

SAINT NIKOLA WIND FARM



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Summary:

- **A brief description of the validation and the project**

Validation: AES Geo Energy OOD has commissioned Carbon Check (Pty) Ltd., to carry out the validation of the project “Saint Nikola Wind Farm”, with regards to the relevant requirements of VCS Standard Version 3.4 (dated 08/10/2013).

Project: The project “Saint Nikola Wind Farm”, is a 156 MW wind farm project which involves generation of grid-connected renewable energy. The project results in emission reductions due to displacement of electricity by a renewable energy source that would otherwise have been provided to the grid by more GHG intensive means.

- **The purpose and scope of validation**

Purpose: The purpose of a validation is to have a thorough and independent assessment of the proposed project activity against the applicable VCS requirements, in particular, the project's baseline, monitoring plan and the project's compliance with relevant VCS and host Party criteria. These are validated in order to confirm that the project design, as documented, is sound and reasonable and meets the identified criteria. Validation is a requirement for all VCS projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of emission reductions. Carbon Check's objective is to perform a thorough, independent assessment of the validation of the project activity.

Scope: The validation scope is defined as an independent and objective review of the Project Description (PD). The PD is reviewed against the relevant criteria and guidance documents provided by VCS which included the following: VCS Program Guide (v3.5, dated 08/10/2013), VCS Standard (v3.4, dated 08/10/2013), Program Definitions (v3.5, dated 08/10/2013), Registration & Issuance Process (v3.5, dated 08/10/2013) and in line with the VCS Validation and Verification Manual (v 3.1, dated 08/10/2013) applicable at the time in order to confirm that the project meets the applicability conditions of the selected baseline and monitoring methodology, ACM0002, version 14 and also assess the claims and assumptions made in the PD without limitation on the information provided by the project participants.

- **The method and criteria used for validation**

The validation consists of the following four phases:

- I. A desk review of the project description documents
 - A review of data and information;
 - Cross checks between information provided in PD and information from sources with all necessary means without limitations to the information provided by the project proponent;
- II. On-site visit and follow-up interviews with project stakeholders
 - Interviews with relevant stakeholders in host country with personnel having knowledge with the project development via telephone, email or direct on-site visits;
 - Cross checking between information provided by interviewed personnel with all necessary means without limitations to the information provided by the project proponent;
- III. Reference to available information relating to projects or technologies similar to project under validation and review based on the approved methodology being applied for the appropriateness of formulae and accuracy of calculations.
- IV. The resolution of outstanding issues and the issuance of the final validation report and opinion.

- **The number of findings raised during validation**

During the course of validation, a total of 25 findings were raised and have been closed, which include:

13 Corrective Action Requests (CARs);

11 Clarification Requests (CLs);

01 Forward Action requests (FARs).

- **Any uncertainties associated with the validation**

The PD /01-1/, emissions reduction calculations /02-1/ along with the supporting documents provided are considered to be in line with the VCS version 3 requirements. The verification team has detected no further uncertainties or quality restriction.

- **Summary of the validation conclusion**

Carbon Check (Pty) Ltd. hereby confirms that the project is fulfilling the criteria specified by VCS PD template version 3.2 /B06/, VCS Standard version 3.4 /B01/, applied methodology ACM0002 version 14/B07/ and hence be successfully validated under VCS. Carbon Check confirms a positive validation opinion confirming the project complies with the applicable VCS requirements, thus recommending the project for registration.

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1 INTRODUCTION

AES Geo Energy OOD has commissioned the VVB, Carbon Check (Pty) Ltd. to perform an validation of the VCS Project Activity “Saint Nikola Wind Farm” in the Municipality of Kavarna, Bulgaria (hereafter referred to as “project activity”). This report summarises the findings of the validation of the project, performed on the basis of the VCS Program Guide (v3.5, dated 08/10/2013), VCS Standard (v3.4, dated 08/10/2013), Program Definitions (v3.5, dated 08/10/2013), Registration & Issuance Process (v3.5, dated 08/10/2013) and VCS Validation and Verification Manual (v 3.1, dated 08/10/2013). Verification is required for all VCS project activities intending to confirm their achieved emission reductions and proceed with request for issuance of VCUs. This report contains the findings and resolutions from the validation of the project activity.

1.1 Objective

The purpose of a validation is to have a thorough and independent assessment of the proposed project activity against the applicable VCS requirements, in particular, the project's baseline, monitoring plan and the project's compliance with relevant VCS and host Party criteria. These are validated in order to confirm that the project design, as documented, is sound and reasonable and meets the identified criteria. Validation is a requirement for all VCS projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of emission reductions, VCUs.

1.2 Scope and Criteria

The validation scope is defined as an independent and objective review of the Project Description (PD), project design, the project's baseline study and monitoring plan and other relevant documents. The PD is reviewed against the relevant criteria and decisions by the VCS, including the approved baseline and monitoring methodology. Carbon Check has employed a risk-based approach in the validation, focusing on the identification of significant risks and reliability of project monitoring and generation of emission reductions.

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

The verification is carried out on the basis of the following requirements, applicable for this project activity:

- VCS Program Guide (v3.5, dated 08/10/2013)
- VCS Standard (v3.4, dated 08/10/2013)
- Program Definitions (v3.5, dated 08/10/2013)
- Registration & Issuance Process (v3.5, dated 08/10/2013)
- VCS Validation and Verification Manual (v 3.1, dated 08/10/2013)

- CDM Methodology: ACM0002: Grid-connected electricity generation from renewable sources --- Version 14.0
- Other relevant rules, including the host country legislation

1.3 Level of Assurance

Reasonable level of assurance

Limited level of assurance

1.4 Summary Description of the Project

The project activity is a 156 MW, grid-connected, renewable energy wind farm in the Municipality of Kavarna, Bulgaria. The project activity involves fifty-two wind turbines, each with a 3 MW capacity/04-1/. All 52 turbines are connected to local power sub-station which is connected to the National Power Grid. Electricity generated is sold to National Electricity Company (NEK). The project proponent for the project activity is AES Geo Energy OOD.

The total estimated GHG emission reductions expected from the project activity are 2,561,076 tCO₂e and average of 256,108 tCO₂e/year.

2 VALIDATION PROCESS

2.1 Method and Criteria

AES Geo Energy OOD has commissioned Carbon Check (Pty) Ltd., to carry out the validation of the project “Saint Nikola Wind Farm”, with regards to the relevant requirements of VCS Standard Version 3.4 (dated 08/10/2013).

The validation includes a thorough and independent assessment of the proposed project activity against the applicable VCS requirements, in particular, the project’s baseline, monitoring plan and the project’s compliance with relevant VCS and host Party criteria. The validation involves assessment of the project and to confirm that the project meets the applicability conditions of the selected baseline and monitoring methodology, ACM0002, version 14 and also assess the claims and assumptions made in the PD without limitation on the information provided by the project participants. The overall validation was conducted using Carbon Check’s internal procedures.

2.2 Document Review

The VCS project description, emission reduction calculation spread sheet and supporting documents related to the project design and baseline were reviewed as per VCS version 03 standard/B01/ requirements. The desk review included:

- A review of the data and information presented to verify completeness and consistency in accordance with VCS version 03 requirements;

- A review of the project description and monitoring methodology, paying particular attention to the applicability conditions of the methodology and baseline and additionality related requirements.
- A review of the monitoring plan and the project’s compliance with relevant VCS criteria.

Furthermore, the validation team used additional documentation by third parties like host-party legislation, technical reports referring to the project design or to the basic conditions and technical data.

2.3 Interviews

A site visit to the project activity was undertaken from 03/03/2014 to 05/03/2014 to confirm the information as outlined in the table below and to resolve issues identified in the document review. The site visit was conducted to assess the implementation and operation of the project activity and to review evidence, and interview key personnel to confirm evidence associated with the project design, implementation, plant operations, environmental impacts, stakeholders etc.

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

	Date	Name	Organisation	Topic
/a/	03/03/2014 - 05/03/2014	Bisera Stoeva	AES GEO ENERGY OOD	<ul style="list-style-type: none"> • Project Design • Project Implementation status • Project start date and Project Location • Baseline Scenario • Baseline Identification and Additionality • Qualification and Training • Plant Operations • Monitoring and reporting documentation • Quality Assurance – Management and operating system • Social and Environmental Impacts • Local Stakeholders meeting process • Compliance with relevant laws • Roles and responsibility • Observations of established practices
/b/	03/03/2014 - 05/03/2014	David Ungar	AES GEO ENERGY OOD	<ul style="list-style-type: none"> • Project background information and VCU consideration • Project Design • Project Implementation

				<ul style="list-style-type: none"> status Monitoring and operating system Roles and responsibility
/c/	03/03/2014 - 04/03/2014	Noam Gressel	Elysium Carbon Trade & Investment	<ul style="list-style-type: none"> Project background information and VCU consideration Project design Baseline identification, Monitoring and additionality Methodology applicability Quantification of emission reductions Sustainability criteria Local Stakeholders meeting process Monitoring and measuring system Monitoring parameters Emission factor for the grid Roles and responsibility
/d/	03/03/2014	Ofer Ben-Dov	Elysium Carbon Trade & Investment	<ul style="list-style-type: none"> Project design Baseline identification, Monitoring and additionality Methodology applicability Quantification of emission reductions
/e/	04/03/2014 - 05/03/2014	Rositsa Rikova	AES GEO ENERGY OOD	<ul style="list-style-type: none"> Project Design Project Implementation status Monitoring and operating system Equipment Calibration
/f/	05/03/2014	Radomir Draganov	AES GEO ENERGY OOD	<ul style="list-style-type: none"> Project Design Project Implementation status Monitoring and operating system
/g/	05/03/2014	Blagovest Nachev	AES GEO ENERGY OOD	<ul style="list-style-type: none"> Project Design Project Implementation status Monitoring and operating system
/h/	05/03/2014	Ron Hooweg	AES GEO ENERGY OOD	<ul style="list-style-type: none"> Project Design Project Implementation status Monitoring and operating system
/i/	05/03/2014	Tsonko Tsonev	Local Stakeholder	<ul style="list-style-type: none"> Local Stakeholder Consultation
/j/	05/03/2014	Stanka Petrova	Local Stakeholder	<ul style="list-style-type: none"> Local Stakeholder Consultation

/k/	05/03/2014	Dr. Zhivko Zhekov	Local Stakeholder	• Local Consultation	Stakeholder
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2.4 Site Inspections

A site inspection was carried out to check the project design, and confirm that the project is implemented and operated as described in the PD. The project site visit was inspected from 03/03/2014 to 05/03/2014. On 03/03/2014, validation team was introduced to the project design and other description related to the project. The project site in the Municipality of Kavarna, Bulgaria was inspected on 04/03/2014 and 05/03/2014. The wind turbines and the connection to local power sub-station were checked. All equipment and facilities associated with the wind farm were also inspected. The layout of the site, geographical coordinates, neighbouring areas were assessed. The local stakeholders were interviewed at Kavarna on 05/03/2014.

2.5 Resolution of Findings

This section summarises the findings from the validation of the project activity. In this section the findings from the document review, site visit, assessments and interviews are provided.

Material discrepancies identified in the course of the verification are addressed either as CARs, CLs or FARs.

Corrective action requests (CAR) are issued, where:

- i. mistakes have been made with a direct influence on project results requiring adjustments of the VERs/VCUs monitoring report;
- ii. applicable methodological specific requirements have not been met.

A **Clarification request (CL)** may be used where additional information is needed to fully clarify an issue or where the information is not transparent enough to establish whether a requirement is met.

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

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

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

A total of 13 CARs, 11 CLs and 01 FAR have been raised for the validation of the project activity.

Summary of findings:

S. No.	Reference Section	CAR	CL	FAR
1.	Project Details	04	02	01
2.	Application of Methodology	09	07	00
3.	Non-Permanence Risk Analysis	NA	NA	NA
4.	Environmental Impact	00	01	00
5.	Comments by Stakeholders	00	01	00
Sum		13	11	01

2.6 Forward Action Requests

01 (One) Forward action requests has been raised during the course of validation on the cancellation of AAUs from Bulgarian national registry. FAR 03.1-1 has been raised in this regard.

3 VALIDATION FINDINGS

3.1 Project Details

The project activity is a 156 MW, grid-connected, renewable energy wind farm in the Municipality of Kavarna, Bulgaria. The project activity involves fifty-two wind turbines, each with a 3 MW capacity/04-1/. The total capacity of the project activity has been confirmed through permit of use/04-1/ which details that 52 wind power generators are to be installed of 3 MW capacities each. The number and the type of wind power generators were also checked during the site visit by the validation team. The details of the individual turbine/04-2/ have been further confirmed through type certificate. The number of turbines has also been confirmed through the site map/04-3/ provided to the validation team. Proof for total capacity of the project activity was not provided to the validation team initially, however later appropriate proofs were submitted. CAR 03.1-2 had been raised in this regard and has been closed. Project description (PD) follows all instructional text and as meets the requirement of para 3.18.1 of VCS Standard. CAR 03.1-1 had been raised in this regard and has been closed.

All 52 turbines are connected to local power sub-station which is connected to the National Power Grid. This has been confirmed through the power purchase agreement Annexure provided as evidence/03-1/. Electricity generated is sold to National Electricity Company (NEK). The invoices have been provided as evidence the invoices were compared against the details of electricity as provided in the emission reduction spreadsheet and the electricity generation records provided/06/. CAR 03.1-3 had been raised in this regard and has been closed. The turbines have 3-blade rotors and are of Vestas V90-3.0 MW type, 105 m height. Induction generator of 1000 VAC at 1680 rpm is installed in each turbine. The technical details of the project as checked during site visit and further cross-checked against the supporting documents/04-1/ are:

	Parameter	Unit	Value
Type	Vestas V90 3 MW		
Operational data	Rated power	MW	3
	Rated wind speed	m/s	13.4
	Operating wind speed range	m/s	4-25
	Wind class	-	IEC WT class 1A/2A

	Parameter	Unit	Value
			except for temperature range
	Design Life time	Years	20
Main components	Rotor (diameter)	m	90
	Blade Type	-	Vestas 44m blade
Generator	Normal supply frequency and converter types	Hz	50 Hz VCS 60 Hz VCRS
	Normal supply voltage and range	kV	6-33 (50 Hz) 10-34.5 (60 Hz)
Tower	Type	-	Tubular steel tower
	Hub heights	m	65, 75, 79.8, 80 (IEC 1A, 50 Hz/60 Hz, 105 (IEC 2A, 50 Hz/60 Hz)

The project proponent for the project activity is AES Geo Energy OOD. The other entity involved with the project is “Elysium Carbon trade & investment”, who are involved as carbon credit developer for the project activity.

The start date of the project activity is 01/11/2012. CL 03.1-1 had been raised in this regard and has been closed. It is after November 2012 that the project developer decided to invest in the project even without the damages being paid by NEK; hence the project became additional after that as the carbon credit revenue was identified as a source of revenue for the project to meet the expenses. Hence, the date 01/11/2012 is justified for the project activity.

The project crediting period is 10 years. The crediting period of the project activity starts on 01/11/2012 and ends on 31/10/2022.

The project activity qualifies as a Project as per section 3.9.1 of VCS standard. CL 03.1-2 had been raised in this regard and has been closed. The estimated GHG emission reductions from the project activity are 2,561,076 tCO₂e and average of 256,108 tCO₂e/year.

The project is located in the municipality of Kavarna, Bulgaria on an estimated area of on 6,000 hectares.

Prior to the project initiation the electricity in the grid was being supplied by a mix of renewable and non-renewable sources of energy using a variety of fuels.

As detailed in the project description, the project complies with the applicable laws in Bulgaria, including the Energy Act and Law on Energy from Renewable Sources (LERS)/07/ and Ordinance No 6 for Grid Connection, Ordinance No 10 for Curtailment, Electricity Trading Rules and Grid Code (Rules for Management of the Electricity System). This was also compared and confirmed through the information available on the website for Ministry of Economy and Energy, Bulgaria/B08/.

The project proponent, 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 for sub-sites A, B and C/04-2/. The permit had not been provided as

evidence but was submitted later. CAR 03.1-4 had been raised in this regard and has been closed.

It has been confirmed in the project description that the project is not seeking registration under any other GHG programs and that there are no GHG emission reduction requirements in Bulgaria that the project is subject to and the project does not participate in any other emissions trading program. Project is not classified as a grouped project and no leakage is applicable in accordance with the applied methodology. The validation did not reveal any information indicating that the Project can be seen as a diversion of official development assistance (ODA) funding towards the host country.

The processes undertaken by the validation team to validate the accuracy and completeness of the project description include conducting a physical site inspection, sampling, reviewing available designs and technical description of the project. Validation team confirms that the project description in the final VCS-PD is accurate and complete in all respects.

Following findings had been raised on this section of the validation and have been successfully resolved:

Finding	CAR 3.1-1		
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding (DOE)	<p>The template used for the project description (PD) does not follow all instructional text and as such does not meet the requirement of para 3.18.1 of VCS Standard:</p> <ol style="list-style-type: none"> 1. The contact details as stated on the cover page do not provide physical address, telephone, email. 2. The summary description of the project in section 1.1 of PD does not meet following requirements from instructional text: <ol style="list-style-type: none"> a. An explanation of how the project is expected to generate GHG emission reductions or removals b. A brief description of the scenario existing prior to the implementation of the project. c. The average number of emission reductions has been provided but the total number of emission reductions (VCUs) is not provided. 3. All the instructional text has not been deleted from the PD as required by the instructions on the cover page of PD. 		

	<ol style="list-style-type: none"> 4. The organization name as stated in section 1.3 of PD does not match the name in section 1.1 of PD. 5. The description of the project activity in section 1.8 of PD does not meet following requirements from instructional text: <ol style="list-style-type: none"> a. Include in the description information about the age and average lifetime of the equipment based on manufacturer's specifications and industry standards, and existing and forecast installed capacities, load factors and efficiencies. b. Include the types and levels of services (normally in terms of mass or energy flows) provided by the systems and equipment that are being modified and/or installed and their relation, if any, to other manufacturing/production equipment and systems outside the project boundary. Clearly explain how the same types and levels of services provided by the project would have been provided in the baseline scenario. 6. In section 4.3 of the PD following requirement is not met: <ol style="list-style-type: none"> a. Where appropriate, include line diagrams to display the GHG data collection and management system b. The procedures for handling non-conformances with the validated monitoring plan.
<p>Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i></p>	<ol style="list-style-type: none"> 1. Physical address, telephone and email were added. 2. Section 1.1 as amended to include the missing information. 3. All the instructional text has been deleted from the PD. 4. The organization name was corrected to "AES Geo Energy OOD".

	<ol style="list-style-type: none"> 5. More information on the technology and the wind farm was added. 6. The net average capacity factor of the wind farm over the last years was added (20.48%). 7. Reference as to the collection and management system, as well as the calculation of GHG emission reductions and an equation were added. We do not feel a diagram is relevant in this case. 8. The possibility of inaccurate and/or invalid measurement of electricity, as well as the procedure to follow in such case, is also covered under the PPA. Section 4.3 was amended to reflect this. A copy of section X of the PPA is provided as confidential in the "confidential" folder under the file name " 2008.09.26_PPA_Section X".
<p>DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<p>The details about the average lifetime of the equipment are provided in the manufacturer specification certificate. However, in section 1.8 of the PD, the description does not provide information about the age and average lifetime of the equipment based on manufacturer's specifications.</p> <p>In section 4.3 of the PD, the procedures for inaccurate and/or invalid measurement of electricity have been provided. However, the procedures for handling the non-conformances from the validated monitoring plan have not been provided.</p> <p>The GPS coordinates for the project location in section 1.9 of the PD, provides the DMS coordinates incorrectly.</p>
<p>Corrective Action or clarification #2 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i></p>	<p>Reference to the bird monitoring program was added to the monitoring plan under "Other monitoring requirements". The following text was added: "According to the approved EIA, a bird monitoring program was established and annual reports are published on the SNWF website. The monitoring report should indicate the status of the bird monitoring annual reports and provide reference to reports which corresponds to the GHG verification periods." The procedures for handling electricity and GHG accounting non-conformances have been covered in the monitoring plan and no additional procedures are necessary in our view.</p> <p>The GPS coordinates for the project location in section 1.9 were checked again and were found</p>

	to correspond to Google Earth coordinates of the site. Please see attached document with Google Earth screenshot.
<p>DOE Assessment #2 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<p>The expected lifetime of the equipment is still not provided in section 1.8 of the PD to meet the requirements as stated in the PD template form.</p> <p>It has been further clarified that the procedures for handling non-conformances have been covered as part of monitoring plan and the PPA.</p> <p>The site longitude for Bulgaria is E and not W, as it is located E of Greenwich. Hence, the longitude of the site as check from Google Earth is 28.454943° or in degrees 28°27'17.80 E. This needs to be revised in the section 1.9 of the PD.</p>
<p>Corrective Action or clarification #3 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i></p>	<p>The following sentence was added to section 1.8: "The design life time of the turbines according to the DNV Type Certificate of the V90-3.0 MW turbine is 20 years. The turbines were installed in 2010 and therefore they are expected to operate at least until 2030". "W" was corrected to "E" in the coordinates' description on section 1.9.</p>
<p>DOE Assessment #3 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<p>The expected lifetime of the equipment has been added to section 1.8 of the PD. The lifetime has also been confirmed with the supporting document presented for the turbine.</p> <p>The geographical coordinates of the project location have been updated in section 1.9 of the PD. The coordinates have been compared with the site map (with geographical coordinates) submitted and further cross checked with the google earth software.</p>
<p>Conclusion <i>Tick the appropriate checkbox</i></p>	<p><input type="checkbox"/> To be checked during the next periodic verification</p> <p><input type="checkbox"/> Outstanding finding (not closed)</p> <p><input checked="" type="checkbox"/> The finding is closed</p>

Finding	CAR 03.1-2		
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding (DOE)	It has been stated in section 1.1 of the PD that the total generation capacity for the project activity is 156 MW. No supporting document has been provided to support the total generation capacity.		

	Also, site layout drawings and other documentation related to technical details have not been provided.
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	The installed capacity is stated on several documents that were provided, of which the most official is the "Permit of use_Saint Nikola Wind Farm_BG EN" (marked as document 28). This document is equivalent to a business license and state that the project includes 52 turbines of 3MW each (overall 156MW). Will be sent again with version 2 of the PD.
DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The total installed generation capacity for the project activity has been validated from the Permit of Use for the project. The permit has been issued by Ministry of Regional Development and Public Works, Bulgaria. The technical details of the project have also been provided in the manufacturer specification type certificate. The site layout for the wind farm has not been provided.
Corrective Action or clarification #2 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	The site layout of the wind farm was provided with version 3 of the PD. See the following documents: "29. Coordinates Map", "SNWF Site layout".
DOE Assessment #2 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The site layout of the wind farm has been provided with the geographical coordinates of the facilities.
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed) <input checked="" type="checkbox"/> The finding is closed

Finding	CAR 03.1-3		
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding (DOE)	It has been stated in section 1.1 of the PD that electricity generated from the power plant is sold to National Electricity Company (NEK). The invoices have been provided as evidence. However, they do not meet the requirements of section 2.2.1 of the VCS Standard. All the supporting documents listed have to be provided with a certified translation copy in English.		

<p>Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i></p>	<p>Section 2.2.1 state the following: "The project and program description, validation report, monitoring report, verification report and all other documentation (including all and any appendices) required under the VCS Program shall be in English".</p> <p>The invoices were provided during the site visit for the validation team request <u>as confidential information</u> only to allow for sample comparison against the information in the Excel spreadsheet. The sample comparison was approved on site as the numbers on the invoice are relevant regardless of the language of the rest of the document.</p> <p>As this is a reference document for the validation team only we do not see the need for an official translation.</p>
<p>DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<p>The invoices for the electricity sold to the sold to National Electricity Company (NEK) have been provided. As clarified by the PP as these documents are reference documents and would not be regarded as documentation for VCS submission. The invoices provide figures and these have been checked by the validation team for comparison with the electricity generation records.</p>
<p>Conclusion <i>Tick the appropriate checkbox</i></p>	<p><input type="checkbox"/> To be checked during the next periodic verification</p> <p><input type="checkbox"/> Outstanding finding (not closed)</p> <p><input checked="" type="checkbox"/> The finding is closed</p>

Finding	CAR 03.1-4		
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding (DOE)	<p>It has been stated in section 1.12.1 of the PD that the project proponent, 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. The permits have not been provided as evidence.</p> <p>Also, in section 1.12.2 it has been stated that "There are no GHG emission reduction requirements in Bulgaria that the project is subject to and the project does not participate in any other emissions trading program", as Bulgaria is an Annex-1 party it needs to be clarified how it meets the requirements of section 3.11.1 of the VCS standard and the required evidence have to be submitted.</p>		

<p>Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i></p>	<p>The "Permit of Use" was provided under the name: "Permit of use_Saint Nikola Wind Farm_BG EN" (marked as document 28). Will be sent again with version 2 of the PD.</p> <p>Section 3.11.1 of the VCS standard state: "The project description shall be accompanied by documentary evidence establishing conclusively one or more of the following rights of use...". This requirement is met by the Permit of Use discussed above as It answers the 1st option in the standard: "A right of use arising or granted under statute, regulation or decree by a competent authority". Furthermore, in the Permit of Use there is no reference or conditions regarding GHG.</p> <p>In addition, the website of the Ministry of Environment and Water of Bulgaria list the approved JI projects in Bulgaria and the Saint Nikola wind farm is not amongst the listed projects. Please see:</p> <p>http://www.moew.government.bg/?show=top&cid=357</p>
<p>DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<p>The Permit of Use issued by Ministry of Regional Development and Public Works, Bulgaria has been provided to confirm the Right of Use for the project activity.</p> <p>It has also been clarified that the project is not listed on the website of the Ministry of Environment and Water of Bulgaria in the list of approved JI projects. However, it is not clear if the project is a part of any emission trading scheme like EU-ETS. Suitable evidence as stated in section 3.11.2 needs to be provided to confirm the same. The possible evidence to confirm the same could be in the form of letter from program operator, DNA or any other relevant regulatory authority.</p>
<p>Corrective Action or clarification #2 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i></p>	<p>A letter from the Bulgarian DNA was provided to the validator with version 3 of the PD. (File name "Letter from MEW" in Bulgarian and "Letter from MEW_eng" translated to English).</p>
<p>DOE Assessment #2 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<p>As discussed with the VCS and the PP on a call a confirmation from the DNA of the Bulgarian government is required confirming the cancellation of assigned amounts units from the national registry.</p>

<p>Corrective Action or clarification #3 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i></p>	<p>A request for cancellation of AAU has been submitted to the Bulgarian Ministry of Environment and Water regarding the AAU retirement related to the St.Nikola wind park. The Ministry of Environment and Water has confirmed receipt and will act on such a request. A confirmation of receipt from MoE of Bulgaria has been sent to the validation team.</p> <p>The actual cancellation letter could take some time.</p>
<p>DOE Assessment #3 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<p>A letter from Bulgaria Ministry of Environment and Water has been submitted to the validation team which confirms that the documentation from PP has been received for the project by the Ministry of Environment and Water and that they are reviewing the documents for cancellation of assigned amount units (AAUs) against the carbon credits realized by the project activity.</p> <p>Since receipt of the cancellation might take some time a FAR has been raised to confirm that the project has received cancellation letter for AAUs on the project activity before the start of first verification. This has to be checked during the first verification of the project activity. FAR 03.1-1 has been raised in this regard.</p>
<p>Conclusion <i>Tick the appropriate checkbox</i></p>	<p><input type="checkbox"/> To be checked during the next periodic verification</p> <p><input type="checkbox"/> Outstanding finding (not closed)</p> <p><input checked="" type="checkbox"/> The finding is closed</p>

Finding	FAR 03.1-1		
<p>Classification</p>	<input type="checkbox"/> CAR	<input type="checkbox"/> CL	<input checked="" type="checkbox"/> FAR
<p>Description of finding (DOE)</p>	<p>Since receipt of the cancellation of AAUs by Bulgaria Ministry of Environment and Water (DNA) might take some time a FAR has been raised to confirm that the project has got assigned amounts units cancelled from the national registry before the start of first periodic verification. This has to be checked during the first verification of the project activity.</p>		
<p>Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i></p>			

<p>DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	
<p>Conclusion <i>Tick the appropriate checkbox</i></p>	<p><input checked="" type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed) <input type="checkbox"/> The finding is closed</p>

Finding	CL 03.1-1		
<p>Classification</p>	<input type="checkbox"/> CAR	<input checked="" type="checkbox"/> CL	<input type="checkbox"/> FAR
<p>Description of finding (DOE)</p>	<p>The start date of the project activity has been provided in section 1.5 of the PD. It needs to be justified that the start date of the project activity meets the definition of start date as stated in VCS Program Definitions version 03.5.</p>		
<p>Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i></p>	<p>The definitions of start date according to VCS Program Definitions version 03.5 is: "The date on which the project began generating GHG emission reductions or removals".</p> <p>Further explanation to clarify why November 1st 2012 is the Start Date of the Project :</p> <p>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 by the Bulgarian authorities to allow the export of the full capacity. The date when the construction of the wind farm was completed and from this date AES Geo Energy was paid damages by NEK due to the fact the grid upgrade was not completed in time. In October 2012 – NEK stopped accepting LDs claims, and by doing so proclaimed the Project complete.</p> <p>Documents proof for the declined Liquidation Damages was provided to the validation team.</p>		

Finding	CL 03.1-1
<p>DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<p>It is after November 2012 that the project developer decided to invest in the project even without the damages being paid by NEK; hence the project became additional after that as the carbon credit revenue was identified as a source of revenue for the project to meet the expenses.</p> <p>Hence, the date 01/11/2012 is justified for the project activity.</p>
<p>Conclusion <i>Tick the appropriate checkbox</i></p>	<p><input type="checkbox"/> To be checked during the next periodic verification</p> <p><input type="checkbox"/> Outstanding finding (not closed)</p> <p><input checked="" type="checkbox"/> The finding is closed</p>

Finding	CL 03.1-2
<p>Classification</p>	<p><input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR</p>
<p>Description of finding (DOE)</p>	<p>It has been stated in section 1.7 of the PD that the project activity is a Large Project. It needs to be clarified as to how the project meets the requirements of large project as stated in section 3.9.1 of the project standard.</p>
<p>Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i></p>	<p>According to the VCS Standard a Projects is defined as "Less than or equal to 300,000 tonnes of CO2e per year". The project is expected to generate on average less than 300,000 tonnes of CO2e per year and therefore should be categorized as "Project" and not "Large project". The PD was corrected to reflect the above.</p>
<p>DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<p>Section 1.7 of the PD has been modified and now meets the requirements of large project as stated in section 3.9.1 of the project standard. Based on the number of ERs per year the project has been classified as a "Project" and not a "Large Project".</p>
<p>Conclusion <i>Tick the appropriate checkbox</i></p>	<p><input type="checkbox"/> To be checked during the next periodic verification</p> <p><input type="checkbox"/> Outstanding finding (not closed)</p> <p><input checked="" type="checkbox"/> The finding is closed</p>

3.2 Application of Methodology

3.2.1 Title and Reference

The project uses a large-scale consolidated CDM methodology, ACM0002: Grid-connected electricity generation from renewable sources, Version 14.0, Sectoral scope: 1. CL 03.2-1 had

been raised in this regard and has been closed. The applied methodology is valid for request of registration up to 26/01/2015. Hence the methodology is determined to be applicable at the time of submission of registration request.

The tools used are:

- Tool for the demonstration and assessment of additionality, Version 07.0.0
- Guidelines on common practice, Version 02.0
- Combined tool to identify the baseline scenario and demonstrate additionality, Version 05.0.0

The methodology and the tools referenced are valid at the time of validation of the project activity. Following findings had been raised in this section of the validation report and have been resolved:

Finding	CL 03.2-1		
Classification	<input type="checkbox"/> CAR	<input checked="" type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding (DOE)	It needs to be clarified what the name of the sectoral scope indicated in section 1.2 of PD is based upon.		
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	The sectoral scope was corrected to "Energy (renewable/non-renewable)" based on: http://www.v-c-s.org/sectoral-scopes .		
DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The sectoral scope as stated in section 1.2 of the PD has been corrected and is as per the sectoral scopes valid in VCS.		
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed) <input checked="" type="checkbox"/> The finding is closed		

3.2.2 Applicability

The project applies the Approved consolidated baseline and monitoring methodology ACM0002, version 14.0.0 /B07/. Applicability criteria for the baseline methodology /B07/ are assessed by the validation team by means of document review and interview. It is agreed in the validation team's opinion that the project activity fully met the criteria as described below:

Applicability criteria as per methodology /B07/	Means of Validation
<i>This methodology is applicable to grid-connected renewable power generation project activities that: (a) install a new power plant at a site where no renewable power plant was operated prior to the implementation of the project activity (Greenfield plant); (b) involve a capacity</i>	The project activity is a grid-connected wind power greenfield power plant where no renewable power plant was operating prior to the

<p><i>addition; (c) involve a retrofit of (an) existing plant(s); or (d) involve a replacement of (an) existing plant(s)</i></p>	<p>implementation of the project activity. Evidence has not been provided to confirm that the project is grid connected, greenfield power plant and that no renewable power plant was operating prior to the implementation of the project activity at the project site. Although, an annex to the power purchase agreement (PPA) has been provided to prove grid-connectivity. However the actual PPA has not been provided. CL 03.2-2 had been raised in this regard and has been closed.</p>
<p><i>The methodology is applicable under the following conditions:</i> <i>(a) The project activity is the installation, capacity addition, retrofit or replacement of a power plant/unit of one of the following types: hydro power plant/unit (either with a run-of-river reservoir or an accumulation reservoir), wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit;</i> <i>(b) In the case of capacity additions, retrofits or replacements (except for wind, solar, wave or tidal power capacity addition projects which use Option 2: on page 16 to calculate the parameter $EG_{P,J,y}$): the existing plant started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion or retrofit of the plant has been undertaken between the start of this minimum historical reference period and the implementation of the project activity.</i></p>	<p>The project activity is the installation of wind power plant. This was confirmed during the site visit and the project description/01-1/ and the description in the EIA report/05/ and permit of use/04-2/.</p>
<p><i>In case of hydro power plants:</i> <i>One of the following conditions must apply:</i> <i>(a) The project activity is implemented in an existing single or multiple reservoirs, with no change in the volume of any of reservoirs; or</i> <i>(b) The project activity is implemented in an existing single or multiple reservoirs, where the volume of any of reservoirs is increased and the power density of each reservoir, as per the definitions given in the project emissions section, is greater than 4 W/m^2; or</i> <i>(c) The project activity results in new single or multiple reservoirs and the power density of each reservoir, as per the definitions given in the project emissions section, is greater than 4 W/m^2.</i></p>	<p>Not applicable. The project under consideration is a wind power project, hence the conditions are not applicable. CAR 03.2-1 had been raised in this regard and has been closed.</p>

<p><i>In case of hydro power plants using multiple reservoirs where the power density of any of the reservoirs is lower than 4 W/m² all the following conditions must apply:</i></p> <ul style="list-style-type: none"> <i>(a) The power density calculated for the entire project activity using equation 5 is greater than 4 W/m²;</i> <i>(b) Multiple reservoirs and hydro power plants located at the same river and where are designed together to function as an integrated project that collectively constitute the generation capacity of the combined power plant;</i> <i>(c) Water flow between multiple reservoirs is not used by any other hydropower unit which is not a part of the project activity;</i> <i>(d) Total installed capacity of the power units, which are driven using water from the reservoirs with power density lower than 4 W/m², is lower than 15 MW;</i> <i>(e) Total installed capacity of the power units, which are driven using water from reservoirs with power density lower than 4 W/m², is less than 10% of the total installed capacity of the project activity from multiple reservoirs.</i> 	<p>Not applicable. The project under consideration is a wind power project.</p> <p>CAR 03.2-1 had been raised in this regard and has been closed.</p>
<p><i>The methodology is not applicable to the following:</i></p> <ul style="list-style-type: none"> <i>(a) Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site;</i> <i>(b) Biomass fired power plants;</i> <i>(c) A hydro power plant that results in the creation of a new single reservoir or in the increase in an existing single reservoir where the power density of the power plant is less than 4 W/m².</i> 	<p>The project activity is a greenfield wind power project and does not involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site. However, an evidence of the baseline scenario had not been provided but was provided later. CL 03.2-2 had been raised in this regard and has been closed. The EIA/05/ report confirms that there was no activity on the site prior to the project activity.</p> <p>This methodological condition has not been listed in the PD and CAR 03.2-1 had been raised in this regard and has been closed.</p>
<p><i>In the case of retrofits, replacements, or capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a result of the identification of baseline scenario, is "the continuation of the current situation, that is to use the power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance".</i></p>	<p>The project activity is a greenfield wind power project and does not involve retrofits, replacements, or capacity additions. However, an evidence of the baseline scenario was not provided earlier and has been provided later. CL 03.2-2 had been raised in this regard and has been closed. It is confirmed</p>

	from the EIA report/05/ that the project is not involve retrofits, replacements, or capacity additions.
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Following findings had been raised in this section of the validation report and have been resolved:

Finding	CL 03.2-2		
Classification	<input type="checkbox"/> CAR	<input checked="" type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding (DOE)	<p>It has been stated in section 2.2 of the PD that “the project is a grid-connected renewable power generation that was install at a site where no renewable power plant was operated prior to the implementation of the project activity.”</p> <p>However, evidence has not been provided to confirm that the project is grid connected, greenfield power plant and that no renewable power plant was operating prior to the implementation of the project activity at the project site and also to confirm that the project does not involve switching from fossil fuels to renewable energy sources at the site of the project activity and project does not involve retrofits, replacements, or capacity additions.</p> <p>Although, an annex to the power purchase agreement (PPA) has been provided to prove grid-connectivity. However the actual PPA has not been provided.</p>		
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	<p>Several of the general documents that were provided to the validation team describe the project as a grid-connected renewable power generation to be developed on agriculture land. Section 1.2 of the project EIA Report vol1 (also provided) state that:</p> <p>"The plot of land under consideration has been allocated under the operating territorial structural plan <u>that targets farming and other compatible production activities</u>. The wind energy production and farming are compatible activities and can be conducted without the creation of conflicts regarding the land use and the type of crops grown there up to now and after the implementation of the investment intention".</p> <p>And:</p> <p><u>"The land distribution plan shows the landed property earmarked for the project as farmland</u>. The future land users will keep its initial use and a possibility will be sought in the detailed structural plans to change the use of a small area of cultivated land envisaging at the same time maximum reclamation of temporarily destroyed areas by subsequent recultivation. The investment intention will not impair the zoning or land use according to the approved Kavarna Municipality territorial structural plan".</p> <p>The "Permit of Use" that was provided to the validation team state that the project includes a "Substation 33/110 kV and Overhead line 110 kV <u>for the connection of the Wind Farm “Saint Nikola” to the Electricity System by way of splitting the overhead line 110 kV</u>".</p>		

	<p>The annex to the power purchase agreement (PPA) has been provided as <u>confidential information</u> to prove grid-connectivity based on discussion with the validation team during the site visit. The annex clearly state that it is an annex to an "Electricity Purchase Agreement" between AES Geo Energy and the "National Electric Company", therefore represent a prove that the wind farm is grid connected.</p> <p>In addition to the above, the validation team visited the site where it was evident that the wind farm was constructed on farmland where no power plant existed before, and that it is connected to the electricity grid.</p>
<p>DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<p>The required evidences to confirm that the project is grid connected, greenfield power plant and that no renewable power plant was operating prior to the implementation of the project activity at the project site have been provided.</p>
<p>Conclusion <i>Tick the appropriate checkbox</i></p>	<p><input type="checkbox"/> To be checked during the next periodic verification</p> <p><input type="checkbox"/> Outstanding finding (not closed)</p> <p><input checked="" type="checkbox"/> The finding is closed</p>

Finding	CAR 03.2-1		
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding (DOE)	<p>Section 2.2 of the PD does not provide all methodological conditions with justification as required by the instructional text:</p> <ol style="list-style-type: none"> 1. Demonstrate and justify how the project activity(s) meets each of the applicability conditions of the methodology(s), and tools (where applicable) applied by the project. Address each applicability condition separately. 		
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	<p>The PD was amended to include reference to all applicability conditions.</p>		
DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>All the methodology conditions and the justification have not been provided:</p> <ol style="list-style-type: none"> 1. Applicability condition number 3 is not complete. 2. The names of the tools used have not been provided. 		
Corrective Action or clarification #2 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	<p>Applicability condition number 3 was corrected to include the full text. The names of the methodology and the tools were added.</p>		

<p>DOE Assessment #2 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<p>The applicability condition number 3 of the methodology has been revised and is provided in full now. The names of the methodology and the tools have also been provided in the PD.</p>
<p>Conclusion <i>Tick the appropriate checkbox</i></p>	<p><input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed) <input checked="" type="checkbox"/> The finding is closed</p>

The selected baseline and monitoring methodology is an approved methodology. Based on above assessment, Carbon Check confirms that the project activity meets the applicability conditions of the methodology and concludes that the project activity correctly applies the approved baseline and monitoring methodology ACM0002, version 14.0.0 /B07/.

3.2.3 Project Boundary

As per the methodology /B07/, the spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the CDM project is connected to. The spatial extent of the project boundary for the project activity encompasses the CDM project facility and the electricity system it is connected to i.e. national electricity grid of Bulgaria. The defined project boundary is in line with ACM0002 (version 14.0.0) /B07/.

The validation team was able to confirm that all the identified emission sources which are impacted by the project activity are addressed by the approved methodology /B07/ and can be seen in the Table below.

Spatial extent of project boundary encompasses:

- Project facility
- Electricity system project facility is connected to, i.e. national electricity grid of Bulgaria

The source of emissions provided in section 2.3 of the project boundary does not provide details in columns Included and Justification/Explanation specific to the project activity. CL 03.2-3 had been raised in this regard and has been closed.

Following findings had been raised on this section of validation report and have been closed:

Finding	CL 03.2-3		
Classification	<input type="checkbox"/> CAR	<input checked="" type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding (DOE)	The source of emissions provided in section 2.3 of the project boundary does not provide details in columns <i>Included</i> and <i>Justification/Explanation</i> specific to the project activity.		

Finding	CL 03.2-3
<p>Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i></p>	Section 2.3 of the project boundary was corrected.
<p>DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	The source of emissions in section 2.3 of the PD provides justification for the applicable/ not applicable emission sources in accordance with the methodology, ACM0002.
<p>Conclusion <i>Tick the appropriate checkbox</i></p>	<input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed) <input checked="" type="checkbox"/> The finding is closed

The sources of greenhouse gas identified in the PD/01/ are deemed to be appropriate and assessed below:

<u>Emissions</u>	GHGs involved	Justification / Explanation
Baseline emissions	CO ₂	Main emission source, CO ₂ emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity. This is emitted from the electricity generation by fossil fuel-fired power plants connected to the Bulgarian national grid (NEK).
Project emissions	NA	Project emission is taken as zero as the project is a renewable energy (wind power project) and has no associated emissions in accordance with the methodology.
Leakage	NA	As per the applied methodology /B07/, No leakage emissions are considered. The main emissions potentially giving rise to leakage in the context of electric sector projects are emissions arising due to activities such as power plant construction and upstream emissions from fossil fuel use (e.g. extraction, processing, transport). These emissions sources are neglected.

In summary, the project boundary was correctly identified in accordance with the methodology ACM0002, version 14.0.0 /B04/. All greenhouse gas emissions occurring within the proposed project activity boundary as a result of the implementation of the VCS project activity have been appropriately addressed in the PD /01/.

The identified project boundary and selected sources of emissions are justified for the project activity. The validation of the project activity did not reveal other greenhouse gas emissions occurring within the VCS project activity boundary as a result of the implementation of the project activity which is expected to contribute more than 1% of the overall expected average annual emission reduction, with respect to the methodology applied.

Based on the review of supporting documented evidence provided by the project participant, Carbon Check can confirm that the project boundary and emission sources described in the PD /01/ are accurate and complete, and also that the selected sources and gases are justified for the proposed project activity.

3.2.4 *Baseline Scenario*

According to para 22 and 23 of the methodology, ACM0002 version 14/B07/ If the project activity is the installation of a new grid-connected renewable power plant/unit, the baseline scenario is the following: Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the “Tool to calculate the emission factor for an electricity system”.

As the electricity from the power plant is being supplied to the grid as was observed during the site visit and the invoices provided as evidence/06/.. CAR 03.1-3 had been raised in this regard and has been closed.

The emission factor has been published by the Bulgarian Ministry of Environment and Water (MoEW), Climate Change Policy Directorate, International Emission Trading Mechanisms Department/B09/.

Validation team confirms that:

- All the assumptions and data used by the project participants are listed in the VCS-PD, including their references and sources;
- All documentation used is relevant for establishing the baseline scenario and correctly quoted and interpreted in the VCS-PD;
- Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence and can be deemed reasonable;
- Relevant national and/or sectoral policies and circumstances are considered and listed in the VCS-PD;
- The approved baseline methodology has been correctly applied to identify the most plausible baseline scenario and the identified baseline scenario reasonably represents what would occur in the absence of the proposed project activity.

Overall the identified baseline scenario is justified and is provided in accordance with the methodology, ACM0002 version 14/B07/.

3.2.5 Additionality

According to para 29 of the methodology, ACM0002, version 14/B07/ - The additionality of the project activity shall be demonstrated and assessed using the latest version of the “Tool for the demonstration and assessment of additionality”. The additionality of the project activity has been demonstrated using version 07.0.0 of the “Tool for the demonstration and assessment of additionality”/B10/.

Step 1: Identification of alternatives to the project activity consistent with current laws and regulations

This is a wind power project and is based on the Methodology ACM0002 Ver. 14.0.0 /B07/. The methodology states,

“If the project activity is the installation of a new grid-connected renewable power plant/unit, the baseline scenario is the following:

Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the “Tool to calculate the emission factor for an electricity system”.

Since the approved methodology ACM0002 /B04/ used by the project activity prescribes the baseline scenario, no further analysis of alternatives is required for the project activity. This is in accordance with section 3.14.1 of the VCS standard/B01/.

Step 2: Investment Analysis

PP has chosen part (b) of § 29 of the tool used to demonstrate additionality /B05/, demonstrating that the project activity is not economically or financially feasible without carbon credit/ CER revenue.

The claim of the project developer, that the project scenario is not economically feasible without benefits from CER sales, has been assessed by the Validation Team through the following steps: Appropriateness of the financial indicator and investment analysis: PP has demonstrated that the financial returns of the VCS project activity are insufficient to justify the required investment. For demonstrating the financial unattractiveness of the project activity, PP has chosen investment analysis and to demonstrate the unattractiveness of the project activity, has selected benchmark analysis. Validation team has assessed correctness of the chosen approach of investment analysis and noted that since there is revenue (from sale of electricity) other than benefits from Carbon Credits/CDM related income in the project, hence option I the simple cost analysis is not applicable and correctly not considered by the PP. Furthermore, since there is no other alternative other than project activity without Carbon credits/ CDM, hence option II investment comparison analysis is also not applicable for the subject project. Since in this instant case baseline is outside the direct control of the project developer (grid connected power) and hence, the choice of the project developer is restricted to “invest or not to invest”, the benchmark approach is most suited as per the latest version of guidelines on investment analysis, § 19 of Annex 5 of EB 62.

In the above background, as subsequent paragraphs would reveal, Validation Team concludes that the additionality justification given by the PP is in accordance with the requirements derived from the approved CDM methodology and the methodological tools referred therein.

The project developer has chosen project IRR in real terms as financial indicator. Pre-tax Project IRR has been chosen as financial indicator as the project takes investment decisions based on IRR and for the project decision was taken to put forth the total investment, since the final decision on investment decision is based on the total investment on the project. Project IRR calculation is used to determine the return available from the project against total investment. As per § 11 of Annex 5 of EB 62 “Due to the impact of loan interest on income tax calculations it is recommended that when a project IRR is calculated to demonstrate additionality a pre-tax benchmark be applied. In cases where a post-tax benchmark is applied the DOE shall ensure that actual interest payable is taken into account in the calculation of income tax.” Hence selection of Pre-tax Project IRR in real terms is justified.

Appropriateness of benchmark: As per § 38 (d) of the additionality tool, discount rates and benchmarks shall be derived from Government/official approved benchmark where such benchmarks are used for investment decisions. The benchmark selected for the project activity is based on a government approved benchmark for the project activity as authorised by the State Commission for Energy and Water Regulation Resolution of Bulgaria. This is deemed suitable for this project activity, since it has been approved by the government.

Guidance on the Assessment of Investment Analysis version 05 states, “*Required/expected returns on equity are appropriate benchmarks for equity IRR. Benchmarks supplied by relevant national authorities are also appropriate if the DOE can validate that they are applicable to the project activity and the type of IRR calculation presented.*” (Cp Annex 5 of EB 62, Guidelines on the Assessment of Investment analysis, item 12). /B07/

Since the benchmark conforms to guidance 12 and 13 of Annex 5, EB 62, Validation team accepted the benchmark.

The validation therefore concludes that the benchmark applied is suitable for the financial indicator selected and it is reasonable to assume that the investment would not have taken place at a return lower than the benchmark. Thus, the selected benchmark conforms to guidance 12 and 13 of Annex 5, EB 62/B15/. In the above background, validation team concludes that the selected benchmark is appropriate, conservative and conforms to various EB guidelines.

Parameters and assumptions used: The basis of cash flow analysis to determine the project IRR for this project activity is:

The project costs are based on AES Geo Energy 2012 Audited Financial Statements.

The profitability estimates of the project, which forms the basis for IRR calculation is based on maintenance costs, O & M fee, Insurance, other costs, land lease fees, fixed asset costs, depreciation, interest rates. Major input parameters used in the additionality demonstration, basis thereof and the appropriateness of the value used are given in the following table:

Parameter	Unit	Value	Data source/Justification and
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			assessment by the validation team to check and cross check the input parameters
Fixed Assets (Total Fixed Investment)	BGN '000 (Thousand Bulgarian Lev)	474 692	<p>Total fixed investment cost of equipment has been taken from AES Geo Energy 2012 Audited Financial Statements /10-2/.</p> <p>Validation team checked the Audited Financial Statements /10-2/ and found the value to be correct. The fixed investment cost is consistent with the value provided in investment sheet/11/ and PD/01/. This also confirms to the requirement of annex 5 of EB 62 and hence acceptable to the validation team.</p> <p>The value of the cost is an actual cost incurred by the project participant. As the actual values were available for the parameter, they are considered most appropriate.</p>
Non-Current Assets (Fixed Assets excluding tax and depreciations)	BGN '000 (Thousand Bulgarian Lev)	427 429	<p>Non-Current Assets cost of equipment has been taken from AES Geo Energy 2012 Audited Financial Statements /10-2/.</p> <p>Validation team checked the Audited Financial Statements /10-2/ and found the value to be correct. The Non-Current Assets cost is calculated based on the fixed assets and deducting the value of tax and depreciation in accordance with para 11 of the guidance for investment analysis/B15/. The value is consistent with the value provided in investment sheet/11/ and PD/01/. This also confirms to the requirement of annex 5 of EB 62 and hence acceptable to the validation team.</p> <p>The value of the cost is an actual cost incurred by the project participant. As the actual values were available for the parameter, they are considered most appropriate.</p>
Maintenance costs	BGN '000 (Thousand Bulgarian Lev)	7 242	<p>Maintenance costs of the project have been taken from AES Geo Energy 2012 Audited Financial Statements /10-2/.</p> <p>Validation team checked the Audited Financial Statements /10-2/ and found the value to be correct. The</p>

			<p>value is consistent with the value provided in investment sheet/11/ and PD/01/. This also confirms to the requirement of annex 5 of EB 62 and hence acceptable to the validation team.</p> <p>The value of the cost is an actual cost incurred by the project participant. As the actual values were available for the parameter, they are considered most appropriate.</p>
O & M Fee	BGN '000 (Thousand Bulgarian Lev)	1 254	<p>O & M fee of the project have been taken from AES Geo Energy 2012 Audited Financial Statements /10-2/. Validation team checked the Audited Financial Statements /10-2/ and found the value to be correct. The value is consistent with the value provided in investment sheet/11/ and PD/01/. This also confirms to the requirement of annex 5 of EB 62 and hence acceptable to the validation team.</p> <p>The value of the fee is an actual cost incurred by the project participant. As the actual values were available for the parameter, they are considered most appropriate.</p>
Insurance	BGN '000 (Thousand Bulgarian Lev)	1 056	<p>Insurance costs of the project have been taken from AES Geo Energy 2012 Audited Financial Statements /10-2/. Validation team checked the Audited Financial Statements /10-2/ and found the value to be correct. The value is consistent with the value provided in investment sheet/11/ and PD/01/. This also confirms to the requirement of annex 5 of EB 62 and hence acceptable to the validation team.</p> <p>The value of the cost is an actual cost incurred by the project participant. As the actual values were available for the parameter, they are considered most appropriate.</p>
Other costs	BGN '000 (Thousand Bulgarian Lev)	1 849	<p>Insurance costs of the project have been taken from AES Geo Energy 2012 Audited Financial Statements /10-2/.</p>

			<p>Validation team checked the Audited Financial Statements /10-2/ and found the value to be correct. Other cost is the sum of all other operating costs other than Maintenance Costs, Insurance Costs, O & M fee. The value is consistent with the value provided in investment sheet/11/ and PD/01/. This also confirms to the requirement of annex 5 of EB 62 and hence acceptable to the validation team.</p> <p>The value of the cost is an actual cost incurred by the project participant. As the actual values were available for the parameter, they are considered most appropriate.</p>
Income tax rate	%	10	<p>The value for corporate tax rate has been deduced from the Corporate Income Tax Act/10-3/ for Bulgaria provided by the government. The value of the tax has been cross checked with the Deloitte/10-4/ report and found correct.</p> <p>Based on above assessment validation team accepted the value of corporate income tax rate.</p>
Annual Land Lease Fee	BGN '000 (Thousand Bulgarian Lev)	997	<p>The value of the fee is based on the formula and is based on the fee established in Shareholder Agreement/10-5/) 509 595 EUR * Exchange rate of Bulgarian Lev with Euros/10-6/ 1.95583 = 997 000BGN.</p> <p>Based on above assessment validation team accepted the value of corporate income tax rate.</p>
Tariff rate/ PPA Price	BGN/MWh	188.29	<p>The value is based on the RES Law/10-7/. The law becomes effective from May 2011 and the price of the tariff is changed from the earlier agreed price. The RES law/10-7/ has been checked by the Validation team and the values have been compared with PD/01/ and Investment analysis sheet/11/.</p> <p>Based on above assessment validation team accepted the value of PPA price.</p>
Access Fee	BGN/MWh	18.83	<p>The value of access fee of the grid is based on the Bulgaria State</p>

			<p>Commission For Energy And Water Regulatory decision/10-8/ of 14/09/2012. The Decision/10-8/ has been checked by the Validation team and the values have been compared with PD/01/ and Investment analysis sheet/11/.</p> <p>Based on above assessment validation team accepted the value of Access fee.</p>
Annual Indexation	%	2.01	<p>The value of indexation rate is based on the weighted average price index inflation forecasts/10-9/ for Bulgaria for the period of the Financial analysis. This value has been further cross-checked against other values for inflation/B16/ and found approximately close.</p> <p>Based on above assessment validation team accepted the value of annual indexation.</p>
Initial bank Loan balance	BGN '000 (Thousand Bulgarian Lev)	311 492	<p>Initial bank Loan balance value of the project have been taken from AES Geo Energy 2012 Audited Financial Statements /10-2/.</p> <p>Validation team checked the Audited Financial Statements /10-2/ and found the value to be correct. The value is consistent with the value provided in investment sheet/11/ and PD/01/. This also confirms to the requirement of annex 5 of EB 62 and hence acceptable to the validation team.</p> <p>The value of the balance is an actual value for the project. As the actual values were available for the parameter, they are considered most appropriate.</p>
Bank Loan Interest SWAP Rate	%	3.78	<p>Bank loan interest rate value of the project has been taken from AES Geo Energy 2012 Audited Financial Statements /10-2/.</p> <p>Validation team checked the Audited Financial Statements /10-2/ and found the value to be correct. The value is consistent with the value provided in investment sheet/11/ and PD/01/. This also confirms to the requirement of annex 5 of EB 62 and</p>

			<p>hence acceptable to the validation team.</p> <p>The value of the interest rate is an actual value for the project. As the actual values were available for the parameter, they are considered most appropriate.</p>
Assets useful life	Years	25	<p>Assets useful life of the project has been taken from AES Geo Energy 2012 Audited Financial Statements /10-2/. This value is used for calculation of depreciation.</p> <p>Validation team checked the Audited Financial Statements /10-2/ and found the value to be correct. The value is consistent with the value provided in investment sheet/11/ and PD/01/. This also confirms to the requirement of annex 5 of EB 62 and hence acceptable to the validation team.</p> <p>The value of the assets useful life is an actual value for the project. As the actual values were available for the parameter, they are considered most appropriate.</p>

As could be observed all the input values are based on the Audited Financial Statement of AES Geo Energy/10-2/, weighted average price index inflation forecasts/10-9/, RES law/10-7/, Corporate Income Tax Act/10-3/, Bulgaria State Commission For Energy And Water Regulatory decision/10-8/ and all the values produced are valid at the time of investment decision, i.e. 01/11/2012. The date of investment decision is based on the rejected liquidation damages by the NEK/12-1/. Validation team confirms that the input values would have marginally/materially changed but their effect would be conservative; in validation team’s opinion this is justified.

The Validation Team based on assessment above concludes that the input parameters used in the financial statement of 2012 were valid and applicable at the time of investment decision. The source for the input parameter, the method adopted to cross check the information/data and the appropriateness of the same are given along with the input parameters. CAR 03.2-2 had been raised in this regard and has been resolved.

As evident from the details given above, the validation had evaluated the parameters used in the financial calculations and the validation team confirms that the underlying assumptions are appropriate and the financial calculations are correct.

Since the input parameters have been sourced from the Financial statement of 2012 were prepared by a reputed third party consultant, the gap between the Financial statement of 2012 and the decision making date being less than a year, validation team concludes that the input

parameters are reliable, credible and appropriate for the project activity and conforms to Annex 5, EB 62.

The documents supporting the financial calculations, in the opinion of Validation Team, are therefore authentic and appropriate. The input parameters were also assessed based on sectoral scope expertise of the validation team and found to be appropriate.

Assessment of correctness of computation: The assessment involved checking the data input extracted from Audited Financial Statements /10-2/, Corporate Income Tax Act/10-3/, Shareholder Agreement/10-5/, Exchange rate of Bulgarian Lev with Euros/10-6/, RES Law/10-7/, Bulgaria State Commission For Energy And Water Regulatory decision/10-8/, Inflation forecasts/10-9/ and other published documents and arithmetical accuracy. Validation Team checked the Technical report, published Government documents and ensured that right input has been taken in the project cost and projections. The accounting principles adopted with respect to computation of depreciation was found to be in order. The arithmetical accuracy was also found to be correct.

The project IRR has been computed for a period of 20 years of operation, and meets the requirements of § 3 of EB 62 Annex 5 and Annex 15 of EB 50. Since the project's operational lifetime is greater, a generous residual value is assigned at the end of the period of assessment. It has been calculated using perpetuity growth method (assuming zero growth) and meets the requirements of § 4 of EB 62 Annex 5. A residual value for intangibles is assumed to be 0 after the depreciation period. This is a conservative value for a residual value. Validation team confirms the suitability of the period of assessment and residual values for the project.

Based on the above, the equity IRR works out to 5.40 % as compared to the benchmark of 9.94%.

Sensitivity Analysis: According to paragraph 20 of the “Guidelines on the assessment of investment analysis” (Version 05) only variables that constitute more than 20% of either total project costs or total project revenues should be included in the sensitivity analysis. In addition the sensitivity analysis should at least cover the range of +10% and -10%.

The following variables were included in the sensitivity analysis:

- Electricity generation;
- Operating expenses;
- Post-PPA electricity price (RES law)

The results of the sensitivity analysis are shown in Table below:

Variable	Variation		
	-10%	0%	+10%
Electricity generation	3.74%	5.40%	6.91%
Operating expenses	5.8%	5.40%	4.98%
Post-PPA electricity price (RES law)	4.89%	5.40%	5.86%

The results of the sensitivity analysis demonstrate that an investment in the project activity, in the absence of carbon credits/ CER revenues, is unattractive.

Validation Team is in agreement with PP's submission regarding additionality. Having regard to the assessment of conformity of additionality demonstration and benchmark selection to the latest version of the Guidance issued by EB on the assessment of investment analysis, plausibility and appropriateness of parameters used and correctness of financial calculations, Validation Team concludes that the project scenario is not economically feasible and the project developer would not have continued with this project without carbon credits revenue benefits.

Step 3: Barrier analysis

The additionality of the project has been demonstrated using Investment analysis. In accordance with "Tool for the demonstration and assessment of additionality", EB 70 Annex 8, Figure 1 and para 44 of the tool barrier analysis has not been conducted. Step 4 has been used to check the common practice analysis.

Step 4: Common practice analysis

Project developer has carried out a common practice analysis as a credibility check as required by the additionality Tool /B10/.

Referring to §57 of additionality Tool (version 07, annex 8 of EB 70) /B10/, Validation team confirms that PP has rightly considered this paragraph to demonstrate common practice as it involves the measures (as listed in § 13 of additionality tool). The subject project satisfies to measure 13 (b) (ii) i.e. (b) Switch of technology with or without change of energy sources (including energy efficiency improvement as well as use of renewable energies). Therefore, the common practice analysis is carried out according to the four step procedure stated in Guidelines On Common Practice/B12/, EB 69 Annex 08 as prescribed within § 58 of additionality tool/B10/ .

Step 1 of the approach calculates applicable output range as +/-50% of the design output or capacity of the project activity. Since the capacity of the project is 156 MW. Hence, the range covers from 78 MW to 234 MW. The same is checked and confirmed by the validation team.

Step 2 of the approach identifies the projects (both CDM and non CDM) which fulfil all of the following conditions:

- (a) The projects are located in the applicable geographical area;
- (b) The projects apply the same measure as the proposed project activity;
- (c) The projects use the same energy source/fuel and feedstock as the proposed project activity, if a technology switch measure is implemented by the proposed project activity;
- (d) The plants in which the projects are implemented produce goods or services with comparable quality, properties and applications areas (e.g. clinker) as the proposed project plant;
- (e) The capacity or output of the projects is within the applicable capacity or output range calculated in Step 1;
- (f) The projects started commercial operation before the project design document (CDM-PDD) is published for global stakeholder consultation or before the start date of proposed project activity, whichever is earlier for the proposed project activity.

Since non-CDM projects have already been identified in Step 2 of the above approach. The CDM projects are identified along with other projects that fulfil the above mentioned criteria. Only those projects are identified which use the same energy source/fuel. There are no projects within the range of 78 MW to 234 MW. As per the public information/13-2/, Suvorovo (60 MW) and Vetrocom (72.5) are the closest to the lower range of 78 MW. But, none of them falls within 78 MW and 234 MW/13-1/. This information has been further cross-checked against Bulgarian Wind Energy Association data /13-1/.

Step 3 of the approach identifies projects that are neither registered CDM project activities, project activities submitted for registration, nor project activities undergoing validation. Hence, the number of such projects is represented as, $N_{all} = 1$.

Step 4 of the approach identifies those that apply technologies that are different to the technology applied in the proposed project activity. The number of such projects is represented as, $N_{diff} = 0$.

Step 5 of the approach finds the value of factor $F = 1 - N_{diff}/N_{all}$, representing the share of plants using technology similar to the technology used in the proposed project activity in all plants that deliver the same output or capacity as the proposed project activity.

F is calculated as, $1 - 0 = 1$.

According to the guidance, the proposed project activity is a “common practice” within a sector in the applicable geographical area if both the following conditions are fulfilled:

- (a) the factor F is greater than 0.2, and
- (b) $N_{all} - N_{diff}$ is greater than 3.

The calculation is correct and in line with the guidance for common practice analysis, checked and confirmed by the validation team. Since, the value of F is greater than 0.2 but $N_{all} - N_{diff}$ is lower than 3, the proposed project activity is not a common practice within a sector in the applicable geographical area as per the guidelines/B12/.

The additionality of the project activity has been demonstrated by barrier analysis. The investment barrier analysis has not been conducted in line with para 51 (a) of the “Tool for the demonstration and assessment of additionality”, EB 70 Annex 8. CAR 03.2-2 had been raised in this regard and has been resolved. CAR 03.2-3 had been raised in this regard and has been resolved.

Common practice analysis was not been conducted in line with Step 4 of the “Tool for the demonstration and assessment of additionality”, EB 70 Annex 8. CAR 03.2-4 had been raised in this regard. Also, a methodology deviation had been applied. CAR 03.2-5 had been raised in this regard and has been closed. CL 03.2-4 had also been raised in this regard and has been closed.

Based on the above assessment, validation team confirms that the project is additional in accordance with Tool for additionality/B10/ and the applied methodology ACM0002, version 14/B07/. All the findings raised have been satisfactorily closed.

Finding	CAR 03.2-2
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Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
<p>Description of finding (DOE)</p>	<p>The investment barrier as provided in section 2.5 of the PD does not meet the requirements of para 51 (a) of the “Tool for the demonstration and assessment of additionality”, EB 70 Annex 8.</p>		
<p>Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i></p>	<p>Para 51 of the tool state: "Establish that there are realistic and credible barriers that would <u>prevent the implementation</u> of the proposed project activity from being carried out if the project activity was not registered as a CDM activity".</p> <p>We therefore added an explanation to the fact that the application of the tool was adapted to discuss the relevance to an operational project. Under these conditions we followed the instructions of Para 51a to discuss the relevant investment barriers.</p>		
<p>DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<p>Section 3.1.3 of the VCS standard has to be referred for the application of any tool/methodology in a project activity. It needs to be justified as to how the project faces investment barrier as listed in para 51 of the tool and not economical/financial barriers.</p>		
<p>Corrective Action or clarification #2 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i></p>	<p>An economical analysis was added to the PD under section 2.5 Additionality, and an economical model workbook was provided to the validation team.</p>		
<p>DOE Assessment #2 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<p>The investment analysis has been added to the PD under section 2.5 and all the values provided with the supporting documents.</p> <p>As few values in the investment analysis have been taken from Financial Statement of AES for the year 2012, how is it justified that the values were applicable by the date of investment decision, i.e. 01/11/2012. A justification needs to be provided in accordance with the guidance 6 of the “Guidelines on Investment Analysis”, EB 62 Annex 5 states:</p> <p><i>“Input values used in all investment analysis should be valid and applicable at the time of the investment decision taken by the project participant. The DOE is therefore expected to validate the timing of the investment decision and the consistency and appropriateness of the input values with this timing. The DOE should also validate that the listed input values have been consistently applied in all calculations.”</i></p>		

<p>Corrective Action or clarification #3 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i></p>	<p>The 2012 financial report was used because is it an official, externally audited, report. Therefore the values are easily justified.</p> <p>Please remember that the generation values that were used are based on actual generation, as well as all costs. The values were known at the end of October 2012, they were only audited in the annual report. The forward financial analysis starts on November 1st as can be seen on cell H6 on the FS tab.</p> <p>Following justification has been provided on the same:</p> <ul style="list-style-type: none"> - Annual sale of electricity for 2012 of BGN 62 530 (from the audited financial statements) – this is equal to 332 098 MWh x 188.29 BGN/MWh. NEK is billed monthly, you can attach one monthly invoice if needed, therefore we know what the revenue is on a monthly basis. Also on p.11 of the financial statements in “Note 2.2 Summary of significant accounting policies” there is the following text “Sale of goods Revenue is recognized in the statement of comprehensive income on a monthly basis, following the measurement of electricity supplied to the client”. - Access fee is also calculated on a per MWh basis therefore is readily available on a monthly basis. - Bank loans – these are repaid based on fixed schedule on fixed dates as per the financing agreements. Therefore the balance as of 1 November is easily available. - Depreciation and amortization – On p.12 of the financial statements in “Note 2.2 Summary of significant accounting policies” there is the following text “The depreciation charge is applied using the straight line method based upon the following estimated useful life”. This combined with the fact that at windfarm there is practically no capital expenditure once the asset is in operation makes the information about accrued depreciation and the fixed assets net value readily available at any given moment.
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	<p>As we explained, an exact date for the "investment decision" cannot easily be defined in this case. The 2012 November LD request was the first one to be rejected by NEK and as we stated from the start, this is the start date of the new financial situation (please see attached the November LD request (confidential)).</p> <p>The LD requests and the reply from NEK (also attached) show that AES Geo Energy decided to keep its commitments according to the agreement and to continue operating the wind farm even when the LDs were rejected. Accordingly, 01 November 2012 has been chosen as the start date and that these documents are the best reference to this fact.</p>
<p>DOE Assessment #3 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<p>PP has clarified that since all the values in the financial statement of year 2012 were available by October 2012 and that the report was audited in December 2012. After the month of October, for next 2 months the values produced were based on the estimates. Hence the details in the financial statement were available at the time of making a decision on the investment for the project.</p> <p>Further it has been clarified that based on the rejection of liquidation damages by the NEK a decision was taken by AES Geo Energy on 01 November 2012 that it would continue operating the wind farm even when the LDs were rejected.</p>
<p>Conclusion <i>Tick the appropriate checkbox</i></p>	<p><input type="checkbox"/> To be checked during the next periodic verification</p> <p><input type="checkbox"/> Outstanding finding (not closed)</p> <p><input checked="" type="checkbox"/> The finding is closed</p>

Finding	CAR 03.2-3		
<p>Classification</p>	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
<p>Description of finding (DOE)</p>	<p>The supporting documents as listed in section 2.5 of the PD for investment barrier and technological barrier have not been provided including the original PPA.</p>		
<p>Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i></p>	<p>The supporting documents relevant to section 2.5 of the PD for investment barrier and technological barrier have been provided under sub folder "Renewable energy in Bulgaria". Will be sent again with version 2 of the PD. A copy of the PPA Annex 1 was provided by Bisera Stoeva through Email to Adam Simcock on February 28 as confidential information.</p>		

<p>DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<p>The relevant supporting documents as referenced in section 2.5 of the PD have been provided.</p>
<p>Conclusion <i>Tick the appropriate checkbox</i></p>	<p><input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed) <input checked="" type="checkbox"/> The finding is closed</p>

Finding	CAR 03.2-4		
<p>Classification</p>	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
<p>Description of finding (DOE)</p>	<p>It has been stated that “Renewable energy technologies are defined as a “measure” and therefore the “Guidelines on common practice” Version 02.0 should be used.” However, renewable energy as a measure is not listed under the measures in para 13 (b) of EB 70 annex 8.</p>		
<p>Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i></p>	<p>According to methodology ACM0002 v14, Para 29, “The additionality of the project activity shall be demonstrated and assessed using the latest version of the “Tool for the demonstration and assessment of additionality” (TOOL01). According to TOOL01 v7, Para 57 “ If the proposed CDM project activity(ies) applies measure(s) that are listed in the definitions section above proceed to Sub-step 4a”. Para 13bii of TOOL01 state that one of the 4 types of measures is the “ Switch of technology with or without change of energy source including energy efficiency improvement as well as use of <u>renewable energies</u> (example: energy efficiency improvements, <u>power generation based on renewable energy</u>);</p>		
<p>DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<p>“Tool for the demonstration and assessment of additionality” has been used to demonstrate the additionality of the project. The common practice analysis has thus been conducted in line with the requirements of the tool. It has been clarified that the measure renewable energy is listed in para 13 b (ii) of the tool.</p>		
<p>Conclusion <i>Tick the appropriate checkbox</i></p>	<p><input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed) <input checked="" type="checkbox"/> The finding is closed</p>		

Finding	CAR 03.2-5		
<p>Classification</p>	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR

Description of finding (DOE)	The methodology deviation as stated in section 2.6 of the PD does not meet the requirement of methodology deviation as per instructional text: 1. The deviation relates only to the criteria and procedures for monitoring or measurement, and does not relate to any other part of the methodology.
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	The common practice analysis was amended and no methodology deviation is requested.
DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The common practice analysis provided has been updated and provided as per the requirements of tool "Tool for the demonstration and assessment of additionality". No methodology deviation is thus required.
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed) <input checked="" type="checkbox"/> The finding is closed

Finding	CL 03.2-4		
Classification	<input type="checkbox"/> CAR	<input checked="" type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding (DOE)	It has been stated in section 2.5 of the PD that "all renewable energy power plants in Bulgaria are facing the same barriers, and most of the barriers were raised after the implementation of the projects when the Bulgarian authorities unilaterally pulled back from contractual agreements, changed existing regulations and created new ones." This information needs to be substantiated with suitable evidence.		
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	Relevant documents were provided to the validation team under the sub folder "Renewable energy in Bulgaria". The provided documents include: articles, correspondence regarding the access fee, trading rules, feed in tariff changes. Will be send again with version 2 of the PD.		
DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The relevant documents confirming that all renewable energy power plants in Bulgaria are facing the same kind of barriers have been provided as newspaper/magazine articles and other such publication.		
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed) <input checked="" type="checkbox"/> The finding is closed		

3.2.6 Quantification of GHG Emission Reductions and Removals

The steps taken and the equations and parameters applied in the VCS-PD to calculate project emissions, baseline emissions, leakage and emission reductions comply with the requirements of the selected methodology including applicable tool(s).

Baseline emissions:

As per para 38 of the methodology, ACM002, version 14/B07/, baseline emissions are calculated using the following equation:

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

Where:

BE_y = Baseline emissions in year y (t CO₂/yr)

$EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr)

$EF_{grid,CM,y}$ = Combined margin CO₂ emission factor for grid connected power generation in year y calculated using the latest version of the “Tool to calculate the emission factor for an electricity system” (t CO₂/MWh)

As per para 40 of the methodology, ACM002, version 14/B07/, $EG_{PJ,y}$ for a greenfield renewable energy power plant is calculated using the following equation:

$$EG_{PJ,y} = EG_{facility,y}$$

Where:

$EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr)

$EG_{facility,y}$ = Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh/yr)

For the purpose of calculation of $EF_{grid,CM,y}$, the officially calculated maximum demand forecast Dispatch Data Adjusted OM EF for 2012 was used/XX//B09/. This is acceptable to the validation team

It had not been justified that the Estimated baseline emissions/ emission reductions for year 2014 are based on average generation and 2015 onwards it includes curtailment as well. CL 03.2-7 had been raised in this regard and has been resolved.

The project proponent has opted to use ex-ante option for determining the emission factor for the grid ($EF_{grid,CM,y}$). For calculation of emission factor dispatch data analysis value has been used. Further, based on the conservative value of the demand forecast a lower value has been used as

the value of emission factor is only used for baseline emissions and does not affect the project emissions. Hence the value is considered as conservative. CL 03.2-7 had been raised in this regard and has been resolved.

Project emissions:

As per para 30 of the methodology, for most renewable power generation project activities, $PE_y = 0$. However, some project activities may involve project emissions that can be significant. These emissions shall be accounted for as project emissions by using the following equation:

$$PE_y = PE_{FF,y} + PE_{GP,y} + PE_{HP,y}$$

Where:

PE_y = Project emissions in year y (t CO₂e/yr)

$PE_{FF,y}$ = Project emissions from fossil fuel consumption in year y (t CO₂/yr)

$PE_{GP,y}$ = Project emissions from the operation of geothermal power plants due to the release of non-condensable gases in year y (t CO₂e/yr)

$PE_{HP,y}$ = Project emissions from water reservoirs of hydro power plants in year y (t CO₂e/yr)

As has been stated in the PD that the project is a wind based renewable energy power plant with no fossil fuel back up, there are no project emissions. This was also confirmed during the site visit by the validation team.

Leakage emissions:

As per para 53 of the methodology, ACM0002 version 14/B07/, no leakage emissions have been identified for the project activity.

Summary of net GHG emission reductions or removals:

Emission reductions are calculated as follows:

$$ER_y = BE_y - PE_y$$

Where:

ER_y = Emission reductions in year y (t CO₂e/yr)

BE_y = Baseline emissions in year y (t CO₂/yr)

PE_y = Project emissions in year y (t CO₂e/yr)

The total emission reductions calculated for the crediting period are 2,561,076. CAR 03.2-6 had been raised in this regard and has been resolved.

All the evidences and sources of data used for calculation of emission reductions had not been provided including electricity generation records. However, the required evidences were submitted during validation. CAR 03.2-7 had been raised in this regard and has been closed.

Finding	CAR 03.2-6		
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding (DOE)	The total estimated ERs as provided in section 1.7 of the PD does not match the sum of ERs for individual years.		
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	The total estimated ERs in section 1.7 of the PD was corrected.		
DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The total estimated ERs in section 1.7 of the PD have been amended. However, these ERs do not match the ERs as provided in 'GHG calculation' workbook of the ER spreadsheet. ERs for the individual years are to be rounded down. Please check further comments in the ER sheet.		
Corrective Action or clarification #2 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	The GHG calculation workbook was amended and the corresponding tables in the PD were corrected.		
DOE Assessment #2 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The GHG calculation workbook has been updated and the corresponding table in section 1.7 of the PD has been revised. The value has also been updated in section 1.1 of the PD.		
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed) <input checked="" type="checkbox"/> The finding is closed		

Finding	CAR 03.2-7		
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding (DOE)	All the evidences and sources of data used for calculation of emission reductions listed in ER spreadsheet are not provided including electricity generation and sales records.		
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	As requested by the validation team during the site visit, the electricity generation and sales records for the requested months were provided by Bisera Stoeva through Email to Adam Simcock on February 28 as <u>confidential information</u> . Document evidence regarding the grid emission		

	factor were provided prior the site visit under the sub folder "Grid Emissions Factor". Will be sent again with version 2 of the PD.
<p>DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<p>The required documents for the grid emission factor have been provided and the grid emission factor has been checked with the document.</p> <p>The electricity generation records have been provided only for the period from November 2012 to November 2013. Also it needs to be clarified how the losses (curtailment) have been estimated for the individual period. Source of information for each data input needs to be provided in the ER sheet.</p>
<p>Corrective Action or clarification #2 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i></p>	<p>Electricity generation records were provided for the period requested by the validator.</p> <p>Curtailment losses calculations are made based on what the turbines could have generated under the same conditions if there was no curtailment. As the wind conditions at the site are constantly measured and the maximum generation potential of the turbines under these conditions are known, then the full amount of electricity that could have been generated can be calculated and the difference between actual generation and potential generation are the curtailment losses.</p> <p>The following was added to the generation and GHG calculation workbook: "Actual generation data is based on official measurements by NEK" and "Curtailment losses calculations are made based on what the turbines could have generated under the same conditions if there was no curtailment"</p>
<p>DOE Assessment #2 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<p>A clarification has been provided on the basis of curtailment losses for the project activity and has been further highlighted in the ER sheet. The curtailment losses are based on the actual generation data and are acceptable to the validation team.</p>
<p>Conclusion <i>Tick the appropriate checkbox</i></p>	<p><input type="checkbox"/> To be checked during the next periodic verification</p> <p><input type="checkbox"/> Outstanding finding (not closed)</p> <p><input checked="" type="checkbox"/> The finding is closed</p>

3.2.7 Methodology Deviations

No methodology deviations have been identified in the project activity. A methodology deviation had been applied to the project activity and has been removed. However, CAR 03.2-5 had been raised in this regard and has been closed.

Finding	CAR 03.2-5		
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding (DOE)	The methodology deviation as stated in section 2.6 of the PD does not meet the requirement of methodology deviation as per instructional text: 1. The deviation relates only to the criteria and procedures for monitoring or measurement, and does not relate to any other part of the methodology.		
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	The common practice analysis was amended and no methodology deviation is requested.		
DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The common practice analysis provided has been updated and provided as per the requirements of tool "Tool for the demonstration and assessment of additionality". No methodology deviation is thus required.		
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed) <input checked="" type="checkbox"/> The finding is closed		

3.2.8 Monitoring Plan

The project uses the methodology ACM0002, version 14/B07/. As per section 6 of the methodology parameter $EG_{facility,y}$ and $EF_{grid,CM,y}$ are to be monitored. Both the parameters are listed in section 4.2 of the PD. has to be monitored. Identify the parameters to be monitored and describe the steps taken to validate the suitability and eligibility of monitoring equipment and procedures.

Data / Parameter (as in the PD)	$EG_{facility,y}$ (Quantity of net electricity generation supplied by the project plant/unit to the grid in year y)	
Unit	MWh/y	
Value	Ex-ante	
	Ex-post	✓
Monitoring frequency (Measuring)	Continuous	
Monitoring frequency (Recording)	Monthly (atleast)	
Source of data	Electricity meters	

Description of measurement methods	Data from commercial meter are electronically transmitted to NEK. Data from control meters are electronically transmitted to project (SNWF) data processing system “Advanced ECConomic”.
Values applied	327,982 MWh/y. CL 03.2-5 had been raised in this regard and has been closed.
Monitoring Equipment	<ul style="list-style-type: none"> - Commercial meter ELSTE AINRTAL-X, class 0.2S, N: 07120785 - Commercial meter ELSTE AINRTAL-X, class 0.2S, N: 07120786 - Control meter Landis+Gyr, class 0.2S, N: 97600398 - Control meter Landis+Gyr, class 0.2S, N: 97600399 <p>These four meters were found in the control room, checked the identification numbers and accuracy class and found to be working. These meters have also been listed in section 4.3 of the PD. It has been clarified that 2 additional meters as listed in section 4.3 of the PD and observed during the site visit are used as backup to the commercial meters installed. It has been clarified that the 2 additional meters shall be used to crosscheck the readings and will also serve as backup in case one of the main meters is malfunctioning. CL 03.2-6 had been raised in this regard and has been closed.</p>
QA/QC procedures	Measurement results from “Advanced ECConomic” are cross-checked with data for sold electricity from monthly protocols delivered by NEK.
Purpose of data	Baseline emissions
Specific location	Control room at Saint Nikola Wind Farm. Power meter is owned by National Electricity Company (NEK)

The electricity maintenance manager of the wind farm is responsible for implementing this monitoring plan. All duty engineers on shift are responsible for data collecting and recording. The organisation structure/09/ has been provided as evidence to confirm the roles and responsibilities of the individuals for the project activity. CAR 03.2-8 had been raised in this regard and has been resolved.

In accordance with section 3.17.1 of the project standard all documents and records will be kept in a secure and retrievable manner for at least two years after the end of the project crediting period. The data collecting and recording procedures as provided in section 4.3 of the PD are acceptable to the validation team. CAR 03.2-9 had been raised in this regard and has been closed.

The validation team considers that the means of implementation of the monitoring plan, including the data management and quality assurance and quality control procedures, are sufficient to ensure that the emission reductions achieved by/resulting from the proposed project activity can be reported ex post and verified.

Validation team confirms that the monitoring plan complies with the requirements of the methodology including applicable tool(s), the monitoring arrangements described in the monitoring plan are feasible within the project design and the project participants are able to implement the described monitoring plan.

Finding	CL 03.2-5		
Classification	<input type="checkbox"/> CAR	<input checked="" type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding (DOE)	It has not been justified that the Estimated emission reductions for year 2014 are based on average generation and 2015 onwards it includes curtailment as well.		
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	Based on NEK's current conduct, we assume that the grid upgrade will not be completed before the end of 2014. However, we believe there is a good chance that work will be completed by 2015 and so the Project will not suffer from curtailment starting in January 2015. In any case, actual issuance of credits will be based on actual generation that was delivered to the grid, and so will account for the exact date when the project will not suffer from curtailment.		
DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>It has been clarified by the PP that the curtailment has been accounted based on the NEK's current conduct and thus the curtailment has been accounted during the period upto 2014. However, as the upgrade of the grid is expected by 2015 no curtailment of the project has been accounted from then and the project would be able to generate and transmit the electricity at full capacity.</p> <p>It needs to be clarified if any documentary evidence has been used for the estimation of the start date of the grid upgrade.</p>		
Corrective Action or clarification #2 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	A copy of the grid upgrade building permit was provided and work had started. The completion date is an internal estimate as NEK will not provide an official date. In any event, the actual GHG reductions will be based on actual generation so it is not critical if our estimate will prove not to have been accurate.		
DOE Assessment #2 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>A copy of the grid upgrade building permit has been provided to the validation team and thus confirmed that the work has started on the project activity.</p> <p>It has been further clarified that the end date is an estimate by the PP.</p>		
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed) <input checked="" type="checkbox"/> The finding is closed		

Finding	CL 03.2-6		
Classification	<input type="checkbox"/> CAR	<input checked="" type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding (DOE)	During the site visit four meters were found in the control room. These meters have also been listed in section 4.3 of the PD. However, monitoring equipment row for parameter $EG_{facility,y}$ in section 4.2 of PD lists only 2 electricity meters. It needs to be clarified why the other 2 meters have not been listed.		
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	As mentioned in the section 4.3 the two additional meters are internal, owned by AES Geo Energy and are used for control measurement. As these will be used also as a backup to the commercial meters, an explanation was added to both section 4.2 and 4.3.		
DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	It has been clarified that 2 additional meters as listed in section 4.3 of the PD and observed during the site visit are used as backup to the commercial meters installed. It has been clarified that the 2 additional meters shall be used to crosscheck the readings and will also serve as backup in case one of the main meters is malfunctioning.		
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed) <input checked="" type="checkbox"/> The finding is closed		

Finding	CL 03.2-7		
Classification	<input type="checkbox"/> CAR	<input checked="" type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding (DOE)	The source of data, measurement methods, monitoring frequency, QA/QC procedures and calculation method for the parameter $EF_{grid,CM,y}$ state in section 4.2 of the PD - As per the "Tool to calculate the emission factor for an electricity system". The tool referenced does not give these details for the parameter $EF_{grid,CM,y}$ and instead gives these details for other parameters used to calculate the parameter $EF_{grid,CM,y}$. It is not clear if the value of the parameter $EF_{grid,CM,y}$ would be calculated based on the monitored values of other parameters from the tool or from the link stated in the comment section for the parameter $EF_{grid,CM,y}$.		
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	The Project Proponent chose the Ex ante option for determining $EF_{grid,CM,y}$, and therefore this parameter will be fixed at registration. Section 4.2 was amended to reflect this.		

Finding	CL 03.2-7
<p>DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<p>The project proponent has opted to use ex-ante option for determining the emission factor for the grid ($EF_{grid,CM,y}$). The options chosen from the document provided as evidence also need to be justified and the how the choices are more suitable for the project activity.</p>
<p>Corrective Action or clarification #2 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i></p>	<p>The following explanation was added to sections 4.1 and 4.2 "This document provides two forecasts for the grid emission factor. A higher value for minimum demand forecast and a lower value for maximum demand forecast. In order to be conservative we chose to use the lower value."</p>
<p>DOE Assessment #2 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<p>For calculation of emission factor dispatch data analysis value has been used. Further, based on the conservative value of the demand forecast a lower value has been used as the value of emission factor is only used for baseline emissions and does not affect the project emissions. Hence the value is considered as conservative.</p>
<p>Conclusion <i>Tick the appropriate checkbox</i></p>	<p><input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed) <input checked="" type="checkbox"/> The finding is closed</p>

Finding	CAR 03.2-8		
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding (DOE)	<p>It is stated in section 4.3 of the PD under responsibility that all duty engineers on shift are responsible for data collecting and recording. The organisation structure has not been provided to confirm the same.</p>		
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	<p>SNWF organisation structure will be sent with version 2 of the PD under the file name: "AES St. Nikola Wind Farm Org Chart April 2014".</p>		
DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>The organisation structure has been provided and has been checked by validation team to confirm the same.</p>		
Conclusion <i>Tick the appropriate checkbox</i>	<p><input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed) <input checked="" type="checkbox"/> The finding is closed</p>		

Finding	CAR 03.2-9		
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding (DOE)	The data collecting and recording procedures as provided in section 4.3 of the PD do not meet the requirements of section 3.17.1 of the project standard.		
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	The following sentence was added to section 4.3: "All documents and records will be kept in a secure and retrievable manner for at least two years after the end of the project crediting period".		
DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The data collecting and recording procedures as provided in section 4.3 of the PD have been modified and meet the requirements of section 3.17.1 of the project standard.		
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed) <input checked="" type="checkbox"/> The finding is closed		

3.3 Non-Permanence Risk Analysis

Not Applicable

3.4 Environmental Impact

The environmental impact assessment of the project activity has been carried out in 2006. The EIA report/05/ has been provided as evidence. Based on the EIA report, recommendations were made. The actions as recommended in the EIA report has been acted upon as detailed in the section 5 of the PD. This has been further cross checked with the supplementary information report. The EIA approval/05-3/ for the project activity has also been checked by the validation team. CL 03.4-1 had been raised in this regard and has been resolved.

Finding	CL 03.4-1		
Classification	<input type="checkbox"/> CAR	<input checked="" type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding (DOE)	As stated in section 5 of the PD that the recommendations were made in the EIA report. It is not clear if any actions have been taken on the recommendations made in the EIA report.		
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	All the recommendations were implemented and the section 5 was amended to reflect that.		
DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	It has been clarified that all the recommendations as made in the EIA have been implemented. The documentary evidences have also been provided to support the same.		

Finding	CL 03.4-1
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed) <input checked="" type="checkbox"/> The finding is closed

3.5 Comments by Stakeholders

The project Saint Nikola wind farm has a continuous public disclosure and consultation plan. The comments and inputs are continuously invited through the website (<http://www.aesgeoenergy.com/site/Studies.html>) as the reports related to environment and social concerns are published on the website. The stakeholder comments received for the project activity have been detailed in section 6 of the PD. The concerned reports related to EIA and the actions completed for the stakeholder consultation have also been provided on the website. CL 03.5-1 had been raised in this regard and has been resolved.

Finding	CL 03.5-1
Classification	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding (DOE)	It is not clear from the description provided in section 6 of the PD what were the comments raised by the stakeholders during the stakeholder consultations and the outcome of such consultations. Also, mechanisms for on-going communication have not been provided.
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	<p>A clarification regarding the main issues that were raised and how they were resolved was added to the PD.</p> <p>As described in section 6, the mechanisms for on-going communication were established in the "Public Disclosure and Consultation Plan" (provided to validation team and will be sent again with version 2 of the PD) that was published in 2008. The plan provides the framework for consultation during three distinguish stages: pre construction, during construction, and during operation.</p> <p>The ongoing efforts are managed by the CSR personal who's responsible for stakeholder's engagement and contributions to the local communities. The project website is used regularly to make the monitoring reports available to stakeholders (http://www.aesgeoenergy.com/site/Studies.html).</p> <p>Additional clarification was added to the PD.</p>
DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The comments raised during the stakeholder consultation have been provided in section 6 of the PD. The responses to the comments have also been provided. For on-going communication the CSR personnel get engaged with the stakeholders and the project website is

	used to share relevant documents and studies in the project activity.
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed) <input checked="" type="checkbox"/> The finding is closed

4 VALIDATION CONCLUSION

The Project Participant “AES Geo Energy OOD” has commissioned the Carbon Check (Pty) Ltd. to perform an independent validation of the VCS Project Activity “Saint Nikola Wind Farm” in Bulgaria. This report summarises the findings of the validation of the project, performed on the basis of VCS criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The validation process was performed on the basis of all guidance and criteria as provided in VCS Standard version 3.4/B01/, VCS Program Guide version 3.5/B05/, VCS Validation and Verification Manual version 3.1/B03/ and Registration & Issuance Process version 3.5/B04/.

The project activity provides the information in PD/01/ as required by VCS Standard /B01/ and Validation and Verification Manual /B03/ and in Carbon Check’s opinion meets the requirements of the applied baseline and monitoring methodology, ACM0002/B07/ and is likely to achieve the estimated emission reductions. The validation has been performed using a risk-based approach, as described above.

Carbon Check (Pty) Ltd concludes the validation with a positive opinion that the VCS Project Activity “Saint Nikola Wind Farm” in Bulgaria, as described in the PD (version 04, dated 17/09/2014) /01/, meets all applicable VCS requirements, including those specified in the Project Standard, relevant methodologies, tools and guidelines.

The selected baseline and monitoring methodology (ACM0002, Version 14) is applicable to the project and correctly applied. Carbon Check (Pty) Ltd therefore requests the registration of the project as a VCS project activity with UNFCCC.

APPENDIX 1.1: REFERENCE DOCUMENTS

Ref	Document
/01/	Project Description titled: 1. Saint Nikola Wind Farm Version 01 dated 09/02/2014 2. Saint Nikola Wind Farm Version 02 dated 05/05/2014 3. Saint Nikola Wind Farm Version 03 dated 27/07/2014 4. Saint Nikola Wind Farm Version 04 dated 17/09/2014 5. Saint Nikola Wind Farm Version 05 dated 18/10/2014
/02/	ER sheet corresponding to: 1. /01-1/ 2. /01-2/ 3. /01-3/ 4. /01-4/ 5. /01-5/
/03/	Power Purchase Agreement 1. NEK - PPA Annex1 dated 10/04/2009
/04/	Technical Details of the Wind Farm: 1. Turbine details - DNV – Type Certificate dated 04/02/2009 2. Ministry of Regional Development and Public Works - Permit of Use – Total capacity dated 22/12/2009 3. SNWF Site layout drawing with geographical coordinates.
/05/	Environmental Impact Assessment 1. EIA report October – November 2006 2. Ministry of Environment and Waters EIA approval dated 20/03/2007 3. AES Geo Energy Supplementary Information Report June 2008
/06/	Energy Generation records, November 2012 onwards Electricity sales Invoice – Jan 2013, June 2013, November 2013 Certificates of Energy Origin – April 2013, August 2013, November 2013
/07/	Law on energy from renewable sources dated 03/05/2011
/08/	Bulgarian Emission factor Baseline study of Emission factor
/09/	Saint Nikola Wind Farm Organizational Chart
/10/	Investment Analysis: 1. Benchmark: State Commission for Energy and Water Regulation Resolution no P -113 of 15/03/2010 2. AES Geo Energy 2012 Audited Financial Statements 3. Corporate Income Tax Act: State Gazette No. 105/22.12.2006, in force as of 01.01.2007 4. Deloitte: International Tax – Bulgaria Highlights 5. AES Geo Energy: Shareholder agreement dated 29/07/2008 (CONFIDENTIAL) 6. Exchange Rate: http://bnb.bg/AboutUs/AUAboutBNB/AUMission/index.htm?toLang= EN 7. Tariff rates: RES Law of 30.03.2011 8. Bulgaria State Commission For Energy And Water Regulatory: Decision of 14/09/2012 9. Annual Indexation: http://www.tradingeconomics.com/bulgaria/forecast
/11/	Investment Analysis spreadsheet

/12/	Barrier: 1. Declined Liquidation Damage claims November 2012 2. Newspaper articles about the Electricity System Operator 3. NEK letters from ESO dated 06/08/2012 4. Access fee letters sent to ESO (Elektroenergien sistemen operator) EAD dated 10/10/2012, 26/06/2013, 11/10/2013
/13/	Common Practice Analysis: 1. http://bgwea.org.server14.host.bg/English/Installed_Wind_in_Bulgaria_EN.html 2. http://www.thewindpower.net/windfarms_list_en.php
/14/	Ministry of Environment and Water, Bulgaria (Climate Change Policy Directorate) letter dated 19/09/2014

APPENDIX 1.2: BACKGROUND DOCUMENTS

Ref	Document
/B01/	VCS Standard (v3.4)
/B02/	VCS Program Guide (v3.5)
/B03/	VCS Validation and Verification Manual version 3.1
/B04/	Registration & Issuance Process (v3.5)
/B05/	VCS Programme Definitions version 3.5
/B06/	VCS PD template version 3.2
/B07/	Applied baseline and monitoring methodology, ACM0002, version 14
/B08/	Ministry of Economy and Energy, Bulgaria http://www.mi.government.bg/en/themes-c186.html
/B09/	Emission Factor for the Bulgarian grid: http://www3.moew.government.bg/files/file/Climate/Climate_Change_Policy_Directorate/IET_M/Joint_Implementation/JI_documents/Baseline_CEF_Summary.pdf http://www.moew.government.bg/?show=top&cid=357
/B10/	Tool for the demonstration and assessment of additionality, Version 07.0.0, EB 70 Annex 8
/B11/	Combined tool to identify the baseline scenario and demonstrate additionality, Version 05.0.0, EB 70 Annex 9
/B12/	Guidelines on common practice, Version 02.0, EB 69 Annex 8
/B13/	Tool to calculate the emission factor for an electricity system , version 04.0.0, EB 75 Annex 15
/B14/	http://www.aesgeoenergy.com/site/Studies.html
/B15/	CDM Executive Board: EB62 Annex 05 “Guidelines on the assessment of investment analysis” version 05 of 15/07/2011
/B16/	http://ieconomics.com/bulgaria-inflation-rate-forecast
/B17/	Guidelines for objective demonstration and assessment of barriers, EB 50 Annex 13, version 01

APPENDIX 2: ABBREVIATION

AAU	Assigned Amount Unit
BE	Baseline Emissions
CAR	Corrective Action Request
CC	Cross Check
CCL	Carbon Check (Pty) Ltd
CDM	Clean Development Mechanism
CER(s)	Certified Emission Reduction(s)
CL	Clarification Request
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
DR	Document Review
DNA	Designated National Authority
EIA	Environmental Impact assessment
ER	Emission Reductions
ESO	Elektroenergien systemen operator EAD
FAR	Forward Action Request
GHG(s)	Greenhouse gas(es)
GWP	Global Warming Potential
I	Interview or any follow up action
IPCC	Intergovernmental Panel on Climate Change
LE	Leakage Emission
LSC	Local Stakeholder Consultation
MoV	Means of Verification
MP	Monitoring Plan
N/A	Not Applicable
NEK	Natsionalna Elektricheska Kompania EAD (National Electric Company)
NGO	Non-governmental Organization
ODA	Official Development Assistance
PD	Project Description
PE	Project Emission
PP(s)	Project Proponent(s)
PPA	Power Purchase Agreement
Ref.	Document Reference
SS(s)	Sectoral Scope(s)
TA	Technical Area
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Voluntary Carbon Standard
VCU	Verified Carbon Unit
VER(s)	Verified Emission Reductions
VVB	Validation/Verification Body
VVM	Validation and Verification Manual (VCS)

APPENDIX 3: CERTIFICATES OF COMPETENCE



Carbon Check (Pty) Ltd

Anubhav Dimri

is hereby certified as a qualified

Assessor
Lead Assessor
Technical Expert
Technical Reviewer

In the following Technical Areas
1.2: 3.1: 13.1

with Carbon Check (Pty) Ltd, under the regulations of the UNFCCC and Carbon Check's qualification criteria .

Approval date: 08 September 2014

Technical Executive
Mr Amit Anand

Chief Executive Officer
Mr Adam Simcock

The above competence is valid for one year from the date of approval and is subject to review as per changes in CCL and UNFCCC requirements and procedures.



Carbon Check (Pty) Ltd

Fco. Javier Vallejo Drehs

is hereby certified as a qualified

Assessor
Lead Assessor
Technical Expert
Technical Reviewer

In the following Technical Areas
1.1, 1.2, 13.1, 14.1, 15.1

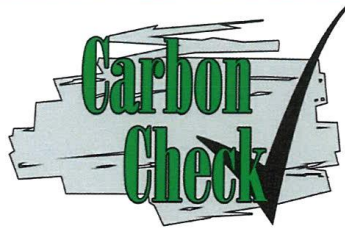
with Carbon Check (Pty) Ltd, under the regulations of the UNFCCC and Carbon Check's qualification criteria .

Revision date: 18 April 2014

Technical Executive
Mr Amit Anand

Chief Executive Officer
Mr Adam Simcock

The above competence is valid for one year from the date of approval and is subject to review as per changes in CCL and UNFCCC requirements and procedures.



Carbon Check (Pty) Ltd

Amit Anand

is hereby certified as a qualified

Assessor
Lead Assessor
Technical Reviewer
Technical Expert for Technical Area
1.2; 13.1

with Carbon Check (Pty) Ltd, under the regulations of the UNFCCC and Carbon Check's qualification criteria .

Approval date: 15 November 2013

Technical Executive
Mr Vikash Kumar Singh

Executive Director
Mr Priyesh Ramlall

The above competence is valid for one year from the date of approval and is subject to review as per changes in CCL and UNFCCC requirements and procedures.