VERIFICATION REPORT

"KARACABEY WIND POWER PROJECT"

RINA Services S.p.A.

Project Title	Karacabey Wind Power Project
Version	1.1 Aa
Report ID	2018-XT-MD-18

Report Title	Verification Report of the "Karacabey Wind Power Project"
Client	Yalova Ruzgar Enerjisinden Elektrik Uretim A.S.
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Prepared By	RINA Services S.p.A.
Contact	Address : Via Corsica, 12 – 16128 Genova, ITALY Telephone : +39 010 538 55 09 email : ghg.services@ rina.org web site : www.rina.org
Approved By	**Laura Severino** (Authorized officer signing for the DOE) 
Work Carried Out By	Tugce KIRATLI; VCS Team Leader, VCS Verifier, Technical Expert

Summary:

RINA Services S.p.A. (RINA), commissioned by Yalova Ruzgar Enerjisinden Elektrik Uretim A.S., has verified the greenhouse gas emission reductions reported for the project activity "Karacabey Wind Power Project" in Turkey, VCS Registration Reference N° 1569, for the period 21/10/2016 to 30/09/2018, with regard to the relevant requirements for CDM and VCS activities.

The objective of the verification is to have an independent review ex post determination of the monitored reductions in GHG emission reductions, reported for the "Karacabey Wind Power Project" project in Turkey for the period 21/10/2016 to 30/09/2018.

Verification was conducted using RINA procedures in line with the requirements specified in the VCS Version 3 Requirements, 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 desk review, on-site assessment and the resolution of outstanding issues and the issuance of the final verification report and certification.

The verification shall ensure that reported emission reductions are complete and accurate in accordance with applicable VCS Version 3 requirements, which refer to CDM rules, in order to be certified.

In conclusion, it is RINA's opinion that the project activity "Karacabey Wind Power Project", in "Turkey", as described in the Monitoring Report version 02 of 30/10/2018, meets all relevant requirements for VCS and CDM activities and all relevant host Party criteria and correctly applies the baseline and monitoring methodology "ACM0002", "Consolidated baseline methodology for grid-connected electricity from renewable sources", version 17 of 13/05/2016. Hence, RINA is able to certify that the emission reductions from the project during the monitoring period 21/10/2016 to 30/09/2018 amount to 96,378 tCO2e.

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1 INTRODUCTION

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 VCS project activity during a defined monitoring period. Certification is the written assurance by the DOE that, during a specific time period, a proposed VCS project activity achieved the reductions in anthropogenic emissions by sources of GHGs as verified.

The objective of this verification/certification was to verify and certify emission reductions and effective implementation of the monitoring of sustainable development indicators and mitigation measures, reported for the "Karacabey Wind Power Project" project in Turkey for the period 21/10/2016 to 30/09/2018.

1.2 Scope and Criteria

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;
- to evaluate whether all the mitigation measures have been effectively put in place according to the monitoring plan and that all the sustainable development indicators have been correctly monitored.

Verification shall ensure that reported emission reductions are complete and accurate in accordance with applicable VCS Version 3 requirements, which refer to CDM rules, 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.

1.3 Level of Assurance

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. All evidence had been confirmed during on site visit with the invoices of electricity generation. The level of assurance is reasonable.

The technical review was performed by a technical reviewer(s) qualified in accordance with RINA's qualification scheme for VCS and CDM validation and verification. The verification team and the technical reviewers consist of the following personnel:

Role/Qualification	Last Name	First Name	Country
VCS Team Leader – VCS Verifier – Technical Expert	Kiratli	Tugce	Turkey
Independent Technical Reviewer	Liu	Hui Feng	China

1.4 Summary Description of the Project

Yalova Ruzgar Enerjisinden Elektrik Uretim A.S. has commissioned RINA to carry out the verification and certification of emission reductions reported for the registered "Karacabey Wind Power Project" project in Turkey, VCS Registration Reference N° 1569, for the period 21/10/2016 to 30/09/2018.

The project is wind power plant located in Marmara Region, Karacabey District of the Bursa Province, Turkey.

The project activity consists of 12 wind turbines each with a 2.5 MW capacity making the total installed capacity of 27.9 MWe/33 MWm. The first phase covered 6 turbines which were commissioned on 21/10/2016 /13/, the second phase covered 4 turbines which were commissioned on 07/12/2016 /14/ and the third phase covered 2 turbines which were commissioned on 16/03/2017 /15/.

The generated electricity is supplied to the National Electricity Transmission Grid of Turkey via Karacabey electricity transmission line of TEIAS.

Project Participant(s)	Yalova Ruzgar Enerjisinden Elektrik Uretim A.S.		
Project Title	Karacabey Wind Power Project		
Location of the project	Marmara Region, Karacabey District, Bursa Province of Turkey		
Methodology(ies)	ACM0002", "Grid-connected electricity generation from renewable sources", version 17 of 13/05/2016 /6/		
Sectoral Scope(s)	1	**RINA's Technical Area(s)**	1.2
Registered VCS PD	Version 04 of 24/01/2017		
VCS Registration Reference No	1569		
Starting date of the crediting period	21/10/2016 (as confirmed through the Temporary Acceptance Protocol /13/)		
Project's crediting period	21/10/2016 and 20/10/2026		
Monitoring period	21/10/2016 to 30/09/2018 (both days included)		
Project documentation link	https://mer.markit.com/br-reg/public/project.jsp?project_id=104000000011992		

2 VERIFICATION PROCESS

The project was validated by RINA S.p.A. on 22/02/2017 and it was registered under the VCS registration reference N° 1569. This is the first verification assessment for the monitoring period 21/10/2016 to 30/09/2018 by RINA.

2.1 Method and Criteria

Verification was conducted using RINA procedures in line with the requirements specified in the VCS Version 3 Requirements, 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:

- Document review;
- On-site assessment;

The resolution of outstanding issues and the issuance of the final verification report and certification.

2.2 Document Review

The monitoring report, version 02 of 30/10/2018 /2/, the emission reduction calculations provided in the form of a spreadsheet, “ER calculations_Karacabey_v2.xlsx” version 02 of 30/10/2018 /8/, the approved baseline and monitoring methodology ACM0002 version 17 /6/ and all the documentation provided to support the monitoring period /01 – 24/ were assessed as part of the verification. In addition, the VCS Project Description (VCS PD) /1/, in particular as regards the baseline estimations and the monitoring plan, and the Validation Report of 22/02/2017 /7/ for the project, were reviewed.

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

/1/	Life Enerji: VCS PD for “Karacabey Wind Power Project” in Turkey, version 04 of 24/01/2017
/2/	Life Enerji: Monitoring report for “Karacabey Wind Power Project” in Turkey, version 01 of 20/07/2018 related to the monitoring period 21/10/2016 to 30/06/2018 Life Enerji: Monitoring report for “Karacabey Wind Power Project” in Turkey, version 02 of 30/10/2018 related to the monitoring period 21/10/2016 to 30/09/2018
/3/	VCS Verified Carbon Standard: VCS Program Guide, VCS Version 3.7 of 21/06/2017
/4/	VCS Verified Carbon Standard: VCS Standard, VCS Version 3.7 of 21/06/2017
/5/	CDM Executive Board: Clean Development Mechanism Validation and Verification Standard for Project Activities, version 01.0 of 03/03/2017
/6/	CDM Executive Board: Baseline and monitoring methodology “ACM0002”, “Grid-connected electricity generation from renewable sources”, version 17 of 13/05/2016
/7/	RINA S.p.A.: Validation Report for “Karacabey Wind Power Project”, version 1.4 Aa of 22/02/2017
/8/	Life Enerji: Emission Reduction Calculation Spreadsheet “ER calculations_Karacabey_v1.xlsx” version 01 of 20/07/2018 related to the monitoring period from 21/10/2016 to 30/06/2018

	Life Enerji: Emission Reduction Calculation Spreadsheet "ER calculations_Karacabey_v2.xlsx" version 02 of 30/10/2018 related to the monitoring period from 21/10/2016 to 30/09/2018
/9/	VCS Verified Carbon Standard: VCS Verification Report Template Version 3.4 of 19/10/2016
/10/	CDM Executive Board: Methodological Tool "Tool to calculate the emission factor for an electricity system", version 05 of 27/11/2015
/11/	Website: https://mer.markit.com/br-reg/public/project.jsp?project_id=104000000011992 Argument: Markit Database Language: English; Retrieved on: 13/09/2018
/12/	Energy Market Regulatory Authority: Generation License numbered EU/5863-13/03384 of 12/11/2015
/13/	The Ministry of Energy and Natural Resources: Temporary Acceptance Protocol of 21/10/2016 (6 Turbines)
/14/	The Ministry of Energy and Natural Resources: Temporary Acceptance Protocol of 07/12/2016 (4 Turbines)
/15/	The Ministry of Energy and Natural Resources: Temporary Acceptance Protocol of 16/03/2017 (2 Turbines)
/16/	Market Financial Conciliation Center (PMUM): All Monthly PMUM Records with in the Monitoring Period (from 21/10/2016 to 30/08/2018)
/17/	UEDAS (Uludag Elektrik Dagitim A.S.): Electricity Invoices for the Monitoring Period (from 21/10/2016 to 30/08/2018)
/18/	The Turkish Ministry of Trade and Industry: Regulation of Metering and Testing of Metering Systems of 24/07/1994
/19/	Turkish Energy Market Regulatory Authority: Communiqué for Measurement Devices used in the Electricity Market of 22/03/2003
/20/	The Energy Market Regulatory Authority: Electricity Market Balancing and Settlement Regulation of 14/04/2009
/21/	Bursa Governorship, Provincial Directorate of Environment and Urban Planning: EIA Not Required Certificate of 28/12/2012
/22/	The Ministry of Environment and Forestry: Environmental Impact Assessment Regulation, Gazette No:26939 of 17/07/2008
/23/	CDM Executive Board: Methodological Tool "Tool to calculate the emission factor for an electricity system", version 05.0 of 27/11/2015
/24/	CDM Executive Board: Methodological Tool "Tool for the demonstration and assessment of additionality", version 07.0 of 23/11/2012
/25/	Landis+Gyr: Calibration Report of the Electricity Meters of 26/03/2015
/26/	Uludag Elektrik Dagitim A.S.: First Index Protocol of 21/10/2016

2.3 Interviews

The Plant Manager was interviewed during the site visit. To see how the monitoring procedures were implemented, the whole process was explained to the verification team during the site visit. The carbon consultant was interviewed about the monitoring report and related parameters. Whole process related emission reduction calculation was explained.

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

	Date	**Name and Role**	**Organization**	**Topic**
/a/	28/09/2018	Iklim DIRLIK SAHIN *Carbon Consultant*	Life Enerji	Monitoring plan Monitoring methodology Monitoring data Implementation status of the project Monitoring equipment and operation Calibration certificates Emission Reductions calculation
/b/	28/09/2018	Kaan BOLAT *Carbon Consultant*	Life Enerji	
/c/	28/09/2018	Cagdas KARAKURT ULKEBAY *Project Manager*	Yalova Ruzgar Enerjisi	
/d/	28/09/2018	Yasar ALAN *General Coordinator*	Yalova Ruzgar Enerjisi	
/e/	28/09/2018	Bulent CUKUR *Operation Chief*	Yalova Ruzgar Enerjisi	
/f/	28/09/2018	Zemine KURTBAY *Biolog*	Yalova Ruzgar Enerjisi	
/g/	28/09/2018	Halil AKBABA *Mukhtar*	Yaris Vilalge	Benefit of the project to the village Project Effects Local employment Expropriation

2.4 Site Inspections

On 28/09/2018, RINA visited the wind power plant located in Karacabey District, Bursa province of Turkey. During the on-site assessment of the project, all the equipment and the systems were accessible. 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.

2.5 Resolution of Findings

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 (CR) is raised if information is insufficient or not clear enough to determine whether the applicable VCS requirements, which refer to CDM rules, have been met.

CARs, CRs identified are included in the verification protocol in Appendix A of this report.

Figure 1 Verification protocol tables

Verification Protocol, Table 1 - Requirement checklist					
Checklist Question	**Ref.**	**MoV**	**Comments**	**Draft Conclusion**	**Final Conclusion**
Checklist questions organized in seven 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, CR and FAR see the definitions above.	OK is used if the information and evidence provided is adequate to demonstrate compliance with VCS requirements which refer to CDM rules.

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 CRs raised in table 1 are repeated here.	Reference to the checklist question number in Table 1 where the CAR or CR is explained.	The responses given by the project participants to address the CARs and/or CRs.	The verification team's assessment and final conclusion of the CARs and/or CRs.

Verification Protocol, Table 3 - Forward Action Requests		
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.

2.5.1 Forward Action Requests

According to the previous validation report /7/, no FAR is raised.

2.6 Eligibility for Validation Activities

The project activity is registered under VCS registration reference Number 1569 /11/; hence this section is not applicable.

3 VALIDATION FINDINGS

In the registered VCS PD for "Karacabey Wind Power Project" in Turkey, version 04 of 24/01/2017 /1/, the installed capacity is defined as 27.9 MWe as confirmed through the Generation License /12/ and Temporary Acceptance Protocols /13/ /14/ /15/. *T*he current annual generation is 101.9 MWh as per the registered VCS PD /1/. The additionality of the project activity is demonstrated by applying investment analysis registered VCS PD /1/.

The project was validated by RINA S.p.A. (Validation Report version 1.4 Aa of 22/02/2017) and it was registered under the VCS registration reference N° 1569.

3.1 Participation under Other GHG Programs

Not applicable.

3.2 Methodology Deviations

There is not any deviation in the applied methodology to the project activity.

3.3 Project Description Deviations

The site visit for validation was performed on 23/06/2016 and during on site visit the start date of the crediting period was decided as 01/12/2016. However, during on verification period, the start date of the crediting period was confirmed as 21/10/2016 as per the Temporary Acceptance Protocols /13/ /14/ /15/.

3.4 Grouped Project

This project is not a grouped project. Hence, this section is not applicable.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

It was verified during the site visit conducted on 28/09/2018 that the proposed project activity has been implemented and it is in operation in accordance to the project activity described in the registered VCS PD /1/.

The project activity has been implemented in 3 phases. On 21/10/2016, the power plant has started operation with 6 turbines, on 07/12/2016, 4 turbines has been commissioned and on 16/03/2017 the remaining 2 turbines has been commissioned. Each commissioning date was confirmed through the Temporary Acceptance Protocols /13/ /14/ /15/. The carbon crediting period and therefore the monitoring starts when the plant commences electricity generation. Therefore, the crediting period starts on 21/10/2016.

The project activity consists of 12 wind turbines, 11 of them with 2.5 MWe and one of them is 0.4 MWe capacity and making the total installed capacity of 27.9 MWe as confirmed through the Generation License /13/. The project boundary in the registered VCS PD /1/ is in line with the actual project boundary. The generated electricity is fed to the national grid. The generated electricity is transmitted to the National Electricity System through Karacabey transmission line. The geographic coordinates of the project activity is confirmed through the Generation License /13/.

4.2 Accuracy of GHG Emission Reduction and Removal Calculations

The emission reduction calculations provided in the spreadsheet /8/ have been verified to be correct and in line with the registered VCS PD /1/.

According to the applied methodology “ACM0002”, “Grid-connected electricity generation from renewable sources”, version 17 of 13/05/2016 /6/, the emission reductions have been calculated based on the following formula:

$ER_y = BE_y – PE_y – LE_y$

Where:

BE_y = Baseline emissions in year y (tCO_2e/yr)

PE_y = Project emissions in year y (tCO_2e/yr)

LE_y = Leakage emissions in year y (tCO_2e/yr)

Baseline emissions

The baseline emissions include the CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity, multiplying the electricity supplied to the grid (MWh) with the combined margin CO_2 emission factor for grid connected power generation in year.

$BE_y = GEN_y \times EF$

Where:

GEN_y = Net electricity delivered to the grid by the project activity in year y excluding transmission losses of the grid (MWh)

EF = Combined margin grid emission factor (tCO_2/MWh)

Project emissions

Project emissions has been assumed to be zero as per the ACM0002 version 17 of 13/05/2016 /6/ as defined in the validated VCS PD /1/.

Leakage emissions

The leakage emissions are assumed to be zero as per the ACM0002 version 17 of 13/05/2016 /6/ as defined in the validated VCS PD /1/.

The data presented in the monitoring report /2/ 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.

Parameters Available at Validation and Data Fixed Ex-ante

DATA/PARAMETER	Source of data	Reported value for the project period	Assessment/Observation
$EF_{grid,CM,y}$ Combined margin CO2 emission factor	TEIAS statistics	0.5521 tCO_2/MWh	According to the approved methodology ACM0002 version 17, the combined emission factor has been determined using the ex-ante option and so it is not requested to monitor and recalculate the emission factors during the crediting period. The combined emission factor is determined to be 0.5521 tCO_2/MWh in the VCS PD /1/ and validation report /7/.

Parameters and Data Monitored

DATA/PARAMETER	$EG_{facility,y}$
Data Unit	MWh/yr
Description	Quantity of net electricity generation supplied to the grid in year y
Source of data to be used	Monthly Meter Reading (PMUM Records) Monthly Invoices (UEDAS Records)
Value data for the monitoring period	174,569
Measuring and reporting frequency; recording procedure	Continuously monitoring and monthly recording, annually reporting
Type of monitoring equipment and its accuracy	Two electricity meters (one main and one backup meter) are installed at the project site. The main meter is Landis+Gyr with serial number 51118076. The backup meters are Landis+Gyr with serial number 51118077. The meters have the accuracy of 0.2s as confirmed through the calibration report /25/. The accuracy class of the meters complies with the "Communiqué for Measurement Devices used in the Electricity Market" /19/.
Calibration frequency/interval	TEIAS is responsible for calibration and maintenance of the meters as per the registered VCS PD /1/. The project owner has no control on the meters since the meters are sealed by the TEIAS as confirmed during the site visit. If any major discrepancy occurs between the two meters, TEIAS performs necessary calibration. The meters were calibrated by the Landis+Gyr on

	26/03/2015 as confirmed through the calibration report /25/. Also, the meters were tested by TEIAS at the project site on 21/10/2016 as confirmed through the first index protocol /26/. As per the "'Regulation of Metering and Testing of Metering Systems" /18/, the meters shall be calibrated every 10 years, therefore the calibration of meters is deemed appropriate and in compliance with the national regulation. During on-site assessment, it was confirmed that the meters are in place and functions well. During the monitoring period, no brake down has been recorded.
How were the values in the monitoring report verified and cross-checked?	The electricity generation figures are based on the PMUM records /16/ and the Monthly Invoices (UEDAS Records) /17/ are used for crosscheck.
Does the data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions?	The electricity generation and consumption is measured in line with the TEIAS rules and requirements /19/. The electricity generation supplied to the grid and electricity consumption from the grid is stored by PMUM on the web site. The Project owner has an ID and password to access this data on the web site. The collected data during the monitoring period will be kept by the project owner at least two years after end of the last crediting period as stated in the registered VCS PD /1/ and monitoring report /2/ in line with the ACM0002 version 17 of 13/05/2016 /6/.
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?	All the data were available for the whole monitoring period.

Emission Reductions Achieved

The emission reductions calculation reported in the Monitoring Report version 02 of 30/10/2018 /2/ and calculation spreadsheet "ER calculations_Karacabey_v2.xlsx" version 02 of 30/10/2018 /8/ have been verified to be correct.

The emission reductions from the project for the monitoring period from 21/10/2016 to 30/09/2018 as reported in the Monitoring Report version 02 of 30/10/2018 /2/ is equivalent to 96,378 tCO_2e. According to the registered VCS PD /1/, the estimated emission reductions are equivalent to 109,445 tCO_2e. The reported averaged emission reductions are 14% lower than the estimated emission reduction.

4.3 Quality of Evidence to Determine GHG Emission Reductions and Removals

The generated electricity monitored continuously by two unit meters that were sealed by TEIAS. Two unit electricity meters (one main meter and one backup meter) are installed at the project site. The main meters are Landis+Gyr with serial number 51118076. The backup meters are Landis+Gyr with serial number 51118077. The meters have the accuracy of 0.2s as confirmed

through the calibration report /25/. The accuracy class of the meters complies with the "Communiqué for Measurement Devices used in the Electricity Market" /19/.

TEIAS is responsible for calibration and maintenance of the meters as per the registered VCS PD /1/. The project owner has no control on the meters since the meters are sealed by the TEIAS as confirmed during the site visit. If any major discrepancy occurs between the two meters, TEIAS performs necessary calibration. The meters were calibrated by the Landis+Gyr on 26/03/2015 as confirmed through the calibration report /25/. As per the "'Regulation of Metering and Testing of Metering Systems" /18/, the meters shall be calibrated every 10 years, therefore the calibration of meters is deemed appropriate and in compliance with the national regulation. The calibration frequency has been respected.

The electricity generation figures are based on the PMUM records /16/ and the Monthly Facility Reports /17/ are used for crosscheck from 21/10/2016 to 30/09/2018. The records and emission reduction calculation spreads sheet /8/ are consistent.

4.4 Non-Permanence Risk Analysis

There is no non-permanence risk rating determined by the project proponent.

5 SAFEGUARDS

5.1 No Net Harm

NA

5.2 Local Stakeholder Consultation

NA

6 VERIFICATION CONCLUSION

RINA Services S.p.A. (RINA) has performed verification of the emission reductions reported for the project activity "Karacabey Wind Power Project" in Turkey, VCS Registration Reference N° 1569, for the period 21/10/2016 to 30/09/2018, with regard to the relevant requirements for CDM and VCS activities.

It is RINA's opinion that the GHG emission reductions stated in the Monitoring Report version 02 of 30/10/2018 for the "Karacabey Wind Power Project" project in Turkey for the period 21/10/2016 to 30/09/2018 are fairly stated. The GHG emission reductions were calculated correctly, on the basis of the approved monitoring methodology "ACM0002", "Grid-connected electricity generation from renewable sources", version 17 of 13/05/2016 and the monitoring plan contained in the registered VCS PD.

Hence, RINA is able to certify that the emission reductions from the project during the monitoring period 21/10/2016 to 30/09/2018 amount to 96,378 tCO_2e.

Verification period: From 21/10/2016 to 30/09/2018

Verified GHG emission reductions and removals in the above verification period:

Year	Baseline emissions or removals (tCO_2e)	Project emissions or removals (tCO_2e)	Leakage emissions (tCO_2e)	Net GHG emission reductions or removals (tCO_2e)
21/10/2016 – 31/12/2016	5,829	0	0	5,829
01/01/2017 – 31/12/2017	49,643	0	0	49,643
01/01/2018 – 30/09/2018	40,906	0	0	40,906
Total	96,378	0	0	96,378

APPENDIX A

VERIFICATION PROTOCOL

TABLE 1 REQUIREMENTS CHECK LIST

Checklist Question		Reference	MoV[1]	Comments	Draft Conclusion	Final Conclusion
A.1	**Monitoring Report**					
A.1.1	Does the used project title clearly enable the reader to identify the unique VCS activity? Is there an indication of a revision number, the date of the revision and the monitoring period?	/1/ /2/ /7/ /11/	DR, CC	The title of the project activity is given as "Karacabey Wind Power Project" in the Monitoring Report version 01 dated 20/07/2018 /2/, which is enable the reader to identify the unique VCS activity. The title is in line with the registered VCS PD /1/, Validation Report /7/ and also market registry /11/. The version and issuance date of report are available at cover page of Monitoring Report /2/. However, report ID of the monitoring report and the contact information (in the first page) is not given.	~~**CR 1**~~	**OK**
A.1.2	Does the project comply with the applicable requirements for completing the Monitoring Reports (latest version available)?	/2/ /3/ /4/	DR	The project complies with the applicable requirements for completing the Monitoring Reports.	**OK**	**OK**
A.1.3	Does the MR comply with the template available (latest version)?	/2/ /3/ /4/ /9/	DR	The project complies with the applicable requirements for completing the VCS Monitoring Report Template /9/.	**OK**	**OK**
A.2	**Description of Project Activity**					
A.2.1	Title of the project activity, revision number and date of Monitoring Report	/1/ /2/ /7/ /11/	DR, CC	The title of the project activity is given as "Karacabey Wind Power Project" in the Monitoring Report version 01 dated 20/07/2018 /2/, which is enable the reader to identify the unique VCS activity. The title is in line with the registered VCS PD /1/, Validation Report /7/ and also market registry /11/.	**OK**	**OK**
A.2.2	Is the actual implementation and operation of the proposed project activity in accordance	/1/ /2/ /12/ /13/ /14/	DR, CC	It is confirmed during the site visit performed on 28/09/2018 that project activity is implemented	~~**CR 2**~~	**OK**

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

Checklist Question		Reference	MoV[1]	Comments	Draft Conclusion	Final Conclusion
	with the project activity in the registered VCS-PD?	/15/		and operated as per the registered PDD /1/. The starting date of operation and crediting period is 21/10/2016. All turbines have been commissioned in three phase. The commissioning date of the first 6 turbines is 21/10/2016, on 07/12/2016, 4 turbines has been commissioned and on 16/03/2017 the remaining 2 turbines has been commissioned as confirmed through the Temporary Acceptance Protocol /13/ /14/ /15/. The generated electricity is supplied to the National Electricity Transmission Grid of Turkey via Karacabey Substation as confirmed through the Generation License /12/. There is no technical information about the turbines. Please discuss in the MR and provide the data sheet for the given information. The UTM coordinates of the turbines are not in line with the registered PDD. In addition, If there is a change, please provide the reference document. “Project start date” and “project crediting period” given in Section 1.5 and 1.6 are not correct as per the Temporary Acceptance Protocol. Please check. Please send a reference document to confirm the registration date of the project activity. Please also check section 2.4.2 of the MR. The given date is not in line with the given one in Table 1-milestone. Please provide the first page of the generation		

Checklist Question		Reference	MoV[1]	Comments	Draft Conclusion	Final Conclusion
				license to confirm no and date of the license.		
A.2.3	Methodology applied for the registered project activity	/1/ /2/ /6/	DR	The registered project activity applies the approved baseline and monitoring methodology ACM0002 version 17 of 13/05/2016 /6/.	**OK**	**OK**
B	**Monitoring**					
B.1	**Monitoring Plan**					
B.1	Is the actual implementation and operation of the proposed project activity in accordance with the project activity in the registered VCS-PD?	/1/ /2/ /4/ /6/	DR, CC, I	The requirements of the VCS Standard Version 3 /4/ were satisfied and RINA confirms that the project conforms to the validation criteria for projects, in accordance with ACM0002 version 17 of 13/05/2016 /6/.	**OK**	**OK**
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?	/1/ /2/ /7/	DR	They complies with the requirements of the Project Standard. No deviation is available.	**OK**	**OK**
B.3	For project activity that consist of more than one site: - describe the status of the implementation and starting date of operation 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 implementation is delayed, described the reasons and the expected implementation dates.	/1/ /2/ /7/ /13/ /14/ /15/	DR, CC, I	The project activity consists of one site and has been implemented in 3 phases. On 21/10/2016, the power plant has started operation with 6 turbines, on 07/12/2016, 4 turbines has been commissioned and on 16/03/2017 the remaining 2 turbines has been commissioned. Each commissioning date was confirmed through the Temporary Acceptance Protocols /13/ /14/ /15/. The carbon crediting period and therefore the monitoring starts when the plant commences electricity generation. Therefore, the crediting period starts on 21/10/2016.	**OK**	**OK**
B.4	Methodology and methodological tool applied for the registered project activity	/1/ /2/ /6/ /7/ /23/ /24/		The registered project activity applies the approved baseline and monitoring methodology ACM0002 version 17 of 13/05/2016 /6/. Also, the following methodological tools are applied for the registered project activity: "Tool for the demonstration and assessment of	**OK**	**OK**

Checklist Question		Reference	MoV[1]	Comments	Draft Conclusion	Final Conclusion
				additionality", version 07.0 of 23/11/2012" /24/ "Tool to calculate the emission factor for an electricity system", version 05.0 of 27/11/2015" /23/		
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 VCS project activity comply with the applied methodology?	/1/ /2/ /6/	DR, CC	The monitoring plan of the registered VCS project activity complies with the applied methodology ACM0002 version 17 of 13/05/2016 /6/.	**OK**	**OK**
C.1.2	Does the monitoring comply with the monitoring plan in the registered VCS-PD?	/1/ /2/ /7/	DR, CC	The monitoring complies with the monitoring plan presented in the registered VCS PD /1/. The following parameters should be monitored as per the monitoring plan in the registered VCS-PD: - Quantity of net electricity generation supplied to the grid in year y ($EG_{facility,y}$):	**OK**	**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?	/1/ /2/ /6/ /7/	DR, CC	As per the approved methodology ACM0002 version 17, the combined emission factor has been determined using the ex-ante option, therefore it is not requested to monitor and recalculate the emission factors during this crediting period. The combined emission factor is determined to be 0.5521 tCO_2/MWh in the registered VCS PD /1/ and validation report /7/.	**OK**	**OK**
C.2.2	What default data were selected and applied?	/1/ /2/ /6/ /7/	DR, CC	Please refer to Section C.2.1 of this protocol.	**OK**	**OK**
C.3	**Data and parameters monitored ex-post**					
C.3.1	Which parameters have been monitored during the monitoring period?	/2/ /8/ /16/	DR, CC, I	***Quantity of net electricity generation supplied to the grid in year y ($EG_{facility,y}$):*** The parameter is measured in MWh/yr and it is monitored by two units electricity meters that are located at the project activity. The net electricity generation is based on the PMUM records /16/.	**OK**	**OK**

Checklist Question		Reference	MoV[1]	Comments	Draft Conclusion	Final Conclusion
				The net electricity generation during monitoring period is calculated as 144,292.043 MWh based on the PMUM records /16/.		
C.3.2	Is the measurement equipment described? Is the accuracy of the measurement equipment addressed and deemed appropriate?	/2/	DR, CC	***Quantity of net electricity generation supplied to the grid in year y ($EG_{facility,y}$):*** Two unit electricity meters (two main meters and two backup meters) are installed at the project site. The mark, model, serial no, accuracy class and calibration date and frequency of the electricity meters should be presented in the VCS-PD and necessary supporting documents (such as First Index Protocol) should be provided to DOE.	~~CR 3~~	**OK**
C.3.3	Is the measuring/reading/recording frequency adequate for all monitoring parameters? Is it in line with the registered monitoring plan?	/1/ /2/ /6/	DR, I	***Quantity of net electricity generation supplied to the grid in year y ($EG_{facility,y}$):*** The electricity generation supplied to the grid and electricity consumption from the grid is monitored continuously by two unit meters and recorded monthly as verified during the site visit. Monitoring frequency is in line with the applied methodology /6/ and registered VCS PD /1/.	**OK**	**OK**
C.4	**Calibration requirements**					
C.4.1	Are the requirements for maintenance and calibration of measurement equipment described and deemed appropriate?	/1/ /2/ /18/	DR, CC	TEIAS is responsible for calibration and maintenance of the meters as per the registered VCS PD /1/. The project owner has no control on the meters since the meters are sealed by the TEIAS as confirmed during the site visit. If any major discrepancy occurs between the two meters, TEIAS performs necessary calibration. The calibration date of the electricity meters should be presented in the VCS-PD and necessary supporting documents (such as First Index Protocol or calibration and test records) should be provided to DOE. As per the "'Regulation of Metering and Testing of Metering Systems" /18/, the meters shall be calibrated every 10 years, therefore the calibration of meters is deemed appropriate and in	~~CR 4~~	**OK**

Checklist Question		Reference	MoV[1]	Comments	Draft Conclusion	Final Conclusion
				compliance with the national regulation.		
C.4.2	Does the calibration cover the monitoring period?	/2/ /18/	DR, CC	The calibration date of the electricity meters should be presented in the VCS-PD and necessary supporting documents (such as First Index Protocol or calibration and test records) should be provided to DOE. As per the "'Regulation of Metering and Testing of Metering Systems" /18/, the meters shall be calibrated every 10 years, therefore the calibration of meters is deemed appropriate and in compliance with the national regulation. The calibration of the meters covers the monitoring period.	~~**CR 4**~~	**OK**
C.4.3	Has the calibration frequency been respected?	/2/ /18/	DR, CC	The calibration date of the electricity meters should be presented in the VCS-PD and necessary supporting documents (such as First Index Protocol or calibration and test records) should be provided to DOE. As per the "'Regulation of Metering and Testing of Metering Systems" /18/, the meters shall be calibrated every 10 years, therefore the calibration of meters is deemed appropriate and in compliance with the national regulation. The calibration of the meters covers the monitoring period.	~~**CR 4**~~	**OK**
C.4.4	In case of delay, describe the applied maximum permissible error	/2/ /18/	DR, CC	Please refer to Section C.4.3 of this protocol.	~~**CR 4**~~	**OK**
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?	/1/	DR	The project activity is environmentally licensed by the competent authority. "Ministry of Environment and Urban Planning of Bursa Province" have issued a Certificate of EIA Not Required Certificate dated 28/12/2012 /21/. The environmental impact of the project activity is evaluated in the VCS-PD /1/. The project is not required any analysis of environment impacts according to the national	**OK**	**OK**

Checklist Question		Reference	MoV[1]	Comments	Draft Conclusion	Final Conclusion
				regulations /22/.		
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?	/1/ /2/	DR, I	An on-site inspection has been performed on 28/09/2018 and it has been confirmed that the monitoring arrangements in the monitoring plan are feasible within the project design.	**OK**	**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?	/1/ /2/ /6/ /20/	DR, CC, I	The electricity generation and consumption is measured in line with the TEIAS rules and requirements /20/. The electricity generation supplied to the grid and electricity consumption from the grid is stored by PMUM on the web site. The Project owner has an ID and password to access this data on the web site. The collected data during the monitoring period will be kept by the project owner at least two years after end of the last crediting period as stated in the registered VCS PD /1/ and monitoring report /2/ in line with the ACM0002 version 17 of 13/05/2016 /6/.	**OK**	**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?	/1/ /2/	DR, I	The generated electricity is measured by two meters that were sealed by TEIAS. The project owner has no control on the meters. The electricity generation supplied to the grid and electricity consumption from the grid is stored by PMUM on the web site. The Project owner has an ID and password to access this data on the web site. The project owner also archives a hardcopy of these protocols, scanned and stored electronically. Also, The collected data during the monitoring period will be kept by the project owner at least two years after end of the last crediting period.	**OK**	**OK**
C.6.4	Are the responsibilities and authorities for monitoring and reporting in accordance with the responsibilities and authorities stated in the monitoring plan?	/1/ /2/	DR, I	The responsibilities and authorities for monitoring and reporting are not discussed in the monitoring plan.	~~**CR 5**~~	**OK**

Checklist Question		Reference	MoV[1]	Comments	Draft Conclusion	Final Conclusion
C.6.5	Does data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions?	/1/ /2/ /8/	DR, I	The data management (from monitoring equipment to emission reduction calculation) ensures correct transfer of data and reporting of emission reductions.	**OK**	**OK**
D.1	**Assessment of data and calculation of emission reductions / Accuracy of emission reduction calculations**					
D.1.1	How were the values in the monitoring report verified and cross-checked?	/2/ /8/ /16/ /17/	DR, I, CC	***Quantity of net electricity generation supplied to the grid in year y ($EG_{facility,y}$):*** The parameter is measured in MWh/yr and it is monitored by two units electricity meters that are located at the project activity. The net electricity generation is based on the PMUM records /16/. The UEDAS /17/ invoices given for cross check is provided and confirmed. The PMUM record is used as main record for electricity generation. In the parameter of $EG_{facility,y}$, the future tenses should be removed and current situation should be discussed. In addition, the mark, model, serial no, accuracy class and calibration date and frequency of the electricity meters should be presented in the VCS-PD and necessary supporting documents (such as First Index Protocol) should be provided to DOE.	~~**CR 6**~~	**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?	/1/ /2/ /6/ /8/	DR	The emission reduction calculations are based on the data measured using calibrated meters of adequate accuracy. Apart from the ex-ante emissions factor, no other assumption is used in these calculations in line with the ACM0002 version 17 of 13/05/2016 /6/ and registered VCS PD /1/.	**OK**	**OK**
D.1.3	Emission reductions reported	/2/ /8/	DR	The value of “Total emission reduction” given as 79,663 and “Generated net electricity” given as 137,180 could not be found in the calculation excel sheet. Please check.	~~**CR 7**~~	**OK**
D.1.4	Difference between the emission reductions estimated in the registered VCS PD and the	/2/ /8/	DR	The value of “Total emission reduction” given as 79,663 and “Generated net electricity” given as	~~**CR 7**~~	**OK**

Checklist Question		Reference	MoV[1]	Comments	Draft Conclusion	Final Conclusion
	emission reductions reported for the monitoring period.			137,180 could not be found in the calculation excel sheet. Please check.		

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
CR 1 The version and issuance date of report are available at cover page of Monitoring Report /2/. However, report ID of the monitoring report and the contact information (in the first page) is not given.	A.1.1	Contact information is given at the table and now the ID number has been included.	**Review 1 (05/11/2018):** The report ID is now given and miswriting of contact information is now removed. **Hence, CR 1 is closed.**
CR 2 There is no technical information about the turbines. Please discuss in the MR and provide the data sheet for the given information. The UTM coordinates of the turbines are not in line with the registered PDD. In addition, If there is a change, please provide the reference document. "Project start date" and "project crediting period" given in Section 1.5 and 1.6 are not correct as per the Temporary Acceptance Protocol. Please check. Please send a reference document to confirm the registration date of the project activity. Please also check section 2.4.2 of the MR. The given date is not in line with the given one in Table 1-milestone. Please provide the first page of the generation license to confirm no and date of the license.	A.2.2	The technical information of the turbines has now been included in the PD. In addition to that, the reference of the information has now been submitted to DOE. Coordinates of Turbine 8 and 11 has been changed. Therefore, the coordinates are not in line with the registered PD. Now, coordinates are updated with respect to generation license and reference document has been provided to DOE. Dates under Section 1.6 and 1.5 are now corrected. VCS Project Review Report is now submitted to DOE. As per this report, on 22/02/2017 all of the findings are closed and no further action was required. The correct registration date is 22/02/2017, which can be validated through the VCS Project Review Report. This date is given under milestone table. Yet, under Section 2.4.2, the statement regarding the registration is not correct. Now, it has been corrected. Now the full version of the generation license has been submitted to DOE.	**Review 1 (07/11/2018):** The technical information about turbines are now presented in the MR and data sheet of the Nordex N100/2500 is now provided to the verification team. The UTM coordinates of the turbines are now in line with the generation license. "Project start date" and "project crediting period" given in Section 1.5 and 1.6 are now corrected as per the Temporary Acceptance Protocol. The registration date of the project activity is now corrected in the MR. The first page of the generation license is now provided to verification team to confirm number and date of the license. **Hence, CR 2 is closed.**
CR 3 The mark, model, serial no, accuracy class and calibration date and frequency of the electricity meters should be presented in the VCS-PD and necessary supporting documents (such as First	C.3.2	The first index protocol and calibration document have now been submitted to DOE. Also, the information regarding the metering devices has been included under Section 3.2	**Review 1 (05/11/2018):** The information about the electricity meters are now given in the VCS-PD and in accordance with the first index protocols and calibration report.

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Verification Conclusion
Index Protocol) should be provided to DOE.			**Hence, CR 3 is closed.**
CR 4 The calibration date of the electricity meters should be presented in the VCS-PD and necessary supporting documents (such as First Index Protocol or calibration and test records) should be provided to DOE.	C.4.1 C.4.2 C.4.3 C.4.4	Information regarding the calibration of the meters are included in the report. Yet, the calibration date and the date of the first index protocol are not the same. Calibration is conducted by the manufacturer.	**Review 1 (05/11/2018):** Since the project owners cannot access the calibration document, we can also accept the first index protocol as a calibration date. If this project have the calibration record, it is OK for us. DOE has highly aware of the difference between calibration record and first index protocol. Please kindly be informed that DOEs are quite dominant in this process. **Hence, CR 4 is closed.**
CR 5 The responsibilities and authorities for monitoring and reporting are not discussed in the monitoring plan.	C.6.4	Responsibilities and authorities for monitoring and reporting are now discussed at Section 3.3 under the title of Operational and Management Structure.	**Review 1 (07/11/2018):** The responsibilities and authorities for monitoring and reporting are now discussed in the monitoring plan. **Hence, CR 5 is closed.**
CR 6 In the parameter of $EG_{facility,y}$, the future tenses should be removed and current situation should be discussed. In addition, the mark, model, serial no, accuracy class and calibration date and frequency of the electricity meters should be presented in the VCS-PD and necessary supporting documents (such as First Index Protocol) should be provided to DOE.	D.1.1	The first index protocol and calibration document have now been submitted to DOE. Also, the information regarding the metering devices has been included under Section 3.2 In the parameter of $EG_{facility,y}$, future tenses are now removed.	**Review 1 (07/11/2018):** The information about the electricity meters are now given in the VCS-PD and in accordance with the first index protocols and calibration report. In addition, the future tenses are now revised in accordance with the current situation. **Hence, CR 6 is closed.**
CR 7 The value of "Total emission reduction" given as 79,663 and "Generated net electricity" given as 137,180 could not be found in the calculation excel sheet. Please check.	D.1.3 D.1.4	Electricity generation and emission reduction of July, August and September 2018 are added and all values are now corrected.	**Review 1 (07/11/2018):** The value of "Total emission reduction and "Generated net electricity" could now be correctly found in the calculation excel sheet. **Hence, CR 7 is closed.**

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CERTIFICATO DI QUALIFICA PER GLI SCHEMI VOLONTARI*
*QUALIFICATION CERTIFICATE FOR VOLUNTARY SCHEMES**

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

è qualificato come: / *is qualified as:* **TEC, VAL, VER, TL, ITRP LOCAL EXPERT**

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

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

REVISIONE *REVISION*	DATA *DATE*	MOTIVAZIONI PER LA REVISIONE *REASON FOR THE REVISION*
0	19/07/2016	First issue with new template
1	09/06/2017	Added qualification as ITRP and Local Expert

Responsabile di schema
Scheme Leader
Laura Severino

*SCHEMI VOLONTARI/ VOLUNTARY SCHEMES: ACR American Carbon Registry, CCB The Climate, Community & Biodiversity Alliance, GS Gold Standard, JI Joint Implementation, SCS Social Carbon Standard, VCS Verified Carbon Standard.

TEC: Technical expert; VAL: Validator; VER: Verifier; TL: Team leader; FIN EXP: Financial Expert; ITRP: Independent technical reviewer

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UNFCCC	quale Entità Operativa Designata (DOE), per condurre la Validazione e la Verifica di Progetti CDM *as Designated Operational Entity (DOE), to carry out Validation and Verification of CDM Projects*
VCSA	per condurre la Validazione e la Verifica di Progetti VCS *to carry out Validation and Verification of VCS Projects*
GS Foundation	per condurre la Validazione e la Verifica di Progetti GS *to carry out Validation and Verification of GS Projects*
Ecologica Institute	per condurre la Validazione e la Verifica di rapporti SCS *to carry out Validation and Verification of SCS Reports*
American Carbon Registry ACR	per condurre la Validazione e la Verifica di Progetti ACR *to carry out Validation and Verification of ACR projects*
The Climate, Community & Biodiversity Alliance CCB	per condurre la Validazione e la Verifica di Progetti co-benefit CCB *to carry out Validation and Verification of co-benefit CCB projects*

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CERTIFICATO DI QUALIFICA PER GLI SCHEMI VOLONTARI*
*QUALIFICATION CERTIFICATE FOR VOLUNTARY SCHEMES**

Si attesta che il sig./sig.ra: / *We declare that Mr/Mrs/Ms:* **Hui Feng Liu**

è qualificato come: / *is qualified as:* **TEC, VAL, VER, TL, ITRP**

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

AREE TECNICHE *TECHNICAL AREAS*	DESCRIZIONE DELL'AREA TECNICA *TECHNICAL AREA DESCRIPTION*	SCOPO SETTORIALE *SECTORAL SCOPE*
1.1	Thermal energy generation	1
1.2	Renewables	1
8.1	Mining and mineral processes	8
9.2	Iron, steel and Ferro alloy production	9
13.1	Solid waste and wastewater	13

REVISIONE *REVISION*	DATA *DATE*	MOTIVAZIONI PER LA REVISIONE *REASON FOR THE REVISION*
0	19/07/2016	First issue with new template (this certificate is linked to CDM qualification)

Responsabile di schema
Scheme Leader
Rita Valoroso

*SCHEMI VOLONTARI/ VOLUNTARY SCHEMES: ACR American Carbon Registry, CCB The Climate, Community & Biodiversity Alliance, GS Gold Standard, JI Joint Implementation, SCS Social Carbon Standard, VCS Verified Carbon Standard.

TEC: Technical expert; VAL: Validator; VER: Verifier; TL: Team leader; FIN EXP: Financial Expert; ITRP: Indipendent technical reviewer

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UNFCCC	quale Entità Operativa Designata (DOE), per condurre la Validazione e la Verifica di Progetti CDM *as Designated Operational Entity (DOE), to carry out Validation and Verification of CDM Projects*
VCSA	per condurre la Validazione e la Verifica di Progetti VCS *to carry out Validation and Verification of VCS Projects*
GS Foundation	per condurre la Validazione e la Verifica di Progetti GS *to carry out Validation and Verification of GS Projects*
Ecologica Institute	per condurre la Validazione e la Verifica di rapporti SCS *to carry out Validation and Verification of SCS Reports*
American Carbon Registry ACR	per condurre la Validazione e la Verifica di Progetti ACR *to carry out Validation and Verification of ACR projects*
The Climate, Community & Biodiversity Alliance CCB	per condurre la Validazione e la Verifica di Progetti co-benefit CCB *to carry out Validation and Verification of co-benefit CCB projects*

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