

SAINT NIKOLA WIND FARM



RINA

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Summary:

RINA Services S.p.A. (RINA), commissioned by AES Geo Energy OOD, has been verifying the greenhouse gas emission reductions reported for the project activity "Saint Nikola Wind Farm" in Bulgaria, VCS Registry Project ID N° VCSR 1258, for the period 01/01/2015 to 30/04/2016, with regard to the relevant requirements for VCS activities (VCS Version 3) and for GHG program applied by the project activity. The verification shall ensure that reported emission reductions are complete and accurate in accordance with applicable VCS requirements in order to be certified.

The project was validated by Carbon Check (Pty) Ltd. (Validation report N° CCL220/VAL/AESGE/CWPP/20130910, ver. 4, issued on 22/10/2014) who performed the validation and it was registered on 27/10/2014 under the VCS Registry Project ID N° VCSR 1258.

The GHG emission reductions were calculated on the basis of the approved Methodology, documented in the registered PD, based on ACM 0002 Large Scale Consolidated Methodology "Grid connected electricity generation from renewable sources", ver. 14.0 of 04/10/2013.

A Monitoring Plan ver. 02 of 20/05/2016 for the current verification period (01/01/2015 to 30/04/2016) was presented and assessed.

In conclusion, it is RINA's opinion that the project activity "Saint Nikola Wind Farm" in Bulgaria, as described in the Monitoring Report version ver. 1 of 10/05/2016 and amended ver. 2 of 20/05/2016 /3/, meets all relevant requirements for VCS activities (Version3) and all relevant host Party criteria and correctly applies the baseline and monitoring methodology ACM0002 Large Scale Consolidated Methodology "Grid connected electricity generation from renewable sources", ver. 14.0 of 04/10/2013 /06/. Hence RINA is able to certify that the emission reductions from the project during the monitoring period 01/01/2015 to 30/04/2016 amount to: 372,003 tCO₂e.

Year:	2015	2016
Baseline Emissions	270,700	101,303
Project Emissions	0	0
Leakage	0	0
Net GHG emission reductions	270,700 tCO ₂ e	101,303 tCO ₂ e
Total ER (01/01/2015 to 30/04/2016) – 372,003 tCO ₂ e		

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1 INTRODUCTION

1.1 Objective

AES Geo Energy OOD has commissioned RINA to carry out the verification of emission reductions reported for the registered “Saint Nikola Wind Farm” project in Bulgaria, VCS Registration Reference N° VCSR 1258, for the period 01/01/2015 to 30/04/2016. This report summarizes the findings of the verification of the project, performed on the basis of VCS Version 3 criteria, GHG program applied, as well as criteria given to provide for consistent project operations, monitoring and reporting. 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, the VCS project activity achieved the reductions in anthropogenic emissions by sources of GHGs as verified.

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.

Verification shall ensure that reported emission reductions are complete and accurate in accordance with applicable VCS Standard Version 3 and all the GHG program requirements in order to be certified. 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

The verification audit of this project activity was conducted to a reasonable level of assurance because all the information, records and technical data is available during the verification process. All the monitoring data involved in the ER estimation is also available.

The technical review was performed by a technical reviewer(s) qualified in accordance with RINA's qualification scheme VCS VER 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	Rachev	Konstantin	Bulgaria
Technical Reviewer	Valoroso	Rita	Italy

1.4 Summary Description of the Project

The Saint Nikola Wind Farm project is a 156 MW, grid-connected, renewable energy wind farm in the Municipality of Kavarna, Bulgaria initiated and operated by “AES Geo Energy OOD /01-03/. The Project consists of a new electrical substation, 52 Vestas V90 wind turbine, each with a capacity of 3MW and an upgrade of the local grid to allow the export of the full capacity. The Project supplies the

generated electricity to the Energy System Operator – ECO for this monitoring period. The area of the project site is approximately 6,000 hectares (60 km²) and apart for a small area around the turbines base and some supporting infrastructure, most of the land is used for agriculture. The design life time of the turbines according to the DNV Type Certificate of the V90-3.0 MW turbine /15/ is 20 years and therefore they are expected to operate at least until 2030.

The construction of the wind farm started in 2008 and the project was implemented in full according to the technical design without any deviations.

The owner of the project AES Geo Energy OOD was granted a "Permit of Use" for the wind farm by the Ministry of Regional Development and Public Works - Directorate for National Construction Supervision in two stages /13, 14/. On December 22nd 2009, a Permit of Use was granted for Saint Nikola sub-site C, and on March 15th 2010 for Saint Nikola sub-site A & B. Together, sub-sites A, B, and C constitute the full operational wind farm and include the 52 wind turbines, the energy collection system, the substation, and the overhead line connecting the wind farm to the grid. Since March 15th 2010 the wind park is in continuous operation. The registration of the project under VCS took place on October 27th 2014 when the registration documents had been uploaded at VCS web-site.

2 VERIFICATION PROCESS

2.1 Method and Criteria

Verification was conducted using RINA procedures in line with the requirements specified in in the VCS Standard (Version 3) and in the GHG program applied, the latest version of the VCS Program Guide, of the VCS Procedural Document 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.

2.2 Document Review

The Monitoring Report version 01 of 10/05/2016 and amended ver. 02 of 20/05/2016 /03/, the emission reduction calculations provided in the form of a spread sheet "Monthly Electricity Generated_received", version 01 of 10/05/2016 /07/ were assessed as part of the verification. In addition the Project Design Document (VCS PD) /01/ in particular the baseline estimations and the monitoring plan and the validation report /02/ for the project were also reviewed. The following table lists the documentation that was reviewed during the verification process.

01	AES Geo Energy: VCS-PD for project activity "Saint Nikola Wind Farm" in Bulgaria, version 05 of 18/10/2014
02	Carbon Check (Pty) Ltd.: Validation Report N° CCL220/VAL/AESGE/CWPP/20130910, ver. 4, issued on 22/10/2014
03	AES Geo Energy: Monitoring report for project activity "Saint Nikola Wind Farm" in Bulgaria, version 1 of 10/05/2016 and amended ver. 02 of 20/05/2016
04	Voluntary Carbon Standard: VCS Program Guide, ver. 3.5 of 08/10/2013 and VSC Standard ver. 3.5 of 25/03/2015
05	Voluntary Carbon Standard: Validation and Verification Manual, ver. 3.1 of 08/10/2013
06	CDM Executive Board: ACM 0002 Large Scale Consolidated Methodology "Grid connected electricity generation from renewable sources", ver. 14.0 of 04/10/2013

07	AES Geo Energy: excell sheet „Monthly Electricity Generated_received“ version 1 of 10/05/2016
08	GRID: Energy System Operator – ECO Electricity meter calibration Protocols (serial number 07120785) of 04/05/2012, 30/07/2013, 25/06/2014 and 03/06/2015
09	GRID: Energy System Operator – ECO Electricity meter calibration Protocols (serial number 07120786) of 04/05/2012, 30/07/2013, 24/06/2014 and 03/06/2015
10	Ministry of Environment and Water of Republic of Bulgaria: Letter of Approval, dated on 13/12/2014
11	Ministry of Environment and Water website: Baseline Carbon Emission Factor of Bulgarian Electricity and Heat Power System http://www3.moew.government.bg/files/file/Climate/Climate_Change_Policy_Directorate/IET_M/Joint_Implementation/JI_documents/Baseline_CEF_Summary.pdf
12	AES Geo Energy and Energy System Operator – ECO: Invoices and Protocols for produced electricity (energy generation) for the whole monitoring period (01/01/2015 to 30/04/2016)
13	Ministry of Regional Development and Public Works - Directorate for National Construction Supervision: "Permit of Use" for the wind farm 1630 of 22/12/2009
14	Ministry of Regional Development and Public Works - Directorate for National Construction Supervision: "Permit of Use" for the wind farm 294 of 15/03/2010
15	DNV: Type Certificate IEC TC-205703-5 V90-3.0 MW
16	Vestas: Declaration of Conformity for Wind power generator Vestas V90, 3 MW, tower height 105m, rotor diameter 90 m of 18/01/2010
17	AES Geo Energy: Actual Wind Turbine Farm Layout
18	State Agency for metrological and technical surveillance: Order A-441/13.10.2011 and Order A-333 of 29/05/2014 the for periodic calibration of used measuring equipment
19	RINA: Verification Report ver. 1.1 of 26/03/2015 for the period 01/11/2012 to 31/12/2014

2.3 Interviews

On 19/05/2016 the team has conducted a conference call with the project participations and all staff involved in the project. The interview process was held with the WPP staff as per the following table. During the conversations with the responsible persons were checked the used monitoring equipment (electro meters owned by the Energy System Operator – ECO, roles and responsibilities of the staff as well as data collection and archiving. The whole technical process was also verified as well as the applicable legal requirements. All Invoices and Protocols for the current verification period /12/, electricity meter calibration Protocols /08-09/, have been presented to the verification team and verified. There are no technical amendments in the WPP.

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

	Date	Name and Role	Organization	Topic
/a/	19/05/2016	Radomir Draganov – Operational Manager Bisera Stoeva – commercial analyst Veselin Marinov –	AES Geo Energy	Monitoring equipment and measurement; Monitoring parameters; Calibration and maintenance of the used monitoring equipment;

		O&M Team Lead Rositsa Rikova – Administration Assistant Petar Georgiev – Health and Safety officer		Roles, responsibilities, training and legal environmental and safety requirements; Organization scheme and responsibilities; Data collecting and archiving; Monitoring Workbook; Social and Environmental Responsibilities; Energy System Operator – ECO Invoices and Protocol records
/b/	19/05/2016	Viktor Milkov – consultant	Greencarbon Bulgaria	MP records, ER estimations, baseline and monitoring estimations and data

2.4 Site Inspections

On 19/05/2016, RINA conducted conference call with the staff of the Wind Power Plant, located near Kavarna, North West Bulgaria. During the documentation assessments and conducted conversations the verification team 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. Due to the reasonable level of assurance during this verification process no site inspection is been conducted.

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.

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.

Detailed information for the documented clarifications can be seen in the attached Table 2 of this Report.

2.5.1 Forward Action Requests

During the previous verification process no FARs have been documented.

2.6 Eligibility for Validation Activities

N/A

3 VALIDATION FINDINGS

No deviation from the used Methodology /06/ as well from the VCS PD /01/ and validated Report /02/ for the estimation of the emission reduction have been applied during this monitoring period. No deviation from the project design /01, 02/ have been also applied.

3.1 Participation under Other GHG Programs

There are no other GHG emission reduction requirements in Bulgaria that the project is subject to and the project does not participate in any other emission trading program.

3.2 Methodology Deviations

No deviation from the used Methodology /06/ as well from the VCS PD /01/ and validated Report /02/ for the estimation of the emission reduction have been applied during this monitoring period. No deviation from the project design /01, 02/ have been also applied.

3.3 Project Description Deviations

No deviation from the used Methodology /06/ as well from the VCS PD /01/ and validated Report /02/ for the estimation of the emission reduction have been applied during this monitoring period. No deviation from the project design /01, 02/ have been also applied.

3.4 Grouped Project

N/A

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

The Saint Nikola Wind Farm project is a 156 MW, grid-connected, renewable energy wind farm in the Municipality of Kavarna, Bulgaria initiated and operated by "AES Geo Energy /01-03/. The Project consists of a new electrical substation, 52 Vestas V90 wind turbine, each with a capacity of 3MW and an upgrade of the local grid to allow the export of the full capacity. The uses renewable wind energy to supply electricity to the national electrical grid. The construction of the wind farm started in 2008 and the project was implemented in full according to the technical design without any deviations. The owner of the project AES Geo Energy OOD was granted a "Permit of Use" for the wind farm by the Ministry of Regional Development and Public Works - Directorate for National Construction Supervision in two stages /13, 14/. On December 22nd 2009, a Permit of Use was granted for Saint Nikola sub-site C, and on March 15th 2010 for Saint Nikola sub-site A & B. Together, sub-sites A, B, and C constitute the full operational wind farm and include the 52 wind turbines, the energy collection system, the substation, and the overhead line connecting the wind farm to the grid. Since March 15th 2010 the wind park is in continuous operation. The registration of the project under VCS took place on October 27th 2014 when the registration documents had been uploaded at VCS web-site. The first verification phase conducted from RINA covered the period from 01/11/2012 to 31/12/2014 /19/.

During the current monitoring period (01/01/2015 to 30/04/2016) the project was found in normal operation and there were no events impacting the current generation of GHG emission reductions. The project has been implemented according the description and technical data presented in the PD /01/. There are no concerns related to conformity of the actual project activity and its operation with the project design document. All project technical data and parameters have been verified during the verification process /07, 08, 09, 12, 15, 16, 17/. As per the applied CDM approved Methodology /06/ the only figures that are taken into consideration are the net generating energy /12/ and emission factor of the grid, which is publically available /11/. The used electric meters are periodically calibrated /08,09/.

4.2 Accuracy of GHG Emission Reduction and Removal Calculations

The PP applied approved CDM Methodology – ACM 0002 /06/. The main data for the calculation of emission reduction are quantity of net electricity generation (Invoices and Protocols) /12/ and official Grid Emission Factor published by the Bulgarian Ministry of Environment and Water /11/. During the current verification all data has been available and cross-checked. All estimations and data documented in Excel sheet /07/ are correct and reliable and were cross-checked. The Baseline emission factors of Bulgarian Electricity and Heat Power System can be found on the web site /11/. The EF was estimated ex ante and it is fixed for the crediting period of the project activity (EF = 0.791) /01, 02/. During this periodic verification no deviations with the MP described in PD is applied. The emission reduction estimations are presented in the excel file /07/ and Monitoring Report /03/. The ER estimations are reliable and correct. The following parameters have been monitored in accordance with the monitoring plan in the monitoring report /02/:

Grid Emission Factor - EF_{grid,y} .GEF as published by the Bulgarian Ministry of Environment and Water (tCO₂MWh) /11/.

Net electricity delivered by the Project to the grid in a year - EG_y. The electricity output from Saint Nikola Wind Farm is measured by Energy System Operator – ECO using their own meters which are installed at the site. The electricity distributed is measured and monitored by two meters and the Grid takes a reading on a monthly basis. The monthly readings are confirmed with the project owner (AES Geo Energy) and on this basis the PP prepares an invoice to the grid owner. The invoice states the volume of the net electricity generated by the project in the stated period. All protocols for the current monitoring period have been checked /12/. The calibration status of the used meters was also checked /08/ and /09/. The meters are calibrated as per the host country requirements /18/. The revised monitoring plan and the applied methodology have been properly implemented and followed by the project participants.

Data fixed ex-ante

DATA/PARAMETER	Source of data	Reported value for the project period	Assessment/Observation
Grid Emission Factor - $EF_{grid,y}$	MOEW web site /11/: http://www3.moew.government.bg/files/file/Climate/Climate_Change_Policy_Directorate/IETM/Joint_Implementation/JI_documents/Baseline_CEF_Summary.pdf	0.791	The data is public available

Monitored data

DATA/PARAMETER	Net electricity delivered by the Project to the grid (monthly and yearly) - EG_y
Data Unit	MWh
Description	Net electricity delivered by the Project to the grid in a year
Source of data to be used	Measurement of electricity meter
Value data for the monitoring period	2015 – 342, 226 MWh 2016 – 128, 070 MWh
Measuring and reporting frequency; recording procedure.	Continuously by the used electricity meters. Reporting data is performed on monthly and yearly basis through the AES excel sheet /07/.
Reporting frequency and recording procedure	Monthly and yearly in logbook in “Monthly Electricity Generated_received” /07/. The company also uses a SCADA program for monitoring of the required data.
Type of monitoring equipment and its accuracy.	Meter (serial number 07120785) – type: ELSTER AINRTAL-X, class 0.2 S Meter (serial number 07120786) – type: ELSTER AINRTAL-X, class 0.2 S Both of them are property of Energy System Operator (ECO)
Calibration frequency/interval	Period – Early /18/. Calibration Protocols /08-09/. The used meters are valid up to 03/06/2016. Through the current monitoring period the measuring equipment has been properly calibrated. The responsibility for the electricity meter calibration is Grid.
How were the values in the monitoring report verified and cross-checked?	All official Protocols for produced electricity have been physically available and cross – checked /12/.
Does the data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions?	Based on the monthly readings, Energy System Operator – ECO sends a protocol to the PP, which is countersigned by PP and returned to the Grid. The protocol contains the gross generation of the plant, the own consumption and the net generation. The PP issues an invoice to the grid. The invoice states the net volume of electricity generated by the

	project in the stated period. An internal procedure for that process is also available in the site (Instruction O-01.23). There are also two internal meters that are used for controlling of the used official electric meters. In case of difference above a 1% an investigation will be apply as per the documented Instruction O-01.23.
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 necessary for the ER calculation in the monitoring period were available.

The emission reduction calculations provided in the spreadsheet /07/ has been verified and found correct and in line with the registered VCS-PD /01/ and Monitoring Plan /03/.

4.3 Quality of Evidence to Determine GHG Emission Reductions and Removals

The electricity output from St. Nikola Wind Power Farm is measured by Energy System Operator – ECO using their own meters which are installed at the site. Grid takes readings on a monthly basis at 12.00 a.m. on the last day of the month by distance reading. Based on the monthly readings /12/ Grid sends a protocol to AES Geo Energy. The protocol /12/ contains the gross generation of the plant, the own consumption and the net generation. The PP issues an invoice to the Grid. The invoice states the volume of electricity generated by the project in the stated period. Since March 2011, own consumption is invoiced separately by the Grid to the PP. The protocols and invoices /12/ are stored on site of the AES Geo Energy. The used monitoring workbook /07/ states monthly and yearly energy generation figures. Emission Factor is fixed for the crediting period in the PD /01/, as it was chosen as the most conservative value for the crediting period. Emission factor is publically available in the website of the Bulgarian Ministry of Environment and Water /12/. The used EF for this monitoring period is 0.791 tCO₂/MWh /01/. According to the applied Large Scale Consolidated Methodology ACM 0002 /06/, the emission reductions have been calculated based on the following formula:

The baseline emissions are to be calculated as follows:

$$BE_y = EG_y * EF_{grid}$$

Where:

BE_y = Baseline emissions in year y (tCO₂ /yr)

EG_y = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the project activity in year y (MWh/yr)

EF_{grid,y} = Grid Emission Factor as published by the Bulgarian Ministry of Environment and Water (tCO₂/MWh).

Project and Leakage emissions are 0 for this project activity /01/ and /06/.

The emission reductions generated by the project are calculated as follows:

$$ER_y = (BE_y - PE_y - LE_y)$$

Where:

BE_y – Baseline emissions in year (tCO₂/y)

PE_y – Project emissions in year (tCO₂/y)

LE_y – Leakage emissions in year (tCO₂/y)

4.4 Non-Permanence Risk Analysis

There is no non-permanence risk rating determined by the project proponent /01/.

5 VERIFICATION CONCLUSION

RINA Service Spa (RINA) has performed verification of the emission reductions reported for the project activity “Saint Nikola Wind Farm” in Bulgaria, VCS Registry Project ID N°VCSR 1258, for the period 01/01/2015 to 30/04/2016, with regard to the relevant requirements for VCS activities. The project participants of the “Saint Nikola Wind Farm” 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 05 of 18/10/2014
- the development and maintenance of records and reporting procedures in accordance with that plan, including the calculation and determination of greenhouse gas emission reductions of the project.

It is the responsibility of RINA to express an independent verification opinion about the project’s conformity with the requirements of VCS Standard version 3 and GHG program applied, 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 VCS-PD;
- the monitoring report and other supporting documents provided are complete and verifiable and in accordance with the applicable VCS Standard version 3 requirements;
- the monitoring is in place as per the applied baseline and monitoring methodology;
- the monitoring plan in the registered VCS-PD is as per the applied baseline and monitoring methodology.

It is RINA’s opinion that the GHG emission reduction stated in the monitoring report version 2 of 20/05/2016 /3/ for the “Saint Nikola Wind Farm” in Bulgaria for the period 01/01/2015 to 30/04/2016 are fairly stated. The GHG emission reductions were calculated correctly on the basis of the approved monitoring methodology CDM Executive Board: ACM 0002 Large Scale Consolidated Methodology “Grid connected electricity generation from renewable sources”, ver. 14.0 of 04/10/2013 and the monitoring plan contained in the registered PDD.

Hence RINA is able to certify that the emission reduction from the project during the monitoring period 01/01/2015 to 30/04/2016 is amount to:

GHG Emission Reductions or Removals	01/01/2015 – 31/12/2015 tCO ₂ e	01/01/2016 – 30/04/2016 tCO ₂ e	Total 01/01/2015- 30/04/2016 tCO ₂ e
Baseline Emissions	270,700	101,303	372,003
Project Emissions	0	0	0
Leakage	0	0	0
Net GHG emission reductions or removals	270,700	101,303	372,003

APPENDIX A: VERIFICATION PROTOCOL

TABLE 1 REQUIREMENTS CHECK LIST

Checklist Question		Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
A Monitoring Report						
A.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?	03	DR	The MR presents the title (St. Nikola Wind Farm) and it is revision 01 dated on 10/05/2016 /03/. The monitoring period is from 01/01/2015 up to 30/04/2016.	OK	OK
A.2	Does the project comply with the applicable requirements for completing the Monitoring Reports (latest version available)?	04, 05	DR, CC	Yes, the project complies with the latest applicable requirements for completing the Monitoring Reports /04/, /05/.	OK	OK
A.3	Does the MR comply with the template available (latest version)?	04, 05	DR, CC	Yes, the MR complies with the latest template available /04/, /05/.	OK	OK
B Description of Project Activity						
A.1	Title of the project activity, revision number and date of Monitoring Report	03	DR	The MR presents the title (Saint Nikola Wind Farm) and it is revision 01 dated on 10/05/2016.	OK	OK
A.2	Is the actual implementation and operation of the proposed project activity in accordance with the project activity in the registered VCS-PD?	01, 03, 13, 14	DR, CC	The project is in fully operational since 15th March 2010 /13,14/. The project was registered under the VCS requirements on 27/10/2014. During the current monitoring period the project was found in normal operation and there were no events impacting the current or future generation of GHG emission reductions. The project has been implemented according the description	OK	OK

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

Checklist Question		Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
				and technical data presented in the PD /01/.		
A.3	Methodology applied for the registered project activity	01, 03, 06	DR	The PP applied CDM Executive Board: ACM 0002 Large Scale Consolidated Methodology "Grid connected electricity generation from renewable sources", ver. 14.0 of 04/10/2013 /06/.	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?	01, 03	DR, I, CC	Yes, the actual implementation and operation of the proposed project activity is in accordance with the project activity in the registered VCS-PD /01/.	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?	03	DR, I, CC	No cases of deviations during the current verification period.	OK	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 implemenetation dates.			N/A		
B.4	Methodology and methodological tool applied for the registered project activity	01, 03, 06	DR, I, CC	The PP applied CDM Executive Board: ACM 0002 Large Scale Consolidated Methodology "Grid connected electricity generation from renewable sources", ver. 14.0 of 04/10/2013 /06/.	OK	OK
C Compliance of the monitoring activities with the registered monitoring plan / Compliance of the monitoring plan with the monitoring methodology						

Checklist Question		Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
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?	03, 06	DR, I, CC	The monitoring plan /03/ included in the registered VCS project activity complies with the applied methodology /06/.	OK	OK
C.1.2	Does the monitoring comply with the monitoring plan in the registered VCS-PD?	01, 03, 06, 07, 12	DR, I, CC	The electricity output from St. Nikola Wind Power Farm is measured by Grid (the electricity purchaser) using their own meters which are installed at the site. Based on the monthly readings /12/ the grid sends a protocol to AES Geo Energy. The protocol /12/ contains the gross generation of the plant, the own consumption and the net generation. The PP issues an invoice to the grid. The protocols and invoices /12/ are stored on site of the AES Geo Energy. The used monitoring workbook /07/ states monthly and yearly energy generation figures. Emission Factor is fixed for the crediting period in the PD /01/, as it was chosen as the most conservative value for the crediting period. Emission factor is publically available in the website of the Bulgarian Ministry of Environment and Water /12/. The used EF for this monitoring period is 0.791 tCO ₂ /MWh /01/.	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?	01, 03, 07, 11, 12,	DR, I, CC	There is a monitoring parameter fixed ex-ante /01/, that is a Grid Emission Factor - EF _{grid,y} available on Ministry of Environment and Water web site /11/. All protocols for monthly energy	OK	OK

Checklist Question		Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
				generation /12/ were also available and cross – checked with the presented figures in the Excell sheet /07/ and in MR /03/. All figures have been correctly applied in the ER estimations. However a clarification is documented: Link of the Ministry of Environment and Water, showing the Bulgarian EF estimations is also correctly presented.		
C.2.2	What default data were selected and applied?	01, 03	DR, I, CC	No default data was selected and applied.	OK	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, 03, 06, 07, 12	DR, I, CC	Net (MWh) electricity delivered by the Project to the grid (monthly and yearly) - EG _y . The amount is documented in a workbooks /07/ and in MR /01/. The amount is also presented in Energy System Operator – ECO Protocols /12/.	OK	OK
C.3.2	Is the measurement equipment described? Is the accuracy of the measurement equipment addressed and deemed appropriate?	01, 03, 06, 08, 09	DR, I, CC	Yes, there are two electricity meters installed in the WPP site. The meters are Energy System Operator – ECO owned. The level of accuracy of the used electric meter in also presented in the MR /03/ and /08/, /09/.	OK	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, 06	DR, I, CC	Yes, the measuring/reading/recording frequency (monthly and yearly) is adequate for the monitoring parameter. It is in line with the monitoring plan /01,	OK	OK

Checklist Question		Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
				03/ and /06/.		
C.4 Calibration requirements						
C.4.1	Are the requirements for maintenance and calibration of measurement equipment described and deemed appropriate?	01, 03, 08, 09, 18	DR, I, CC	The Grid shall calibrate the used electric meters every year /18/. During the verification all calibration files were assessed /08, 09/. After calibration a Protocol is issued /08, 09/. All protocols have been available and checked.	OK	OK
C.4.2	Does the calibration cover the monitoring period?	03, 08, 09	DR, I, CC	Yes, the calibration covers the monitoring period /08, 09/.	OK	OK
C.4.3	Has the calibration frequency been respected?	03, 08, 09, 18	DR, I, CC	Yes, the calibration frequency has been respected /08, 09, 18/.	OK	OK
C.4.4	In case of delay, describe the applied maximum permissible error	03	DR, I, CC	No delays for the current verification period.	OK	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?	03	DR, I, CC	Yes, the monitoring of sustainable development indicators / environmental impacts are warranted by legislation in the host Country.	OK	OK
C.6 Management system and quality control						
C.6.1	How has it been assessed that the monitoring arrangements described in the monitoring plan are feasible within the project design?	03, 07	DR, I, CC	Data management (from monitoring equipment to emission reduction calculation) documented in excel workbook /07/ and MR /03/ ensure correct transfer of data and reporting of emission reduction estimation.	OK	OK
C.6.2	Are procedures identified for day-to-day record handling (including what records to keep, storage area of records	01, 03, 12	DR, I, CC	Based on the monthly readings, the Grid sends a protocol to the PP, which is	OK	OK

Checklist Question		Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
	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?			countersigned by PP and returned to the grid. The protocol contains the gross generation of the plant, the own consumption and the net generation. The PP issues an invoice to the Grid. The invoice states the net volume of electricity generated by the project in the stated period. An internal procedure for that process is also available in the site (Instruction O-01.23). There are also two internal meters that are used for controlling of the used official electric meters. In case of difference above 1% an investigation will be apply as per the documented Instruction O-01.23. The MR pointed that all monitored data required for verification and issuance will be kept for two years after the end of the crediting period or the last issuance of CERs.		
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?	03	DR, I, CC	Yes, the data management and quality assurance and quality control procedures are sufficient to ensure that the emission reductions are achieved. Please also refer to C.6.2	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?	03	DR, I, CC	Yes, the responsibilities and authorities for monitoring and reporting are in accordance with the responsibilities and authorities stated in the monitoring plan /01, 03/. The main responsibilities for the project are on the head of WPP /a/.	OK	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?	01, 03, 12	DR, I, CC	There is no specific transfer of data. Only protocols /12/ and workbook are used /07/.	OK	OK
D.1 Assessment of data and calculation of emission reductions/Accuracy of emission reduction calculations						
D.1.2	How were the values in the monitoring report verified and cross-checked?	01, 03, 07, 12	DR, I, CC	All net electricity values documented in protocols were verified /12/. These figures were cross-checked with the values documented in the Excell workbook /07/. After that all values, formulas and estimations have been also re-estimated.	OK	OK
D.1.3	If only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	03, 07, 12	DR, I, CC	All data was available during the verification period.	OK	OK
D.1.4	Emission reductions reported	03	DR, I, CC	Yes, the emission reductions are reported in the MR /03/.	OK	OK
D.1.5	Difference between the emission reductions estimated in the registered PDD and the emission reductions reported for the monitoring period.	03	DR, I, CC	The ER for the current verification period is a little more (5.4% for 2015) in compare to the estimated one during the validation phase. The PP is requested to clarify why there is difference between the estimated ER during this monitoring period and estimated one in the registered PD.	CL1	OK

TABLE 2 RESOLUTION OF CORRECTIVE ACTION REQUESTS AND CLARIFICATION REQUESTS

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Verification Conclusion
CL 1 The PP is requested to clarify why there is difference between the estimated ER during this monitoring period and the estimated one in the registered PD.	D.1.5	A clarification is amended in the Monitoring Report, ver.02/20.05.2016	The verification team does accept the provided explanation in the revised PDD ver. 02 of 20/05/2016. This CL is closed.

TABLE 3 FORWARD ACTION REQUEST

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

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:

Rachev Konstantin

è qualificato come:
is qualified as:

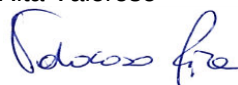
TEC, VAL, VER, TL

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
5.1	Chemical industry	5
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

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: Independent technical reviewer

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

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:

Rita Valoroso

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
1.2	Renewables	1
3.1	Energy demand	3
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 QPT
Head of QPT
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 <i>as Designated Operational Entity (DOE), to carry out Validation and Verification of CDM Projects</i>
VCSA	per condurre la Validazione e la Verifica di Progetti VCS <i>to carry out Validation and Verification of VCS Projects</i>
GS Foundation	per condurre la Validazione e la Verifica di Progetti GS <i>to carry out Validation and Verification of GS Projects</i>
Ecologica Institute	per condurre la Validazione e la Verifica di rapporti SCS <i>to carry out Validation and Verification of SCS Reports</i>
American Carbon Registry ACR	per condurre la Validazione e la Verifica di Progetti ACR <i>to carry out Validation and Verification of ACR projects</i>
The Climate, Community & Biodiversity Alliance CCB	per condurre la Validazione e la Verifica di Progetti co-benefit CCB <i>to carry out Validation and Verification of co-benefit CCB projects</i>