The GHG emission reductions were calculated on the basis of the approved methodology ACM0002, version 13.0.0., ‘Consolidated baseline methodology for grid-connected electricity generation from renewable sources’ of 11/05/2012 and the monitoring plan included in the registered Project Design Document, version 03.1 of 07/12/2012.

In conclusion, it is RINA’s opinion that the project activity “Nallakonda wind farm in Andhra Pradesh”, in “India”, as described in the Monitoring Report version 02.1 of 23/11/2015, 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 13.0.0 of 11/05/2012. Hence RINA is able to certify that the emission reductions from the project during the monitoring period 22/03/2013 to 24/02/2015 amount to 191,890 tCO<sub>2e</sub>.

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#### Keywords:

Climate Change, Kyoto Protocol, Clean Development Mechanism, Verification

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## Abbreviations

APCPDCL	Andhra Pradesh Central Power Distribution Company Limited
BE	Baseline Emissions
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM M&P	Modalities and Procedures CDM
CER(s)	Certified Emission Reduction(s)
CH <sub>4</sub>	Methane
CL	Clarification Request
CO <sub>2</sub>	Carbon dioxide
CO <sub>2</sub> 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
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
WEC	Wind Energy Converter

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# VERIFICATION/CERTIFICATION REPORT

## 1 INTRODUCTION

Tadas Wind Energy Private Limited has commissioned RINA to carry out the verification and certification of emission reductions reported for the registered “Nallakonda wind farm in Andhra Pradesh” project in India, CDM Registration Reference N° 8791, for the period 22/03/2013 to 24/02/2015.

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 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 28/05/2015, version 02.0 of 31/07/2015 and version 2.1 of 23/11/2015 **/01/**, the emission reduction calculations provided in the form of a spreadsheet (8791 ER Spreadsheet v01.0.xlsx) version 01 of 28/05/2015 and version 02 (8791 ER Spreadsheet v02.0.xlsx) of 31/07/2015 **/02/**, were assessed as part of the verification. In addition the Project Design Document (PDD) **/03/** in particular the baseline estimations and the monitoring plan, the validation report (version 03.2) issued on 13/06/2013 **/04/** for the project were reviewed.

The monitoring report version 01 of 28/05/2015 **/01/** was made publicly available on the CDM UNFCCC website on 22/06/2015.

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

/01/	Tadas Wind Energy Private Limited: Monitoring report for project activity "Nallakonda wind farm in Andhra Pradesh" in India, version 01 of 28/05/2015 and version 02.0 of 31/07/2015 and version 02.1 of 23/11/2015 related to the monitoring period 22/03/2013 to 24/02/2015
/02/	Tadas Wind Energy Private Limited: Emission reduction worksheet (8791 ER Spreadsheet v01.0.xlsx) version 01 of 28/05/2015 and version 02 (8791 ER Spreadsheet v02.0.xlsx) of 31/07/2015 related to the monitoring period 22/03/2013 to 24/02/2015.
/03/	Tadas Wind Energy Private Limited: CDM-PDD for project activity "Nallakonda wind farm in Andhra Pradesh" in India, version 03.1 of 07/12/2012 and version 04 of 23/11/2015
/04/	LRQA: CDM validation report of "Nallakonda wind farm in Andhra Pradesh", LRQA reference: CDM-MUM-0061930, version 03.2 of 13/06/2013
/05/	UNFCCC website Project 8791: Nallakonda wind farm in Andhra Pradesh, <a href="http://cdm.unfccc.int/Projects/DB/LRQA%20Ltd1355495522.4/view">http://cdm.unfccc.int/Projects/DB/LRQA%20Ltd1355495522.4/view</a> , in English language, retrieved on 20/07/2015 Monitoring Report published linkage on UNFCCC website Project 8791, <a href="http://cdm.unfccc.int/Projects/DB/LRQA%20Ltd1355495522.4/iProcess/RINA1434982593.33/view">http://cdm.unfccc.int/Projects/DB/LRQA%20Ltd1355495522.4/iProcess/RINA1434982593.33/view</a> in English language, retrieved on 20/07/2015
/06/	CDM Executive Board: Monitoring Report Form (CDM-MR-FORM), version 05.1 and Instructions for filling out the monitoring report form, dated 04/05/2015
/07/	CDM Executive Board: Clean Development Mechanism Project Cycle Procedure, version 09.0 of 20/02/2015
/08/	CDM Executive Board: Clean Development Mechanism Project Standard, version 09.0 of 20/02/2015
/09/	CDM Executive Board: Clean Development Mechanism validation and verification standard, version 09.0 of 20/02/2015
/10/	CDM Executive Board: Baseline and monitoring methodology "ACM0002", "Consolidated baseline methodology for grid-connected electricity generation from renewable sources", version 13.0.0 of 11/05/2012
/11/	Commissioning certificates: APCPDCL: Commissioning certificate of 12.8 MW (16*800 kW WECs) bearing location number 48-63 dated 17/07/2012 APCPDCL: Commissioning certificate of 3.2 MW (4*800 kW WECs) bearing location number 65-68A dated 09/07/2012 APCPDCL: Commissioning certificate of 6.4 MW (8*800 kW WECs) bearing location number 73-77 and 155-157 dated 17/07/2012 APCPDCL: Commissioning certificate of 9.6 MW (12*800 kW WECs) bearing location number 78-89 dated 15/07/2012 APCPDCL: Commissioning certificate of 8.0 MW (10*800 kW WECs) bearing location number 131-140 dated 07/07/2012 APCPDCL: Commissioning certificate of 8.0 MW (10*800 kW WECs) bearing location number 141-150 dated 07/07/2012

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	APCPDCL: Commissioning certificate of 2.4 MW (3*800 kW WECs) bearing location number 151-153 dated 07/07/2012
/12/	Joint Meter Reading (APTRANSCO, APCPDCL and representative of Tadas Wind Energy Limited) for the period 24/02/2013 to 24/02/2015
/13/	Phase 1 (12.80 MW) <ul style="list-style-type: none"> <li>- Main meter (serial no. 12093036), check meter (serial no. 12093022) and Stand-by meter (serial no. 12093041) calibrated on 29/12/2012 by MP DISCOM, Hindpur; and calibrated on 18/06/2014 by Yathva Energy Solutions Pvt. Ltd.</li> </ul>
/14/	Phase 2 (3.20 MW) <ul style="list-style-type: none"> <li>- Main meter (serial no. 12092974), check meter (serial no. 12093033) calibrated on 26/09/2012 by MP DISCOM, Hindpur; and calibrated on 08/07/2014 by Yathva Energy Solutions Pvt. Ltd.</li> <li>- Stand-by meter (serial no. 12092975) on 21/01/2013 by MP DISCOM, Hindpur and on 08/07/2014 by Yathva Energy Solutions Pvt. Ltd.</li> </ul>
/15/	Phase 3 (6.40 MW) <ul style="list-style-type: none"> <li>- Main meter (serial no. 12092997), check meter (serial no. 12093030) calibrated on 26/09/2012 by MP DISCOM, Hindpur; and calibrated on 08/07/2014 by Yathva Energy Solutions Pvt. Ltd.</li> <li>- Stand-by meter (serial no. 12093006) on 21/12/2012 by MP DISCOM, Hindpur and on 08/07/2014 by Yathva Energy Solutions Pvt. Ltd.</li> </ul>
/16/	Phase 4 (9.60 MW) <ul style="list-style-type: none"> <li>- Main meter (serial no. 12092994), check meter (serial no. 12093013) calibrated on 25/09/2012 by MP DISCOM, Hindpur; and calibrated on 19/06/2014 by Yathva Energy Solutions Pvt. Ltd.</li> <li>- Stand-by meter (serial no. 12093031) on 21/01/2013 by MP DISCOM, Hindpur and on 19/06/2014 by Yathva Energy Solutions Pvt. Ltd.</li> </ul>
/17/	Phase 5 (8 MW) <ul style="list-style-type: none"> <li>- Main meter (serial no. 12093018), check meter (serial no. 12093021) calibrated on 21/09/2012 by MP DISCOM, Hindpur; and calibrated on 10/07/2014 by Yathva Energy Solutions Pvt. Ltd.</li> <li>- Stand-by meter (serial no. 12093024) on 29/12/2012 by MP DISCOM, Hindpur and on 10/07/2014 by Yathva Energy Solutions Pvt. Ltd.</li> </ul>
/18/	Phase 6 (8 MW) <ul style="list-style-type: none"> <li>- Main meter (serial no. 12093028), check meter (serial no. 12093003) calibrated on 16/11/2012 by MP DISCOM, Hindpur; and calibrated on 09/07/2014 by Yathva Energy Solutions Pvt. Ltd.</li> <li>- Stand-by meter (serial no. 12093035) on 16/11/2012 by MP DISCOM, Hindpur and on 09/07/2014 by Yathva Energy Solutions Pvt. Ltd.</li> </ul>
/19/	Phase 7 (2.40 MW) <ul style="list-style-type: none"> <li>- Main meter (serial no. 12093019), check meter (serial no. 12093004) calibrated on 21/12/2012 by MP DISCOM, Hindpur; and calibrated on 09/07/2014 by Yathva Energy Solutions Pvt. Ltd.</li> <li>- Stand-by meter (serial no. 12093026) on 21/12/2012 by MP DISCOM, Hindpur and on 09/07/2014 by Yathva Energy Solutions Pvt. Ltd.</li> </ul>
/20/	NABL: Accreditation status; webpage 'http://www.nabl-india.org/nabl/index.php?c=search&m=index' in English language accessed on 11/08/2015.
/21/	Tadas Wind Energy Private Limited: Monthly invoices raised to APPCC, APTRANSCO from March 2013 (billing period 24/02/2013 to 24/03/2013) to February 2015 (billing period 24/01/2015 to 24/02/2015)
/22/	Tadas Wind Energy Private Limited: Cumulative generation from individual WEC (as per

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	control panel records) for the period 24/02/2013 to 24/03/2013
/23/	Tadas Wind Energy Private Limited: Cumulative generation from individual WEC (as per control panel records) for the period 22/03/2013 to 24/03/2013
/24/	<p>Power Purchase Agreements (PPAs):</p> <ul style="list-style-type: none"> <li>a) PPA between Central Power Distribution Company of Andhra Pradesh Limited and M/s Tadas Wind Energy Limited 12.8 MW dated 10/10/2012</li> <li>b) PPA between Central Power Distribution Company of Andhra Pradesh Limited and M/s Tadas Wind Energy Limited 3.2 MW dated 10/10/2012</li> <li>c) PPA between Central Power Distribution Company of Andhra Pradesh Limited and M/s Tadas Wind Energy Limited 6.4 MW dated 10/10/2012</li> <li>d) PPA between Central Power Distribution Company of Andhra Pradesh Limited and M/s Tadas Wind Energy Limited 9.6 MW dated 10/10/2012</li> <li>e) PPA between Central Power Distribution Company of Andhra Pradesh Limited and M/s Tadas Wind Energy Limited 8 MW dated 11/10/2012</li> <li>f) PPA between Central Power Distribution Company of Andhra Pradesh Limited and M/s Tadas Wind Energy Limited 8 MW dated 11/10/2012</li> <li>g) PPA between Central Power Distribution Company of Andhra Pradesh Limited and M/s Tadas Wind Energy Limited 2.4 MW dated 11/10/2012</li> </ul>



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### 2.2 On-site assessment

On 24/07/2015, RINA, visited project site across Gondipalli, Duddebanda, Kogira, Mustikovilla villages of Anantpur District of Andhra Pradesh state in India. During the on-site assessment of the project RINA 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/	24/07/2015	Mr. Sajil (Manager)	Wind World (India) Limited	Project description, implementation status of the project, Monitoring plan and ER calculations
/b/	24/07/2015	Mohd. Illiaz (Manager)	IL&FS Wind Power Services Limited (Representative of Tadas Wind Energy Pvt. Ltd.)	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)
/c/	24/07/2015	Subrata Chakrabarty (Assistant Manager)	IL&FS Environment (Consultant of Tadas Wind Energy Pvt. Ltd.)	Cross-check between information provided in the monitoring report and data from other sources such as JMR , invoice and payment receipts.
/d/	24/07/2015	Rohil Kudtarkar (Manager)	IL&FS Wind Power Services Limited (Representative of Tadas Wind Energy Pvt. Ltd.)	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 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 and Technical Expert TA 1.2	Buragohain	Champok	Yes	India
Verifier	Mathew	Vijay	No	India
Technical Reviewer TA 1.2	Valoroso	Rita	No	Italy

## 3 VERIFICATION FINDINGS

The findings of the verification related to the monitoring period from 22/03/2013 to 24/02/2015 as documented and described in the monitoring report version 01 of 28/05/2015, version 02.0 of 31/07/2015 and version 02.1 of 23/11/2015 /01/ 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.

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### 3.1 Description of the project activity

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

Project Participant(s)	Tadas Wind Energy Private Limited		
Project Title	Nallakonda wind farm in Andhra Pradesh		
Location of the project	Anantpur District, Andhra Pradesh state, India.		
Methodology(ies)	"ACM0002", "Consolidated baseline methodology for grid-connected electricity generation from renewable sources", version 13.0.0 of 1/05/2012 /10/		
Sectoral Scope(s)	01	RINA's Technical Area(s)	1.2
Registered PDD	Revision 03.1 of 07/12/2012		
Date of registration	22/03/2013	CDM Registration Reference N°	8791
Starting date of the crediting period	22/03/2013		
Project's crediting period	22/03/2013 to 21/03/2023 (Fixed)		
Monitoring period	22/03/2013- 24/02/2015		
Project documentation link	<a href="http://cdm.unfccc.int/Projects/DB/LRQA%20Ltd1355495522.4/view">http://cdm.unfccc.int/Projects/DB/LRQA%20Ltd1355495522.4/view</a>		
Purpose of the project activity	<p>The project activity consists of 63 WECs (800 kW each) of Enercon make E-53 totaling to a capacity of 50.4 MW, in Anantpur district, Andhra Pradesh state of India connected to Southern grid of India. The Project will lead to reduced greenhouse gas emissions displacing equivalent electricity from fossil fuel based electricity generating plants in grid.</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 validation report, no FAR was raised or there are no FAR to be addressed during this verification /04/.

### 3.3 Monitoring Report

The Monitoring Report for the project activity "Nallakonda wind farm in Andhra Pradesh", in "India", version 01 of 28/05/2015, version 02.0 of 31/07/2015 and version 02.1 of 23/11/2015 submitted by the Tadas Wind Energy Private Limited have been the basis for the verification process.

RINA confirms that the above MR is based on the currently valid MR template /06/ and is completed in accordance with the applicable guidance document/06/.

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The main changes between the MR version 01 of 28/05/2015 published in the UNFCCC website on 22/06/2015 and the MR version 02.1 of 23/11/2015 submitted for registration are the following:

Section of the MR	Description and reason for changing the information in that section
Section D.2	The calibration frequency of energy meter is corrected and calibration gap of energy meters are explained in final MR.
B.2.2	Post registration changes (correction) as per queries raised during information and reporting check

### 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 /03/ and found that the project implementation is in accordance with the registered PDD /03/. The project activity consists of 63 WECs (800 kW each) of Enercon make E-53 at Anantpur district of Andhra Pradesh state, India, totaling to a capacity of 50.4 MW. The generated electricity is evacuated to APTRANSCO sub-station. All the WECs were commissioned in phased manner. The first 23 WEC were commissioned on 07/07/2012 and the last 24 WECs were commissioned on 17/07/2012 as confirmed from commissioning certificates /11/. 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 /12/; this is in line with the registered PDD/01/. The same has been cross checked with the monthly electricity sales invoices raised by PP /13/.

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 13.0.0 /10/. The net electricity generation by the project from 22/03/2013 to 24/02/2015, was taken into consideration.

#### Post registration changes:

Corrections:

The registered PDD mention name of the PP as Tadas Wind Energy Limited which is changed to Tadas Wind Energy Private Limited. This information is already updated at UNFCCC project view page. The project boundary diagram is revised so as to reflect clearly the metering positions although there is no change in project boundary from registered PDD. Correction is done in section B.7.1 of the PDD to clearly specify the monitoring meters as main, check and stand-by meter instead of yard meter (individual WEG site), main and check meter. In line with this the monitoring diagram under section B.7.3 of the PDD is corrected. The monitoring plan and arrangement is not changed post-registration of the project; although the monitoring diagram is further made transparent so as to reflect the actual site condition and meter name as reflected in monthly joint meter readings. The location/arrangement of meters are as per provisions of power purchase agreements /24/. Since, the proposed corrections does not change either the design of the project activity or applicability of the methodology, the changes does not require prior approval from Board as per Appendix 1 of project standard/08/.

### 3.5 Methodology for determining Emission Reductions.

According to the applied methodology "ACM0002", " Consolidated baseline methodology for grid-connected electricity generation from renewable sources /10/, the emission reductions have been calculated based on the following formula:

$$ER_y = BE_y - PE_y$$

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Where,

ER<sub>y</sub> is the total emission reductions of the project activity during the year y;

BE<sub>y</sub> is the baseline emissions for the project activity during the year y;

PE<sub>y</sub> is the emissions for the project activity during the year y;

$$BE_y = EG_{PJ,y} * EF_{grid,CM,y}$$

Where:

BE<sub>y</sub> Baseline Emission in year y (tCO<sub>2</sub>)

EG<sub>PJ,,y</sub> Quantity of net electricity supplied to grid as a result of the implementation of the Project

EF<sub>grid,CM,y</sub> CO<sub>2</sub> emission factor of the grid in year y (tCO<sub>2</sub>/MWh)

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

Baseline emission factor (EF<sub>grid,CM,y</sub>) of the grid 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<sub>OM,y</sub> and 0.25 for EF<sub>BM,y</sub> are applicable as per ACM0002 /10/.

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, leakage emissions is neglected, which is as per the registered PDD /03/.

Hence:

$$LE_y = 0$$

Emission Reduction achieved is;

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

### 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 13.0.0 /10/. 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 /03/ and the monitoring report /01/.

## VERIFICATION/CERTIFICATION REPORT

### 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
<b>EF<sub>grid,OM,y</sub></b> , Operating margin CO <sub>2</sub> emission factor of the grid in year y	CO <sub>2</sub> Baseline Database for the Indian Power Sector, Version 7, CEA /03/, /04/	0.9514 tCO <sub>2</sub> /MWh	The value is ex-ante fixed for crediting period of 10 years as per the registered PDD /03/, which has been justified and validated by validation DOE /04/ to follow the applied methodology and tool and already approved by EB.
<b>EF<sub>grid,BM,y</sub></b> , Build margin CO <sub>2</sub> emission factor of the grid in year y	CO <sub>2</sub> Baseline Database for the Indian Power Sector, Version 7, CEA /03/, /04/	0.7338 tCO <sub>2</sub> /MWh	The value is ex-ante fixed for crediting period of 10 years as per the registered PDD /03/, which has been justified and validated by validation DOE /04/ to follow the applied methodology and tool and already approved by EB.
<b>EF<sub>grid,CM,y</sub></b> , CO <sub>2</sub> emission factor of the grid in year y	CO <sub>2</sub> Baseline Database for the Indian Power Sector, Version 7, CEA /03/, /04/	0.8970 tCO <sub>2</sub> /MWh	The value is ex-ante fixed for crediting period of 10 years as per the registered PDD /03/, 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 <sub>facility,y</sub> ; MWh																																													
Description	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y																																													
Source of data to be used	Joint Meter Reading (JMR) or statement /12/.																																													
Value of monitored parameter for the monitoring period	213,908.47 MWh /12/, /02/																																													
Monitoring equipment	<div>Energy meter</div> <table><tr><td colspan="3">Phase 1 (12.80 MW)</td></tr><tr><td>Main Meter</td><td>Check Meter</td><td>Back-up meter</td></tr><tr><td>12093036</td><td>12093022</td><td>12093041</td></tr></table> <div>Phase 2 (3.20 MW)</div> <table><tr><td>Main Meter</td><td>Check Meter</td><td>Back-up meter</td></tr><tr><td>12092974</td><td>12093033</td><td>12092975</td></tr></table> <div>Phase 3 (6.40 MW)</div> <table><tr><td>Main Meter</td><td>Check Meter</td><td>Back-up meter</td></tr><tr><td>12092997</td><td>12093030</td><td>12093006</td></tr></table> <div>Phase 4 (9.60 MW)</div> <table><tr><td>Main Meter</td><td>Check Meter</td><td>Back-up meter</td></tr><tr><td>12092994</td><td>12093013</td><td>12093031</td></tr></table> <div>Phase 5 (8 MW)</div> <table><tr><td>Main Meter</td><td>Check Meter</td><td>Back-up meter</td></tr><tr><td>12093018</td><td>12093021</td><td>12093024</td></tr></table> <div>Phase 6 (8 MW)</div> <table><tr><td>Main Meter</td><td>Check Meter</td><td>Back-up meter</td></tr><tr><td>12093028</td><td>12093003</td><td>12093035</td></tr></table> <div>Phase 7 (2.40 MW)</div> <table><tr><td>Main Meter</td><td>Check Meter</td><td>Back-up meter</td></tr><tr><td>12093019</td><td>12093004</td><td>12093026</td></tr></table>	Phase 1 (12.80 MW)			Main Meter	Check Meter	Back-up meter	12093036	12093022	12093041	Main Meter	Check Meter	Back-up meter	12092974	12093033	12092975	Main Meter	Check Meter	Back-up meter	12092997	12093030	12093006	Main Meter	Check Meter	Back-up meter	12092994	12093013	12093031	Main Meter	Check Meter	Back-up meter	12093018	12093021	12093024	Main Meter	Check Meter	Back-up meter	12093028	12093003	12093035	Main Meter	Check Meter	Back-up meter	12093019	12093004	12093026
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Main Meter	Check Meter	Back-up meter																																												
12093019	12093004	12093026																																												
Accuracy of the monitoring equipment	The energy meters are of accuracy class 0.2S which is in line with the registered PDD /03/.																																													
Measuring/Reading/Recording frequency	Continuous measurement and monthly recording in the form of JMR. This is in line with the registered PDD.																																													
Calcualtion method (if applicable)	JMR records both gross export and import as per readings of energy meters. Accordingly net export is calculated. Further, if the dates of the JMR do not match with the start and end date of																																													

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	<p>monitoring period, net export to grid for that particular duration is calculated as sum of net electricity generated by a WEC as per below formula:</p> $EG_{facility,y} = \sum_{i=1}^n \text{ net energy for each WEC}$ <p>Net energy for each WEC = <math>(EG_{net,ss}/\Sigma EG_{net,p}) * EG_{net,i}</math></p> <p>Where,</p> <p><math>EG_{net,ss}</math> is the net electricity generation as per JMR.</p> <p><math>EG_{net,p}</math> is the net electricity generation by project WEC for the JMR period as recorded in individual WEC control panel.</p> <p><math>EG_{net,i}</math> is the net electricity generation by project WEC for the monitoring period which do not match with JMR dates.</p>																														
Calibration																															
Calibration frequency/interval Is the calibration interval in line with the monitoring plan of the PDD?	Yes; the calibration frequency is once in a year and this is in line with the registered monitoring plan. However, there has been delay in calibration and PP has applied maximum permissible error for the delayed calibration period as per appendix of VVS version 09 /09/.																														
Does the calibration cover the monitoring period? Has the calibration frequency been respected?	<p>The monitoring period is from 22/03/2013 to 24/02/2015. The calibration details of energy meters are given below:</p> <table border="1"><thead><tr><th colspan="3">Phase 1 (12.80 MW)</th></tr><tr><th>Main Meter</th><th>Check Meter</th><th>Back-up meter</th></tr></thead><tbody><tr><td>12093036</td><td>12093022</td><td>12093041</td></tr><tr><td>Calibrated on 29/12/2012 (valid until 28/12/2013)</td><td>Calibrated on 29/12/2012 (valid until 28/12/2013)</td><td>Calibrated on 29/12/2012 (valid until 28/12/2013)</td></tr><tr><td>Calibrated on 18/06/2014 (valid until 17/06/2015)</td><td>Calibrated on 18/06/2014 (valid until 17/06/2015)</td><td>Calibrated on 18/06/2014 (valid until 17/06/2015)</td></tr></tbody></table> <p>Calibration gap from 29/12/2013 to 18/06/2014. PP has applied maximum error margin of 0.2% from December 2013 (entire month) to June 2014 (entire month) in line with VVS version 09 appendix /09/.</p> <table border="1"><thead><tr><th colspan="3">Phase 2 (3.20 MW)</th></tr><tr><th>Main Meter</th><th>Check Meter</th><th>Back-up meter</th></tr></thead><tbody><tr><td>12092974</td><td>12093033</td><td>12092975</td></tr><tr><td>Calibrated on 26/09/2012 (valid until 25/09/2013)</td><td>Calibrated on 26/09/2012 (valid until 25/09/2013)</td><td>Calibrated on 21/01/2013 (valid until 20/01/2014)</td></tr><tr><td>Calibrated on 08/07/2014 (valid until 07/07/2015)</td><td>Calibrated on 08/07/2014 (valid until 07/07/2015)</td><td>Calibrated on 08/07/2014 (valid until 07/07/2015)</td></tr></tbody></table> <p>Calibration gap from 26/09/2013 to 08/07/2014. PP has applied maximum error margin of 0.2% from September 2013 (entire month) to July 2014 (entire month) in line with VVS version 09 appendix /09/.</p>	Phase 1 (12.80 MW)			Main Meter	Check Meter	Back-up meter	12093036	12093022	12093041	Calibrated on 29/12/2012 (valid until 28/12/2013)	Calibrated on 29/12/2012 (valid until 28/12/2013)	Calibrated on 29/12/2012 (valid until 28/12/2013)	Calibrated on 18/06/2014 (valid until 17/06/2015)	Calibrated on 18/06/2014 (valid until 17/06/2015)	Calibrated on 18/06/2014 (valid until 17/06/2015)	Phase 2 (3.20 MW)			Main Meter	Check Meter	Back-up meter	12092974	12093033	12092975	Calibrated on 26/09/2012 (valid until 25/09/2013)	Calibrated on 26/09/2012 (valid until 25/09/2013)	Calibrated on 21/01/2013 (valid until 20/01/2014)	Calibrated on 08/07/2014 (valid until 07/07/2015)	Calibrated on 08/07/2014 (valid until 07/07/2015)	Calibrated on 08/07/2014 (valid until 07/07/2015)
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Phase 3 (6.40 MW)		
Main Meter	Check Meter	Back-up meter
12092997	12093030	12093006
Calibrated on 26/09/2012 (valid until 25/09/2013)	Calibrated on 26/09/2012 (valid until 25/09/2013)	Calibrated on 21/01/2013 (valid until 20/01/2014)
Calibrated on 08/07/2014 (valid until 07/07/2015)	Calibrated on 08/07/2014 (valid until 07/07/2015)	Calibrated on 08/07/2014 (valid until 07/07/2015)

Calibration gap from 26/09/2013 to 08/07/2014. PP has applied maximum error margin of 0.2% from September 2013 (entire month) to July 2014 (entire month) in line with VVS version 09 appendix /09/.

Phase 4 (9.60 MW)		
Main Meter	Check Meter	Back-up meter
12092994	12093013	12093031
Calibrated on 25/09/2012 (valid until 24/09/2013)	Calibrated on 25/09/2012 (valid until 24/09/2013)	Calibrated on 21/01/2013 (valid until 20/01/2014)
Calibrated on 19/06/2014 (valid until 18/06/2015)	Calibrated on 19/06/2014 (valid until 18/06/2015)	Calibrated on 19/06/2014 (valid until 18/06/2015)

Calibration gap from 25/09/2013 to 19/06/2014. PP has applied maximum error margin of 0.2% from September 2013 (entire month) to June 2014 (entire month) in line with VVS version 09 appendix /09/.

Phase 5 (8 MW)		
Main Meter	Check Meter	Back-up meter
12093018	12093021	12093024
Calibrated on 21/09/2012 (valid until 20/09/2013)	Calibrated on 21/09/2012 (valid until 20/09/2013)	Calibrated on 29/12/2012 (valid until 28/12/2013)
Calibrated on 10/07/2014 (valid until 09/07/2015)	Calibrated on 10/07/2014 (valid until 09/07/2015)	Calibrated on 10/07/2014 (valid until 09/07/2015)

Calibration gap from 21/09/2013 to 10/07/2014. PP has applied maximum error margin of 0.2% from September 2013 (entire month) to July 2014 (entire month) in line with VVS version 09 appendix /09/.

Phase 6 (8 MW)		
Main Meter	Check Meter	Back-up meter
12093028	12093003	12093035
Calibrated on 16/11/2012 (valid until 15/11/2013)	Calibrated on 16/11/2012 (valid until 15/11/2013)	Calibrated on 16/11/2012 (valid until 15/11/2013)
Calibrated on	Calibrated on	Calibrated on

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	09/07/2014 (valid until 08/07/2015)	09/07/2014 (valid until 08/07/2015)	09/07/2014 (valid until 08/07/2015)															
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12092975	Calibration certificate dated 21/01/2013 (with																	

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	(Stand-by meter)	validity until 20/01/2014) by M&P Division, Hindpur and on 08/07/2014 with validity until 07/07/2015 by Yathva Energy Solutions Pvt. Ltd /14/
	<b>Phase 3 (6.40 MW)</b>	
	<b>Serial No.</b>	<b>Calibration Certificate</b>
	12092997 (main meter)	Calibration certificate dated 26/09/2012 (with validity until 25/09/2013) by M&P Division, Hindpur and on 08/07/2014 with validity until 07/07/2015 by Yathva Energy Solutions Pvt. Ltd /15/
	12093030 (check meter)	Calibration certificate dated 26/09/2012 (with validity until 25/09/2013) by M&P Division, Hindpur and on 08/07/2014 with validity until 07/07/2015 by Yathva Energy Solutions Pvt. Ltd /15/
	12093006 (Stand-by meter)	Calibration certificate dated 21/12/2012 (with validity until 20/12/2013) by M&P Division, Hindpur and on 08/07/2014 with validity until 07/07/2015 by Yathva Energy Solutions Pvt. Ltd /15/
	<b>Phase 4 (9.60 MW)</b>	
	<b>Serial No.</b>	<b>Calibration Certificate</b>
	12092994 (main meter)	Calibration certificate dated 25/09/2012 (with validity until 24/09/2013) by M&P Division, Hindpur and on 19/06/2014 with validity until 18/06/2015 by Yathva Energy Solutions Pvt. Ltd /16/
	12093013 (check meter)	Calibration certificate dated 25/09/2012 (with validity until 24/09/2013) by M&P Division, Hindpur and on 19/06/2014 with validity until 18/06/2015 by Yathva Energy Solutions Pvt. Ltd /16/
	12093031 (Stand-by meter)	Calibration certificate dated 21/01/2013 (with validity until 20/01/2014) by M&P Division, Hindpur and on 19/06/2014 with validity until 18/06/2015 by Yathva Energy Solutions Pvt. Ltd /16/
	<b>Phase 5 (8 MW)</b>	
	<b>Serial No.</b>	<b>Calibration Certificate</b>
	12093018 (main meter)	Calibration certificate dated 21/09/2012 (with validity until 20/09/2013) by M&P Division, Hindpur and on 10/07/2014 with validity until 09/07/2015 by Yathva Energy Solutions Pvt. Ltd /17/
	12093021 (check meter)	Calibration certificate dated 21/09/2012 (with validity until 20/09/2013) by M&P Division, Hindpur and on 10/07/2014 with validity until 09/07/2015 by Yathva Energy Solutions Pvt. Ltd

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		/17/
	12093024 (Stand-by meter)	Calibration certificate dated 29/12/2012 (with validity until 28/12/2013) by M&P Division, Hindpur and on 10/07/2014 with validity until 09/07/2015 by Yathva Energy Solutions Pvt. Ltd /17/
	<b>Phase 6 (8 MW)</b>	
	<b>Serial No.</b>	<b>Calibration Certificate</b>
	12093028 (main meter)	Calibration certificate dated 16/11/2012 (with validity until 15/11/2013) by M&P Division, Hindpur and on 09/07/2014 with validity until 08/07/2015 by Yathva Energy Solutions Pvt. Ltd /18/
	12093003 (check meter)	Calibration certificate dated 16/11/2012 (with validity until 15/11/2013) by M&P Division, Hindpur and on 09/07/2014 with validity until 08/07/2015 by Yathva Energy Solutions Pvt. Ltd /18/
	12093035 (Stand-by meter)	Calibration certificate dated 16/11/2012 (with validity until 15/11/2013) by M&P Division, Hindpur and on 09/07/2014 with validity until 08/07/2015 by Yathva Energy Solutions Pvt. Ltd /18/
	<b>Phase 7 (2.40 MW)</b>	
	<b>Serial No.</b>	<b>Calibration Certificate</b>
	12093019 (main meter)	Calibration certificate dated 21/12/2012 (with validity until 20/12/2013) by M&P Division, Hindpur and on 09/07/2014 with validity until 08/07/2015 by Yathva Energy Solutions Pvt. Ltd /19/
	12093004 (check meter)	Calibration certificate dated 21/12/2012 (with validity until 20/12/2013) by M&P Division, Hindpur and on 09/07/2014 with validity until 08/07/2015 by Yathva Energy Solutions Pvt. Ltd /19/
	12093026 (Stand-by meter)	Calibration certificate dated 21/12/2012 (with validity until 15/11/2013) by M&P Division, Hindpur and on 09/07/2014 with validity until 08/07/2015 by Yathva Energy Solutions Pvt. Ltd /19/
	Does the calibration of meters have been done by an accredited person or institution?	MP DISCOM, Hindpur is state nodal agency and Yathva Energy Solutions Pvt. Ltd. is NABL accredited agency /20/. Hence, credible for calibration.

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In conclusion, RINA is able to confirm that the monitoring has been implemented in full compliance with the registered monitoring plan and all the parameters listed in the registered monitoring plan have been sufficiently monitored.

### 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, version 13.0.0 /10/ and the registered PDD /03/. 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 WECs ( $EG_{facility,y}$ ) is directly sourced from monthly joint meter reading reports which also provides gross export and gross import by the project WECs. In cases, the JMR dates do not match with the start and end date of monitoring period, the net export for that duration is calculated considering individual WEC generation (as recorded in individual WEC control panel) in line with registered monitoring plan. The project WECs are commissioned in seven phases and each phase WECs are connected to a set of energy meters (main, check and stand-by). Hence, each month seven JMRs are recorded. It was verified that main, check and stand-by energy meter is of accuracy 0.2 S /13-19/ as mentioned in the registered PDD /03/. Since the JMR is recorded on monthly basis and the net export as per JMR for the month of March 2013 (24/02/2013 to 24/03/2013) was 5,176,999 kWh, whereas, monitoring period starts from 22/03/2013, the net export from 22/03/2013 to 24/03/2014 is calculated considering below formula:

$$EG_{facility,y} = \sum_{i=1}^n \text{Net energy for each WEC}$$

Net energy for each WEC =  $(EG_{net,ss}/\Sigma EG_{net,p}) * EG_{net,i}$

Where,

$EG_{net,ss}$  is the net electricity generation as per JMR; Recorded value for the period 24/02/2013 to 24/03/2013 was 5,176,999 kWh /12/.

$EG_{net,p}$  is the net electricity generation by project WEC for the JMR period as recorded in individual WEC control panel. Recorded value for the period 24/02/2013 to 24/03/2013 was 5,484,868 kWh /22/.

$EG_{net,i}$  is the net electricity generation by project WEC for the monitoring period which do not match with JMR dates. Recorded value for the period 22/03/2013 to 24/03/2013 was 642,631 kWh /23/.

In addition, there has been delay in calibration of energy meters as explained in section 3.5.2.2 above and PP has applied maximum error (2%) of the energy meter with the measured value for the duration of the delay calibration in line with appendix of VVS version 09 /09/.

Accordingly net export for the month of March 2013 (22/03/2013 to 24/03/2013) reported in ER sheet is 606,559.73 /02/. Net export in rest of the months under the monitoring period is considered as per JMR reports /12/. Accordingly, the net electricity supplied by the project activity during the current monitoring period is 213,908.47 MWh /01/,/02/. The reported value is cross checked against monthly JMR copies /12/ and cross checked with monthly invoices raised by PP /21/.

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 /12/.

The calibration of monitoring equipment (energy meters) has been done as per registered PDD (once in a year /03/ and same has been verified by RINA /13-19/.

The resulting baseline emission of reductions of 191,890.00 tCO<sub>2</sub>e (round down value) after multiplying with the grid emission factor fixed *ex-ante* at 0.89707 tCO<sub>2</sub>/MWh /01/,/02/.

The project emission and leakage emission is zero in line with the registered PDD /03/. 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.



## VERIFICATION/CERTIFICATION REPORT

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 /03/, /04/.

### 3.5.4 Accuracy of emission reduction calculations

The emission reduction calculations provided in the spreadsheet /02/ have been verified to be correct and in line with the registered PDD /03/.

The emission reductions from the project for the monitoring period as reported in the monitoring report revision 02.1 of 23/11/2015 /01/ is equivalent to 191,890 tCO<sub>2e</sub>. The reported emission reductions are 1.28% less than the estimated emission reduction of 194,385 tCO<sub>2e</sub>/03/.

In order to detect errors, omissions or misstatements in emission reductions or removals being claimed by project participants in the monitoring report, the materiality have been applied by RINA a per clause 11.2.3 of VVS, Version 09.0 /06/. The project is a large scale CDM project activity and a 2 percent materiality threshold is applied. The verification activity does not involve any sampling procedure. 100% data has been used as per monitored monthly records. Net electricity export to grid as monitored in calibrated energy meter is the only monitoring parameter. Monthly joint meter reading (JMR) is prepared and approved by state utility. Based on monthly JMR invoice is raised, The verification team has cross checked 100% data (JMR) with invoices raised and did not find any error or misstatement in reporting.

The data presented in the monitoring report /01/ were assessed by reviewing in detail project documentation, collection of monitored data, observation of established monitoring and reporting 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 PDD /03/. The monitoring and reporting of electricity data is in accordance with well-established operational procedures. The site visit confirmed that the management system for the CDM project is in place and can be traced, such as the organizational structure with responsibilities, monitoring procedure and monitoring management, emergency treatment procedure and competence criteria of CDM personnel involved in the CDM project. The organizational structure, responsibilities 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 registered monitoring plan.



## VERIFICATION/CERTIFICATION REPORT

### 4 VERIFICATION AND CERTIFICATION OPINION

RINA Service Spa (RINA) has performed verification of the emission reductions reported for the project activity “Nallakonda wind farm in Andhra Pradesh” in India, CDM Registration Reference N° 8791, for the period 22/03/2013 to 24/02/2015, with regard to the relevant requirements for CDM activities.

The project participants of the “Nallakonda wind farm in Andhra Pradesh” 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 03.1 of 07/12/2012 and revised PDD version 04 of 23/11/2015
- 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 02.1 of 23/11/2015 for the “Nallakonda wind farm in Andhra Pradesh” project in India for the period 22/03/2013 to 24/02/2015 are fairly stated. The GHG emission reductions were calculated correctly on the basis of the approved monitoring methodology “ACM0002”, “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”, version 13.0.0 of 11/05/2012 and the monitoring plan contained in the registered PDD.

Hence RINA is able to certify that the emission reductions from the project during the monitoring period 22/03/2013 to 24/02/2015 amount to 191,890 tCO<sub>2e</sub>.

Genova, 25/11/2015



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 <sup>1</sup>	Comments	Conclusion
<b>A Monitoring Report</b>					
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/, /03/	DR	Yes, the project title is “Nallakonda wind farm in Andhra Pradesh”, which clearly identifies the unique CDM activity.  The monitoring report, version 1.0 of 28/05/2015 covers the monitoring period from 22/03/2013 – 24/02/2015.	OK
A.2	Does the project comply with the applicable requirements for completing the Monitoring Reports (latest version available)?	/01/, /06/	DR	Yes, the project complies with the applicable requirements for completing the Monitoring Report Form (CDM-MR-FORM), version 05.1 of 04/05/2015. The MR is completed in accordance to the instructions for filling out the Monitoring Report form.	OK
A.3	Does the MR comply with the template available (latest version)?	/01/, /06/	DR	Please refer to the above section A.2	OK
<b>B Description of Project Activity</b>					
B.1	Is the actual implementation and operation of the proposed project activity in accordance with the project activity in the registered PDD?	/01/, /03/, /04/, /05/, /11/	DR	The project activity is registered under CDM program with UNFCCC on 22/03/2013. The crediting period for the project activity is from 22/03/2013 to 21/03/2023 (fixed). The current monitoring period as mentioned in the monitoring report is 22/03/2013 to 24/02/2015, which is in line with the crediting period.  As per the registered PDD, the project activity is installation of 63 WECs (800 kW each) of Enercon make E-53 totaling to a capacity of 50.4 MW, in Karnataka state of India and exporting power to Southern grid. The project leads to reduced greenhouse gas emissions because it displaces electricity from fossil fuel dominated electricity	OK

<sup>1</sup> MoV: DR document review, I interview, CC cross checking

Checklist Question		Reference	MoV <sup>1</sup>	Comments	Conclusion
				generation plants connected in grid.  The commissioning dates of the WTGS were cross checked with commissioning certificates and also during the site visit and the same is found to be acceptable.  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.	
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/, /03/, /04/, /05/	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/,/03/, /04/, /05/, /11/	DR, I	The project involves the installation of 63 WECs (800 kW each) of Enercon make E-53 totaling to a capacity of 50.4 MW, in Karnataka state of India to provide reliable, renewable power to the Southern grid.  All the WECs under the project activity were commissioned by 17/07/2012. The commissioning date of the WTGS were cross checked with the commissioning certificates and also during the site visit and the same is found to be acceptable.	OK
B.4	Methodology and methodological tool applied for the registered project activity	/01/, /03/, /05/,/10/	DR, CC	The project activity applies “ACM0002”, “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”, version 13 of 11/05/2012. The tools applied are: Tool to calculate the emission factor for an electricity system – Version 02.2.1 Tool for the demonstration and assessment of additionality – Version 06.1.0	OK

Checklist Question		Reference	MoV <sup>1</sup>	Comments	Conclusion
<b>C Compliance of the monitoring activities with the registered monitoring plan / Compliance of the monitoring plan with the monitoring methodology and methodological tool</b>					
<b>C.1 Monitoring plan</b>					
C.1.1	Does the monitoring plan included in the registered CDM project activity comply with the applied methodology?	/01/, /03/ /10/	DR	Yes, the monitoring plan in the registered CDM PDD complies with the applied methodology ACM0002, version 13 of 11/05/2012.	OK
C.1.2	Does the monitoring comply with the monitoring plan in the registered PDD?	/01/, /03/	DR, I	Yes, the monitoring during this monitoring period complies with the registered PDD.	OK
<b>C.2 Data and parameters fixed ex-ante or at renewal crediting period</b>					
C.2.1	Which parameters were available at validation and how were they verified?	/01/, /03/ /04/	DR	<p>EF<sub>grid,OM,y</sub>: Operating margin Emission Factor of national electricity grids (Southern grid). The values for this parameter is 0.9514 tCO<sub>2</sub>/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 7. The correctness of the value has been confirmed by the validation team.</p> <p>EF<sub>grid,BM,y</sub>: Build Margin Emission factor of national electricity grids (Southern grid). The values for this parameter are 0.7338 tCO<sub>2</sub>/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<sub>grid,CM,y</sub>: Combined margin emission factor of national electricity grids (Southern grid). The values for this parameter is 0.8970 tCO<sub>2</sub>/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 has been confirmed by the validation team.</p> <p>The value of the above parameters are derived</p>	OK

Checklist Question		Reference	MoV <sup>1</sup>	Comments	Conclusion										
				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/, /03/ /04/	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/, /03/, /04/, /05/	DR/CC	The following parameters are being monitored during the current monitoring period which is in line with the registered CDM PDD: <table><tr><td>Data/Parameter:</td><td>EG<sub>facility,y</sub></td></tr><tr><td>Data unit:</td><td>MWh/year</td></tr><tr><td>Description:</td><td>Quantity of net electricity generation supplied by the project plant/ unit to the grid in year y.</td></tr><tr><td>Source of data:</td><td>Joint Meter Reading (JMR) or statement</td></tr><tr><td>Value(s) of monitored parameter:</td><td>213,908.47</td></tr></table>	Data/Parameter:	EG <sub>facility,y</sub>	Data unit:	MWh/year	Description:	Quantity of net electricity generation supplied by the project plant/ unit to the grid in year y.	Source of data:	Joint Meter Reading (JMR) or statement	Value(s) of monitored parameter:	213,908.47	OK
Data/Parameter:	EG <sub>facility,y</sub>														
Data unit:	MWh/year														
Description:	Quantity of net electricity generation supplied by the project plant/ unit to the grid in year y.														
Source of data:	Joint Meter Reading (JMR) or statement														
Value(s) of monitored parameter:	213,908.47														
C.3.2	Is the measurement equipment described? Is the accuracy of the measurement equipment addressed and deemed appropriate?	/01/, /03/ /11/	DR	Yes, energy meter (stand by, main and check) is connected to number of WECs as and when commissioned at site which is then connected to a bulk meter at the pooling sub-station. The project has seven sets (stand by, main and check) of such energy meters. All energy meters are of 0.2S accuracy class. The accuracy is as per registered PDD and also comply national standard.	OK										
C.3.3	Is the measuring/reading/recording frequency adequate for all monitoring parameters? Is it in line with the registered monitoring plan?	/01/, /03/ /04/	DR	Yes, continuous measurement and at-least monthly recording of net electricity generation supplied by the project to grid. This is in line with the registered monitoring plan. Further electricity generation from individual WEC is monitored at the inbuilt control panel of individual WEC. Cumulative generation from any WEC for any particular period can be retrieved since all WECs are SCADA connected	OK										

Checklist Question		Reference	MoV <sup>1</sup>	Comments	Conclusion																					
				and real time generation is monitored and daily generation is recorded.																						
C.4 Calibration requirements																										
C.4.1	Are the requirements for maintenance and calibration of measurement equipment described and deemed appropriate?	/01/,/03/, /04/, /05/,	DR	<p>Yes; The net export to grid from the project WECs are as per JMR (monthly) taken from all the project energy meters (main, check and back-up) installed at WEC site. All the energy meters are calibrated annually. Calibration details are given below:</p> <table><tr><th>Meter</th><th>Sl.No</th><th>Calibration date</th></tr><tr><td colspan="3">Phase 1 (16*800 kW = 12.8 MW)</td></tr><tr><td>Main meter</td><td>12093036</td><td>29/12/2012 valid until 28/12/2013. 18/06/2014 valid until 17/06/2015</td></tr><tr><td>Check Meter</td><td>12093022</td><td>29/12/2012 valid until 28/12/2013. 18/06/2014 valid until 17/06/2015</td></tr><tr><td>Back-up meter</td><td>12093041</td><td>29/12/2012 valid until 28/12/2013. 18/06/2014 valid until 17/06/2015</td></tr><tr><td colspan="3">Phase 2 (4*800 kW = 3.2 MW)</td></tr><tr><td>Main meter</td><td>12092974</td><td>26/09/2012 valid until 25/09/2013. 08/07/2014 valid until 07/07/2015</td></tr></table>	Meter	Sl.No	Calibration date	Phase 1 (16*800 kW = 12.8 MW)			Main meter	12093036	29/12/2012 valid until 28/12/2013. 18/06/2014 valid until 17/06/2015	Check Meter	12093022	29/12/2012 valid until 28/12/2013. 18/06/2014 valid until 17/06/2015	Back-up meter	12093041	29/12/2012 valid until 28/12/2013. 18/06/2014 valid until 17/06/2015	Phase 2 (4*800 kW = 3.2 MW)			Main meter	12092974	26/09/2012 valid until 25/09/2013. 08/07/2014 valid until 07/07/2015	CAR-1, OK
Meter	Sl.No	Calibration date																								
Phase 1 (16*800 kW = 12.8 MW)																										
Main meter	12093036	29/12/2012 valid until 28/12/2013. 18/06/2014 valid until 17/06/2015																								
Check Meter	12093022	29/12/2012 valid until 28/12/2013. 18/06/2014 valid until 17/06/2015																								
Back-up meter	12093041	29/12/2012 valid until 28/12/2013. 18/06/2014 valid until 17/06/2015																								
Phase 2 (4*800 kW = 3.2 MW)																										
Main meter	12092974	26/09/2012 valid until 25/09/2013. 08/07/2014 valid until 07/07/2015																								

Checklist Question	Reference	MoV <sup>1</sup>	Comments	Conclusion
			<div>Check Meter</div> <div>12093033</div> <div>26/09/2012 valid until 25/09/2013. 08/07/2014 valid until 07/07/2015</div>	
			<div>Back-up meter</div> <div>12092975</div> <div>21/01/2013 valid until 20/01/2014. 08/07/2014 valid until 07/07/2015</div>	
			<b>Phase 3 (8*800 kW = 6.4 MW)</b>	
			<div>Main meter</div> <div>12092997</div> <div>26/09/2012 valid until 25/09/2013. 08/07/2014 valid until 07/07/2015</div>	
			<div>Check Meter</div> <div>12093030</div> <div>26/09/2012 valid until 25/09/2013. 08/07/2014 valid until 07/07/2015</div>	
			<div>Back-up meter</div> <div>12093006</div> <div>21/12/2012 valid until 20/12/2013. 08/07/2014 valid until 07/07/2015</div>	
			<b>Phase 4 (12*800 kW = 9.6 MW)</b>	
			<div>Main meter</div> <div>12092994</div> <div>25/09/2012 valid until 24/09/2013. 19/06/2014 valid until 18/06/2015</div>	



Checklist Question	Reference	MoV <sup>1</sup>	Comments	Conclusion	
			Check Meter	12093013	25/09/2012 valid until 24/09/2013. 19/06/2014 valid until 18/06/2015
			Back-up meter	12093031	21/01/2013 valid until 20/01/2014. 19/06/2014 valid until 18/06/2015
			Phase 5 (10*800 kW = 8.0 MW)		
			Main meter	12093018	21/09/2012 valid           until 20/09/2013. 10/07/2014 valid           until 09/07/2015
			Check Meter	12093021	21/09/2012 valid           until 20/09/2013. 10/07/2014 valid until 09/07/2015
			Back-up meter	12093024	29/12/2012 valid           until 28/12/2013. 10/07/2014 valid until 09/07/2015
			Phase 6 (10*800 kW = 8.0 MW)		
			Main meter	12093028	16/11/2012 valid           until 15/11/2013. 09/07/2014 valid           until 08/07/2015

Checklist Question		Reference	MoV <sup>1</sup>	Comments			Conclusion
				Check Meter	12093003	16/11/2012 valid until 15/11/2013. 09/07/2014 valid until 08/07/2015	
				Back-up meter	12093035	16/11/2012 valid until 15/11/2013. 09/07/2014 valid until 08/07/2015	
				Phase 7 (3*800 kW = 2.4 MW)			
				Main meter	12093019	21/12/2012 valid until 20/12/2013. 09/07/2014 valid until 08/07/2015	
				Check Meter	12093004	21/12/2012 valid until 20/12/2013. 09/07/2014 valid until 08/07/2015	
				Back-up meter	12093026	21/12/2012 valid until 20/12/2013. 09/07/2014 valid until 08/07/2015	
				Calibration frequency stated in table D.2 of the MR is not consistent with registered monitoring plan. Further, no explanation has been provided for the delayed calibration and how the monitored data has been adjusted for the delayed calibration period.			
C.4.2	Does the calibration cover the monitoring period?	/01/,/03/,	DR	Yes; calibration cover the monitoring period.			CAR-1, OK

Checklist Question		Reference	MoV <sup>1</sup>	Comments	Conclusion
C.4.3	Has the calibration frequency been respected?	/04/, /05/, /01/, /03/, /04/, /05/	DR	However, please refer to section C.4.1 above. Please refer to section C.4.1 above.	<del>CAR-1</del> , OK
C.4.4	Does the calibration of meters have be done by an accredited person or institution?	/01/, /03/, /04/, /05/	DR	Please refer to section C.4.1 above.	<del>CAR-1</del> , OK
C.4.5	In case of delay, describe the applied maximum permissible error	/01/, /03/, /04/, /05/	DR	Please refer to section C.4.1 above.	<del>CAR-1</del> , OK
<b>C.5 Monitoring of the sustainable indicators</b>					
C.5.1	Is the monitoring of sustainable development indicators/ environmental impacts warranted by legislation in the host Country?	/01/, /03/, /04/, /10/	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 13.	OK
<b>C.6 Management system and quality control</b>					
C.6.1	How has it been assessed that the monitoring arrangements described in the monitoring plan are feasible within the project design?	/01/, /03/, /04/, /05/, /10/	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/, /03/, /04/, /05/, /10/	DR	Data to be used for emission reductions calculation is as per monthly generation report, daily individual WEC generation records and apportioned (calculated) value for the duration which do not match the monthly generation report dates. 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/, /03/, /04/, /05/, /10/, /12/	DR/CC	The meter readings (both export and import) are recorded in the JMR on monthly basis. Further, individual WEC generation is recorded daily as per individual WEC control panel readings. Hence monthly values are taken from JMR for calculation of emission reductions. Individual WEC control panel generation is used to calculate net export for the duaration which do not match the JMR dates. The The joint meter readings (JMR) contains the value of energy exported and energy imported. Based on JMR and records of individual WEC	<del>CAR-2</del> , OK

Checklist Question		Reference	MoV <sup>1</sup>	Comments	Conclusion
				control panel (LCS) generation net electricity exported by the project WECs are calculated. Based on the net export data invoices are raised on State utility. RINA checked the net electricity supplied to the grid by means of joint meter readings. The same was crosschecked with the value mentioned in the invoices and found to be appropriate. RINA, thus confirms that the data management and 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. However, the ER sheet does not mention the source of the values considered for emission reduction calculation.	
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/, /03/, /04/, /05/	DR	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.	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/, /03/, /04/, /05/	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
<b>D.1 Assessment of data and calculation of emission reductions/Accuracy of emission reduction calculations</b>					
D.1.1	How were the values in the monitoring report verified and cross-checked?	/01/, /02/, /03/, /04/, /05/, /11/	DR/CC	Please refer to section C.6.3	CAR-2, OK
D.1.2	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/, /03/, /04/, /05/, /11/	DR/CC	Not applicable since all the data has been correctly measured, recorded according to the applied monitoring methodology ACM0002, version 13 and the registered PDD for this monitoring period.	OK
D.1.3	Emission reductions reported	/01/, /02/, /03/, /04/, /05/, /11/	DR/CC	Emission reduction reported for the monitoring period is 191,890 tCO <sub>2e</sub> .	OK

Checklist Question		Reference	MoV <sup>1</sup>	Comments	Conclusion
D.1.4	Difference between the emission reductions estimated in the registered PDD and the emission reductions reported for the monitoring period.	/01/, /02/, /03/, /04/, /05/, /11/	DR/CC	There is a reduction of 1.28% in emission reduction compared to registered PDD and reported during the monitoring period.	<b>OK</b>

**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
CAR 1 Calibration frequency stated in table D.2 of the MR is not consistent with registered monitoring plan. Further, no explanation has been provided for the delayed calibration and how the monitored data has been adjusted for the delayed calibration period.	C.4.1, C.4.2, C.4.3, C.4.4, C.4.5	PP Response: Calibration frequency mentioned in section D.2 of revised CDM-MR-FORM, v02.0 is now consistent with the registered monitoring plan. Further, explanation on the adjustment of monitored data due to delayed calibration has now been provided in section D.2 of revised CDM-MR-FORM, v02.0	Calibration frequency is corrected in the revised MR. The same is now consistent with registered PDD. Further, there has been delay in calibration and the revised MR provides explanation on adjustment of measured value for the delay calibration period in line with VVS version 09 appendix. <b>CAR is closed.</b>
CAR 2 The ER sheet does not mention the source of the values considered for emission reduction calculation	C.6.3, D.1.1	PP Response: The source of the values considered for emission reduction calculation has now been included in revised ER spreadsheet, v02.0. Please refer to <Generation Data> workbook.	The source of values reported in ER sheet is now provided in the revised ER sheet. Reported values are cross checked with source (JMR and control panle readings) and found to be consistent. <b>CAR is closed.</b>

**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 come<sup>1</sup>:  
*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*

<sup>1</sup> 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:

**Mathew Vijay**

è qualificato come<sup>1</sup>:  
is qualified as:

**CDM -TEC, -VAL, -TL**

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

**1.2**

AREE TECNICHE TECHNICAL AREAS	DESCRIZIONE DELL'AREA TECNICA TECHNICAL AREA DESCRIPTION	SCOPO SETTORIALE SECTORAL SCOPE
1.2	Renewables	1

in accordo alle istruzioni del Settore Sostenibilità, Ambiente & Cambiamenti Climatici.  
in accordance with the instructions of the Sustainability, Environment & Climate Change Sector.

REVISIONE REVISION	DATA DATE	MOTIVAZIONI PER LA REVISIONE REASON FOR THE REVISION
0	02/08/2012	-
3	10/11/2015	New revision of IS-QPT-GHG-20

Il Resp. QPT  
Head of QPT

<sup>1</sup> Legend:

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

CDM: Clean Development Mechanism  
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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

<sup>1</sup> 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  
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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*