

VALIDATION REPORT OF “DENIZLI WIND POWER PROJECT, TURKEY”



RINA SERVICES S.P.A.

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Summary:

RINA Services S.p.A. (RINA), commissioned by Korda Enerji Uretim Pazarlama İthalat ve İhracat A.S., has performed the validation of the project activity “Denizli Wind Power Project, Turkey” in Turkey, with regard to the relevant requirements for CDM and VCS activities.

The objective of the Validation is to have an independent evaluation of a project activity by a designated operational entity against the requirements of the VCS Version 3.7 and GHG program applied, on the basis of the project design document. The validation scope is to review the VCS PD against the UNFCCC criteria for CDM and VCS Version 3.7 Requirements.

Validation was conducted using RINA procedures in line with the requirements specified in the CDM M&P, the latest version of the CDM Validation and Verification Standard, and relevant decisions of the COP/MOP and the CDM EB and applying standard auditing techniques. The validation consisted of desk review, on-site assessment and the resolution of outstanding issues and the issuance of the final validation report.

The verification shall ensure that reported emission reductions are complete and accurate in accordance with applicable VCS Version 3.7 requirements, which refer to CDM rules, in order to be certified.

In conclusion, it is RINA's opinion that the project activity “Denizli Wind Power Project, Turkey” in Turkey, as described in the VCS-PD version 06 of 13/10/2021, meets all relevant requirements for VCS activities and all relevant host Party criteria and correctly applies the baseline and monitoring methodology “ACM0002: Grid-connected electricity generation from renewable sources”, version 19.0 of 31/08/2018.

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1 INTRODUCTION

Korda Enerji Uretim Pazarlama Ithalat ve Ihracat A.S. has commissioned RINA to carry out the validation of the grouped project “Denizli Wind Power Project, Turkey” project in Turkey.

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

1.1 Objective

The objective of the Validation is to have an independent evaluation of a project activity by a designated operational entity against the requirements of the VCS Version 3.7 and GHG program applied, on the basis of the project design document. In particular, the project's baseline, monitoring plan, and the project's compliance with relevant VCS Version 3.7 requirements, GHG program requirements and host Party criteria 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 Voluntary Carbon Units (VCUs).

1.2 Scope and Criteria

The validation scope is to review the VCS PD against the UNFCCC criteria for CDM and VCS Version 3.7 Requirements.

UNFCCC criteria for CDM refer to Article 12 of the Kyoto Protocol, the CDM modalities and procedures, the procedures for registration of programme of activity as a single CDM and the subsequent decisions by the CDM Executive Board.

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

1.3 Level of Assurance

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

In line with VCS Standard and as per 14064-3:2006 para A.2.3.2, a reasonable level of assurance is defined for the validation of the project activity. The technical review was performed by a technical reviewer(s) qualified in accordance with RINA's qualification scheme VCS VER validation and verification. The validation team and the technical reviewers consist of the following personnel:

Role/Qualification	Last Name	First Name	Country
VCS Team Leader, VCS Validator, Technical Expert	Kiratli	Tugce	Turkey
Financial Expert	Milkov	Viktor	Bulgaria
Technical Reviewer	Liu	Huifeng	China

1.4 Summary Description of the Project

The purpose of the project activity is to install wind power plant with a total installed capacity of 66 MWe as per the Generation License /15/. The generated electricity will be fed to national grid. The project is within boundaries of Ege Region, Denizli Province of Turkey, located at near Demirli Village. The project qualifies as a large-scale CDM project activity.

2 VALIDATION PROCESS

2.1 Method and Criteria

Validation was conducted using RINA procedures in line with the VCS Version 3.7 requirements and the requirements specified in the CDM M&P, the latest version of the CDM Validation and Verification Standard, and relevant decisions of the COP/MOP and the CDM EB and applying standard auditing techniques.

The validation consisted of the following three phases:

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

2.2 Document Review

The VCS PD version 06 of 13/10/2021 /1/, in particular the applicability of the methodology, the baseline determination, the additionality of the project activity, the starting date of the project, the monitoring plan, the emission reduction calculations provided in the form of a spreadsheet, "CM_Denizli.v3.xlsx" /2/ were assessed as part of the validation.

The following table lists the documentation that was reviewed during the validation:

/1/	Life Enerji: VCS PD for "Denizli Wind Power Project, Turkey" in Turkey, version 01 of 06/07/2018 Life Enerji: VCS PD for "Denizli Wind Power Project, Turkey" in Turkey, version 02 of 19/02/2019 Life Enerji: VCS PD for "Denizli Wind Power Project, Turkey" in Turkey, version 03 of 30/04/2019 Life Enerji: VCS PD for "Denizli Wind Power Project, Turkey" in Turkey, version 04 of 05/07/2019 Life Enerji: VCS PD for "Denizli Wind Power Project, Turkey" in Turkey, version 06 of 13/10/2021
/2/	Life Enerji: Baseline Emission Factor "CM_Denizli.v1.xlsx" version 01, submitted on 10/07/2018 Life Enerji: Baseline Emission Factor "CM_Denizli.v2.xlsx" version 02, submitted on 03/12/2018 Life Enerji: Baseline Emission Factor "CM_Denizli.v3.xlsx" version 03, submitted on 19/01/2019
/3/	Life Enerji: Common Practice Spreadsheet "Common Practice_Denizli.xlsx" version 01, submitted on 11/07/2018 Life Enerji: Common Practice Spreadsheet "Common Practice_Denizli v2.xlsx" version 02, submitted on 31/12/2018

	Life Enerji: Common Practice Spreadsheet "Common Practice_Denizli v3.xlsx" version 03, submitted on 30/04/2019 Life Enerji: Common Practice Spreadsheet "Common Practice_Denizli v4.xlsx" version 04, submitted on 28/07/2019 Life Enerji: Common Practice Spreadsheet "Common Practice_Denizli WPP_13102021.xls" version 05, submitted on 13/10/2021
/4/	Life Enerji: Financial Calculation Spreadsheet "IRR_Denizli_05 06 2018.xlsx" version 01 of 05/06/2018 Life Enerji: Financial Calculation Spreadsheet "IRR_Denizli_19 02 2019.xlsx" version 02 of 19/02/2019 Life Enerji: Financial Calculation Spreadsheet "IRR_Denizli_30 04 2019.xlsx" version 03 of 30/04/2019
/5/	VCS Verified Carbon Standard: VCS Program Guide, VCS Version 03, v3.7 of 21/06/2017
/6/	VCS Verified Carbon Standard: VCS Standard, VCS Version 03, v3.7 of 21/06/2017
/7/	VCS Verified Carbon Standard: VCS Validation Report Template VCS Version 03, v3.4 of 19/10/2016
/8/	VCS Verified Carbon Standard: VCS Project Description Template VCS Version 03, v3.3 of 19/10/2016
/9/	VCS Verified Carbon Standard: VCS Validation and Verification Manual VCS Version 03, v3.3 of 19/10/2016
/10/	CDM Executive Board: Clean Development Mechanism Project Standard, version 01.0 of 03/03/2017
/11/	CDM Executive Board: Clean Development Mechanism Validation and Verification Standard, version 01.0 of 03/03/2017
/12/	CDM Executive Board: Baseline and Monitoring Methodology "ACM0002", "Grid-connected electricity generation from renewable sources", version 19.0 of 31/08/2018
/13/	CDM Executive Board: Methodological Tool "Tool to calculate the emission factor for an electricity system", version 07.0 of 31/08/2018
/14/	CDM Executive Board, Glossary of CDM terms, version 09.1 of 01/09/2017
/15/	Energy Market Regulatory Authority: Generation License numbered EU/3382-10/2050 of 18/08/2011
/16/	PPM Kirlilik Onleme ve Yonetimi Ltd. Sti.:Project Introduction File of "Denizli RES" of 07/07/2011
/17/	Ministry of Forestry And Water Management/General Directorate of Nature Conservation and National Parks: Ornithology Compliance Letter of 17/01/2014
/18/	Ornithology Report for "Denizli WPP", period of Autumn, December 2014
/19/	Siemens: Maintenance and Service Agreement of 14/03/2018
/20/	Siemens Wind Power Ruzgar Enerjisi A.S.: Engineering, Procurement and Construction Contract of 19/03/2018
/21/	UL International GmbH (DEWI): Site Related Wind Potential Analysis and Energy Yield Assessment of 23/10/2017
/22/	Ornithology Report for "Denizli WPP", period of Spring, July 2014
/23/	Denizli Governorship, Provincial Directorate of Environment and Urban Planning: EIA Not Required Certificate of 15/07/2011
/24/	Ecosystem Assessment Report of December 2013
/25/	Siemens: Notice To Proceed for Execution of Works of 23/03/2018

/26/	Energy Market Regulatory Authority: Electricity Market Law, No: 6446 of 14/03/2013
/27/	Energy Market Regulatory Authority: Renewable Energy Sources Law No:6094 of 29/12/2010
/28/	Energy Market Regulatory Authority: Environmental Law No: 2872 of 09/08/1983
/29/	Website: https://www.vcsprojectdatabase.org/#/home Argument: Verified Carbon Standard Registry Language: English, Retrieved on: 19/10/2018
/30/	CDM Executive Board: Methodological Tool “Tool for the demonstration and assessment of additionality”, version 07.0 of 23/11/2012
/31/	Intergovernmental Panel on Climate Change: 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2, Chapter 1, Table 1.4 “Default CO ₂ Emission Factors for Combustion”
/32/	The Ministry of Trade and Industry: Regulation of Metering and Testing of Metering Systems of 24/07/1994
/33/	Turkish Energy Market Regulatory Authority: Communiqué for Measurement Devices used in the Electricity Market of 22/03/2003
/34/	Korda Enerji: Photos of Sprinkler Irrigation Program during on Construction, submitted on 20/02/2019
/35/	Selin Lab: Precipitated Dust - Passive Tube Measurement and Soil Analysis of 08/06/2018
/36/	Selin Lab: Dust (PM10) Measurement of 30/05/2018
/37/	Selin Lab: Noise Measurement of 30/05/2018
/38/	UNFCCC Executive Board: “Request for clarification on use of approved methodology AM0005 for several projects in China”, submitted on 29/04/2019
/39/	Website: https://www.egm.gov.tr/tr-TR/Sayfalar/Enerji-Yatirimlari Argument: List of Energy Investments from 2003 to 2019 Language: Turkish, Retrieved on: 22/07/2019
/40/	CDM Executive Board: Methodological Tool: “Guidelines for reporting and validation of plant load factors”, version 01 of 17/07/2009
/41/	CDM Executive Board: CDM Tool 27: Investment analysis version 08.0 , valid from 01/11/2017.
/42/	LEFT BLANK INTENTIONALLY
/43/	LEFT BLANK INTENTIONALLY
/44/	Website: http://www.tcmb.gov.tr/kurlar/200708/31052010.html Argument: Central Bank of the Republic of Turkey, Exchange Rates Language: English, Retrieved on: 06/08/2019
/45/	Website: http://www.gib.gov.tr/fileadmin/user_upload/Yararli_Bilgiler/amortisman_oranlari2011.html Argument: Amortization rates Language: Turkish, Retrieved on: 06/08/2019
/46/	The Presidency of the Turkish Revenue Administration: General Communiqué on Tax Procedural Law, Depreciation Rate List, Official Gazette No: 28405, Enactment Date: 08/09/2012
/47/	Website: http://www.enerji.gov.tr/mevzuat/5346/5346_Sayili_Yenilenebilir_Enerji_Kaynaklarinin_E

	lektrik_Enerjisi_Uretimi_Amacli_Kullanimina_Iliskin_Kanun.pdf Argument: Feed-in tariff for electric energy generated by WPP Language: Turkish, Retrieved on 06/08/2019
/48/	Website: http://www.epdk.gov.tr/documents/elektrik/tarife/iletim/ELK_TARIFE_ILETIM_2360.doc Argument: Interconnection fees reported by Turkish energy authority (TEIAS) Language: Turkish & English, Retrieved on 06/08/2019
/49/	Website: http://www.epdk.gov.tr/index.php/4b360128-53aa-4174-8104-a6c10434ac9c Argument: Electricity tariffs – Turkey Language: Turkish, Retrieved on 06/08/2019
/50/	Website: http://www.kpmg.com/global/en/services/tax/tax-tools-and-resources/pages/corporate-tax-rates-table.aspx Argument: KPMG, Corporate tax rate in Turkey Language: English, Retrieved on: 06/08/2019
/51/	Website: http://www.teias.gov.tr/istatistik2010/front%20page%202010-%C3%A7i%C3%A7ek%20kitap/maliyet(67-73)/70.xls Argument: TEIAS grid losses Language: Turkish, Retrieved on: 06/08/2019
/52/	Website: https://www.moodys.com/research/Moodys-changes-outlook-on-Turkeys-Baa3-government-bond-rating-to--PR_296615 Argument: Country ratings Language: English, Retrieved on: 06/08/2019
/53/	Website: http://eud.teias.gov.tr/ITUM_IletimTarifeleri.asp Argument: TEIAS annual usage fees Language: Turkish, Retrieved on: 06/08/2019
/54/	KfW IPEX Bank GmbH (dated 03/08/2018) Loan Agreement
/55/	EBRD Facility Supplement Agreement - dated 10/08/2018 (Loan Agreement additional contract - dated 13/07/2018)
/56/	CDM Executive Board, 'Tool to determine the remaining lifetime of equipment', ver.01, from 16 Oct 2009
/57/	Energy Market Regulatory Authority: Occupational Health and Safety Regulation No:6331 of 30/6/2012
/58/	Website: https://documents1.worldbank.org/curated/en/799701498842988254/pdf/ICR00004069-06192017.pdf Argument: World Bank Report-equity IRR benchmarks for RES projects in Turkey-p.40 Language: English; Retrieved on 08.11.2021

2.3 Interviews

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

	Date	Name and Role	Organization	Topic
/a/	02/08/2018	İklim SAHİN <i>Carbon Consultant</i>	Life Enerji	Description of the project activity
/b/	02/08/2018	Kaan BOLAT <i>Carbon Consultant</i>	Life Enerji	Baseline and Additionality Eligibility Criteria

/c/	02/08/2018	Yasin BILMEZ <i>Carbon Responsible (OHS Specialist)</i>	Korda Enerji	Emission reductions calculations Monitoring plan and monitoring arrangements
/d/	02/08/2018	Cengiz DEDEOLUK <i>Mukhtar</i>	Atakoy Village	Positive and negative impacts of the project activity Roads of the village
/e/	02/08/2018	Emre TANRIVERDI <i>Environmental Engineer</i>	Golden Cevre Danismanlik	Contact details of the project proponents Local employment

2.4 Site Inspections

On 02/08/2018, RINA visited project site located at Babadag District within boundaries of Denizli Province to resolve questions and issues identified during the document review and to perform interviews with relevant stakeholders in the host country.

Representatives of project owner (Korda Enerji Uretim Pazarlama Ithalat ve Ihracat A.S.) and carbon consultant (Life İklim ve Enerji Ltd. Sti.) were interviewed about the applicability of the methodology, eligibility criteria, baseline scenario, and project boundary.

During on site visit the validation team had interviewed with mukhtar of Atakoy Village and participated in the meeting where Golden environmental consultancy provided general information to stakeholders. In the meeting, Positive and negative impacts of the project activity, roads of the village, contact details of the project proponents and local employment were discussed. They have no complaints about the project activity and no negative feedback received.

2.5 Resolution of Findings

The objective of this phase of the validation is to resolve any outstanding issues, which need to be clarified for RINA's positive conclusion on the project design.

To guarantee transparency a validation protocol has been customized for the project. The protocol shows in a transparent manner the requirements, means of validation and the results from validating the identified criteria. The validation protocol consists of three tables; the different columns in these tables are described in the figure below (see Figure 1). The completed validation protocol is enclosed in Appendix A to this report.

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

- The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions.
- The VCS Version 3.7 requirements have not been met.
- There is a risk that the emission reductions cannot be monitored or calculated.

A clarification request (CR) is raised if information is insufficient or not clear enough to determine whether the applicable VCS Version 3.7 requirements have been met.

Figure 1 VCS Validation Protocol Tables

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

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

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

2.5.1 Forward Action Requests

No FAR is raised during the Validation.

3 VALIDATION FINDINGS

3.1 Project Details

The project is large-scale wind power plant, which has a total installed capacity of 66 MWe according to the Generation License /15/. The scope of the Denizli Wind Power Project, Turkey was outlined in Section 1.2 of this report as Type I, Renewable Energy Projects and Category: I.D, Grid connected renewable electricity generation.

The proposed project is a Greenfield project where no other power plant was located at the same site prior to the implementation of the project activity, which is confirmed during the on-site inspection. The project consists of 22 turbines each having 3 MW capacities. Total output of the project is 66 MWe as per the Generation License /15/.

Denizli Wind Power Project, Turkey has been implemented as a wind power plant in order to provide electricity to the Turkish National Grid. Due to its technology, it uses wind as fuel and provides energy without any GHG emission. Therefore, the project has not been implemented to generate GHG emissions for the purpose of their subsequent reduction, removal or destruction.

RINA was able to verify all the documented evidence listed above during the validation process and can confirm that data and considerations are complete and accurate.

RINA confirms that the description of the proposed VCS project activity, as contained in the VCS-PD sufficiently covers all relevant elements, is accurate and complete and that it provides the reader with a clear understanding of the nature of the proposed VCS project activity.

Project proponent

The project proponents and their responsibility are clearly defined under Section 1.3 of the VCS PD /1/. Korda Enerji Uretim Pazarlama Ithalat ve Ihracat A.S. is the project owner and developer and Life Iklim ve Enerji Ltd. Sti. is project consultant.

Project start date

The starting date of project activity is 13/09/2019 and it is in line with the VCS Standard /6/.

As per the VCS Standard /6/, the project start date is the date on which the project began generating GHG emission reductions or removals. The defined starting date is also in line with the ACM0002 /12/.

Project crediting period

The crediting period of the project activity is chosen as two times renewable credit periods of 10 years. The first crediting period starts from 13/09/2019-12/09/2029.

Project scale and estimated GHG emission reductions or removals

The estimated average annual emission reductions from the project are estimated to be on the average 105,622 tCO₂e per year over the selected 10 year crediting period.

Projects are categorized by size according to their estimated average annual emission reductions or removals according to VCS Standard /6/. Since the estimated annual emission reductions resulting from the project is less than 300,000 tCO₂e, the category of the project is defined as "Project" as per the VCS Standard /6/.

Project location

The project is within boundaries of Denizli Province of Turkey, located at Babadag County.

The coordinates of the project areas are given below:

Turbine No.	Latitude (N)	Longitude (E)
1	37° 47' 20.6232"	28° 46' 23.1853"
2	37° 47' 12.2208"	28° 47' 01.8137"
3	37° 47' 03.9120"	28° 47' 14.8588"
4	37° 47' 01.2264"	28° 47' 27.2621"
5	37° 47' 00.8664"	28° 47' 48.5921"
6	37° 46' 57.2304"	28° 48' 07.8802"
7	37° 46' 48.7524"	28° 48' 21.2862"
8	37° 46' 40.6128"	28° 48' 27.3013"
9	37° 46' 28.7040"	28° 48' 38.1288"
10	37° 46' 27.5160"	28° 49' 06.7112"
11	37° 46' 22.2780"	28° 49' 16.2287"
12	37° 46' 20.9208"	28° 49' 30.3374"
13	37° 46' 16.3164"	28° 49' 51.1912"
14	37° 46' 10.6140"	28° 50' 03.2709"
15	37° 46' 12.4608"	28° 50' 38.6291"
16	37° 46' 03.8532"	28° 50' 43.5239"
17	37° 45' 55.1196"	28° 50' 46.0450"
18	37° 45' 45.2808"	28° 50' 54.7502"
19	37° 45' 36.4392"	28° 51' 02.1310"
20	37° 45' 28.4112"	28° 51' 11.2480"
21	37° 45' 19.0440"	28° 51' 25.1119"
22	37° 45' 24.4980"	28° 51' 55.5690"

Project compliance with applicable laws, statutes and other regulatory frameworks

The relevant applicable local laws and regulations related to the project are given below:

- Electricity Market Law /26/
- Law on Utilization of Renewable Energy Resources for the Purpose of Generating Electrical Energy /27/
- Environmental Law /28/

- Occupational Health and Safety Regulation [/57/](#)

The project is in compliance with the given laws.

According to the Electricity Law, the generation license is required to operate in the energy market. The project activity already has a generation license as confirmed through the site visit [/15/](#).

Law on Utilization of Renewable Energy Resources for the Purpose of Generating Electrical Energy covers protection of renewable energy resource areas, certification of the electricity obtained from these sources and principles and procedures for the use of these resources. Denizli WPP is using wind as a source and called renewable energy project. The project activity generated electricity within the framework of this law.

In order to comply with the Environment Law, the project introduction file prepared by the 3rd party and has been sent to the Denizli Governorship. According to the decision of Denizli Governorate, EIA is not required certificate is given for the project activity.

Health and safety risks, emergency plans of the project have been considered by project developer both during construction and operation phases. Project developers identify the occupational health and safety measures to be taken as well as the protective gear or equipment to be used as a consequence of the risk assessment. Healthy and safe working conditions for the employers with internal procedures and protective equipment have been provided by project developer in this project.

Ownership and other programs

Right of use: The legal right to control and operate the project activity belong to Korda Enerji Uretim Pazarlama İthalat ve İhracat A.S. as confirmed through the Generation License [/15/](#).

Emissions trading programs and other binding limits: Net GHG emission reductions or removals generated by the project will not be used for compliance with an emissions trading program or for meeting binding limits on GHG emissions.

Participation under other GHG programs: The project has not been registered or seeking registration under other GHG programs as confirmed through the GS or VCS project activity [/29/](#).

Other forms of environmental credit sought or received: The project has not created another form of Environmental Credit.

Rejection by other GHG programs: The project has not been rejected by other GHG programs as confirmed through the GS and VCS project data base [/29/](#).

Additional information relevant to the project

Eligibility criteria for grouped projects:

The project is a grouped project.

Commercially sensitive information:

The financial analysis of the project investment as a whole and the values that have been discussed are considered as commercially sensitive information. In addition, the variables and

their explanations that are used for the benchmark calculations in investment analysis that are subject to extensive research and effort which are classified as commercially sensitive information for the project developer Korda Enerji Uretim Pazarlama İthalat ve İhracat A.S. Baseline Information is confidential as well. The information suggested above has been excluded from the public version of the project description document.

Any further information:

Not applicable.

3.2 Application of Methodology

3.2.1 Title and Reference

The CDM approved baseline and monitoring methodology ACM0002 version 19.0: “Grid-Connected Electricity Generation from Renewable Sources” [/12/](#) is correctly applied for the project activity.

3.2.2 Applicability

The project correctly applies the approved baseline and monitoring methodology “ACM0002”, “Grid-connected electricity generation from renewable sources”, version 19.0 of 31/08/2018 [/12/](#).

The proposed project activity meets the criteria defined in the baseline methodology as it ensures that:

- The project activity is the installation of a new wind power plant at a site where no renewable power plant was operated prior to the implementation of the project. The project is a Greenfield plant as validated through the site visit.
- The installed capacity of the project activity is 66 MWe that is larger than the 15 MW as validated through the Generation License [/15/](#).
- The proposed project activity does not involve switching from fossil fuels to renewable energy sources at the site of project activity as confirmed during the site visit.
- The proposed project activity does not involve combined heat and power (co-generation) systems as confirmed during on-site visit.
- The proposed project activity does not involve addition of renewable energy generation units at an existing renewable power generation facility.
- The proposed project activity does not involve biomass fired power plants.
- The project activity is not retrofit or replacement project. The project is a Greenfield plant as validated through the site visit.

The project activity applies the following methodological tools:

- Methodological Tool “Tool to calculate the emission factor for an electricity system”, version 06.0 of 01/11/2017 [/13/](#)
- Methodological Tool “Tool for the demonstration and assessment of additionality”, version 07.0 of 23/11/2012 [/30/](#)

and meets the defined criteria as it ensures that:

- Additionality tool is applicable to the project activity since Verified Carbon Standard VER project activities, of whatever scale and type, are required to use either UNFCCC-approved or a Verified Carbon Standard-approved additionality tool to demonstrate project additionality [/30/](#).

- Baseline tool is applicable to the project activity since the project activity supplies electricity to the national grid [/13/](#).

RINA hereby confirms that the selected baseline and monitoring methodology has been previously approved by the CDM Executive Board and allowed the use of VCS Board, and is applicable to the Project, which complies with all the applicability conditions therein and the selected version is valid at the time of submission of the proposed project activity for registration. It is also confirmed that the methodology is correctly applied by comparing it with the actual text of the applicable version of the methodology.

3.2.3 Project Boundary

The project boundary clearly defined in accordance with the applied methodology, According to the approved baseline and monitoring methodology “ACM0002 [/12/](#)”, “Grid-connected electricity generation from renewable sources”, version 19.0 of 31/08/2018 the project boundary includes the project power plant and all power plants connected physically to the electricity system that the project is connected to.

Emissions sources included in the project boundary are shown in the table below:

	GHGs involved	Description
Baseline emissions	CO ₂	According to ACM0002, only CO ₂ emissions from electricity generation should be accounted for.
	CH ₄	Excluded according to methodology of ACM0002.
	N ₂ O	Excluded according to methodology of ACM0002.
	Other	The project activity does not emit any other emissions.
Project emissions	CO ₂	Excluded according to methodology of ACM0002.
	CH ₄	Excluded according to methodology of ACM0002.
	N ₂ O	Excluded according to methodology of ACM0002.
	Other	The project activity does not emit any other emissions.

By checking the information by the physical site, RINA can confirm that all the emission sources, gases have been included in the project boundary, and the description in the VCS PD is 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 the approved baseline methodology ACM0002 [/12/](#), the baseline scenario is “Electricity delivered to the grid by the project would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid”. Since the baseline is defined by the approved methodology, no further analysis is required as per the paragraph 94 of the VVS [/11/](#).

The approved baseline methodology “Grid connected renewable electricity generation” has been correctly applied to identify the most reasonable baseline scenario and the identified baseline scenario reasonably represents what would occur in the absence of the proposed VCS project activity.

3.2.5 Additionality

3.2.5.1. Choice of approach

For the demonstration of additionality the PP has used the “Tool for the demonstration and assessment of additionality”, ver. 07.0.0 /30/, choosing Investment Analysis, Option III: Benchmark analysis as appropriate for the project.

According to the PDD /1/ the proposed project generates financial and economic benefits other than carbon revenues so Option I: Simple cost analysis cannot be used.

The investment comparison analysis is also not applicable for the proposed project because the baseline scenario, providing the same annual electricity output by the Turkish National Grid, is not an investment project.

The PP has adopted Option III- benchmark analysis method based on the consideration of the equity IRR of the proposed project.

The Investment analysis has been performed according to the requirements of the “Tool 27: Investment Analysis” version 08.0 /41/, which could be verified by checking the spreadsheet provided by the project participant's /4/.

It could be verified that the cash flow calculation had the right structure, was complete, and was accurate.

All the formulas in the spreadsheet are readable, relevant cells are viewable and unprotected.

3.2.5.2. Benchmark selection

As stated above the Project Proponent used a benchmark calculated according to the requirements of the Tool for the Demonstration and Assessment of Additionality ver. 07.0.0 /30/ - Sub-step 2b: Option III. Apply benchmark analysis.

Benchmark rate is defined in line with “Tool 27: Investment Analysis” version 08.0 /41/ which suggests the applied benchmark shall be appropriate to the type of IRR calculated.

According to the Tool /41/ “Required/expected returns on equity are appropriate benchmarks for an equity IRR. Benchmarks supplied by relevant national authorities are also appropriate”.

Also, according to the Tool for the Demonstration and Assessment of Additionality ver. 07.0.0 /30/ benchmark can be derived from ‘Estimates of the cost of financing and required return on capital (e.g., commercial lending rates and guarantees required for the country and the type of project activity concerned), based on bankers views and private equity investors/funds.

Since Turkey is not listed in the Appendix of Tool27: Investment Analysis, ver. 08 /41/, similar countries having same credit rates around 19/03/2019 (investment decision taken date) are examined by PP and Georgia was determined as the similar country along with the relevant justification since the Georgia's Moody's credit rating was Ba2 which was same with that of Turkey. Based on that, Georgia's default value for equity IRR is 12.72% for Group 1 (the energy industries) at that time as indicated and the same benchmark value (12.72%) had been used by PP, previously.

However, since it has been determined by PP that more appropriate (country-specific) benchmark has been available in Turkey, the same has been taken into consideration by PP to obtain a more reliable benchmark during Verra project review stage.

The World Bank has issued a loan appraisal document for the private sector renewable energy and energy efficiency projects in Turkey, # ICR00004069, dated 19/07/2017 /58/ and in it the Bank recommends a threshold equity IRR benchmark for wind energy projects of 15.0 % (p. 40 of

the Report). The IRR in this case is considered “after taxes” because the financial data is assessed after the end of the financial year in Turkey.

As a “bankers view” the recommended by the World Bank expected equity IRR of a wind energy project completely satisfies the conditions set in Tool 27; Investment analysis /41/ and Tool for the Demonstration and Assessment of Additionality ver. 07.0.0 /30/ for deriving of the benchmark of the project.

Therefore, 15.0 % equity IRR is appropriate benchmark for the project activity and also additionality demonstration.

3.2.5.3. Choice of financial indicators

The PP has identified the equity IRR as the most suitable financial indicator for the project.

The equity IRR of 7.74 % is calculated based on the input parameters that are the latest available at the time of the investment decision taking.

The IRR is calculated after taxes to match the type of the benchmark chosen.

According to the Tax Revenue Administration /45/ & /46/, depreciation period of electromechanical equipment such as wind turbines and transformers is 10 years.

The IRR is calculated for 25 years (+ 1 years construction period) which reflects the default technical lifetime of on-land wind turbines as defined by the ‘Tool to determine the remaining lifetime of equipment’ /56/.

The fair value of the equipment is added to the cash-flow at the last year of the investment analysis period as required by the Tool 27 /41/.

3.2.5.4. Input parameters

RINA compared the input parameters for the financial analysis included in the PDD /1/ and in the IRR spreadsheet /4/ and was able to confirm that the values applied are consistent with the values stated in the documents mentioned above.

All the data used for the investment analysis were available at the time of the investment decision. The PDD /1/ and the calculation spreadsheet /4/ presented the input parameters, as follows:

No	Input name	Input Value	Unit
1	Installed power	66	MWe
2	Operational lifetime (years)	25	years
4	Annual energy generation (net)	181,601	MWh
5	Electricity sales price	55.50	EUR/MWh
6	Income Tax Rate	20	%
7	Total Investment cost	76,687,362	EUR
8	Loan amount	57,607,238	EUR

9	Equity amount	19,080,124	EUR
10	Interest rate	7.50	%
11	Repayment period	13	years
12	Tenor	2	years
13	Annual Operating Cost	2,539,312	EUR/year
14	EUR/TL	4.8335	
	US\$/TL	3.9362	
	EUR/US\$	1.228	

Assessment:

The audit team assessed all input parameters and crosschecked them against the available references and public sources. All documents mentioned below have been available at the time of the Investment decision taking (19/03/2018). The results of the assessment are as follows

- 1. Installed capacity:** 66 MWe. The installed capacity stated in the VCS-PD was checked and confirmed by studying the following documents presented to the audit team:
 - Generation License numbered EU/3382-10/2050 of 18/08/2011 [/15/](#);
 - Siemens Wind Power Ruzgar Enerjisi A.S.: Engineering, Procurement and Construction Contract of 19/03/2018 [/20/](#);
 - UL International GmbH (DEWI): Site Related Wind Potential Analysis and Energy Yield Assessment of 23/10/2017 [/21/](#).

- 2. Net output:** 181,601 MWh/year. The Plant Load Factor (PLF) of the WPP was defined based on the energy assessment report, issued by UL International GmbH (DEWI) on 23/10/2017 [/21/](#). In this particular case, the PLF of the plant has been calculated as ~0.321 at probability of exceedance of p75 [/21/](#) which is adequate for such projects. The electric energy generation has been crosschecked and verified also with the Energy Generation License issued by EMRA [/15/](#). The transmission losses at 2.42% applied in order to calculate the net electricity generation has been confirmed by studying the website of the Turkish Electric Company /TEIAS/ [/51/](#).

The estimated output of net electric energy was verified and confirmed.

- 3. The price of electric energy,** set for the project at 55.50 EUR/MWh. In order to check this, the audit team studied local laws and tariffs in Turkey as follows:
 - Electricity Market Law No 6446 of 14/03/2013 [/26/](#);
 - Energy Market Regulatory Authority: Renewable Energy Sources Law No:6094 of 29/12/2010 [/27/](#);
 - Turkish Government website (feed-in tariff for electric energy generated by WPP) [/47/](#).

According to Turkish laws and regulations referred, this price is guaranteed and fixed.

The laws referred do not fix the period of guaranteed price. The influence of eventual price increase or decrease is regarded in the Sensitivity analysis of the VCS PD [/1/](#).

The price was confirmed.

- 4. Total investment: 76,687,362 EUR.** In order to crosscheck the amount of the Investment costs the audit team studied the following documents:
 - Siemens Wind Power Ruzgar Enerjisi A.S.: Engineering, Procurement and Construction Contract of 19/03/2018 [/20/](#);
 - PPM Kirlilik Onleme ve Yonetimi Ltd. Sti.:Project Introduction File of "Denizli RES" of 07/07/2011 [/16/](#);
 - Siemens: Notice To Proceed for Execution of Works of 23/03/2018 [/25/](#);
 - Interconnection fees reported by Turkish energy authority (TEIAS) [/48/](#).

The amount of the investment listed in the VCS PD was confirmed.

5. **O&M costs.** The costs are estimated in the IRR calculation spread sheet [/4/](#) at 2,539,312 EUR/year.

The O&M expenses have been stated in the Maintenance and Service Agreement signed with Siemens [/19/](#).

In order to crosscheck the additional values applied the audit team studied also the following document:

- TEIAS annual System usage fees [/53/](#);
- Financial Calculation Spreadsheet "IRR_Denizli_30 04 2019.xlsx" [/4/](#).

The O&M costs were verified and confirmed.

6. **Depreciation rate:** The rate is set at 10 years for the electromechanical equipment. In order to verify the values used the audit team studied the website of the Turkish Revenue Administration [/45/](#), [/46/](#).

The rate was confirmed.

7. **Loan parameters:** Loan amount – 57,607,238 EUR; Interest on loan 7.50%; Tenor – 13 years; Grace period – 2 years.

In order to verify the values used the audit team studied the following documents:

- Siemens Wind Power Ruzgar Enerjisi A.S.: Engineering, Procurement and Construction Contract of 19/03/2018 [/20/](#);

During the site visit the PP showed all loan documentation to the audit team. The amount and the terms of the loan have been confirmed as follows:

- KfW IPEX Bank GmbH (dated 03/08/2018) Loan Agreement - 57,058,939 \$ [/54/](#);
- EBRD Facility Supplement Agreement - dated 10/08/2018 (Loan Agreement additional contract - dated 13/07/2018) - 13,682,749 \$ [/55/](#).

8. **Corporate tax rate of 20%.** The value was verified and confirmed by visiting the website of KPMG [/50/](#).

9. **Currency exchange rates:** EUR/TL Rate – 4.8335; US\$/TL – 3.9362; EUR/US\$ - 1.228

The rates have been confirmed by visiting the website of the Turkish National Bank for the time of the investment decision taking (19/03/2018) [/44/](#).

All parameters checked were valid at 19/03/2018 which is the date of investment decision taking (EPC agreement signing date).

The audit team checked the relevant data and parameters and confirmed their correctness and justification.

The equity IRR calculation after taxation was provided in a spreadsheet [/4/](#). The calculation were verified and found to be correct by RINA as well as the assumptions used in the calculation were deemed to be correct. The equity IRR after taxes without VER revenues is 7.74%, which confirms that the proposed project activity in absence of the VER benefits and compared to the benchmark IRR of 15.0% is not financially attractive.

The investment analysis and sensitivity analysis result in the following:

Scope of Analysis	Equity IRR Calculated after taxes	Benchmark
Base Case	7.74%	15.0%

The above benchmark and accompanying sensitivity analyses reveal the fact that no alternative scenario can make the project pass the benchmark expectation. The equity IRR after taxes, even with an increase of 10% in the electricity generation/tariff, cannot exceed 15.0%.

The calculations in the spreadsheet /4/ were verified and found to be correct. The assumptions used in the calculations have been found to be correct too.

The benchmark and the equity IRR of the project are approved by the auditing team.

Based on the information verified, RINA was able to confirm that the input parameters used in the investment analysis are reasonable and adequately represent the economic situation of the project activity at the time of the investment decision taking.

3.2.5.5. Sensitivity analysis

The following parameters have been identified by the PP as relevant for a sensitivity analysis:

- Electricity selling price;
- Investment cost;
- Energy yield;
- Annual operating costs.

The range of variation of the main parameters is +/-10% which is reasonable for the project activity.

	IRR Sensitivity with electricity selling price		
Change in %	-10%	0%	10%
Equity IRR	4.93%	7.74%	10.63%
	IRR Sensitivity with Investment cost		
Change in %	-10%	0%	10%
Equity IRR	7.69%	7.74%	7.76%
	IRR Sensitivity with the energy yield		
Change in %	-10%	0%	10%
Equity IRR	4.93%	7.74%	10.63%
	IRR Sensitivity with Annual Operating cost		
Change in %	-10%	0%	10%
Equity IRR	9.12%	7.74%	6.24%

1. **Electricity tariff.** The tariff should increase with about 20% in order to reach the benchmark of 15.0%. The PP stated that considering the fact that the tariffs in Turkey are fixed, it is unrealistic to expect such an increase of the feed-in-tariff.

2. **Investment costs.** The sensitivity in the investment has been applied to the investment items which represent equal or above 20% of the total investment amount. The variations do not allow reaching the benchmark at 10% decrease of the investment costs. In order to hit the benchmark the Investment costs have to be decreased by more than 20% which is unlikely for such investment projects that always undertake thorough prefeasibility assessment. Since the electromechanical equipment solely form a major part of the investment costs and no change is expected in agreed purchasing price of the equipment, a change greater than 10% in overall investment cost is highly unlikely to occur.
3. **Energy yield.** It is based on the Annual net energy generation which is defined in the Generation license /15/ and the Energy Yield Report /21/ after thorough assessment of wind power potential. The energy production is the main source of income and represents 100 % of the revenues (without revenue from selling VER). The energy yield being calculated at a conservative probability of exceedance of p75, it is very unlikely for the project to generate higher electric energy for a long period of time so the probability to reach the benchmark is very low. The PP has calculated that to hit the benchmark of 15.0% the revenues, respectively the energy generation has to increase with ~20% which is highly unlikely.
4. **Operational costs.** In order to hit the benchmark the O&M costs have to decrease with ~70% which is impossible. Since the wind turbines have already been specified and no change in installed capacity is expected due to the production license and contract with the supplier, no change more than 10% in annual operational and maintenance costs is likely to happen.

The final conclusion is that the PP has performed a thorough assessment of all possibilities for reaching and exceeding the benchmark and has demonstrated that this possibility is very low.

The audit team approves the abovementioned sensitivity analysis as well as the analysis of the possibilities of realisation of all assessed scenarios.

Common practice analysis

According to the methodological tool for the demonstration and assessment of additionality /30/, the common practice analysis /3/ have been conducted applying the following steps:

Step 1: The applicable output range is calculated as +/-50% of the capacity of the project activity in line with the tool. The project comprises an installed capacity of 66 MWe; therefore, the applicable output range is 33 MW to 99 MW.

Step 2: (a) The applicable geographical area for the proposed project covers the entire host country (Turkey) as the default area specified in the guideline. (b) The project activity a green-field wind power project and uses measure "Switch of technology with or without change of energy source including energy efficiency improvement as well as use of renewable energies". (c) The project use wind as an energy source, than all wind power plants are filtered. (d) Since all the power plants are produce electricity, all projects are candidates for this step. (e) The capacity range of the projects is within the applicable capacity range from 33 MW to 66 MW. (f) There are 67 projects started commercial operation before the start date of proposed activity.

Step 3: Within the projects identified in Step 2, identify those that are neither registered CDM project activities, project activities submitted for registration, nor project activities undergoing validation. Note their number N_{all} .

The total number of N_{all} is calculated as 2 in the "Common Practice_Denizli WPP_13102021.xls" common practice calculation spreadsheet /3/ which could be confirmed through the Energy Investments /39/.

Step 4: Within similar projects identified in Step 3, identify those that apply technologies that are different to the technology applied in the proposed project activity. Note their number N_{diff} .

The power plants apply technologies different that the technology applied in the proposed project activity is identified as N_{diff} . Thus, N_{diff} is calculated as 1.

Step 5: 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. The $N_{all}-N_{diff}$ is calculated as 1, which are not greater than 3. Therefore, the project is not common practice.

According to the Methodological Tool: Common Practice, it is defined that “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.”

In line with the paragraph above, the date which is based on for the common practice analysis has been determined as;

Global stakeholder consultation publication date (listing on the VERRA project pipeline) of Denizli WPP is 27/06/2019 and project start date of Denizli WPP is 13/09/2019. Because of the global stakeholder consultation publication date (listing on the VERRA project pipeline) is earlier than the project start date, the Common Practice analysis of the project is based on the Global stakeholder consultation publication date (listing on the VERRA project pipeline) which is 27/06/2019

According to the “Global stakeholder consultation publication date (listing on the VERRA project pipeline, dated 27/06/2019)”, the Common Practice document has been now revised for the project activity.

RINA can confirm that all data, rationales, assumptions, justifications and documentation provided by the project participants to support demonstration of additionality are credible and reliable.

By assessing, the evidences presented and cross-checking the information contained in, RINA considers the reasoning for the proposed project additionality demonstration is credible and reasonable i.e. the proposed project has the ability to reduce anthropogenic emissions of greenhouse gases by sources below those that would have occurred in the absence of the registered VCS project activity.

As a result of its investigations, RINA can confirm that the relevant tool is followed step-by-step and that the project is not a common practice in Turkey.

3.2.6 Quantification of GHG Emission Reductions and Removals

The emission reduction ER_y by the proposed project activity during the crediting period is the difference between baseline emissions (BE_y), project emission (PE_y).

Baseline Emissions

The baseline emissions (BE_y in tCO₂e) are the product of the baseline emission factor ($EF_{grid,CM,y}$ in tCO₂e) times the net electricity supplied by the project activity to the grid ($EG_{facility,y}$ in MWh). The baseline emission factor for the project activity is determined ex-ante as a combined margin (CM) consisting of the combination of operating margin (OM) and build margin (BM) according the methodological “Tool to calculate the emission factor for an electricity system”. The relevant electric power system is identified in accordance with the tool [/13/](#).

The OM is calculated to be tCO₂e/MWh 0.6601 and the BM is calculated to be tCO₂e/MWh 0.2900. The combined grid emission factor of the grid is determined ex-ante for the ten years crediting period and it has been calculated as weighted average (wOM = 0.75 and wBM = 0.25) of the operating margin emission factor and the build margin emission factor. The combined margin emission factor is calculated as 0.5676 tCO₂e/MWh and the net electricity supplied by the project activity to the grid is estimated to be 186,100 MWh/year.

The annual baseline emissions generated by the project activity is calculated to be 105,622 tCO₂e/year.

Project Emissions

Project emissions are neglected since the project activity is a wind power plant in line with the ACM0002 [/12/](#).

Leakage

Since energy generating equipment is not transferred from or to another activity as validated engineering, procurement and construction agreement [/20/](#).

Emission Reductions

The emission reductions (ER_y) are calculated as the following formula:

$$ER_y = BE_y - PE_y - LE_y$$

$$ER_y = BE_y$$

$$= 105,622 \text{ tCO}_2\text{e/year}$$

The annual emission reductions generated by the project activity is calculated to be 105,622 tCO₂e/year over the selected renewable 10 years crediting period.

The estimation of the emission reductions can be replicated using the data and parameter values provided in the VCS-PD [/1/](#) and supporting file [/2/](#). The data sources mentioned have been verified by RINA and confirms that the GHG emissions reduction calculation is complete and transparent, and the data accuracy has been verified.

3.2.7 Methodology Deviations

There are no deviations about the methodology of the project activity.

3.2.8 Monitoring Plan

The approved baseline and monitoring methodology “ACM0002”, “Grid-connected electricity generation from renewable sources”, version 19.0 of 31/08/2018 [/12/](#) has been applied.

The monitoring plan is in accordance with the monitoring methodology; the monitoring plan will give opportunity for real measurement of achieved emission reductions.

RINA has checked all the parameters presented in the monitoring plan against the requirements of the methodology; no deviations relevant to the project activity have been found in the plan.

RINA confirms that the monitoring arrangements described in the monitoring plan are feasible within the project design, and the means of implementation of the monitoring plan are sufficient to ensure the emission reductions achieved by/resulting from the proposed VCS project activity can be reported ex post and verified.

Parameters Determined Ex-ante

The ex-ante parameters that are mentioned in the methodology are included in the VCS PD and are provided in compliance with the methodology:

	Data / Parameter	Unit	Value applied	Assessment
/1/	Operating Margin of Turkey National Grid (OM)	tCO ₂ e/ MWh	0.6601	The data used to determine the OM emission factor of the grid is obtained from TEIAS Statistics. The validation team has confirmed that this is the most updated data at the time for submission for validation, which is considered as appropriate. The emission factors of fuels used in the calculations are based on IPCC default values at the lower limit of uncertainty at a 95% confidence interval as provided in table 1.4 of Chapter 1 of Volume 2 of the 2006 IPCC Guidelines on National GHG Inventories /31/, which is in line with the methodological tool, and considered as appropriate.
/2/	Build Margin of Turkey National Grid (BM)	tCO ₂ e/ MWh	0.2900	The data used to determine the BM emission factor of the grid is obtained from TEIAS Statistics. The validation team has confirmed that this is the most updated data at the time for submission for validation, which is considered as appropriate. The net energy conversion efficiencies of power unit are taken from Tool to calculate the emission factor for an electricity system /13/, which is deemed reasonable. The emission factors of fuels used in the calculations are based on IPCC default values at the lower limit of uncertainty at a 95% confidence interval as provided in table 1.4 of Chapter 1 of Volume 2 of the 2006 IPCC Guidelines on National GHG Inventories /31/, which is in line with the methodological tool, and considered as appropriate.
/3/	Combined Margin of Turkey National Grid (CM)	tCO ₂ e/ MWh	0.5676	The emission factor is calculated as a combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the tool /13/.

Parameters Monitored Ex-post

The ex-post parameters that are mentioned in the methodology are included in the VCS-PD and are provided in compliance with the methodology, and they will be monitored during the crediting period:

	Parameter	Description/Assessment
/1/	EG _{facility,y} (MWh/y)	Quantity of net electricity generation supplied by the project plant to the grid in year y. The quantity of electricity supplied by the project plants/units to the grid and the quantity of electricity delivered to the project plant/unit from the grid will be measured. Net generation will be calculated via subtracting energy delivered by the project activity to the grid for internal consumption from electricity fed to the grid. The electricity generation of the plant will be crosschecked with PMUM records that are the basis of sold electricity. The net electricity will be measured continuously and recorded at least monthly. Net electricity generation will be measured by two meters. The meters will comply with EMRA (Energy Market Regulatory Authority) regulation /32/. The electricity meters have not been purchased yet. However, the accuracy class of the meters will be in line with the “Communiqué for Measurement Devices used in the Electricity Market” /33/ as explained in the VCS-PD /1/. The maintenance and calibration of meters are under TEIAS responsibility. If any major discrepancy occurs between the two meters, TEIAS performs necessary calibration.

Management System and Quality Assurance

The electricity generation and consumption is measured in line with the TEIAS rules and requirements [/33/](#). The generated electricity fed to grid will be measured by two meters, which will be sealed by TEIAS. Two meters will be installed, the main meter is used for monitoring, and the secondary meter is used for quality control and back-up purposes.

The electricity generation supplied to the grid and electricity consumption from the grid is stored by PMUM on the web site. The Project owner has a password to access this data on the web site. As indicated in the VCS-PD [/1/](#), the monitored data will be kept for two years after the end of the crediting period or the last issuance of VERs in line with the methodology [/12/](#).

3.3 Non-Permanence Risk Analysis

There is not any risk for the project activity.

4 SAFEGUARDS

4.1 No Net Harm

During the site visit, it is concluded that there are no negative impacts of the project activity to the socio-environment topics. Denizli Wind Power Project, Turkey has minimum impact on terrestrial fauna, aquatic life, and takes precautionary approach in regard to environmental challenges.

4.2 Environmental Impact

The project activity is environmentally licensed by the competent authority. “Ministry of Environment and Urban Planning of Denizli Province” have issued a Certificate of EIA Not Required Certificate dated 15/07/2011 [/23/](#). The environmental impact of the project activity is evaluated in the VCS-PD [/1/](#).

The project is not required any analysis of environment impacts according to the national regulations /28/.

4.3 Local Stakeholder Consultation

Local Stakeholder Consultation meeting was held by the project proponent on 31/07/2019 in Atakoy Village. The mukhtar and the stakeholders were concerned only about the road situation used by trucks. The project proponent and the environmental consultant (from Golden Cevre Danismanlik) were stated that all necessary precautions would be taken in this regard. This was added to the monitoring parameters for controlling during on verification period. In addition to that, stakeholders have access to all the information of the public relationships expert, project manager and assistant general director of the company. They will be able to communicate with them in case of any problems.

4.4 Public Comments

There are no public comments.

5 VALIDATION CONCLUSION

RINA Services Spa (RINA) has performed validation of the project activity “Denizli Wind Power Project, Turkey” in Turkey, with regard to the relevant requirements for VCS Version 3.7 activities.

The review of the project design document and the subsequent follow-up interviews have provided RINA with sufficient evidence to determine the fulfillment of the stated criteria.

The project correctly applies the approved baseline and monitoring methodology “ACM0002”, “Grid-connected electricity generation from renewable sources”, version 19.0 of 31/08/2018.

By generating renewable energy from wind plant, the project results in reduction of CO₂ emissions that are real measurable and giving long-term benefits to the mitigation of climate change. It is demonstrated that the project is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity.

The total emission reductions from the “Denizli Wind Power Project, Turkey” are estimated to be on average 105,622 tCO₂e per year over the selected 10 years renewable crediting period. The emission reduction forecast has been checked and it is deemed likely that the stated amount is achieved given that the underlying assumptions do not change.

The monitoring plan provides for the monitoring of the project’s emission reductions and of the sustainable development indicators. The monitoring arrangements described in the monitoring plan are feasible within the project design and it is RINA’s opinion that the project participants are able to implement the monitoring plan.

In conclusion, it is RINA’s opinion that the project activity “Denizli Wind Power Project, Turkey” in Turkey, as described in the VCS PD version 06 of 13/10/2021, meets all relevant UNFCCC and VCS Version 3.7 requirements for the VCS VER and all relevant host Party criteria and correctly applies the baseline and monitoring methodology “ACM0002”, “Grid-connected electricity generation from renewable sources”, version 19.0 of 31/08/2018.

APPENDIX A

VALIDATION PROTOCOL

TABLE 1 REQUIREMENTS CHECK LIST

Checklist Question		Reference	MoV ¹	Comments	Conclusion
A Description of Project Activity					
A.1 Title of the project activity					
A.1.1.	Does the used project title clearly enable the reader to identify the unique VCS activity? Are there an indication of a revision number and the date of the revision?	/1/	DR	The title of the project activity is defined as "Denizli Wind Power Project, Turkey" in the VCS PD /1/ , which is enable the reader to identify the unique VCS activity. However, the project activity could not be found in the mer-markit or VCS database. Please provide the required resources to verify the standard membership. The version and completion date of report are available at cover page of VCS PD version 01 of 06/07/2018 /1/ .	CR-1 OK
A.1.2	Does the project comply with the applicable requirements for completing the VCS PD (latest version available)?	/1/ /6/ /8/	DR	The VCS PD version 01 /1/ complies with the applicable requirements for completing the VCS PD defined in the VCS Standard /6/ and VCS Project Description Template, version v3.3 of 19/10/2016 /8/ .	OK
A.1.3	Does the VCS PD comply with the template available (latest version)?	/1/ /8/	DR	The VCS PD version 01 /1/ complies with the latest version of VCS Project Description Template, version 3.3 /8/ .	OK
A.2 Description of the proposed project activity					
A.2.1	Does the VCS PD contain an accurate description of the project activity and provide the reader with a clear understanding of the precise nature of the project activity and the technical aspects of its implementation? How was the design of the project assessed?	/1/ /2/	DR, CC, I	The issues given in below should be discussed: - The capacity of the turbines are defined as 3 MWp in the VCS-PD. Please clarify "p" in the capacity. - Technical specifications of the turbines are not in line with the data sheet found in the web. Please provide the turbine agreement for confirming the technical specifications. - Review all footnote numbers and content in the VCS-PD. - The reference links and dates should be checked for the Laws given in Section 1.11. All the dates and the	CAR-1 OK

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

Checklist Question		Reference	MoV ¹	Comments	Conclusion
				number of gazette should be revised. - Please check Appendix 1. The given information is not correct (such as registration number and country). - Please remove Sustainable Development Goals given in Section 3.1 of the VCS-PD. - The capacity of the project activity is not given correctly in Section 2.2 Applicability of methodology. Please check.	
A.2.2	Does the project activity involve alteration of existing installations? If yes, have the differences between pre-project and post-project activity been clearly described in the VCS PD?	/1/	DR, I	The project activity does not involve any alteration of existing installation.	OK
A.2.3	Is all information provided consistent and in compliance with the actual situation or planning?	/1/	DR, I	The VCS PD is consistent and in compliance with the actual situation. As per the VCS PD version 01 /1/ , the project is a wind power plant with a capacity of 66 MWe.	OK
A.3 Project proponent					
A.3.1	Does VCS PD provide contact information and roles/responsibilities for the project proponent(s)?	/1/	DR	The project proponents are clearly defined under Section 1.3 of the VCS PD /1/ . Korda Enerji Uretim Pazarlama Ithalat ve Ihracat A.S. is the project owner and Life Enerji is project developer. However, the project proponent is given incorrectly in Section 1.3 in the VCS-PD. Please check.	CR-2 OK
A.4 Technical description of the project					
A.4.1	Does the information provided on the location of the project activity allow for a clear identification of the site(s)?	/1/ /15/	DR, CC	The project is within boundaries of Denizli Province of Turkey at Babadag County as confirmed during on site visit. However, the information about the location is not given correctly in the VCS-PD. Please check the location of the project activity. The coordinates of the turbines in the project activity, which are presented in Section 1.9 of VCS PD /1/, could not be verified with the Generation License /15/ since no reference web-site is given.	CR-3 OK

Checklist Question		Reference	MoV ¹	Comments	Conclusion
A.4.2	Is the category(ies) of the project activity correctly identified?	/1/	DR	The category of the project activity is not identified clearly under Section 1.2 of the VCS PD version /1/ . The project activity is a wind power plant and sectoral scope is “1 Energy Industries-Renewable Energy”; however, it is not discussed. In addition, in Section 1.2, the title of the methodology is given wrongly. Please correct.	~~CR-4~~ OK
A.4.4	What is the expected operational lifetime of the project activity? Is it reasonable?	/1/ /15/	DR, CC	The expected lifetime of the project activity is defined as 25 years which are not in line with the generation license /15/ . The meaning of “Lifetime of the project” and “lifetime of the equipment” are different. Please check the definition given in Section 1.6 (The lifetime of the project is 25 years).	~~CR-5~~ OK
A.5 Public funding					
A.5.1	Does the information on public funding provided conform to the actual situation or planning as presented by the PPs?	/1/	DR, I	The explanation about the public funding is given clearly in the section 1.12.3 of the VCD-PD.	OK
A.5.2	If public funding from Parties included in Annex I is used for the project activity, have these Parties provided an affirmation that such funding does not result in a diversion of official development assistance, is separate from, and is not counted towards the financial obligations of these Parties?	/1/	DR	The project activity is a voluntary emission reduction project, which is developed under VCS; hence, the transfer of technology from any Annex I Party is not applicable.	OK
B. Application of a baseline and monitoring methodology					
B.1 Methodology applied					
B.1.1	Does the project activity apply an approved methodology and the correct version thereof?	/1/ /12/	DR	The proposed project activity applies “ACM0002 Grid-connected electricity generation from renewable sources, version 19.0 of 31/08/2018” /12/ as indicated in the VCS PD /1/ . The applied methodology is approved by CDM; however, the applied version is not the latest version at the time of VCS PD submission.	~~CR-6~~ OK
B.1.2	Is there any specific guidance, including the methodological tools provided by EB and has these guidance been applied?	/1/ /13/	DR	The methodological tool “Tool to calculate the emission factor for an electricity system, version 04.0 of 04/10/2013” /13/ is applied. However, the applied tool is not the latest version at the time of VCS-PD submission. Please also check all the tool's versions. Some of them	~~CR-7~~ OK

Checklist Question		Reference	MoV ¹	Comments			Conclusion
				are not up to date.			
B.1.3	How was it validated that the project activity complies with the applicability criteria?	/1/	DR, I	Applicability of ACM0002			~~CR-8~~ OK
				Applicability criteria	Project activity	Criteria is met?	
				This methodology is applicable to grid-connected renewable energy power generation project activities that: (a) Install a Greenfield power plant; (b) Involve a capacity addition to (an) existing plant(s); (c) Involve a retrofit of (an) existing operating plants/units; (d) Involve a rehabilitation of (an) existing plant(s)/unit(s); or (e) Involve a replacement of (an) existing plant(s)/unit(s).	The project activity consists of installation of Greenfield power plant at a site where no renewable power plant was operated prior to the implementation of the project activity.	OK	
				The project activity may include renewable energy power plant/unit of one of the following types: hydro power plant/unit with or without reservoir, wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave	The project activity is the installation of 33 numbers of wind turbine generators (WTGs).	OK	

Checklist Question		Reference	MoV ¹	Comments			Conclusion
				power plant/unit or tidal power plant/unit.			
				In the case of capacity additions, retrofits, rehabilitations or replacements (except for wind, solar, wave or tidal power capacity addition projects the existing plant/unit 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, retrofit, or rehabilitation of the plant/unit has been undertaken between the start of this minimum historical reference period and the implementation of the project activity.	The project activity does not involve capacity additions, retrofits, rehabilitations or replacements. Hence this criterion is not applicable to the project activity.	OK	
				In case of hydro power plants, one of the following conditions shall apply: (a) The project activity is implemented in existing single or multiple reservoirs, with no change in the volume of	The project activity is not a hydro power plant. Hence this applicability criterion is not relevant to the project activity.	OK	

Checklist Question	Reference	MoV ¹	Comments	Conclusion
			any of the reservoirs; or (b) The project activity is implemented in existing single or multiple reservoirs, where the volume of the reservoir(s) is increased and the power density calculated using equation (3), is greater than 4 W/m²; or (c) The project activity results in new single or multiple reservoirs and the power density, calculated using equation (3), is greater than 4 W/m²; or (d) The project activity is an integrated hydro power project involving multiple reservoirs, where the power density for any of the reservoirs, calculated using equation (3), is lower than or equal to 4 W/m², all of the following conditions shall apply: (i) The power density calculated using the total installed capacity of the integrated project, as per equation (4), is greater than 4 W/m²; (ii) Water flow between reservoirs is not used by any other hydropower	

Checklist Question	Reference	MoV ¹	Comments	Conclusion
			unit which is not a part of the project activity; (iii) Installed capacity of the power plant(s) with power density lower than or equal to 4 W/m² shall be: a. Lower than or equal to 15 MW; and b. Less than 10 per cent of the total installed capacity of integrated hydro power project. In the case of integrated hydro power projects, project proponent shall: (a) Demonstrate that water flow from upstream power plants/units spill directly to the downstream reservoir and that collectively constitute to the generation capacity of the integrated hydro power project; or (b) Provide an analysis of the water balance covering the water fed to power units, with all possible combinations of reservoirs and without the construction of reservoirs. The purpose of water balance is to demonstrate the requirement of specific combination of	

Checklist Question		Reference	MoV ¹	Comments			Conclusion
				reservoirs constructed under CDM project activity for the optimization of power output. This demonstration has to be carried out in the specific scenario of water availability in different seasons to optimize the water flow at the inlet of power units. Therefore this water balance will take into account seasonal flows from river, tributaries (if any), and rainfall for minimum five years prior to implementation of CDM project activity.			
				The methodology is not applicable to: (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; (b) Biomass fired power plants/units	Project activity does not involve: • Switching from fossil fuels to renewable energy sources at the site of the project activity. • Biomass fired plants. Hence this criterion is not applicable.	OK	
				In the case of retrofits, rehabilitations, replacements, or	The project is not a retrofit, rehabilitations,	OK	

Checklist Question		Reference	MoV ¹	Comments			Conclusion
				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, i.e. 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”.	replacements or capacity addition; hence this applicability criterion is not relevant.		
				In addition, the applicability conditions included in the tools referred to above apply.	Applicability conditions of the applied tool are not justified	CR 8	
B.1.4	Is the selected baseline one of the baseline(s) described in the methodology and this hence confirms the applicability of the methodology?	/1/ /12/	DR	A benchmark approach has been applied to establish the baseline scenario and demonstrate additionality as per the applied methodology ACM0002 /12/ .			OK
B.2 Project boundary							
B.2.1	Is the project boundary are clearly defined and in accordance with the applied methodology?	/1/ /12/	DR	The project boundary clearly defined in accordance with the applied methodology, ACM0002 /12/ . The values and years given in Table 3: Low and High Demand Projection Scenarios for Ten Years Period is not in line with the provided calculation excel sheet. Please check.			CR-9 OK
B.2.2	What are the project's system boundaries (components and facilities used to mitigate GHGs)?	/1/ /15/	DR	The project system boundary consists of 22 wind turbines, which will be connected physically to the grid. It could be confirmed through the Generation License /15/ . The information given about the grid in Section 1.1 is not correct. Please check.			CR-10 OK

Checklist Question		Reference	MoV ¹	Comments	Conclusion
B.2.3	Which sources are identified for the project? Does the identified project boundary cover all possible sources linked to the project activity?	/1/ /12/	DR	Project boundary is identified the PDD /1/ for baseline and project activity. The source of baseline emission CO ₂ emissions are included in baseline calculation since fossil fuels fired for electricity generation. CH ₄ and N ₂ O emissions are neglected regarding to the methodology. Project emissions are neglected regarding to the methodology since the project activity is a wind power plant.	OK
B.2.4	In case of grid connected electricity project: is the relevant grid correctly identified in accordance with the latest version of tool to calculate emission factor of electricity system and the underlying methodology?	/1/ /13/	DR	The geographic and system boundaries for the relevant electricity grid can be clearly identified and information on the characteristics of the grid is available in the VCS PD /1/ in accordance with the "Tool to calculate emission factor of electricity system" /13/ .	OK
B.2.5	Does the project involve other emissions sources not foreseen by the methodologies that may question the applicability of the methodology? Do these sources contribute by more than 1% to the estimated emission reductions of the project?	/1/ /12/	DR	It is explained in the VCS-PD that a backup power generator will be installed in power plant. In case, emissions from back-up power generator exceed 1% of the total emission reductions, they will be accounted as project emissions in each verification period.	OK
B.3 Identification of the Baseline Scenario					
B.3.1	Which baseline scenarios have been identified? Is the list of the baseline scenarios complete? Does the VCS PD follow the steps to determine the baseline scenario required by the methodology/tool?	/1/ /12/	DR	A benchmark approach is applied to establish the baseline scenario and demonstrate additionality as per the ACM0002 /12/ .	OK
B.3.2	How have the other baseline scenarios been eliminated in order to determine the baseline?	/1/ /12/	DR	A benchmark approach is applied to establish the baseline scenario and demonstrate additionality as per the applied methodology /12/ . Therefore, it is not applicable.	OK
B.3.3	What is the baseline scenario? Is the determination of the baseline scenario in accordance with the guidance in the methodology?	/1/ /12/	DR	The baseline scenario for the project activity is already defined as 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 per the applied methodology, ACM0002 /12/ .	OK

Checklist Question		Reference	MoV ¹	Comments	Conclusion
B.3.4	Has the baseline scenario been determined using conservative assumptions? Does the baseline scenario sufficiently take into account relevant national and/or sectoral policies (E+ / E-), macro-economic trends and political aspirations?	/1/ /12/	DR	Please refer to Section B.3.1 of this validation protocol.	OK
B.4 Additionality					
B.4.1	What tool does the project use to assess additionality? Is this in line with the methodology?	/1/ /12/ /30/	DR	It is mentioned in the VCS PD /1/ that, "Tool for the demonstration and assessment of additionality, version 07.0.0" /30/ is used for additionality and it is in line with the methodology ACM0002 /12/ .	OK
B.4.2	What is the project additionality mainly based on?	/1/	DR	The project additionality is mainly based on investment analysis.	OK
B.4.3 Prior consideration					
B.4.3.1	What is the starting date of the proposed project activity? Is it in accordance with the VCS Standard?	/1/ /6/	DR, I	The start date of the crediting period is given as 01/01/2019. However, during on site visit the project proponent specified that the estimated start date of the project activity is September 2019. Please correct. The construction is not finished when the site visit was performed. As per the VCS Standard /6/ , the project start date is the date on which the project began generating GHG emission reductions or removals. However, project start date is determined as EPC Agreement sign date. Please correct.	~~CR-11~~ OK
B.4.3.2	Is the project activity a new project activity or existing project?	/1/	DR, I	The project activity is a new project activity as confirmed during the site visit.	OK
B.4.3.3	Does the timeline of the project confirm that continuous actions in parallel with the implementation were taken to secure project status? Please specify the gap between the documented evidences.	/1/	DR	Please also add all the necessary dates to the implementation schedule.	~~CR-12~~ OK
B.4.4 Investment analysis					
B.4.4.1	What is the analysis method used to determine whether the proposed project activity is not (a) the most economically or	/1/	DR	The up-to-date IRR excel sheet is not provided to the validation team.	~~CAR-2~~ OK

Checklist Question		Reference	MoV ¹	Comments	Conclusion
	financially attractive; or (b) economically or financially feasible, without the revenue from the sale of certified emission reductions?				
B.4.4.2	What the financial indicator is used?	/1/	DR	The up-to-date IRR excel sheet is not provided to the validation team.	CAR-2 OK
B.4.4.3	If a benchmark is used, is it ensured that it is selected in accordance with the requirements of the EB guidelines and it represents standard returns in the market? Is the benchmark suitable for the type of financial indicator presented? Is it ensured the any risk premiums applied in determining the benchmark reflect the risks associated with the project type or activity?	/1/	DR	The up-to-date IRR excel sheet is not provided to the validation team.	CAR-2 OK
B.4.4.4	Is the investment analysis carried out in accordance with specific guidance from EB? Is the investment analysis complete and accurate? Is the investment analysis provided in a spreadsheet version? Are all the formulas used readable and all relevant cells be viewable and unprotected?	/1/	DR	The up-to-date IRR excel sheet is not provided to the validation team.	CAR-2 OK
B.4.4.5	Cross-check the parameters used in the financial analysis against third party or publicly available sources (all parameters used as input values shall be cross-checked and assessed).	/1/	DR	The up-to-date IRR excel sheet is not provided to the validation team.	CAR-2 OK
B.4.4.6	Are the input values used in the investment analysis valid and applicable at the time of the investment decision taken by the PP?	/1/	DR	The up-to-date IRR excel sheet is not provided to the validation team.	CAR-2 OK
B.4.4.7	Where applicable, the PFL has been defined ex-ante according to the applicable EB	/1/	DR	The up-to-date IRR excel sheet is not provided to the validation team.	CAR-2 OK

Checklist Question		Reference	MoV ¹	Comments	Conclusion
	guideline?				
B.4.4.8	Does the time period of the investment analysis reflect the expected operation of the underlying project activity (technical lifetime)?	/1/	DR	The up-to-date IRR excel sheet is not provided to the validation team.	CAR-2 OK
B.4.4.9	Does the fair value of the project activity assets is included at the end of the assessment period as a cash flow in the final year? Is the fair value calculated in accordance with local accounting regulations where available or international best practice?	/1/	DR	The up-to-date IRR excel sheet is not provided to the validation team.	CAR-2 OK
B.4.4.10	Does the income tax calculation take depreciation into account? Is the depreciation year in accordance with normal accounting practice in the Host Country	/1/	DR	The up-to-date IRR excel sheet is not provided to the validation team.	CAR-2 OK
B.4.4.11	Sensitivity analysis: have the key parameters contributing to more than 20% of the revenue/costs during operating or implementation been identified?	/1/	DR	The up-to-date IRR excel sheet is not provided to the validation team.	CAR-2 OK
B.4.4.12	Sensitivity analysis: is the range of variations is reasonable in the project activity? The main parameters can be changed for the different project category.	/1/	DR	The up-to-date IRR excel sheet is not provided to the validation team.	CAR-2 OK
B.4.4.13	Have the key parameters been varied to reach the benchmark and the likelihood of this happening been justified to be small?	/1/	DR	The up-to-date IRR excel sheet is not provided to the validation team.	CAR-2 OK
B.4.5 Barrier analysis					
B.4.5.1	Are the barriers identified complimentary to a potential investment analysis?	/1/ /12/	DR	The investment barrier is applied.	OK
B.4.5.2	How were the investment barriers assessed to be real?	/1/ /12/	DR	Please refer to Section B.4.5.1 of this validation protocol.	OK
B.4.5.3	How were the technological barriers assessed to be real?	/1/ /12/	DR	Please refer to Section B.4.5.1 of this validation protocol.	OK
B.4.5.4	How were the other barriers assessed to be	/1/ /12/	DR	Please refer to Section B.4.5.1 of this validation protocol.	OK

Checklist Question		Reference	MoV ¹	Comments	Conclusion
	real?				
B.4.5.5	Barriers due to prevailing practice (First of its kind): does the project apply measures currently covered in the framework (fuel and feedstock switch, switch of technology with or without change of energy source, methane destruction, methane formation avoidance)?	/1/ /12/	DR	Please refer to Section B.4.5.1 of this validation protocol.	OK
B.4.5.6	Barriers due to prevailing practice (First of its kind): do the technologies deliver the same output and differ by at least of energy source/fuel, feed stock, size of installation?	/1/ /12/	DR	Please refer to Section B.4.5.1 of this validation protocol.	OK
B.4.5.7	Barriers due to prevailing practice (First of its kind): does the applicable geographical area is in compliance with the definition as per the EB guideline?	/1/ /12/	DR	Please refer to Section B.4.5.1 of this validation protocol.	OK
B.4.5.8	Is the project activity prevented by the identified barriers and at least one of the possible alternatives to the project activity is feasible under the same circumstances?	/1/ /12/	DR	Please refer to Section B.4.5.1 of this validation protocol.	OK
B.4.5.9	How the VCS can alleviate the identified barriers?	/1/ /12/	DR	Please refer to Section B.4.5.1 of this validation protocol.	OK
B.4.6 Common practice analysis					
B.4.6.1	Does the project apply measures currently covered in the framework (fuel and feedstock switch, switch of technology with or without change of energy source, methane destruction, methane formation avoidance)?	/1/ /3/ /12/	DR	Please check the common practice tool. More current revision is available. In addition, access to the site from the link provided, should be updated. It is better to verify all data with the help of filtering. Please also check the total capacity given for the calculation.	~~CR-13~~ OK
B.4.6.2	Do the technologies deliver the same output and differ by at least of energy source/fuel, feed stock, size of installation, investment climate in the date of the investment decision, other features?	/1/ /3/ /12/	DR	Please refer to Section B.4.6.1 of this validation protocol.	OK
B.4.6.3	Does the applicable geographical area is in compliance with the definition as per the EB guideline?	/1/ /3/ /12/	DR	Please refer to Section B.4.6.1 of this validation protocol.	OK

Checklist Question		Reference	MoV ¹	Comments	Conclusion
B.4.6.4	How many similar non-CDM-projects exist in the region within the scope?	/1/ /3/ /12/	DR	Please refer to Section B.4.6.1 of this validation protocol.	OK
B.4.6.5	What is the data source(s) used for the common practice analysis?	/1/ /3/ /12/	DR	Please refer to Section B.4.6.1 of this validation protocol.	OK
B.4.7 Conclusion					
B.4.7.1	What is the conclusion with regard to the additionality of the project activity?	/1/ /3/ /6/ /12/	DR	Please refer to Section B.4.3, B.4.4, B.4.5 and B.4.6 of this validation protocol.	~~CR-11~~ ~~CR-12~~ ~~CR-13~~ ~~CAR-2~~ OK
B.5 Algorithms and/or formulae used to determine emission reductions					
B.5.1 Baseline emissions					
B.5.1.1	Are the steps and equations applied to calculate the baseline emissions in compliance with the requirements of selected baseline and monitoring methodology?	/1/ /2/ /12/	DR, CC	The steps and equations applied to calculate the baseline emissions are in compliance with the requirements of ACM0002 /12/ .	OK
B.5.1.2	Have conservative assumptions been used when calculating the baseline emissions and are the uncertainty estimates properly addressed? Are all the values used in the VCS PD considered reasonable in the context of the proposed project activity?	/1/ /2/ /12/ /13/	DR, CC	An approved CDM methodology, ACM0002 /12/ and methodological tool "Tool to calculate the emission factor for an electricity system, version 05.0.0 /13/ " are applied. The official published data, TEIAS statistics of 2016 are used to determine the emission factor of the grid. The emission factor is calculated as a combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the tool /13/ . However, the estimated emission reduction given as 633,144 tCO ₂ is not in line with the calculation excel sheet. In addition, in "Table 1:Share of Low Cost Resource (LCR) Production 2012-2016 (Production in GWh)" given in the calculation excel sheet, the value "Share of LCRs" in the year 2016 is not correct.	~~CAR-3~~ OK
B.5.1.3	Baseline Emissions estimated	/1/ /2/ /12/ /13/	DR, CC	Please refer to Section B.5.1.3 of this validation protocol.	OK

Checklist Question		Reference	MoV ¹	Comments	Conclusion
B.5.2 Project emissions					
B.5.2.1	Are the steps and equations applied to calculate the project emissions in compliance with the requirements of selected baseline and monitoring methodology? Are all the values used in the VCS PD considered reasonable in the context of the proposed project activity?	/1/ /12/	DR. CC	Project emissions are neglected since the project activity is a wind power plant in line with the ACM0002 /12/. However, the values are not written in correct column (they were written in baseline emissions not project emissions), please check.	~~CR-14~~ OK
B.5.2.2	Have conservative assumptions been used when calculating the project emissions and are the uncertainty estimates properly addressed?	/1/ /12/	DR. CC	Project emissions are neglected since the project activity is a wind power plant in line with the ACM0002 /12/.	OK
B.5.2.3	Project emissions estimated	/1/ /12/	DR. CC	Project emissions are neglected since the project activity is a wind power plant in line with the ACM0002 /12/.	OK
B.5.3 Leakage					
B.5.3.1	Are the steps and equations applied to calculate the leakage in compliance with the requirements of selected baseline and monitoring methodology? Are all the values used in the VCS PD considered reasonable in the context of the proposed project activity?	/1/ /12/ /20/	DR	The leakage emissions are neglected as per ACM0002 /12/ since energy generating equipment is not transferred from or to another activity as per the equipment agreement /20/.	OK
B.5.3.2	Have conservative assumptions been used when calculating the leakage and are the uncertainty estimates properly addressed?	/1/ /12/	DR	The leakage emissions are neglected as per ACM0002 /12/ since energy generating equipment is not transferred from or to another activity.	OK
B.5.3.3	Leakage estimated	/1/ /12/	DR	The leakage emissions are neglected as per ACM0002 /12/ since energy generating equipment is not transferred from or to another activity.	OK
B.5.4 Emission reductions					
B.5.4.1	Has the methodology been correctly applied to calculate the emission reductions and can this be replicated by the data provided in the VCS PD and supporting files to be submitted for registration?	/1/ /12/	DR, CC	During the first crediting period emission reduction is calculated as following equation according to the ACM0002 /12/: $ER_y = BE_y - PE_y - LE_y$ The project emission and leakage emissions are	OK

Checklist Question	Reference	MoV ¹	Comments	Conclusion
			identified as zero for the project activity. Therefore, emission reduction is equal to the baseline emission. The calculation of baseline emission reductions is carried out in a conservative manner providing documentation and references to data sources. An approved CDM methodology, ACM0002 /12/ and methodological tool “Tool to calculate the emission factor for an electricity system /13/” is applied. The official published data, TEIAS statistics, are used to determine the emission factor of the grid. The emission factor is calculated as a combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the tool. OM Calculation Option (a) simple OM is selected to calculate the operating margin (OM) emission factor of the grid as per the tool since the average share of electricity generation by low-cost/must-run plants for five most recent years is found to be less than 50%. The ex-ante option is selected for OM, from the years 2014 to 2016. BM Calculation The build margin (BM) emission factor calculation is in line with the latest version of methodological tool “Tool to calculate the emission factor for an electricity system /13/”. CM Calculation The combined Margin is calculated for Wind and solar power generation project activities: $w_{OM} = 0.75$ and $w_{BM} = 0.25$ for the first crediting period and for subsequent crediting periods. Therefore; OM: 0.6483 BM: 0.3234 CM: 0.5670	
B.5.4.2	Are all the assumptions and data used by the	/1/ /12/	DR, Please refer to Section B.5.1.2 of this protocol.	OK

Checklist Question		Reference	MoV ¹	Comments	Conclusion
	project participants listed in the VCS PD including their references and sources?		CC		
B.5.4.3	Is all the documentation used by the project participants as the basis for assumptions and source of data quoted and interpreted in the VCS PD?	/1/ /12/	DR, CC	Please refer to Section B.5.1.2 of this protocol.	OK
B.5.4.4	Emission Reductions estimated	/1/ /12/	DR, CC	Please refer to Section B.5.1.2 of this protocol.	OK
B.6 Monitoring plan					
B.6.1 Parameters ex-ante					
B.6.1.1	Does the monitoring plan contain the list of all parameters required by the approved methodology and by the applicable methodological tool?	/1/ /12/ /13/	DR, CC	The monitoring plan does not contain the list of all ex-ante parameters required by the approved methodology /12/ and the tool /13/ .	~~CR-15~~ OK
B.6.1.2	How were the parameters available at validation verified?	/1/ /12/ /13/	DR, CC	Please refer to Section B.6.1.2 of this protocol.	~~CR-15~~ OK
B.6.1.3	Which default data have been selected and applied?	/1/ /12/ /13/	DR, CC	Please refer to Section B.6.1.2 of this protocol.	~~CR-15~~ OK
B.6.1.4	Are all the values used in the VCS PD considered reasonable in the context of the proposed project activity?	/1/ /12/ /13/	DR, CC	Please refer to Section B.6.1.2 of this protocol.	~~CR-15~~ OK
B.6.2 Parameters ex-post					
B.6.2.1	Does the monitoring plan described in the VCS PD comply with the requirements of the methodology and the applicable methodological tool?	/1/ /12/ /13/	DR, CC	Please check the monitored parameter given in section 4.2. The name, description, value and frequency are not in line with the tool and the current situation.	~~CR-16~~ OK
B.6.2.2	Does the monitoring plan contain all necessary parameters and are they clearly described?	/1/ /12/ /13/	DR, CC	Please refer to Section B.6.2.1 of this protocol.	~~CR-16~~ OK
B.6.2.3	Is the measurement equipment described? Is the accuracy of the measurement equipment addressed and deemed appropriate? Are the	/1/	DR, CC	The monitoring equipment has not been purchased yet. The necessary explanations about the accuracy class and calibration frequency of the electricity meters is	~~CR-17~~ OK

Checklist Question		Reference	MoV ¹	Comments	Conclusion
	requirements for maintenance and calibration of measurement equipment described and deemed appropriate?			given in VCS-PD. Calibration frequency of the electricity meters is defined both 2 years and 10 years. Please correct. Two meters will be placed (one main and one reserve) at the project area. These meters will be sealed by TEIAS and intervention by project proponent is not possible. The accuracy of the measurement equipment is addressed in the PDD /1/ .	
B.6.2.4	Is the monitoring and recording frequency adequate for all monitoring parameters? Is it in line with the monitoring methodology?	/1/ /12/ /13/	DR, CC	Please refer to B.6.2.1 and B.6.2.3 of this report.	CR-16 OK
B.6.2.6	How has it been assessed that the monitoring arrangements described in the monitoring plan are feasible within the project design? Please confirm the ability of the project participants to implement the described monitoring plant.	/1/ /12/ /13/	DR, CC	Please refer to B.6.2.1 and B.6.2.3 of this report.	CR-16 OK
B.6.3 Management/Quality Assurance/Quality Control					
B.6.3.1	Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)?	/1/ /33/	DR	The electricity generation and consumption is measured in line with the TEIAS rules and requirements /33/ .	OK
B.6.3.2	Are the data management and quality assurance and quality control procedures sufficient to ensure that the emission reductions achieved by/resulting from the project can be reported ex post and verified?	/1/	DR, I	In the VCS PD the data management and quality assurance and quality control procedures are discussed clearly.	OK
B.6.3.3	Will all monitored data required for verification and issuance be kept for two years after the end of the crediting period or the last issuance of CERs, for this project activity, whichever occurs later?	/1/	DR	All data will be kept for at least two years after the end of the each crediting period as mentioned in the VCS PD /1/ .	OK
B.6.4 Monitoring of the VCS indicators of sustainable development					
B.6.4.1	Does the monitoring plan include the VCS indicators of sustainable development?	/1/	DR	According to the interviews with the stakeholders, monitoring parameters should be arranged; all positive parameters such as local employment should be	CAR-4 OK

Checklist Question		Reference	MoV ¹	Comments	Conclusion
				removed.	
B.6.4.2	Does the monitoring plan give the way (how, when, by who) of monitoring of each VCS indicator?	/1/	DR	Please refer to Section B.6.4.1 of this validation protocol.	CAR-4 OK
C.1 Crediting period					
C.1.1	What is the expected crediting starting date of the proposed project activity?	/1/ /6/	DR, I	The start date of the crediting period is given as 01/01/2019. However, during on site visit the project proponent specified that the estimated start date of the project activity is September 2019. Please correct.	CR-18 OK
C.1.2	What is the length of the crediting period? Is it clearly defined and reasonable?	/1/ /9/	DR	Crediting period is presented as “5-year crediting period” in Section 4.3 of the VCS-PD. Please correct. The crediting period is defined as 10 years in Section 1.6 of the VCS-PD. However, in project details (Section 1.1) the crediting period is defined as “first”. Please ensure that different information is removed.	CR-19 OK
D.1 Environmental impacts					
D.1.1	Has an analysis of the environment impacts of the project activity been undertaken? Is it clearly and sufficiently described in the VCS PD?	/1/ /23/	DR	Project Introduction File was prepared for EIA process in line with the domestic laws and regulations in Turkey. “EIA not Required Certificate given by Environment and Urban Ministry” /23/ was submitted to the validation team.	OK
D.1.2	Will the project create any adverse environmental effects? Are transboundary environmental impacts considered in the analysis?	/1/ /23/	DR	Please refer to Section D.1.1 of this validation protocol.	OK
D.1.3	Is the analysis of the environmental impacts required by the legislation of the host Country? If yes, has the EIA has been approved by local Government? Does the approval contain any conditions that need monitoring?	/1/ /23/	DR	Please refer to Section D.1.1 of this validation protocol.	OK
D.1.4	Is it the project in line with the current environmental legislation in the host Country?	/1/ /23/	DR	Please refer to Section D.1.1 of this validation protocol.	OK
D.1.5	Is the monitoring of sustainable development	/1/ /23/	DR	Please refer to Section D.1.1 of this validation protocol.	OK

Checklist Question		Reference	MoV ¹	Comments	Conclusion
	indicators/ environmental impacts warranted by legislation in the host country?				
D.1.6	Are the sustainable development indicators in line with stated national priorities in the host country?	/1/ /23/	DR	Please refer to Section D.1.1 of this validation protocol.	OK
E.1 Local stakeholder consultation					
E.1.1	Are the local stakeholders be invited by the PP prior to the publication of the VCS PD to the UNFCCC website?	/1/	DR	No information is given for "Stakeholder Consultation" and "Public Comments".	~~CR-20~~ OK
E.1.2	Are the stakeholders invited being considered as regards commenting the proposed project activity?	/1/	DR	Please refer to Section E.1.1 of this validation protocol.	~~CR-20~~ OK
E.1.3	Is the summary of the comments received from the stakeholders, provided in the VCS PD complete?	/1/	DR	Please refer to Section E.1.1 of this validation protocol.	~~CR-20~~ OK
E.1.4	Has due account been taken by the project participants of any stakeholder comments received?	/1/	DR	Please refer to Section E.1.1 of this validation protocol.	~~CR-20~~ OK
E.1.5	If a stakeholder consultation process is required by regulations/laws in the host Country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	/1/	DR	Please refer to Section E.1.1 of this validation protocol.	~~CR-20~~ OK

TABLE 2 RESOLUTION OF CORRECTIVE ACTION REQUESTS AND CLARIFICATION REQUESTS

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Verification conclusion
CAR 1 The issues given in below should be discussed: - The capacity of the turbines are defined as 3 MWp in the VCS-PD. Please clarify “p” in the capacity. - Technical specifications of the turbines are not in line with the data sheet found in the web. Please provide the turbine agreement for confirming the technical specifications. - Review all footnote numbers and content in the VCS-PD. - The reference links and dates should be checked for the Laws given in Section 1.11. All the dates and the number of gazette should be revised. - Please check Appendix 1. The given information is not correct (such as registration number and country). - Please remove Sustainable Development Goals given in Section 3.1 of the VCS-PD. - The capacity of the project activity is not given correctly in Section 2.2 Applicability of methodology. Please check.	A.2.1	- Capacity of the turbines is corrected as 3 MWe. - Due to the company’s confidentiality policy, turbine agreement is not shared. However, turbine technical specifications are now corrected and related data sheet is provided in the footnote. They are in line with the data sheet now. - Footnote numbers and their content is now reviewed and updated. - Link and dates are checked and relevant information is now corrected. - Information given in Appendix 1 is reviewed and now corrected. - Sustainable Development Goals are removed from Section 3.1. - Capacity of the project in Section 2.2. is corrected accordingly. <u>Response (30.04.2019):</u> - Footnote numbers and content are now checked. Due to the document provided to DOE has track change on, footnotes were seemed incorrect. Now, clean version of the PD is also shared with the DOE, and footnote numbers and content can be checked from clean version. - Appendix 1 is now checked and corrected, including contact person information.	<u>Review 1 (28/02/2019):</u> The issues given in below should be discussed: - The capacity of the turbines are now defined as 3 MWe in the VCS-PD. - Technical specifications of the turbines can now be confirmed with the data sheet and presented correctly in VCS-PD. - Review all footnote numbers and content in the VCS-PD. - The reference links and dates are now revised for the Laws given in Section 1.11. - Please check Appendix 1. The given information is not correct (such as Contact Person). - Sustainable Development Goals given in Section 3.1 of the VCS-PD is now removed. - The capacity of the project activity is now given correctly in Section 2.2 Applicability of methodology. <u>Hence, CAR 1 is not closed.</u> <u>Review 2 (14/06/2019):</u> The issues given in below should be discussed: - All footnote numbers and content are revised in the VCS-PD. - Appendix 1 is now revised. <u>Hence, CAR 1 is closed.</u>

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Verification conclusion
CAR 2 The up-to-date IRR excel sheet is not provided to the validation team.	B.4.4	IRR excel sheet is now shared with the validation team. <u>Response (30.04.2019):</u> - Guidelines on the assessment of investment analysis is now removed and CDM Tool 27: Investment analysis version 08.0 is now used which is valid from 01/11/2017. - According to DOE's request, since Turkey is not listed in the tool's appendix, similar countries having same credit rates around 19.03.2018 (investment decision taken date) are examined. Tool 27 states it made use of Moody's credit ratings. Moody's credit rating of Turkey on 7 March 2018 is Ba2 (https://countryeconomy.com/ratings/turkey). Moreover, Moody's credit rating for Georgia is Ba2 after 11 September 2017. (https://countryeconomy.com/ratings/georgia) When the reference given in tool which is updated in January 2019 is checked (http://pages.stern.nyu.edu/~adamodar/Neu_Home_Page/datafile/ctryprem.html), it can be still seen Georgia's Moody's credit is Ba2 as unchanged. In this sense, it can be confirmed that, Georgia's Moody's credit rate is Ba2 around 19.03.2018 (investment decision taken date). In the appendix of Tool 27: Investment analysis version 08.0, Georgia's default value for equity IRR is 12.72 for Group 1 (which includes energy industries). Consequently,	<u>Review 1 (09/04/2019):</u> The IRR calculation sheet is presented to the validation team. However, please kindly discuss the issues given below: "Guidelines on the assessment of investment analysis ²" version 5 is no longer valid. The PP should refer to CDM Tool 27: Investment analysis, valid from 01/11/2017. - According to the Methodological tool: Investment analysis, Version 08: "The applied benchmark shall be appropriate to the type of IRR calculated. Local commercial lending rates or WACC are appropriate benchmarks for a project IRR. Required/expected returns on equity are appropriate benchmarks for an equity IRR. Benchmarks supplied by relevant national authorities are also appropriate." The PP uses local lending rates as a benchmark, which is not appropriate for equity IRR comparison. Please see Tool 27: Appendix: Default values for equity IRR (Turkey is not listed but adequate value could be used based on countries with similar credit rating for February 2018, before the Investment decision date). - In Table FINANCIALS the interest rate is stated as 76.500% please correct. - In Table FINANCIALS please correct the date of investment decision taking.

² See, http://cdm.unfccc.int/Reference/Guidclarif/reg/reg_guid03.pdf

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Verification conclusion
		benchmark for Turkey can be taken as 12.72. 3. Interest rate is stated as 7.50% in Table FINANCIALS. If there are further matters on this issue, may you please clarify? 4. Investment decision taken date is 19.03.2018 which is the same date as EPC agreement. Construction start date is 23.03.2018 which is justified by “notice to proceed for execution of works” and is now shared with the DOE. Since investment decision taken date is 19.03.2018 and this approach is approved by the DOE, currency exchange rates are specified from Central Bank of the Republic of Turkey on 19.03.2018. If there are further matters on this issue, may you please clarify?	<u>Hence, CAR 2 is not closed.</u> <u>Review 2 (01/07/2019):</u> 1. The PP has used the Guidelines on the assessment of investment analysis is now removed and CDM Tool 27: Investment analysis version 08.0, valid from 01/11/2017, which is the latest version of the tool. 2. The PP has chosen a benchmark based on a default value recommended by the Guidelines for a country with the same Moody's credit rating which is an acceptable approach since Turkey is not included in the List of default equity IRR values. 3. The Interest rate is stated correctly as 7.50% in Table FINANCIALS in the VCS PD. 4. The Investment decision date is stated in all documents as 19/03/2018 (date of EPC agreement signing). All data used is relevant as per that time. <u>Hence, CAR 2 is closed.</u> During the review by VERRA the PP has changed the approach for definition of the benchmark. Previously, Georgia was determined as the similar country along with the relevant justification since the Georgia's Moody's credit rating had been Ba2 which had been the same with that of Turkey. Based on that, Georgia's default value for equity IRR is 12.72% for Group 1 (the energy industries) at that time as indicated and the

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Verification conclusion
			same benchmark value (12.72%) had been used by PP, Later, during VERRA review of the project the PP came into conclusion that more appropriate (country-specific) benchmark has been available in Turkey, the same has been taken into consideration by PP to obtain a more reliable benchmark during Verra project review stage. The World Bank has issued a loan appraisal document for the private sector renewable energy and energy efficiency projects in Turkey, # ICR00004069, dated 19/07/2017 and in it the Bank recommends a threshold equity IRR benchmark for wind energy projects of 15.0 % (p. 40 of the Report). As a “bankers view” the recommended by the World Bank expected equity IRR of a wind energy project completely satisfies the conditions set in Tool 27; Investment analysis and Tool for the Demonstration and Assessment of Additionality ver. 07.0.0 for deriving of the benchmark of the project. The auditing team assessed the new benchmark of 15.0 % and approved it as corresponding to the methodologies and

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Verification conclusion
			tools applied.
CAR 3 The estimated emission reduction given as 633,144 tCO ₂ is not in line with the calculation excel sheet. In addition, in "Table 1:Share of Low Cost Resource (LCR) Production 2012-2016 (Production in GWh)" given in the calculation excel sheet, the value "Share of LCRs" in the year 2016 is not correct.	B.5.1.2	- Estimated emission reduction is now corrected both in Excel and VCS-PD. -Emission reduction excel is updated with 2017 data and mentioned errors are now removed. <u>Response (30.04.2019):</u> Relevant link which states "in the absence of annual production data use of weights estimated using installed capacity in place of annual electricity generation is permitted" is now updated and reachable and relevant document is now shared with the DOE.	<u>Review 1 (28/02/2019):</u> The estimated emission reduction is now in line with the calculation excel sheet. In addition, in "Table 1:Share of Low Cost Resource (LCR) Production 2012-2016 (Production in GWh)" given in the calculation excel sheet, the value "Share of LCRs" in the year 2016 is now corrected. However, to confirm the BM calculation, the explained "CDM Executive Board approved deviation from the methodology AM005 for a similar situation" given as footnote 106 is not reachable. <u>Hence, CAR 3 is not closed.</u> <u>Review 2 (14/06/2019):</u> Footnote 49 is now reachable to confirm the BM calculation, <u>Hence, CAR 3 is closed.</u>
CAR 4 According to the interviews with the stakeholders, monitoring parameters should be arranged; all positive parameters such as local employment should be removed.	B.6.4	Section 5.1 and section 5.3 are now corrected accordingly. Positive parameters are removed and indicators are now defined clearly. <u>Response (30.04.2019):</u> According to VCS Standard (https://verra.org/wp-content/uploads/2018/03/VCS_Standard_v3.7.pdf), potential impacts of the project are summarized under Section 3.17 Safeguards. Under No Net Harm, it is just	<u>Review 1 (01/03/2019):</u> According to the VCS Standard, the project proponent shall identify potential negative environmental and socio-economic impacts, and shall take steps to mitigate them. Please revise mitigation measure part of the monitoring parameters. Please also re-evaluate the parameters that can be selected and add <i>negative impacts</i> of the project activity. <u>Hence, CAR 4 is not closed.</u>

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Verification conclusion
		stated that “the project proponent shall identify potential negative environmental and socio-economic impacts, and shall take steps to mitigate them”. Moreover, under Local Stakeholder Consultation Section, it is stated that “the project proponent shall conduct a local stakeholder consultation prior to validation as a way to inform the design of the project and maximize participation from stakeholders. Such consultations allow stakeholders to evaluate impacts, raise concerns about potential negative impacts and provide input on the project design. The project proponent shall establish mechanisms for ongoing communication with local stakeholders to allow stakeholders to raise concerns about potential negative impacts during project implementation. The project proponent shall take due account of all and any input received during the local stakeholder consultation and through ongoing communications, which means it will need to either update the project design or justify why updates are not appropriate. The project proponent shall demonstrate to the validation/verification body what action it has taken in respect of the local stakeholder consultation as part of validation, and in respect of ongoing communications as part of each subsequent verification”. VCS does not specify the potential negative environmental and socio-economic impacts in detail. VCS also does not require a comprehensive impact analysis.	<u>Review 2 (14/06/2019):</u> For wind power plants there are negative impacts envisaged so far. If you foresee that this project will not have any negative impact, an evidence should be provided about excavation, biodiversity, birds and expropriation. <u>Hence, CAR 4 is not closed.</u> <u>Review 3 (23/07/2019):</u> According to the interview with stakeholders and the reports examined, the parameters are found acceptable. <u>Hence, CAR 4 is closed.</u>

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Verification conclusion
		Furthermore, potential negative environmental and socio-economic impacts were discussed with stakeholders in the stakeholders meeting and there were not any negative comments in the site visit. These potential negative impacts were decided with the DOE throughout these stakeholder meetings. Lastly, these parameters were approved and adequate for numerous previous VCS wind power plant projects. Therefore, since all of these parameters are discussed and agreed on the site visit, there are no need to add additional parameters. These parameters are adequate for this project. <u>Response (05.07.2019):</u> Now, ecosystem report of the project is submitted to DOE. The conclusion part of the report (page 91) states that: Consequently, attention should be paid to the points highlighted in this report during and after construction and turbine installations; If the points highlighted in the text are taken care of during the operation phase: there will be no negative impact on bats, migratory birds and vertebrate fauna (page 65-68). Within the report, some parameters to be monitored are stated. These are: - 4 endemic plant species were identified in the project site. These species are <i>Centaurea cadmea</i> Boiss., <i>Picris olympica</i> Boiss., <i>Draba bruniifolia</i> Stev. subsp.	

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Verification conclusion
		heterocoma (Fenzl) Coode & amp; nana (Stapf) Schulz and Muscari aucheri (Boiss.) Baker. Whenever these species are detected the following shall be applied: The peeling of the fertile part of the soil should be kept according to the method and this soil should be laid as the top layer again in order to restore the route. - In the sections where the turbines are located, the vegetation in a circle of approximately 100 m diameter will be cleaned and these sections will preferably be covered with gravel. (page 56) - It is recommended that the towers of wind turbines be painted in light color and the ends of the wind turbines are painted in a contrasting manner. - It is recommended to place a light source at the top of the tower. According to VCS Standard (https://verra.org/wp-content/uploads/2018/03/VCS_Standard_v3.7.pdf), potential impacts of the project are summarized under Section 3.17 Safeguards. During the site visit, potential negative environmental and socio-economic impacts were discussed with stakeholders in the stakeholders meeting and there were not any negative comments in the site visit. These potential negative impacts were decided with the DOE throughout these stakeholder meetings. Lastly, these parameters were	

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Verification conclusion
		approved and adequate for numerous previous VCS wind power plant projects. To conclude, the ecosystem report does not state that there are negative impacts. Therefore, potential negative impacts discussed during the site visit are adequate for this project.	
CR 1 The project activity could not be found in the mer-market or VCS database. Please provide the required resources to verify the standard membership.	A.1.1	Process is still ongoing and did not finished yet. <u>Response (30.04.2019):</u> Process is still ongoing and did not finished yet. Relevant link will be shared with the DOE when available. <u>Response (04.07.2019):</u> Process is still ongoing and did not finished yet. Relevant link will be shared with the DOE when available. <u>Response (29.07.2019):</u> The project is now listed. The link is : https://www.vcsprojectdatabase.org/#/pipeline_details/PL1908	<u>Review 1 (26/02/2019):</u> The project activity could not be found in the mer-market or VCS database. Please provide the required resources to verify the standard membership. Please see VCS Standard, section 5.2.3. <u>Hence, CR 1 is not closed.</u> <u>Review 2 (14/06/2019):</u> Please see VCS Standard, section 5.2.3. “The project shall be listed on the project pipeline before the opening meeting between the validation/verification body and the project proponent (such opening meeting representing the beginning of the validation process). The validation/verification body is responsible for checking that the project is listed on the project pipeline and shall not conduct the opening meeting or otherwise begin validation until such time as the project is listed.” <u>Hence, CR 1 is not closed.</u> <u>Review 3 (23/07/2019):</u> Please see VCS Standard, section 5.2.3. “The project shall be listed on the project

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Verification conclusion
			pipeline before the opening meeting between the validation/verification body and the project proponent (such opening meeting representing the beginning of the validation process). The validation/verification body is responsible for checking that the project is listed on the project pipeline and shall not conduct the opening meeting or otherwise begin validation until such time as the project is listed.” <u>Hence, CR 1 is not closed.</u> <u>Review 4 (30/07/2019):</u> The project is listed now in the VCS Database. <u>Hence, CR 1 is closed.</u>
CR 2 The project proponent is given incorrectly in Section 1.3 in the VCS-PD. Please check.	A.3.1	Project proponent is now corrected. Could you please clarify if there are further errors on this issue? <u>Response (30.04.2019):</u> Section 1.3. is now revised and contact person is updated.	<u>Review 1 (26/02/2019):</u> The project proponent is now given correctly in Section 1.3 of the VCS-PD. However, contact person must be also revised. <u>Hence, CR 2 is not closed.</u> <u>Review 2 (14/06/2019):</u> The contact person is now given correctly in the VCS-PD. <u>Hence, CR 2 is closed.</u>
CR 3 The information about the location is not given correctly in the VCS-PD. Please check the location of the project activity. The coordinates of the turbines in the project activity, which are presented in Section 1.9 of	A.4.1	- Location of the project activity is checked and corrected accordingly. - Relevant website is now provided in the footnote.	<u>Review 1 (26/02/2019):</u> The location of the project is now corrected in VCS-PD. In addition, the coordinates can now be confirmed as per the given web-site. <u>Hence, CR 3 is closed.</u>

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Verification conclusion
VCS PD /1/, could not be verified with the Generation License /15/ since no reference web-site is given.			
CR 4 The category of the project activity is not identified clearly under Section 1.2 of the VCS PD version /1/. The project activity is a wind power plant and sectoral scope is “1 Energy Industries-Renewable Energy”; however, it is not discussed. In addition, in Section 1.2, the title of the methodology is given wrongly. Please correct.	A.4.2	Category and scope of the project is now added. Moreover, title of the methodology is corrected.	<u>Review 1 (26/02/2019):</u> The sectoral scope of the project activity is now defined in the VCS-PD. The title of the methodology is now given correctly. <u>Hence, CR 4 is closed.</u>
CR 5 The expected lifetime of the project activity is defined as 25 years which are not in line with the generation license /15/. The meaning of “Lifetime of the project” and “lifetime of the equipment” are different. Please check the definition given in Section 1.6 (The lifetime of the project is 25 years).	A.4.4	Relevant section is corrected as lifetime of the project activity is 49 years.	<u>Review 1 (26/02/2019):</u> The given expected lifetime of the project activity is now in line with the generation license. <u>Hence, CR 5 is closed.</u>
CR 6 The applied methodology is approved by CDM; however, the applied version is not the latest version at the time of VCS PD submission.	B.1.1	ACM0002: Grid-connected electricity generation from renewable sources --- Version 18.1 was valid until 30 August 2018. First draft of the VCS-PD is submitted on 6 July 2018. Therefore, it was the latest version when first draft is submitted. Moreover, all tools' versions are checked and corrected.	<u>Review 1 (26/02/2019):</u> In the previous version of the VCS PD, in Section 2.1, the version of the methodology is given as “16.0.0” and at that time “18.1” is available. However, all versions are now defined as “version 18.1”. <u>Hence, CR 6 is closed.</u>
CR 7 The methodological tool “Tool to calculate the emission factor for an electricity system, version 04.0 of 04/10/2013” /13/ is applied. However, the applied tool is not the latest version at the time of VCS-PD submission. Please also check all the tool's versions. Some of them are not up to	B.1.2	All tools' versions are checked and corrected accordingly.	<u>Review 1 (26/02/2019):</u> The version of the methodological tool “Tool to calculate the emission factor for an electricity system is now revised. Also all the tool's versions were checked and revised. <u>Hence, CR 7 is closed.</u>

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Verification conclusion
date.			
CR 8 Applicability conditions of the applied tool are not justified.	B.1.3	Applicability conditions are now justified and presented in Section 2.2. <u>Response (30.04.2019):</u> Last row of the applicability table is now revised. Applicability conditions of the applied tool are now justified. Same justifications were accepted for numerous previous projects. If there are further matters, may you please elaborate?	<u>Review 1 (26/02/2019):</u> Applicability conditions of the applied tool are not justified. <u>Hence, CR 8 is not closed.</u> <u>Review 2 (14/06/2019):</u> Applicability conditions of the applied tool are now justified. <u>Hence, CR 8 is closed.</u>
CR 9 The values and years given in Table 3: Low and High Demand Projection Scenarios for Ten Years Period is not in line with the provided calculation excel sheet. Please check.	B.2.1	Values and the table are updated with the 2017 data and errors are now removed.	<u>Review 1 (26/02/2019):</u> The values and years given in Table 4: Low and High Demand Projection Scenarios for Ten Years Period is now in line with the provided calculation excel sheet. <u>Hence, CR 9 is closed.</u>
CR 10 The information given about the grid in Section 1.1 is not correct. Please check.	B.2.2	- Grid information in Section 1.1. is now corrected.	<u>Review 1 (26/02/2019):</u> The information given about the grid in Section 1.1 is now corrected. <u>Hence, CR 10 is closed.</u>
CR 11 The construction is not finished when the site visit was performed. As per the VCS Standard /6/, the project start date is the date on which the project began generating GHG emission reductions or removals. However, project start date is determined as EPC Agreement sign date. Please correct.	B.4.3.1	Project start date now corrected as 01/09/2019.	<u>Review 1 (26/02/2019):</u> The project start date is now presented as 01/09/2019 (expected) and it is acceptable. <u>Hence, CR 11 is closed.</u>
CR 12 Please also add all the necessary dates to the implementation schedule.	B.4.4.1	All necessary dates are now added. <u>Response (30.04.2019):</u> Document showing the construction start	<u>Review 1 (26/02/2019):</u> The implementation schedule does not consist all the agreements or construction date.

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Verification conclusion
		date (notice to proceed for execution of works) is now shared with the DOE. Start date of the construction is now added to the project implementation schedule. Moreover, loan contact and maintenance contract dates are now included in the project implementation schedule. Implementation schedule is now completed.	<u>Hence, CR 12 is not closed.</u> <u>Review 2 (29/05/2019):</u> The implementation schedule now consists all the agreements. <u>Hence, CR 12 is closed.</u>
CR 13 Please check the common practice tool. More current revision is available. In addition, access to the site from the link provided, should be updated. It is better to verify all data with the help of filtering. Please also check the total capacity given for the calculation.	B.4.6.1	Common practice tool version is now updated as well as the reference site given. Common practice analysis is reviewed. <u>Response (30.04.2019):</u> All types of projects are now added to the common practice excel and wind power plants are filtered out in the Excel script which can be validated. Step 2 of the common practice can now be monitored. VCS-PD is not updated since necessary information is already given and given information or result is not changed (just all types of projects are added to Excel which have no effect on the result). This type of common practice explanation in VCS-PD was accepted for numerous previous projects. DOE can now validate the common practice analysis of the project. If there are further matters, may you please elaborate? <u>Response (04.07.2019):</u> The common practice analysis is now prepared from scratch. First, all of the energy investments are downloaded from	<u>Review 1 (19/03/2019):</u> The Step-2 of the common practice could not be monitored since no filter or reference is given for all projects (not only wind power plants). Please add all type of projects in Turkey to the common practice excel sheet with the reference, than present all steps in your VCS-PD. <u>Hence, CR 13 is not closed.</u> <u>Review 2 (28/06/2019):</u> The common practice could not be verified since it was not clear whether the pre-2012 period was also taken into account or not. <u>Hence, CR 13 is not closed.</u> <u>Review 3 (19/07/2019):</u> The common practice could now be verified. However, please make sure all steps in the document are applied such as Step-2 (f). <u>Hence, CR 13 is not closed.</u> <u>Review 4 (30/07/2019):</u> All steps in the common practice are identified clearly.

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Verification conclusion
		this link: https://www.eigm.gov.tr/tr-TR/Sayfalar/Enerji-Yatirimlari Afterwards, till the investment decision date of the project, all of the energy investments are combined at this Excel: "Enerji Yatirimlari.Ham Veri" In order to detect the capacity extensions, the column A is sorted from A to Z. Afterwards, the capacity extensions are combined and the Excel is filtered for WPPs. Afterwards, the excel is sorted for 33 to 99. The common practice analysis is now submitted.. <u>Response (29.07.2019):</u> Step 2-f is now revised and now includes the investment decision date.	<u>Hence, CR 13 is closed.</u>
CR 14 In section 3.4, the values are not written in correct column (they were written in baseline emissions not project emissions), please check.	B.5.2.1	Table in Section 3.4 are corrected. Now, values are written in the correct column.	<u>Review 1 (26/02/2019):</u> The values are now written in correct column. <u>Hence, CR 14 is closed.</u>
CR 15 The monitoring plan does not contain the list of all ex-ante parameters required by the approved methodology /12/ and the tool /13/.	B.6.1.1	All relevant parameters are now included in monitoring plan and Section 4.1. If there are missing parameters, could you please clarify in more detail?	<u>Review 1 (26/02/2019):</u> The monitoring plan now contains all the list of ex-ante parameters required by the approved methodology and the tool. <u>Hence, CR 15 is closed.</u>
CR 16 Please check the monitored parameter given in section 4.2. The name, description, value and frequency are not in line with the tool and the current situation.	B.6.2.1	Section 4.2 and information mentioned are now corrected and are now in line with the tool and current situation. <u>Response (30.04.2019):</u> Description and unit of the parameter is now updated and now in line with the tool. Previous statement was a typo and is now	<u>Review 1 (26/02/2019):</u> The name, value and frequency of the monitored parameter given in section 4.2 are now in line with the tool and the current situation. However, description and unit of the parameter still are not in line with the tool. In addition, a new information is given as

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Verification conclusion
		removed. Periodic calibration of the meters will be done every 10 years according to the regulation.	“meters on the plant will be calibrated by the supplier firm on an annual basis”. Please make sure that this calibration can be done regularly every year. <u>Hence, CR 16 is not closed.</u> <u>Review 2 (29/05/2019):</u> The description and unit of the parameter are now in line with the tool. The given incorrect information is now removed from the VCS-PD. <u>Hence, CR 16 is closed.</u>
CR 17 Calibration frequency of the electricity meters is defined both 2 years and 10 years. Please correct.	B.6.2.3	Necessary corrections were carried out.	<u>Review 1 (26/02/2019):</u> Calibration frequency of the electricity meters is now defined 10 years. <u>Hence, CR 17 is closed.</u>
CR 18 The start date of the crediting period is given as 01/01/2019. However, during on site visit the project proponent specified that the estimated start date of the project activity is September 2019. Please correct.	C.1.1	Start date of the crediting period is corrected as 01/09/2019 throughout the VCS-PD.	<u>Review 1 (26/02/2019):</u> The start date of the crediting period is now corrected as 01/09/2019. <u>Hence, CR 18 is closed.</u>
CR 19 Crediting period is presented as “5-year crediting period” in Section 4.3 of the VCS-PD. Please correct. The crediting period is defined as 10 years in Section 1.6 of the VCS-PD. However, in project details (Section 1.1) the crediting period is defined as “first”. Please ensure that different information is removed.	C.1.2	- Crediting period is corrected as 10 years. - Since VCS rules state that crediting period shall be 10 years and since the project is under construction, it is in first crediting period. Could you please clarify if there are further problems in this issue?	<u>Review 1 (26/02/2019):</u> Crediting period is now corrected as “10-year crediting period” in Section 4.3 of the VCS-PD. In the previous version of the VCS-PD, in Section 1.6, it is clearly defined that crediting period is 10 years (no renewed twice). In section 1.1, it is defined this crediting period as “first”. Therefore, it should be decided whether the crediting period should be renewed or not. During on site visit, these little miswriting are

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Verification conclusion
			corrected by consultant. <u>Hence, CR 19 is closed.</u>
CR 20 No information is given for "Stakeholder Consultation" and "Public Comments".	E.1.1	Since site visit is conducted, stakeholder consultation and public comments sections are completed now. <u>Response (30.04.2019):</u> There was a typo in the previous version of the PD. Visited village is now corrected as Ataköy Village.	<u>Review 1 (26/02/2019):</u> According to the participant list and DOE notes, the visited village is Atakoy Village, not Demirli Village. Please explain. <u>Hence, CR 20 is not closed.</u> <u>Review 2 (29/05/2019):</u> It is now revised as Atakoy Village. <u>Hence, CR 20 is closed.</u>



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

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

Tugce Kiratli

è qualificato come:
 is qualified as:

TEC, VAL, VER, TL, ITRP
 LOCAL EXPERT

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

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

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

Responsabile di schema
 Scheme Leader
 Laura Severino

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

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

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 RINA Services S.p.A. is accredited/recognized by

UNFCCC	come Entità Operativa Designata (DOE), per condurre la Validazione e la Verifica di Progetti GDM
VCSA	per condurre la Validazione e la Verifica di Progetti VCS
GS Foundation	per condurre la Validazione e la Verifica di Progetti GS
Ecologica Institute	per condurre la Validazione e la Verifica di rapporti SCS
American Carbon Registry ACR	per condurre la Validazione e la Verifica di Progetti ACR
The Climate, Community & Biodiversity Alliance CCB	per condurre la Validazione e la Verifica di Progetti co-benefit CCB



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

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

Victor Milkov

è qualificato come:
 is qualified as:

TEC, FIN EXP

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

AREE TECNICHE TECHNICAL AREAS	DESCRIZIONE DELL'AREA TECNICA TECHNICAL AREA DESCRIPTION	SCOPO SETTORIALE SECTORIAL SCOPE
1.1	Thermal energy generation	1
1.2	Renewables	1

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

Responsabile di schema
 Scheme Leader
 Rita Valeroso

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

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RINA Services S.p.A. è accreditato/recognized by
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UNFCCC	Quali Entità Operativa Designata (DOE), per condurre la Validazione e la Verifica di Progetti CDM as Designated Operational Entity (DOE), to carry out Validation and Verification of CDM Projects
VCSA	per condurre la Validazione e la Verifica di Progetti VCS to carry out Validation and Verification of VCS Projects
GS Foundation	per condurre la Validazione e la Verifica di Progetti GS to carry out Validation and Verification of GS Projects
Ecologica Institute	per condurre la Validazione e la Verifica di rapporti SCS to carry out Validation and Verification of SCS Reports
American Carbon Registry ACR	per condurre la Validazione e la Verifica di Progetti ACR to carry out Validation and Verification of ACR projects
The Climate, Community & Biodiversity Alliance CCB	per condurre la Validazione e la Verifica di Progetti co-benefit CCB to carry out Validation and Verification of co-benefit CCB projects

GHG_QUAL_CERT_EN_07_16 Voluntary(Certificate)

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

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

Fulya Ekinci Ozen

è qualificato come:
 is qualified as:

TEC, VAL, VER, LOCAL EXPERT, TL, ITRP

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

REVISIONE REVISION	DATA DATE	MOTIVAZIONI PER LA REVISIONE REASON FOR THE REVISION
0	27/01/2017	First issue
5	06/12/2017	Update qualification as VAL

Head of QPT
 Laura Severino

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

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GS Foundation	per condurre la Validazione e la Verifica di Progetti GS to carry out Validation and Verification of GS Projects
Ecologica Institute	per condurre la Validazione e la Verifica di rapporti SCS to carry out Validation and Verification of SCS Reports
American Carbon Registry ACR	per condurre la Validazione e la Verifica di Progetti ACR to carry out Validation and Verification of ACR projects
The Climate, Community & Biodiversity Alliance CCB	per condurre la Validazione e la Verifica di Progetti co-benefit CCB to carry out Validation and Verification of co-benefit CCB projects

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