

ÇERÇİKAYA WIND POWER PROJECT VALIDATION REPORT



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Summary:

Bureau Veritas Certification has made the validation of "Çerçikaya Wind Power Project" of "ZT Enerji Elektrik Üretim San. ve Tic. A.Ş." located in Mediterranean Region, Hatay Province on the basis of UNFCCC criteria for the CDM methodology (ACM0002 Version 17), Voluntary Carbon Standard (VCS) v.3.6, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM rules and modalities and the subsequent decisions by the CDM Executive Board, as well as the host country criteria.

Çerçikaya Wind Power Project is owned by "ZT Enerji Elektrik Üretim San. ve Tic. A.Ş.". The project type is wind power plant. The project purpose is supplying electricity generation to the Turkish National Grid by generating electricity from renewable sources. The project total capacity is 57 MW which is confirmed through the Energy Yield Assessment Report dd.06/03/2014. The power generation is achieved by installing and operating 19 wind turbines (Acciona AW125) with 3 MW capacity each. Project expects to generate and supply 184,017 MWh of electricity per year to the grid and expects to reduce 101,473 tCO₂e per year by replacing non-renewable generation sources in the national grid. The crediting period of the project activity is 20/03/2015 to 19/03/2025, 10 years, to be renewed once.

The validation scope is defined as an independent and objective review of the project design document, the project's baseline study, monitoring plan and other relevant documents, and consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and internal technical review followed by the issuance of the final validation report and opinion. The overall validation, from Contract Review to Validation Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

The first output of the validation process is a list of Clarification and Corrective Actions Requests (CL and CAR), presented in Appendix B. Taking into account this output, Life Enerji on behalf of the project proponent, revised its project design document, final document being version 3, dated 24/02/2017, resolve the issues that have risen during the interviews and subsequent interactions.

In summary, it is Bureau Veritas Certification's opinion that the project correctly applies the baseline and monitoring methodology ACM0002 Version 17 and meets the relevant UNFCCC requirements for the CDM Methodology, Voluntary Carbon Standard (VCS) v.3.6 requirements and the relevant host country criteria.

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1 INTRODUCTION

1.1 Objective

The validation serves as project design verification and is a requirement of all projects. The validation is an independent third party assessment of the project design. In particular, the project's baseline, the monitoring plan (MP), and the project's compliance with relevant UNFCCC CDM Methodology, Verified Carbon Standard (VCS) v.3.6 requirements, and host country criteria are validated in order to confirm that the project design, as documented, is sound and reasonable, and meet the stated requirements and identified criteria. Validation is a requirement for all VCS-VCU projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of verified carbon units (VCUs).

UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM rules and modalities and the subsequent decisions by the CDM Executive Board, as well as the host country criteria.

1.2 Scope and Criteria

The validation scope is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules, Verified Carbon Standard (VCS) v.3.6 and associated interpretations.

The validation is not meant to provide any consulting towards ZT Enerji Elektrik Üretim San. ve Tic. A.Ş or Life Enerji. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.

1.3 Level of Assurance

The Level of assurance of the validation report is defined as **reasonable**

1.4 Summary Description of the Project

The project is wind power plant and involves 19 Acciona AW125 wind turbines of 3MW capacity each combining a total installed capacity of 57 MW. The project activity is located in Mediterranean region, Hatay Province. The project coordinates are confirmed through EIA not required decision as below;

Wind Turbine No.	Latitude (N)	Longitude (E)
1	36° 26' 23,5860"	48° 07' 28,1688"
2	36° 26' 18,9024"	48° 07' 23,0410"
3	36° 26' 07,9332"	48° 07' 16,0202"
4	36° 26' 07,7604"	48° 07' 08,9985"
5	36° 26' 02,2020"	48° 07' 01,9771"
6	36° 25' 55,6032"	48° 06' 58,6883"
7	36° 25' 49,4184"	48° 06' 57,8734"
8	36° 25' 43,3560"	48° 06' 56,6927"

Wind Turbine No.	Latitude (N)	Longitude (E)
9	36° 25' 37,3440"	48° 06' 54,9882"
10	36° 25' 31,2888"	48° 06' 52,6833"
11	36° 25' 25,8816"	48° 06' 49,1100"
12	36° 25' 20,5680"	48° 06' 45,4530"
13	36° 25' 10,7220"	48° 06' 42,1247"
14	36° 24' 58,4784"	48° 06' 44,2644"
15	36° 24' 47,5308"	48° 06' 44,9109"
16	36° 24' 35,9424"	48° 06' 58,1839"
17	36° 24' 26,8920"	48° 07' 02,2513"
18	36° 24' 19,2276"	48° 07' 04,5014"
19	36° 24' 10,9404"	48° 07' 07,9381"

The project comes under Type I – Renewable Energy Project as per Appendix B of the procedures for the CDM project activities. The project won't produce any greenhouse gas (GHG) during operation. The electricity generated by the project can displace part of the power from the fossil fuel-fired plants of Turkey and the annual GHG emission reductions are 101,473 tCO₂e. The lifetime of the project activity validated as 25 years through the Tool to determine the remaining lifetime of equipment. The crediting period of the project activity is 10 years and 0 months which will be renewed once. The crediting period will be 20 years and 0 months in total.

2 VALIDATION PROCESS

2.1 Method and Criteria

The overall validation, from Contract Review to Validation Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

In order to ensure transparency, a validation protocol was customized for the project, according to the version 09.0 of the Clean Development Mechanism Validation and Verification Standard, issued by CDM Executive Board after its 4/CMP.10 on 15/02/2015. The protocol shows, in a transparent manner, criteria (requirements), means of validation and the results from validating the identified criteria. The validation protocol serves the following purposes:

- It organizes, details and clarifies the requirements a GS-VER project is expected to meet;
- It ensures a transparent validation process where the validator will document how a particular requirement has been validated and the result of the validation.

The completed validation protocol is enclosed in Appendix A to this report.

The validation report underwent an Internal Technical Review (ITR) before requesting publishing of the report for the project activity. The ITR is an independent process performed to examine thoroughly that the process of verification has been carried out in conformance with the requirements of the verification scheme as well as internal Bureau Veritas Certification procedures.

The Lead Verifier provides a copy of the validation report to the reviewer, including any necessary validation documentation. The reviewer reviews the submitted documentation for conformance with the validation scheme. This will be a comprehensive review of all documentation generated during the validation process.

When performing an Internal Technical Review, the reviewer ensures that:

The validation activity has been performed by the team by exercising utmost diligence and complete adherence to the CDM rules and requirements.

The review encompasses all aspects related to the project which includes project design, baseline, additionality, monitoring plans and emission reduction calculations, internal quality assurance systems of the project participant as well as the project activity, review of the stakeholder comments and responses, closure of CARs, CLs and FARs during the verification exercise, review of sample documents.

The reviewer compiles clarification questions for the Lead Verifier and Validation Team and discusses these matters with Lead Verifier.

After the agreement of the responses on the 'Clarification Request' from the Lead Verifier as well as the PP(s) the finalized validation report is accepted for further processing.

During the start date of the validation VVM was the current manual for the project activity but it's validity date is finished during the validation. Project activity is also determined through the VVS version 09.0 by the validation team.

2.2 Document Review

The Project Description (VCS-PD) submitted by Life Enerji and additional background documents related to the project design and baseline, i.e. technical documentation, assessments, reports, national laws and regulations, VCS Project Description Template v.3.3, Approved CDM methodology, VCS v.3.6 requirements, and Kyoto Protocol.

Among the documents sent to DOE, following are commercially sensitive:

- Financial details of the Project
- Consultancy and feasibility reports prepared by 3rd parties
- Spreadsheet of baseline calculations
- All contracts signed with other parties for construction, purchase of electromechanical equipment and turbine manufacture, maintenance and service

This sensitive info is shared with DOE during validation and is in-line with the VCS requirements that are defined for sensitive information.

To address Bureau Veritas Certification corrective action and clarification requests, Life Enerji revised the VCS-PD and resubmitted it on 24/02/2017.

The validation findings presented in this report relate to the project as described in the VCS-PD.

2.3 Interviews

On 10/02/2017 Bureau Veritas Certification performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of ZT Enerji Elektrik Üretim San. ve Tic. A.Ş and Life Enerji were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics:

Interviewed organization	Interview topics
ZT Enerji Elektrik Üretim San. ve Tic. A.Ş (the Project Owner)	➤ Project background information and CDM consideration. ➤ Project technology, operation and maintenance. ➤ Project approval and implementation status. ➤ Project management and monitoring plan. ➤ Stakeholder consultation process. ➤ Common practice in the area. ➤ Government policies related to the project activity.
Local Stakeholder	➤ Project background in details ➤ Stakeholder comments ➤ Social and environmental impact of the project ➤ GS Sustainability matrix
Life Enerji (the Consultant)	➤ Applicability of selected methodology. ➤ Baseline determination. ➤ Emission reductions calculation. ➤ Emission reduction monitoring plan.

2.4 Site Inspections

A site visit was performed on 10/02/2017 where representatives of ZT Enerji Elektrik Üretim San. ve Tic. A.Ş and Life Enerji were interviewed about the project. Implementation of the project was observed on-site.

2.5 Resolution of Findings

During the validation, there were no material discrepancies that were identified.

2.5.1 Forward Action Requests

No FAR has been raised.

3 VALIDATION FINDINGS

3.1 Project Details

The project is project large scale wind power plant and located in Mediterranean Region, Hatay province. Total installed capacity of the project is 57 MW. Total capacity of the project is confirmed through the electricity generation licens dd. 01/03/2012. Expected annual amount of the electricity generation is 184,017 MWh. Annual amount of the electricity generation is confirmed through Energy Yield Assessment report dd. 06/03/2014. Project is supplying electricity to the National Power Grid by generating electricity from renewable energy source. The estimated and calculated annual emission reduction is 101,473 tonnes of CO₂e. Emission factor and reduction methods are checked and confirmed by the validation team completely. Project scope is categorized as Type I – Renewable Energy, Energy Industries in accordance with UNFCCC 4/CMP.1, Annex II, Appendix B. The project main purposes are; reducing the GHG gas emissions in Turkey, being environmentally friendly, having social benefits to local life and creating direct and indirect employment opportunities in the region.

Project is being developed by ZT Enerji Elektrik Üretim San. ve Tic. A.Ş. Other entities involved in the project are Life Enerji handling the carbon consultancy on behalf of the project proponent. Project start date is the commissioning date of the plant. The commissioning date of the project is confirmed as 20/03/2015. The lifetime of the project activity validated for 25 years through the Tool to determine the remaining lifetime of equipment.

The project activity is located in Mediterranean region, Hatay Province. The project coordinates are confirmed through EIA not required decision as below;

Wind Turbine No.	Latitude (N)	Longitude (E)
1	36° 26' 23,5860"	48° 07' 28,1688"
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19	36° 24' 10,9404"	48° 07' 07,9381"

The project is wind power plant and involves 19 Acciona AW125 wind turbines of 3MW capacity each combining a total installed capacity of 57 MW. All technical details of the project activity is carefully examined and confirmed by the validation team through the Energy Yield Assessment Report dd. 06/03/2014 and technical specifications of the equipment.

Mandatory laws are applicable to the project are Environmental Law (Nr. 2872 / 11.08.1983), Electricity Market Law (Nr. 4628 /20.02.2001) and Law on Utilization of Renewable Energy Resources for the Purpose of Generating Electrical Energy (Nr. 5346 / 18.05.2005).

Sources of the validation have been confirmed through the Energy Yield Assessment Report dd. 06/03/2014, official project documentation and publicly available laws and TEIAS data. The investment Decision date is confirmed through the Turbine foundation agreement dated 01/11/2013. The agreement is signed between Yol-Kur Hafriyat and ZT Enerji on 01/11/2014.

On the other hand confirmed project timeline by the validation team can be seen as follows;

Date (DD/MM/YYYY)	Activity
05/12/2013	Agreement with Carbon consultant (Life İklim ve Enerji)
01/11/2013	Turbine foundation agreement (Yol-Kur Hafriyat)
10/12/2013	Turbine agreement
24/01/2014	EIA Not Required Certificate for 19 turbines
06/03/2014	Bankable Energy Yield Assessment Report for Çerçikaya WPP
13/08/2014	Loan Agreement Date
17/06/2015	Revised date of the Licence
20/03/2015	The start date of whole operation

Prior consideration is not essential regarding to VCS rules.

The investment Decision date is confirmed through the Turbine foundation agreement dated 01/11/2013.

Finally, all milestones of the project are checked attentively by the validation team through the contracts and agreements. All given events reference documents are stored in DOE data base and completely confirmed by the validation team.

On the other hand, it is confirmed that the project is not a grouped project, has not involved any other emission trading programs and other binding limits, has not participated under other GHG programs and has not created another form of environmental credit of renewable energy certificate by the validation team.

The given parameters' references are detailed in the VCS PD. All references are checked and confirmed by the validation team.

The VVB hereby confirms that the project description in VCS-PD (Version 3.0) is accurate and complete in all aspects of the project description.

3.2 Application of Methodology

3.2.1 Title and Reference

Applied methodology is ACM0002 Version 17 “Consolidated baseline methodology for grid connected electricity generation from renewable sources” and utilized tools are “Tool for the demonstration and assessment of additionality” v.7.0.0 for additionality and “Tool to calculate the emission factor for an electricity system” v.5.0.0 for calculation of the emission factor the national grid.

3.2.2 Applicability

The steps taken to assess the relevant information contained in the VCS-PD against each applicability condition are described below.

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. This condition is confirmed through the EMRA Generation License dd. 01/03/2012.
- The project activity is the installation of 19 numbers of wind turbine generators (WTGs). This condition is confirmed through the EMRA Generation License dd. 01/03/2012.
- The project activity does not involve capacity additions, retrofits, rehabilitations or replacements. It is confirmed through site observations.
- The project activity is not a hydro power plant. This is confirmed through EMRA Generation License and site visit observations.
- Project activity does not involve:
 - Switching from fossil fuels to renewable energy sources at the site of the project activity.
 - Biomass fired plants.

This condition is confirmed through EMRA Generation License and site visit observations.

- The project is not a retrofit, rehabilitations, replacements, or capacity addition. This condition is confirmed through EMRA Generation License and site visit observations.

The VVB hereby confirms that the selected baseline and monitoring methodology (ACM0002, version 17.0), tools “Tool for the demonstration and assessment of additionality” (version 07.0) and “Tool to calculate the emission factor for an electricity system” (version 05.0) is previously approved by the CDM Executive Board, and is applicable to the project activity, which, complies with all the applicability conditions therein.

3.2.3 Project Boundary

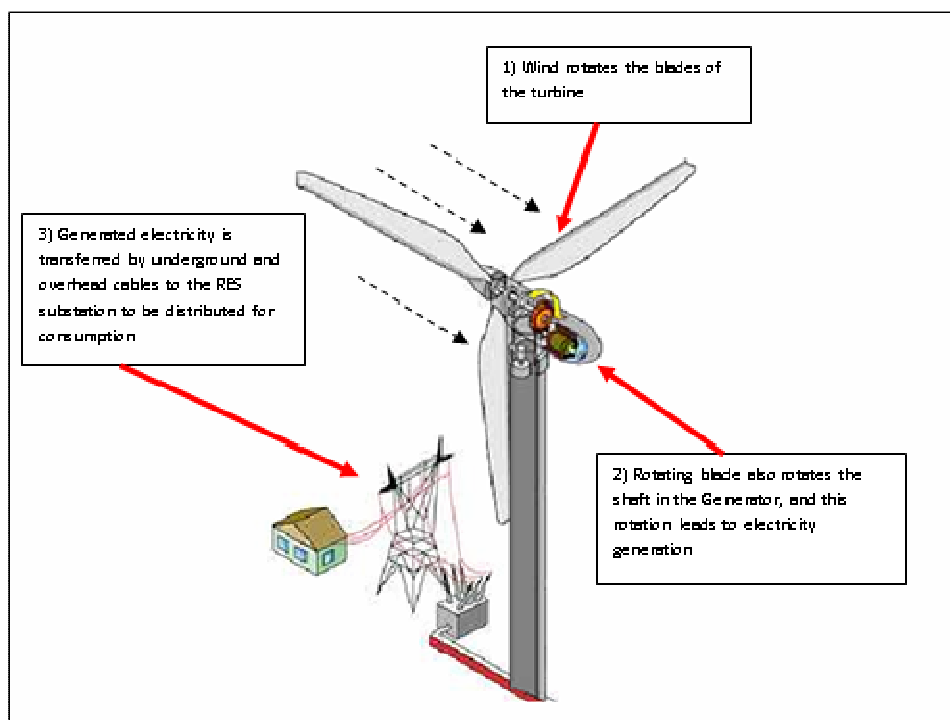
The VVB validated the project boundary by:

- Review of System Connection Agreement dd. 30/01/2014, EMRA Generation License dd. 01/03/2012.
- On-site observations and interviews regarding the project site and equipment through a site visit.

The spatial extent of the project boundary includes the project power plant and all power plants connected physically to the national electricity grid.

Source		GHGs	Included?	Justification/Explanation
Baseline scenario	CO ₂ emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity	CO ₂	Yes	<i>Main emission source:</i> Fossil fuels fired for electricity generation cause CO ₂ emissions. It is included to baseline calculation to find the displaced amount by the project activity.
		CH ₄	No	<i>Minor emission sources:</i> Even though there may be some CH ₄ and N ₂ O emissions during electricity generation, these emissions are negligible and not included in baseline calculation to be conservative and comply with Table-1 of the methodology (page 5).
		N ₂ O	No	
Project scenario	Emissions during construction and operation of the project activity	CO ₂	No	<i>Minor emission source</i>
		CH ₄	No	<i>Minor emission source</i>
		N ₂ O	No	<i>Minor emission source</i>

Below is the diagram for project boundary:



Based on the above assessment, the VVB hereby confirms that the identified boundary and the selected sources and gases are justified for the project activity.

3.2.4 Baseline Scenario

The procedure contained in the methodology to identify the most reasonable baseline scenario has been correctly applied. The baseline scenario has been identified, in line with the applied methodology ACM0002, v.17.0, 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 reflected in the combined margin (CM) calculations described in the 'Tool to calculate the emission factor for an electricity system ver.05' under Section 2.4 and Section 3.1 of VCS-PD v.3.

In line with the requirements of the applied tool, the Simple Operating Margin Emission Factor (EF_{grid,OM simple,y}) has been calculated ex-ante, using TEIAS data for 2013-2015 period which is actual data during the investment decision date.

The operating margin is calculated as **0,6276 tCO₂ / MWh**. The operating margin calculation is checked and accepted by the validation team through the actual references for the project activity.

For BM factor calculation are calculated and confirmed through the Ministry of Energy publications between 2010-2012 publications.

The Build Margin Emission Factor (EF_{grid,BM,y}) has been determined as **0.3230** tCO₂/MWh and has been found appropriate by the validation team.

In accordance with the methodology of the “Tool to calculate the emission factor for an electricity system”, Version 05; Project participant determined the Combined Margin Emission Factor as **0.5514** tCO₂/MWh and this have been confirmed by the validation team with reviewing all baseline calculation sheet equations and confirming the parameters used for the calculations and their relevant sources. After approval of the Baseline specialist all clarifications and corrective action requests related to Baseline calculations are closed by the validation team.

Based on the above assessment, the VVB hereby confirms that:

- (a) All the assumptions and data used by the project participants are listed in the VCS-PD, including their references and sources;
- (b) All documentation used is relevant for establishing the baseline scenario and correctly quoted and interpreted in the VCS-PD;
- (c) Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence and can be deemed reasonable;
- (d) Relevant national and/or sectoral policies and circumstances are considered and listed in the VCS-PD;
- (e) The approved baseline methodology 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-VCU project activity.

3.2.5 *Additionality*

The step taken and sources of information used to cross-check the information contained in the VCS PD Ver. 3 on this matter are described below.

Prior consideration of VCU credits for the project activity is not mandatory under VCS v.3.6 requirements. The investment Decision date is confirmed through the Turbine foundation agreement dated 01/11/2013. Carbon consultancy agreement is signed on 05/12/2013. The project commissioning date and the crediting period start date is confirmed as 20/03/2015 through provisional acceptance.

“Tool for demonstration and assessment of additionality” (v07.0.0) has been utilized to demonstrate additionally. Following the requirements of the aforementioned tool, first valid alternatives to the project activity were determined and their compliance with relevant mandatory laws and regulations were evaluated. Following this, Investment Analysis was used to demonstrate the additionally of the project.”

Under sub-step 1a, the following three alternatives are identified as the alternative scenarios that are likely to happen in the absence of the project activity:

Alternative (a): The proposed project activity undertaken without being registered as a VCS project activity.

Alternative (b): Other realistic and credible alternative scenario(s) to the proposed VCS project activity scenario that deliver electricity with comparable quality, properties and application areas, taking into account, where relevant, examples of scenarios identified in the underlying methodology

Alternative (c): Continuation of the current situation, i.e. Çerçikaya WPP is not built.

Alternative (a) is not found financially attractive and realistic regarding to investment analysis. Alternative (b) is not found also as a realistic scenario. Energy investment alternatives such as wind, solar and geothermal are not realistic although Electricity Market License Regulation gives priority to these types of renewable projects, which utilize local resources with low environmental impact. Only Alternative (c) is found as realistic and credible scenario which is same amount of electricity generation by existing grid. The alternative scenario is in compliance with existing laws and regulations.

Under Step-2 **Investment Analysis** is performed to demonstrate the additionality of the project. The investment Decision date is confirmed through the turbine contract dated 01/11/2013. The investment analysis inputs are confirmed through the feasibility report and contracts.

Under sub-step 2a Option III – Benchmark Analysis is selected through the “Tool for the demonstration and assessment of additionality Version (07.0.0)”. Option I is Simple Cost analysis and Option II is Investment Comparison analysis in the tool. Option I cannot be applied since project has income from sale of generated electricity without VER revenue. Option II is not applicable, as the baseline scenario of the proposed project is the national grid supplying the same amount of electricity rather than a similar investment project alternative and the project owner has no investment options to compare with.

Under Sub-step 2b Benchmark Analysis Method is applied. Project IRR has been chosen as the indicator. According to the Tool, 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’. Ministry of Development publishes “Main Economic Indicators” on a monthly basis. Since the project is a mid-term investment (exceeding one year), lending rate for medium term investment has been selected as the benchmark. The lending rate for the medium term investment as estimated by the Turkish Development Bank is 13% for the March 2013. This 13% is taken as the benchmark value.

Main Financial Indicators are as below:

Name	Value	Reference
Installed Power (MWm)	57	License of The project
Operational lifetime of the project (years)	25	Tool
Net Generation to be sold (MWh)	184,017	Net generation calculated by using P90 value from Fichtner Bankable Energy Yield Assessment Report
Electricity tariff (USD/MWh)	73	For feed-in-tariff (http://www.epdk.gov.tr/documents/elektrik/mevzuat/kanu)

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Income Tax Rate	20%	Corporate Tax Rate (http://www.gib.gov.tr/index.php?id=860)
LoanShare (EUR)	40,920,786	Loan Agreement
Annual Operating Cost (EUR)	2,396,526	Estimated Operation Cost
Total Project Cost (EUR)	62,412,507	Equipment agreements and Financial Analysis Reports
EUR/USD Rate	1.352	Loan Agreement Date (Investment Decision Date TCMB rare (01/11/2013))
EUR/USD Rate	1.352	Loan Agreement Date (Investment Decision Date TCMB rare (01/11/2013))

The key assumptions for the calculation of the equity IRR are as follows:

- All relevant costs and revenues are included in the calculation of the equity IRR of the project activity.
- The investment period has been chosen as 25 years as the lifetime of the project activity has been supposed as also 25 years.
- The revenue from yearly electricity generation is based on the electricity sales base price with incentive applicable at the time of the investment decision.
- Over %80 percentage of the total project cost are confirmed through agreements by validation team. The reference list shows the related agreements.

All project IRR inputs are checked and accepted by the validation team. The Internal Rate of Return (IRR) is calculated as 10.22%. This is obviously below the financial benchmark of 13 % and the project activity cannot be considered to be a financially attractive alternative.

In the sensitivity analysis -10%, +10% range is applied for the investment cost, production expenses and revenue. The calculated IRR figures are again below the benchmark rate.

Parameter	Electricity Price			Turbine Cost			Energy Yield			Operating Cost		
Variance	-10%	0%	10%	-10%	0%	10%	-10%	0%	10%	-10%	0%	10%
IRRs	7.97%	10.22%	12.43%	12.28%	10.22%	8.66%	7.97%	10.22%	12.43%	10.87%	10.22%	9.58%

For production, P90 values have been used. +%10 increase on Electricity Price has been determined and IRR increases to 12.43%. It is the highest IRR value and lower than the benchmark.

IRR analysis is also checked and accepted by the financial specialist. The sensitivity analysis shows that the equity IRR of the proposed project does not overcome the financial benchmark despite favourable conditions. The sensitivity analysis further substantiates that the project activity is not a feasible alternative and so additional.

Barrier Analysis is not used for the project activity.

Common Practice Analysis

The common practice is confirmed through the “Tool for the demonstration and assessment of additionality”, version 7.0.0 and according to the Guidelines on Common Practice version 02.0. The steps of the common practice are validated as follows through the tool and guideline as follows;

Step 1: Calculate applicable capacity or output range as +/-50% of the total design capacity or output of the proposed project activity:

The project capacity is 57 MW. The range for the project activity is between 28.5 MW and 85.5 MW according to step 1.

Step 2: Identify similar projects (both CDM and non-CDM) which fulfill all of the following conditions:

- (a) The projects are located in the applicable geographical area; (Turkey)
- (b) The projects apply the same measure as the proposed project activity; (Renewable Energy Projects)
- (c) The projects use the same energy source/fuel and feedstock as the proposed project activity, if a technology switch measure is implemented by the proposed project activity; (Wind Power Plants)
- (d) The plants in which the projects are implemented produce goods or services with comparable quality, properties and applications areas (e.g. clinker) as the proposed project plant; (N.A.)
- (e) The capacity or output of the projects is within the applicable capacity or output range calculated in Step 1; (28.5 MW – 85.5 MW)
- (f) The projects started commercial operation before the project design document (CDM-PDD) is published for global stakeholder consultation or before the start date of proposed project activity.

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} .

From the list obtained from TEIAS Capacity Projection Report 2012. (Ref-29), it has been understood that when projects registered as VER projects and projects under validation are excluded, there is not any project, Satisfying the steps 2 and 3,

$N_{all} = 0$

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} .

When both the fuel types of the power plants and the company types are taken into account, the number of companies that apply technologies different that the technology applied in the proposed project activity,

$N_{diff} = 0$

Step 5: Calculate factor $F=1-N_{diff}/N_{all}$ representing the share of similar projects (penetration rate of the measure/technology) using a measure/technology similar to the measure/technology used in the proposed project activity that deliver the same output or capacity as the proposed project activity.

$$F = 1 - 0 / 0$$

= undefined

Factor F is therefore undefined.

Since $N_{all} - N_{diff} = 0$ is not greater than 3, Bureau Veritas Certification hereby confirms that the proposed GS-VER project activity is not common practice. The calculations are checked and confirmed through the TEIAS Capacity Projection Report 2012.

(<http://www.teias.gov.tr/KAPASITEPROJEKSIYONU2012.pdf>)

In conclusion, as demonstrated in accordance with ACM0002 Version 17, "Tool for the demonstration and assessment of additionality" – Version 07.0.0, the proposed VER project activity is additional.

3.2.6 Quantification of GHG Emission Reductions and Removals

3.2.6.1 Baseline Emissions

The baseline emissions for the project were calculated in line with the applied methodology and the relevant tools ACM0002 Version 17.0.0; "Tool for the demonstration and assessment of additionality" v.07.0; "Tool to calculate the emission factor for an electricity system" v.05.0.

$EF_{grid,CM}$ is calculated according to the "Tool to calculate the emission factor for an electricity system" version 05.0. The combined margin emission factor $EF_{grid,CM,y}$ calculated through equation is **0.5514** tCO₂/MWh.

3.2.6.2 Project Emissions

The project emission from wind power plant is zero.

3.2.6.3 Leakage Emissions

According to the methodology, leakage emissions are neglected.

3.2.6.4 Summary of GHG emission reductions or removals

Accordingly the baseline emissions BE_y are calculated as following:

$$BE_y = EG_{BL,y} \cdot EF_{CO_2,grid,y}$$

Where:

BE_y Baseline emissions in year y (tCO₂)

- $EG_{BL,y}$ Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year y (MWh)
 $EF_{grid,CM,y}$ CO2 emission factor of the grid in year y (tCO2/MWh)

If the project activity is the installation of a new grid-connected renewable power plant/unit at a site where no renewable power plant was operated prior to the implementation of the project activity, then:

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

$$EG_{facility,y} = 184,017 \text{ MWh/year}$$

Therefore, the expected baseline emission for the full year production of the project is:

$$BE_y = 0.5514 \times 184,017 = \mathbf{101,473 \text{ tCO}_2e}$$

According to the methodology, the generic equation for the calculation of emission reduction is:

$$ER_y = BE_y - PE_y - LE_y$$

Where:

- ER_y Emission reductions for the year y (tCO2)
 BE_y Baseline emissions for the year y (tCO2)
 PE_y Project emission for the year y (tCO2)
 LE_y Leakage Emission in year y (tCO2)

$$ER_y = 101,473 - 0 - 0 = \mathbf{101,473 \text{ tCO}_2}$$

Starting date of the project activity is estimated as 01/03/2015

Years	Estimated baseline emissions or removals (tCO2e)	Estimated project emissions or removals (tCO2e)	Estimated leakage emissions (tCO2e)	Estimated net GHG emission reductions or removals (tCO2e)
20.03.2015-31.12.2015	76,105	0	0	76,105
2016	101,473	0	0	101,473
2017	101,473	0	0	101,473
2018	101,473	0	0	101,473
2019	101,473	0	0	101,473
2020	101,473	0	0	101,473
2021	101,473	0	0	101,473
2022	101,473	0	0	101,473
2023	101,473	0	0	101,473
2024	101,473	0	0	101,473
01.01.2025-19.03.2025	25,368	0	0	25,368
Total	1,116,203	0	0	1,116,203

Based on the above assessment, the VVB hereby confirms that:

- (a) All assumptions and data used by the project participants are listed in the VCS-PD, including their references and sources;
- (b) All documentation used by project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the PD;
- (c) All values used in the PD are considered reasonable in the context of the proposed CDM project activity;
- (d) The baseline methodology has been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions;
- (e) All estimates of the baseline emissions can be replicated using the data and parameter values provided in the PD.

The formulas and factors used in the calculation of GHG emissions are found to be transparent and correct by the validation team. Statistics related to the national grid were taken from publicly available TEİAŞ, EMRA sources. All data parameters and their sources, available at validation for the ex-ante calculation of the Combined Margin Emission Factor have been validated by the baseline expert of the validation team to be conservative and appropriate.

3.2.7 Methodology Deviations

There are no methodological deviations applied to the project.

3.2.8 Monitoring Plan

The monitoring plan includes the monitoring of “Electricity Production / EGfacility,y”, the quantity of the net electricity that is delivered to the grid, and this parameter will be the basis for the emission reduction calculations. The DOE hereby confirms that the monitoring plan complies with the requirements of the methodology.

Data and parameters available at validation

The Combined Margin emission factor is calculated ex-ante; the parameters used in the calculation of the emission factor are available at validation. The below table shows the data and parameters that are available at validation

Parameter	Data Unit	Description	Source
Gross EG_y	GWh	Gross Electricity supplied to the grid by relevant sources (2013-2015)	Turkish Electricity Transmission Company (TEİAŞ), Annual Development of Turkey's Gross Electricity Generation of Primary Energy Resources (2013-2015) TEİAŞ http://www.teias.gov.tr/T%C3%BCrkiyeElektrik%C4%B0statistikleri/istatistik2015/istatistik2015.htm , table 55
EF_{grid, CM, y}	tCO ₂ /MWh	Combined margin CO ₂ emission factor for the	As per “Tool to calculate the emission factor for an electricity

Parameter	Data Unit	Description	Source
		project electricity system in year 2015	system"
Eg_{facility,y}	MWh/yr m3	Quantity of net electricity generation by the project plant in a year	Turkish Electricity Transmission Company (TEIAS), Annual Development of Electricity Generation- Consumption and Losses in Turkey (1984-2014) TEIAS, see http://www.teias.gov.tr/T%C3%BCrkiyeElektrik%C4%B0statistikleri/istatistik2015/istatistik2015.htm
EF_{CO2,i,y}	tCO ₂ /GJ	CO ₂ emission factor of fuel type i used in year y	IPCC default values at the lower limit of the uncertainty at a 95% confidence interval as provided in table 1.4 of Chapter1 of Vol. 2 (Energy) of the IPCC Guidelines on National GHG Inventories. See http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf
Sample Group for BM emission factor		Most recent power plants which compromise 20% of total generation	Annual Development Of Fuels Consumed In Thermal Power Plants In Turkey By The Electric Utilities, TEIAS: http://www.teias.gov.tr/YayinRapor/ASIYONU2011.pdf http://www.teias.gov.tr/YayinRapor/ASIYONU2012.pdf http://www.teias.gov.tr/YayinRapor/ASIYONU2013.pdf
η_{m,y}		Average energy conversion efficiency of power unit m in year y	Annex I the "Tool to calculate the emission factor for an electricity system"
HV_{i,y}	Mass or volume unit	Heating Values of fuels consumed for electricity generation in the years of 2013, 2014 and 2015	Heating Values Of Fuels Consumed In Thermal Power Plants In Turkey By The Electric Utilities, TEİAŞ. See: http://www.teias.gov.tr/T%C3%BCrkiyeElektrik%C4%B0statistikleri/istatistik2015/istatistik2015.htm excel

Parameter	Data Unit	Description	Source
			file 69
$FC_{i,y}$	Mass or volume unit	Amount of fuel type i consumed in the project electricity system in year y	Annual Development of Fuels Consumed In Thermal Power Plants In Turkey by The Electric Utilities, TEİAŞ. See: http://www.teias.gov.tr/T%C3%BCrkiyeElektrik%C4%B0statistikleri/istatistik2015/istatistik2015.htm excel file 67
$NCV_{i,y}$	TJ/Gg	Net Calorific Value of fuel types in the years of 2013, 2014 and 2015	Calculated by using $HV_{i,y}$ to $FC_{i,y}$ as Net Calorific Values of fuel types are not directly available in Turkey.

Data and parameters monitored

Data / Parameter	$EG_{facility,y}$
Data unit	MWh/yr
Description	Quantity of net electricity generation supplied to the grid in year y
Source of data	The data from the Electricity Meters are the basis for the settlement notification of PMUM. Data are gathered electronically from the meters by TEİAŞ and stored in secured website of PMUM, which is accessible to project developer with a private password. For monitoring, web screenshots of PMUM shall be used as source of data.
Description of measurement methods and procedures to be applied	- Two electricity meters will be placed (one main and one reserve) at the substation. These meters are sealed by TEİAŞ and intervention by project proponent is not possible. The fact that two meters are installed in a redundant manner keeps the uncertainty level of the only parameter for baseline calculation low. High data quality of this parameter is not only in the interest of the emission reduction monitoring, but paramount for the business relation between the plant operator and the electricity buyers. - Monthly settlement notifications of PMUM (Piyasa Mali Uzlaştırma Merkezi) consist hourly electricity production and withdrawn from the grid. - Since the meters are reading electricity supplied to the system and withdrawn from the system separately, the net electricity amount supplied to the grid will be calculated by electricity supplied minus electricity withdrawn which will be taken from monthly settlement notifications. The above described measurement method follows Article 81 of the

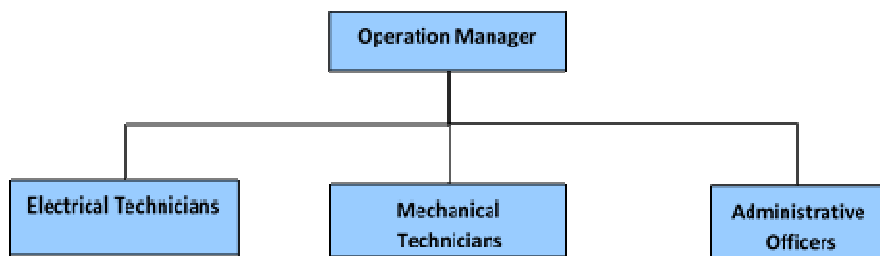
	official regulation “Electricity Market Balancing And Settlement Regulation”												
Frequency of monitoring/recording	Annually												
Value applied:	184,017 MWh/year												
Monitoring equipment	Meters are in compliance with the communiqué for Metering Devices to be used in Electricity Market. The specification of electricity meters are provided below: <table><tr><td>Name</td><td>Serial Number</td><td>Brand –Model</td><td>Date Of Calibration</td></tr><tr><td>Main Meter</td><td>4585848</td><td>EMH</td><td>12/12/2016</td></tr><tr><td>Backup meter</td><td>4585849</td><td>EMH</td><td>12/12/2016</td></tr></table> Accuracy class: Active 0.2S – Reactive 2	Name	Serial Number	Brand –Model	Date Of Calibration	Main Meter	4585848	EMH	12/12/2016	Backup meter	4585849	EMH	12/12/2016
Name	Serial Number	Brand –Model	Date Of Calibration										
Main Meter	4585848	EMH	12/12/2016										
Backup meter	4585849	EMH	12/12/2016										
QA/QC procedures to be applied	According to the Article 2 of the Communiqué of Meters in Electricity Sector: ‘The meters to be used in the electricity market shall be compliant with the standards of Turkish Standards Institute or IEC and have obtained “Type and System Approval” certificate from the Ministry of Trade and Industry.’ Therefore, Ministry of Trade and Industry (Ministry) is responsible from control and calibration of the meters. Also according to Article 11 of this Communiqué, meters shall be in class of 0.5s, which means error interval for measuring is in $\pm 0.5\%$ range which is well acceptable according to rules. Paragraph b) of the Article 9 of the ‘Regulation of Metering and Testing of Metering Systems’ (Regulation) of Ministry states that: ‘ b) Periodic tests of meters of electricity, water, coal gas, natural gas and current and voltage transformers are done every 10 years.’ Therefore periodic calibration of the meters will be done every 10 years. Also according to Article 67 (page 20) of this regulation, the calibration shall be done in calibration stations which have been tested and approved by Ministry of Trade and Industry. Article 10 d) of Communiqué requires the meters shall be three phase four wire and Article 64 of Regulation clearly states how calibration shall be performed for this kind of meters. As above mentioned, the data acquisition and management and quality assurance procedures that are anyway in place, no additional procedures have to be established for the monitoring plan. In addition to that the quantity of net electricity delivered to the grid will be cross checked with the meter reading records (OSF forms) provided to the company by TEIAS and internal reports provided to the head of the company by the plant manager.												
Purpose of data	Calculation of emission reductions												

Calculation method	The net electricity will be calculated by: a) Subtracting self-consumption value from gross generation value for each month to find the net electricity supplied to the grid. b) Adding up all monthly net electricity values to calculate the total net electricity supplied to the grid during the monitoring period. c) Multiplying the total net electricity value with the CM emission factor.
Comments	-

Monitoring plan given in VCS-PD, are in line with the monitoring requirements of the applied approved CDM methodology, ACM0002 Version 17. Main parameter monitored in line with the methodology is the net electricity supplied to the grid, which will be the basis of the amount of emission reduction achieved by the project. Roles and responsibilities regarding monitoring have been given under section 4.3 of the VCS-PD v.3.0

Regarding monitoring of the quantity of net electricity delivered to the grid (EGy), the main source for the data has been determined as the Monthly official PMUM (Market Financial Settlement Centre) records, Meter Reading records (OSF Forms) will be used as the basis for cross-checking the PMUM records. Readings will be taken from a set of meters, one main and one reserve at the substation. TEIAS is the responsible for the calibration of the meters if any change occurs between the main and reserve meters.

Operation manager is the responsible for the implementation of the monitoring plan and preparation of the monitoring report. Operation and Management Diagram can be seen as below;



The project participant is the responsible for the implementation and oversight of the monitoring plan as well as data management. The period of storage of monitoring data will not be less than 2 years after the end of crediting period or till the last issuance of VER's for the project activity, whichever occurs later. The Project Participant will be responsible for storage of data received from the measuring devices.

Monitoring data is collected in accordance with the agreement done between the project owner and Turkish Electricity Distribution Company (TEDAS) which provides the infrastructure for the connection to the national grid.

The metering system is defined in the agreement as two groups; main meter and spare meter. The meters are placed at the point the electricity is fed to the grid and sealed on behalf of the both parties.

Maintenance and calibration of TEIAS meters will be carried out according to the System Connection Agreement dd. 15/01/2016. The measuring device's specifications are in accordance with the measurement communiqué of Turkey (Turkish Standards and International Electro technical Commission standards).

4 SAFEGUARDS

4.1 No Net Harm

The project has minimum impact on terrestrial fauna, except from birds, and takes precautionary approach in regard to environmental challenges. Moreover, necessary precautions will be taken in order to minimize the impact of the project on the environment.

4.2 Environmental Impact

The project participants conducted an analysis of the environmental impacts of the proposed project activity, including trans-boundary impacts as a part of the national EIA procedures. However, the project is EIA exempt as it is not included in activities determined in the Annex-II of the EIA Regulations. This was made official and was validated through the decision of the Hatay Provincial Environment and Forestry Directorate dd.24/01/2014.

Due to project size and location almost no impact is expected which is found acceptable by BVC after on-site observations and assessment of the project characteristics.

Bureau Veritas Certification hereby confirms that the project participants have undertaken an analysis of environmental impacts.

4.3 Local Stakeholder Consultation

Local Stakeholder Consultation meeting was held on 06/12/2013 in Kömürçukuru Village of Belen District. At the meeting in Kömürçukuru, the plan to build the wind power project was presented to the public for the first time. The purpose of the meeting was to inform public and stakeholders about the plan and present and discuss social and environmental impacts of the project.

Invitation process for local stakeholder meeting was followed and about 20 associations/governmental offices were invited by invitation letters or calling. Apart from this kind of invitation other stakeholders were invited by local announcements such as announcement done on village coffeehouse and in newspaper. During the site visit dd.10/02/2017 stakeholder are declared their positive opinions to validation team.

4.4 Public Comments

Public comments received during local stakeholder consultation meeting and also continuous input process book was handed into the mayor of Kömürçukuru, Abdullah Öner in order to receive comments after the meeting.

The other way of encouraging people to comment on the project was explained in the announcements and invitation letter as writing e-mail, calling or sending letters.

5 VALIDATION CONCLUSION

Bureau Veritas Certification has performed a validation of the Çerçikaya Wind Power Project. The validation was performed on the basis of UNFCCC criteria, applied CDM Methodology ACM0002 Version 17.0, VCS criteria and Turkey's criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting.

The validation consisted of the following three phases: i) a desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) the resolution of outstanding issues and internal technical review followed by the issuance of the final validation report and opinion. Project participant/s used the latest tool for demonstration of the additionality. In line with this tool, the VCS-PD provides analysis of investment barriers to determine that the project activity itself is not the baseline scenario.

As a wind power production plant, the project is likely to result in reductions of GHG emissions. An analysis of the investment barriers demonstrates that the proposed project activity 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. Project's technical aspects, annual expected generation amounts and ex-ante calculated grid combined emission factor has been confirmed by the validation team and the ex-ante calculations of the expected emission reductions have been validated, therefore given that the project is implemented and maintained as designed, the project is likely to achieve the estimated amount of emission reductions (101,473 tonnes CO₂e) that has been validated in the VCS-PD v.3.0.

The review of the project design documentation (version 03) and the subsequent follow-up interviews have provided Bureau Veritas Certification with sufficient evidence to determine the fulfilment of stated criteria.

In our opinion, the project correctly applies and meets the relevant UNFCCC requirements for the CDM Methodology ACM0002 Version 17, VCS v.03.6 and the relevant host country criteria. Bureau Veritas Certification thus requests registration of 'Çerçikaya Wind Power Project' as a VCS-VCU project activity.



Mrs. Seda YÜCEL

Internal Technical Reviewer

13/03/2017



Mr. Furkan SADIKOĞLU

Lead Verifier

13/03/2017

6 REFERENCES

- Çerçikaya WPP VCS PD Ver 1.0 - 14/10/2016
- Çerçikaya WPP VCS PD Ver 2.0 - 31/01/2017
- Çerçikaya WPP VCS PD Ver 3.0 - 24/02/2017
- Çerçikaya EF Calculation Excel Sheet Ver 01
- Çerçikaya IRR Calculation Excel Sheet Ver 01
- Çerçikaya IRR Calculation Excel Sheet Ver 02
- Çerçikaya IRR Calculation Excel Sheet Ver 03
- Çerçikaya Common Practice Excel Sheet Ver 01
- EIA Not Required – 24/01/2014
- Energy Yield Assessment Report – 06/03/2014
- EMRA Generation License – 01/03/2012
- Investment Control Report - 10/09/2014
- Project Introduction File – May 2013
- System Connection Agreement -30/01/2014
- System Usage Agreement – 09/12/2014
- Provisional Acceptance – 20/03/2015
- Turbine Foundation Agreement – 01/11/2013
- Turbine Agreement – 10/12/2013
- Loan Agreement – 13/08/2014

6 PERSONS INTERVIEWED

- **Mrs. Elif Özdemir** - Life Enerji– Consultant - +90 0312 481 21 42
- **Mr. Mehmet Doğru** – Kömürçukuru Muhtar - +90 535 640 95 18
- **Mr. Mehmet Çalışkan** – Çerçikaya WPP – Technician
- **Mr. Ahmet Ateş** – Çerçikaya WPP - Personnel

7 VALIDATION TEAM

Internal Technical Reviewer: Seda YÜCEL – Chemical Engineer

Bureau Veritas Certification SAS – Internal Technical Reviewer

Fikriye Seda YÜCEL, B.Sc. in Chemical Engineering has completed her M.Sc. degree in Istanbul Technical University in Energy Science and Technology. She is auditor and trainer for ISO 50001 and auditor for ISO 14001 and has about 2 years of experience in management systems and 7 years of experience in energy management in industry. She has been involved in more than 20 GS and VCS projects as a team leader/validator/verifier especially in the energy sector. She has been working as Gold Standard team leader/validator/verifier and CDM trainee validator/verifier.

Team Leader : Furkan SADIKOĞLU – Electrical and Electronics Engineer

Bureau Veritas Certification SAS – Lead Verifier

Furkan Sadıkoğlu is an Electrical & Electronics engineer. He has an experience in renewable energy and LED lightning sectors and he has over 4 years' experience in energy sectors. He has participated online seminars in the Gold Standard Academy in 2012, 2013 and 2017 and is a lead verifier for GHG emission reduction projects.

Investment Analysis Specialists: Mr. Murat Gencer – Master of Economics

RiskTürk Software Development and Consultancy – Head of Financial Analysis Team

Murat Gencer, consultant and a trainer, has over 11 years of experience in FMCG, software development and banking sectors. He is specialized in project finance, financial modelling, risk management and MS Excel applications.

APPENDIX A: LARGE SCALE PROJECT ACTIVITIES VALIDATION PROTOCOL (REV 10.3)**Table 1** Validation requirements based on VVS version 09.0 (EB 79 Annex 4), PS version 09.0 (EB 79 Annex 3), PCP version 09.0 (EB 79 Annex 5), and Guidelines for completing the PD form version 01.0 (EB 66 Annex 9)

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
Part I Cover Page					
(a) Is the title of the project activity provided?	PD		Title of the project is given as Çerçikaya Wind Power Project.	OK	OK
(b) Is the version number of the PD indicated?	PD		Version number of the PD is given as 01	OK	OK
(c) Is the completion date of the PD provided in DD/MM/YYYY format?	PD		Completion date of the PD is given as 14/10/2016.	OK	OK
(d) Are project participants indicated?	PD		Project participant is given as ZT Enerji Elektrik Üretim San. Ve Tic. A.Ş.	OK	OK
(e) Is the host party(ies) indicated?	PD		Host party is given as Turkey	OK	OK
(f) Is the sectorial scope and selected methodology(ies) indicated?	PD		The select methodology (ACM0002 Version 17) seems to be valid when project documents are submitted to DOE.	OK	OK
(g) Is the estimated amount of annual average GHG emission reductions indicated?	PD		Annual average estimated emission reduction is provided (101,473 tCO ₂ e).	OK	OK
Part II PD					
A. Description of project activity					

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
A.1 Purpose and general description of project activity					
A.1.1 Is a brief description of the project activity provided, including a summary of the scope of activities/ measures that are to be implemented within the project activity?	PD PS	31(b)	Average annual electricity production is determined based on Confidence Level P75 through the Energy Yield Assessment Report. Why P90 or P50 values are not used?	CL01	OK
			Under section 1.1 of VCS PD the project capacity is given as 57 MWe through EIA Not Required Decision for 19 turbines, but on EIA Decision capacity is given as 53 MWe. Please revise the reference accordingly.	CAR01	OK
A.1.2 Are the scenario existing prior to the start of project and baseline scenario indicated?	PD		The scenario existing prior to the start of project (baseline scenario) is indicated under section 1.8 of the VCS-PD.	OK	OK
			The project start date is given as 20 March 2015 under section 1.1 of VCS PD. On the other side start date is given as 11 January 2015 under section 1.5. Please provide the actual date through the reference and revise related sections.	CAR02	OK
A.1.3 Does it explain how the project activity will reduce GHG emissions or increase GHG removals?	PS	31(c)	Purpose of the proposed project is to generate electricity by utilizing the renewable energy potential to meet increasing electricity demand and thus	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			reduce fossil fuel consumption.		
A.1.4 Is the estimated of annual average and total GHG emission reductions for the chosen crediting period provided?	PD		Expected total emission reductions for the chosen crediting period is not provided under section 1.1 of VCS PD.	CAR03	OK
A.1.5 Is a brief description of how the project activity contributes to sustainable development provided?	PD		Stated sustainable development specific goals are sufficient under section 1.1 of VCS PD.	OK	OK
A.1.6 In order to determine whether the description of the proposed project activity in the PD is accurate, complete, and provides an understanding of the proposed CDM project activity, does the DOE conducted a physical site visit to assess the Project? If not, please justify.	VVS	65	The physical site visit was conducted on 10/02/2017 by the validation team to validate the description of the project activity provided in the VCS PD.	OK	OK
A.1.7 For all other proposed CDM project activities not referred to in VVS paragraphs 65-66, does the DOE undertaken the validation of project description by reviewing available designs and feasibility studies and should conduct comparison analysis with equivalent projects, as appropriate.	VVS	67	The validation team has undertaken a physical site visit to validate the project description. Hence this clause is not applicable.	OK	OK
A.1.8 If the proposed CDM project activity involves the alteration of an existing installation or process, does the project description state the differences resulting from the project activity compared to the pre-project situation?	VVS	68	Not applicable as the project activity is a Greenfield project.	OK	OK
A.2 Location of project activity					

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
A.2.1 Is the host party(ies) indicated?	PD		Turkey has ratified the Kyoto Protocol however not set any emission reduction target; hence, it is not listed as an Annex B country of the Kyoto Protocol and will not be a host for Clean Development Mechanism (CDM) or Joint Implementation (JI) projects until the end of 2012, because of its particular situation. There is no DNA in Turkey. Hence, the checklist question is N/A.	OK	OK
A.2.2 Is region/state/province etc. indicated?	PD		Mediterranean Region /Hatay province	OK	OK
A.2.3 Is City/Town/Community etc. indicated?	PD		İskenderun district in Hatay province.	OK	OK
A.2.4 Are the details of physical location of the project activity provided?	PD		Coordinates or formats under table 2 of VCS PD are not line with EIA Not Required Document please clarify.	CL02	OK
A.3 Technologies and measures					
A.3.1 Are there a list and the arrangement of the main manufacturing / production technologies, systems and equipment involved?	PD		Turbine technical specification is provided under section 1.8 of the VCS PD.	OK	OK
A.3.1.1 Is the information about the age and average lifetime of the equipment based on manufacturer's specifications and industry standards, and existing and forecast installed capacities, load factors and efficiencies included in the	PD		OK	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
description?					
A.3.1.2 Are the monitoring equipment's and their location in the systems included in the description?	PD		Electricity transfer from turbine to transmission line diagram that shows the monitoring equipment's and their location is provided on figure 3 of the VCS PD.	OK	OK
A.3.2 Are energy and mass flows and balances of the systems and equipment included in the project activity provided?	PD		Provided on figure 3 of the VCS PD	OK	OK
A.3.3 Are the types and levels of services provided by the systems and equipment that are being modified and/or installed under the project activity and their relation, if any, to other manufacturing/ production equipment and systems outside the project boundary provided?	PD		Not applicable as it is a green field project.	OK	OK
A.3.4 Does the description clearly explain how the same types and levels of services provided by the project activity would have been provided in the baseline scenario?	PD		In the absence of the project activity, how the electrical energy would have been delivered to the grid provided.	OK	OK
A.3.5 Is a list of facilities, systems and equipment in operation under the existing scenario prior to the implementation of the project activity provided?	PD		Turkish national grid is the baseline.	OK	OK
A.3.6 Is a list of facilities, systems and equipment in the baseline scenario provided?	PD		Turkish national grid is the baseline.	OK	OK
A.3.7 Is a description of how technologies and measures and know-how to be used are transferred to the Host Party(ies) included?	PD		It is described under section 1.8 of VCS PD.	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
A.4 Party(ies) and project participant(s)					
A.4.1 Are following information provided in a tabular format?					
A.4.1.1 List of project participants and parties	PD		Under section 1.3 project participant list is provided.	OK	OK
A.4.1.2 Identification of Host Party	PD		There is no DNA in Turkey. Hence, the checklist question is N/A.	OK	OK
A.4.1.3 Indication whether the Party wishes to be considered as project participant	PD		There is an indication about the issue. N/A	OK	OK
A.5 Public funding of project activity					
A.5.1 Is it indicated whether the project activity receives public funding from Annex I Parties?	PD		The 1.12 section of the PD mentions that "No public funding is used for the project."	OK	OK
A.5.2 In case where public funding from Annex I Parties is involved, are followings provided? (a) Information on Parties providing public funding (b) Attached in Appendix 2: the affirmation obtained from such Parties 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 those Parties	PS	34	N/A	OK	OK
B. Application of selected approved baseline and monitoring methodology					
B.1 Reference of methodology					

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
B.1.1 Is the selected methodology (ies) indicated with exact reference (number, title and version)?	PD		The selected methodology is indicated as "ACM0002 Version 17.0 Consolidated baseline methodology for grid-connected electricity generation from renewable sources".	OK	OK
B.1.2 Are the baseline and monitoring methodologies selected by the project participants the valid versions of those approved by the Board?	VVS	70	The selected methodology (ACM0002 Verison 17) seems to be valid when project documents are submitted to DOE.	OK	OK
B.1.3 Are there any tools and other methodologies to which the selected methodology indicated?	PD		Tool to calculate the emission factor for an electricity system (Version 05.0.0) ; Tool for the demonstration and assessment of additionality (Version 07.0.0) ; Tool to determine the remaining lifetime of the equipment	OK	OK
B.1.4 Has specific guidance and/or clarifications provided by the Board with respect to the approved methodology and any applicable tools been applied?	VVS	71	N/A	OK	OK
B.1.5 Is there any deviation or clarification requested for the approved methodology?	VVS	78-81	N/A	OK	OK
B.2 Applicability of methodology					
B.2.1 Is the selected baseline and monitoring methodology applicable to the project activity and that the selected version valid at the time of submission of the proposed project activity for registration?	VVS	73-75	The selected baseline and monitoring methodology is applicable to the project activity and the valid version of ACM0002 methodology is used at the time of submission of the proposed project activity	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			for registration.		
B.2.2 Does the project activity meet each of the applicability conditions of the approved methodology or other methodology component referred to therein?	PD VVS	76	Applicability conditions of ACM0002 Version 17.0.0 are completely described with objective references.	OK	OK
B.3 Project boundary					
B.3.1 Are the emission sources and GHGs included in the project boundary for the purpose of calculating project emissions and baseline emissions described using the table provided?	PD		Emission sources are correctly shown on boundary listed under section 2.3 of the VCS PD.	OK	OK
B.3.2 Is a flow diagram of the project boundary presented, physically delineating the project activity?	PD		OK	OK	OK
B.3.3 Does the flow diagram include the equipment, systems and flows of mass and energy described? In particular, is the emission sources and GHGs included in the project boundary and the data parameters to be monitored indicated in the diagram?	PD VVS	82	System usage agreement and connection agreement are not provided.	CAR04	OK
B.4 Establishment and description of baseline scenario					
B.4.1 Is an explanation how the baseline scenario is established in accordance with the selected baseline methodology provided?	PD VVS	89	The project applied CDM-EB approved "ACM0002: Grid connected renewable electricity generation from renewable sources - Version 17." EF _{grid,CM} is calculated according to the "Tool to calculate the emission factor for an	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			electricity system".		
B.4.2 When establishing the baseline scenario, and where "future anthropogenic emissions by sources are projected to rise above current levels due to the specific circumstances of the host Party", do the project participants follow the "Guidelines on the consideration of suppressed demand in CDM methodologies"?	PS	42	N/A	OK	OK
B.4.3 Does the approved methodology that is selected by the proposed CDM project activity prescribe the baseline scenario and hence no further analysis is required?	VVS	113, 115	ACM0002 Version 17 is used for the baseline determination.	OK	OK
B.4.4 If no, does the PD identify credible alternatives to the project activity in order to determine the most realistic baseline scenario?	VVS	114	OK	OK	OK
B.4.5 Does the list of alternatives given in the PD ensure that: (a) One of the options that the project activity is undertaken without being registered as a proposed CDM project activity (b) The list contains all plausible alternatives (c) The alternatives comply with all applicable and enforced legislation	VVS	114	Alternatives are assessed properly according to "Tool for the demonstration and assessment of additionality". Definitions of the alternatives are provided under Sub-step 1a section of the VCS PD.	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
B.4.6 Has any procedure contained in the methodology to identify the most reasonable baseline scenario, been correctly applied?	PD VVS	89	Yes, the procedure contained in the methodology to identify the most reasonable baseline scenario has been correctly applied.	OK	OK
B.4.7 Is the baseline identified for the proposed project activity the scenario that reasonably represents the anthropogenic emissions by sources of GHGs that would occur in the absence of the proposed project activity?	VVS	88	N/A	OK	OK
B.4.8 Does the selected methodology require use of tools (such as the “Tool for the demonstration and assessment of additionality” and the “Combined tool to identify the baseline scenario and demonstrate additionality”) to establish the baseline scenario?	VVS	89	The methodology refers to “Tool for the demonstration and assessment of additionality (Version 7.0.0)”.	OK	OK
B.4.9 Does the methodology require several alternative scenarios to be considered in the identification of the most reasonable baseline scenario?	VVS	90	Yes, the methodology requires several alternative scenarios to be considered in the identification of the most reasonable baseline scenario.	OK	OK
B.4.10 Are the documents and sources referred to in the PD correctly quoted and interpreted and are they crosschecked with other verifiable and credible sources, such as local expert opinion, if available?	PD VVS	91	References are correctly provided.	OK	OK
B.4.11 Does the PD provide a description of the identified baseline scenario, including a description of the technology that would be employed and/or the activities that would	VVS	92	The baseline scenario is identified according to the “Baseline Methodology Procedure” of ACM0002 Version 17.	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
take place in the absence of the proposed project activity?					
B.4.12 Have all applicable CDM requirements been taken into account in the identification of the baseline scenario for the proposed project activity?	VVS	93	The baseline scenario is identified according to the "Baseline Methodology Procedure" of ACM0002 Version 17.	OK	OK
B.4.13 Has relevant national and/or sectorial policies and circumstances (type E+ or E-), such as sectorial reform initiatives, local fuel availability, power sector expansion plans, and the economic situation in the project sector been taken into account?	VVS	93	N/A	OK	OK
B.4.14 Is a transparent description of the baseline scenario provided?	PD		Transparent description of the baseline scenario is provided.	OK	OK
B.5 Demonstration of additionality					
B.5.1 Is the project activity demonstrated additional in accordance with the selected methodology (ies)?	PD		The project activity demonstrated additional in accordance with the selected methodology through Investment analysis.	OK	OK
B.5.2 Where the procedure in the selected methodology(ies) and/or tool involves several steps, is it described how each step is applied and is the outcome of each step transparently documented?	PD		"Tool for the Demonstration and Assessment of Additionality (Version 07.0.0)" is taken into account for additionality section.	OK	OK
B.5.3 Is the method selected to demonstrate additionality clearly indicated?	PD		Benchmark analysis method applied. World Bank 2009 reference has been used. Please use more new reference for Benchmark determination.	CAR05	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
B.5.4 If investment analysis is used:					
B.5.4.1 Are all relevant assumptions and parameters used in the analysis listed?	PD		Options are described according to “Tool for the demonstration and assessment of additionality” Version 7.0.0	OK	OK
B.5.4.2 Is the latest version of the “Guidelines on the assessment of investment analysis” applied?	VVS	118	Version 05 is applied.	OK	OK
B.5.4.3 Is project activity one of the following cases in regards to investment analysis:	VVS	119			
B.5.4.3.1 The proposed project activity would produce no financial or economic benefits other than CDM-related income;	VVS	119(a)	The proposed project generates financial and economic benefits via the sales of electricity other than carbon revenues.	OK	OK
B.5.4.3.2 The proposed project activity is less economically or financially attractive than at least one other credible and realistic alternative;	VVS	119(b)	All scenarios are consistent with the baseline definition of ACM0002 / Version 17.0 where it defines the baseline scenario as the amount of electricity that would be delivered to the grid by the project activity, generated by the operation of existing grid-connected power plants and by the addition new generation sources.	OK	OK
B.5.4.3.3 The financial returns of the proposed project activity would be insufficient to justify the required investment.	VVS	119(c)	Under investment analysis net generation is given as 160,250,810 MWh but it is given as 184.017 MWh under section 1.1 of VCSPD.	CAR06	OK
			The loan agreement is not provided DOE.	CAR07	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			Total project cost is given as 68,695,516 Euro. But equipment agreement and other references are not provided to DOE.	CAR08	OK
B.5.4.4 Has the accuracy of financial calculations carried out for investment analysis been verified as follows:	VVS	120			
B.5.4.4.1 Determine the suitability of the financial indicator selected by the project participants and conduct a thorough assessment of all parameters and assumptions used in calculating such financial indicators, and determine the accuracy and suitability of these parameters using available evidence and applying its expertise in relevant accounting practices	VVS	120(a)	1. Please exclude the fair value at the end of analysis period. Assets will have been already depreciated in 25th year. But if the problem stated in 5th item is solved, there may be a need of calculating the fair value again but just for the construction activities. 2. The some of loan payments is not equal to debt amount. 3. Please apply different depreciation periods for each asset class. Depreciation period for the construction activities should be 40 years. 4. 1% Premium rate for the insurance seems very high. Please make a validation. 5. Please link the sensitivity cost parameter to each asset class, so that depreciation calculations can be affected		

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
				CAR09	OK
B.5.4.4.2 Cross-check the parameters against third-party or publicly available sources, such as invoices or price indices	VVS	120(b)	Refer to CAR09.	CAR09	OK
B.5.4.4.3 Review, as appropriate, feasibility reports, public announcements and annual financial reports related to the proposed project activity and the project participants	VVS	120(c)	Refer to CAR09.	CAR09	OK
B.5.4.4.4 Assess the correctness of computations carried out and documented by the project participants; and	VVS	120(d)	Refer to CAR09.	CAR09	OK
B.5.4.4.5 Assess, where applicable, the sensitivity analysis by the project participants to determine under what conditions variations in the result would occur, and the likelihood of these conditions.	VVS	120(e)	Sensitivity analysis is need to be revised according to correct electricity generation value.	CAR10	OK
B.5.4.5 If benchmark analysis is used:					
B.5.4.5.1 Is the benchmark clearly indicated?	PD		The benchmark is clearly indicated.	OK	OK
B.5.4.5.2 Is the type of benchmark applied suitable for the type of financial indicator presented?	VVS	121(a)	The type of benchmark applied is suitable for the type of financial indicator presented.	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
B.5.4.5.3 Does the risk premiums applied in determining the benchmark reflect the risks associated with the project type or activity?	VVS	121(b)	Refer to CAR03.	CAR09	OK
B.5.4.5.4 Is it reasonable to assume that no investment would be made at a rate of return lower than the benchmark?	VVS	121(c)	Refer to CAR03.	CAR09	OK
B.5.4.6 If cost comparison is used:					
B.5.4.6.1 Are the scenarios compared described?	PD		N/A	OK	OK
B.5.4.7 If PPs rely on values from FSR:	VVS	122			
B.5.4.7.1 Has the FSR been the basis of the decision to proceed with the investment in the project?	VVS	122(a)	Financial analysis for the Project is the basis of the decision to proceed with the investment in the project.	OK	OK
B.5.4.7.2 Are the values used in the PD and associated annexes fully consistent with the FSR? If inconsistencies occur, was the appropriateness of the values validated?	VVS	122(b)	Refer to CAR09.	CAR09	OK
B.5.4.7.3 On the basis of its specific local and sectoral expertise, is confirmation provided, by cross-checking or other appropriate manner, that the input values from the FSR are valid and applicable at the time of the investment decision?	VVS	122(c)	Time Schedule is given on Table 5 of the PD. Please provide references for Carbon consultant agreement, turbine agreement, loan agreement and start date of project.	CAR11	OK
B.5.5 If barriers analysis is used:					

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
B.5.5.1 Is the “Guidelines for objective demonstration and assessment of barriers” followed?	PS	48	N/A	OK	OK
B.5.5.2 Is it ensured that only the most relevant barriers selected?	PD		N/A	OK	OK
B.5.5.3 Is the credibility of the barriers justified with key facts and/or assumptions and the rationale?	PD		N/A	OK	OK
B.5.5.4 Is it ensured that issues that have a direct impact on the financial returns of the project activity are not considered as barriers but assessed by investment analysis? This does not refer to either: (a) Risk related barriers (b) Barriers related to the unavailability of sources of finance for the project activity	VVS	125	N/A	OK	OK
B.5.5.5 Were the barriers determined as real?	VVS	126(a)	N/A	OK	OK
B.5.5.6 Were the barriers determined as preventing the implementation of the project activity but not the implementation of at least one of the possible alternatives?	VVS	126(b)	N/A	OK	OK
B.5.6 Common Practice Analysis					
B.5.6.1 If the project type is first-of-its kind, do	VVS	128		OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
the project participants consider “Guidelines on additionality of first-of-its-kind project activities”?	PS	49(a)	N/A		
B.5.6.2 If the project type is not first-of-its kind, has common practice analysis been conducted considering “Guidelines on common practice”?	VVS PS	128 49(b)	Common practice analysis is correctly applied according to Guidelines on Common practice version 02.0 under page 28 of VCS PD.	OK	OK
B.5.6.3 Was it assessed whether the geographical scope of the common practice analysis is appropriate for the assessment related to the project activity’s technology or industry type?	VVS	129(a)	OK	OK	OK
B.5.6.4 Was it determined to what extent similar and operational projects, other than CDM project activities, and have been undertaken in the defined region?	VVS	129(b)	OK	OK	OK
B.5.6.5 Are similar and operational projects, other than CDM project activities, already “widely observed and commonly carried out” in the defined region? Is it assessed whether there are essential distinctions between the proposed CDM project activity and the other similar activities?	VVS	129(c)	OK	OK	OK
B.5.7 Prior consideration of the clean development mechanism					
B.5.7.1 If the project activity start date prior to the date of publication of the PD for stakeholder comments, were the CDM benefits considered necessary in the decision to undertake the project as a	PD VVS	105	N/A	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
proposed CDM project activity?					
B.5.7.2 Is the start date of the project activity, reported in the PD, the earliest date at which either the implementation or construction or real action of a project activity begins?	VVS	106	The reference of the starting date of the project activity is not provided under Table-5.	CAR12	OK
B.5.7.3 If the project activity requires construction, retrofit or other modifications, is it ensured that the date of commissioning not considered as the project activity start date?	VVS	106	N/A	OK	OK
B.5.7.4 Is it a project activity with a start date on or after 02 August 2008, or before 02 August 2008?	VVS	106	The project activity start date is after 02 August 2008.	OK	OK
B.5.7.5 For a project activity with a start date on or after 02 August 2008, are the following provisions to be satisfied:					
B.5.7.5.1 Has the PP informed the Host Party DNA and the UNFCCC secretariat in writing of the commencement of the project activity and of their intention to seek CDM status within 180days of the project activity start date?	PS VVS	27 107	N/A	OK	OK
B.5.7.5.2 Do the project participants inform the secretariat of the progress of the project activity every subsequent two years after the initial notification, until the PD regarding the project activity has been published for global stakeholder consultation or, a new	PCP	9		OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
baseline and monitoring methodology is proposed or a revision of an approved baseline and monitoring methodology is requested for the project activity before the start date?			N/A		
B.5.7.6 For a project activity with a start date before 02 August 2008, are the following elements to be satisfied:	VVS	108			
B.5.7.6.1 Are evidence of their awareness of the CDM prior to the project activity start date, and that the benefits of the CDM were a decisive factor in the decision to proceed with the project provided?	PS VVS	28(a) 108	N/A	OK	OK
B.5.7.6.2 Are evidence that continuing and real actions were taken to secure CDM status for the project in parallel with its implementation provided?	PS VVS	28(b) 108-110	N/A	OK	OK
B.5.7.6.3 Is an implementation timeline of the proposed CDM project activity provided?	PS	28(c)	N/A	OK	OK
B.6 Emission reductions					
B.6.1 Explanation of methodological choices					
B.6.1.1 Does the PD explain how the methods or methodological steps in the selected methodology, for calculating project emissions, baseline emissions, leakage emissions and emission reductions are	PD VVS	96	The 3 section of the VCS PD describes the steps for the calculation of emission reduction in accordance with ACM0002	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
applied?			Version 17.		
B.6.1.2 In case the methodology(ies) include different scenarios or cases, does the PD indicate and justify which scenario or cases applies to the project activity?	PD		OK	OK	OK
B.6.1.3 In case the methodology(ies) provide different options to choose from, does the PD indicate and justify which option is chosen for the project activity?	PD VVS	97	OK	OK	OK
B.6.1.4 In case the methodology (ies) allow different default values, does the PD indicate and justify which of the default values have been chosen for the project activity?	PD		OK	OK	OK
B.6.2 Data and parameters fixed ex-ante					
B.6.2.1 If data and parameters will not be monitored throughout the crediting period of the proposed project activity but have already been determined and will remain fixed throughout the crediting period, are all data sources and assumptions: (a) Appropriate and correct? (b) Applicable to the proposed CDM project activity? (c) Resulting in a conservative estimate of the emission reductions?	PD VVS	98	The baseline emission cases are line with the methodology ACM0002 Version 17 and "Tool to calculate the emission factor for an electricity system Version 05.0.0".	OK	OK
B.6.2.2 For each piece of data or parameter, are tables provided in accordance with the	PD		Tables for each piece of data and parameters are provided in accordance with	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
instructions?			the instructions.		
B.6.3 Ex-ante calculations of emission reductions					
B.6.3.1 Is a transparent ex ante calculation of project emissions, baseline emissions (or, where applicable, direct calculation of emission reductions) and leakage emissions expected during the crediting period, applying all relevant equations provided in the approved methodology provided?	PD		OK	OK	OK
B.6.3.2 Is the information how each equation is applied, in a manner that enables the reader to reproduce the calculation, provided?	PD		The information how each equation is applied to reproduce the calculation is provided under section 3 of the VCS PD.	OK	OK
B.6.3.3 Is the information of additional background information and/or data provided in Appendix 4, including relevant electronic spreadsheets?	PD		An excel sheet for the baseline emission is provided. (CM_Çerçikaya WPP)	OK	OK
B.6.3.4 Is a sample calculation for each equation used provided, substituting the values used in the equations?	PD		Ex-ante calculations are provided in the PD section 3 of the VCS PD. A sample calculation for each equation used is provided by the PPs.	OK	OK
B.6.4 Summary of the ex-ante estimates of emission reductions					
B.6.4.1 Are the results of the ex-ante estimation of emission reductions for all years of the crediting period, provided in a tabular format?	PD		The results of the ex-ante estimation of emission reductions for all years of the crediting period are provided in a tabular	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			format.		
B.7 Monitoring Plan					
B.7.1 Data and parameters to be monitored					
B.7.1.1 Is specific information on how the data and parameters that need to be monitored would actually be collected during monitoring included?	PD		EG _{facility,y} parameter is provided under the monitoring plan section of the VCS PD.	OK	OK
B.7.1.2 For each data or parameter, is the information completed, in a tabular format:					
B.7.1.2.1 The source(s) of data that will be actually used for the proposed project activity (e.g. which exact national statistics). Where several sources may be used, explain and justify which data sources should be preferred.	PD		Information's are clearly described.	OK	OK
B.7.1.2.2 Is an estimate of the data / parameter that will be monitored during the crediting period provided?	PD		Yes, estimate for all parameters that will be monitored during the crediting period, has been tabulated in the 4.1 of VCS PD.	OK	OK
B.7.1.2.3 Is the estimate provided in the PD for this monitored data or parameter reasonable?	VVS	98	Under section 4.2 estimated electricity generation is given as 184,017 MWh/yr.	OK	OK
B.7.1.2.4 Where data or parameters are to be measured, does it specify the measurement methods and procedures, standards to be applied,	PD		Measurement methods and procedures of the parameters are given under	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
accuracy of the measurements, person/entity responsible for the measurements, and, in case of periodic measurements, the measurement intervals?			section of the 4.3 of the VCS PD.		
B.7.1.2.5 Is a description of the QA/QC procedures including the calibration procedures, where applicable, provided?	PD		QA/QC procedures of the parameters are given in the 4.2 of the VCS PD.	OK	OK
B.7.1.2.6 Is the purpose of data indicated?	PD		The purpose of the EG _{facility,y} data parameters is given in the 4.2 of the VCS PD.	OK	OK
B.7.1.3 Is this monitoring plan based on the approved monitoring methodology applied to the proposed CDM project activity?	VVS	131	The monitoring plan is based on the ACM0002 Version 17.	OK	OK
B.7.1.4 Does the monitoring plan contain all necessary parameters?	VVS	132(a)	The 4.1 section of the GS-VER-PD contains all the parameters in accordance with the applied methodology ACM0002 Version 17.	OK	OK
B.7.1.5 Do the means of monitoring described in the plan comply with the requirements of the methodology including applicable tool(s)?	VVS	132(a)	The monitoring plan is based on the ACM0002 Version 17.	OK	OK
B.7.1.6 Are the monitoring arrangements described in the monitoring plan feasible within the project design?	VVS	132(b)	The monitoring plan is based on the ACM0002 Version 17.	OK	OK
B.7.1.7 Are the means of implementation of the monitoring plan, including the data	VVS	132(b)		OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
management and quality assurance and quality control procedures, sufficient to ensure that the emission reductions achieved by/resulting from the proposed CDM project activity can be reported ex post and verified?			The monitoring plan is based on the ACM0002 Version 17.		
B.7.2 Sampling plan					
B.7.2.1 Are there any data and parameters monitored in section B.7.1 above to be determined by a sampling approach?	PD		N/A	OK	OK
B.7.2.2 Is a description of the sampling plan provided in accordance with the recommended outline for a sampling plan in the “Standard for sampling and surveys for CDM project activities and programme of activities”?	PD		N/A	OK	OK
B.7.3 Other elements of monitoring plan					
B.7.3.1 Is the operational and management structure that the project operator will implement in order to monitor emission reductions and any leakage generated by the project activity, described in the PD?	PD PS	56(a)	Operational and management structure of the project activity is provided on Figure 7 under section 4.3 of the VCS PD.	OK	OK
B.7.3.2 Are the responsibilities for and institutional arrangements for data collection and archiving clearly indicated?	PD PS	56(c)	The responsibilities for and institutional arrangements for data collection and archiving are clearly indicated under section 4.3 of the VCS PD.	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
B.7.3.3 Does the monitoring plan include provisions to ensure that data monitored and required for verification and issuance be kept and archived electronically for two years after the end of the crediting period or the last issuance of CERs, whichever occurs later?	PS	56(b)	ZT Enerji will keep all the data needed for the calculation of emission reductions during the crediting period and until two years after the last issuance of VCS for Çerçikaya WPP.	OK	OK
B.7.3.4 Does the monitoring plan include uncertainty levels, methods and the associated accuracy level of measuring instruments to be used for various parameters and variables?	PS	56(e)	Uncertainty levels and the associated accuracy level of measuring instruments are provided under section 4.2 of the VCS PD.	OK	OK
B.7.3.5 Does the monitoring plan include specifications of the calibration frequency for the measuring equipments?	PS	56(f)	The monitoring plan includes specifications of the calibration frequency for the measuring equipment.	OK	OK
C. Duration and crediting period					
C.1 Duration of project activity					
C.1.1 Start date of project activity					
C.1.1.1 Is the start date of the project activity stated, in the format of DD/MM/YYYY?	PD		The reference of the start date of project activity is not provided. See CAR12.	CAR12	OK
C.1.1.2 Does it describe how the start date has been determined and provide evidence to support this date?	PD		See CAR12.	CAR12	OK
C.1.2 Expected operational lifetime of project activity					

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
C.1.2.1 Is the expected operational lifetime of the project activity stated in years and months?	PD		For the project option (c) is used. So in the tool it is said that default lifetime for the on-shore wind turbines is 25 years.	OK	OK
C.2 Crediting period of project activity					
C.2.1 Type of crediting period					
C.2.1.1 Is the type of crediting period chosen for the project activity stated?	PD		A two times renewable crediting period of 10 years 0 month shall apply.	OK	OK
C.2.1.2 In case a renewable crediting period was chosen, does it indicate whether it is the first, second or third?	PD		It is first.	OK	OK
C.2.2 Start date of crediting period					
C.2.2.1 Is the start date of crediting period stated in the format of DD/MM/YYYY?	PD		The start date of the crediting period is estimated as 11/01/2015. But in related sections and tables starting date is given differently.	CAR13	OK
C.2.3 Length of crediting period					
C.2.3.1 Is the length of crediting period stated in years and months?	PD		The length of the first crediting period is given properly.	OK	OK
D. Environmental impacts					
D.1 Analysis of the environmental impacts					
D.1.1 Is a summary of the analysis of the environmental impacts of the project activity	PD		A summary of the analysis of the environmental impacts of the project activity	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
and references to all related documentation provided?			and references are provided.		
D.2 Environmental impact assessment					
D.2.1 If an environmental impact assessment is required, are conclusions and references to all related documentation provided?	PD		EIA not required document is provided.	OK	OK
D.2.2 Have the project participants undertaken an analysis of environmental impacts activity, including transboundary impacts, and whether those impacts are considered significant by the project participants or the host Party?	VVS	134	The environmental impacts are not determined in a table format as a monitoring parameter.	CAR14	OK
D.2.3 If the host Party requires an environmental impact assessment, have the environmental impact assessment approved by local government?	VVS	135	OK	OK	OK
E. Local stakeholder consultation					
E.1 Solicitation of comments from local stakeholders					
E.1.1 Did the project participants complete a local stakeholder consultation process and that due steps were taken to engage stakeholders and solicit comments for the proposed project activity?	VVS	138	Local Stakeholder Consultation meeting was held on 06/12/2013 in Kömürçukuru Village of Belen District. Please add invitation letter to validation team.	CAR15	OK
E.1.2 Is the process by which comments from local stakeholders have been invited provided?	PD		N/A	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS		Draft Concl	Final Concl
E.2 Summary of comments received						
E.2.1 Are stakeholders that have made comments identified?	PD		N/A		OK	OK
E.2.2 Have comments by local stakeholders that can reasonably be considered relevant for the proposed CDM project activity been invited?	VVS	139 (a)	N/A		OK	OK
E.2.3 Is the summary of comments provided complete?	PD VVS	139 (b)	N/A		OK	OK
E.3 Report on consideration of comments received						
E.3.1 Is information provided to demonstrate that all comments received have been considered?	PD VVS	139 (c)	N/A		OK	OK
F. Approval and authorization						
F.1 General						
F.1.1 Is it indicated whether the letter(s) of approval from Party(ies) available at the time of submitting the PD to the validating DOE?	PD		N/A		OK	OK
F.2 Approval			COUNTRY A	COUNTRY B		
F.2.1 Has the DNA of each Party indicated as being involved in the proposed CDM project	VVS	38	N/A		OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS		Draft Concl	Final Concl
activity in section A.3 of the PD provided a written letter of approval?				N/A		
F.2.2 Does the letter of approval from DNA of each Party confirm that : (a) The Party is a Party of the Kyoto Protocol (b) The participation is voluntary (c) In the case of the host Party, the proposed CDM project activity contributes to the sustainable development of the country (d) Refers to the precise proposed CDM project activity title in the PD being submitted for registration	VVS	39	N/A	N/A	OK	OK
F.2.3 Is(are) the letter(s) of approval unconditional with respect to (F.2.2) above?	VVS	40	N/A	N/A	OK	OK
F.2.4 Has(ve) the letter(s) of approval been issued by the respective Party's DNA? If there is doubt with respect to (F.2.2) above, was it verified with the DNA that the letter of approval is valid for the proposed CDM project activity under validation?	VVS	41,42	N/A	N/A	OK	OK
F.2.5 Does the letter of approval by the DNA of the host Party confirm the contribution of the proposed CDM project activity to the sustainable development of the host Party?	VVS	51	N/A		OK	OK
F.3 Authorization						
F.3.1 Has each project participant been authorized by at least one Party involved in a letter of approval?	VVS	45	N/A		OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
F.3.2 Is the information in tabular form in the PD consistent with the contact information for project participants provided?	VVS	46	N/A	OK	OK
F.3.3 Are any entities other than those approved as project participants included in the PD?	VVS	47	N/A	OK	OK
F.3.4 Has the approval of participation issued from the relevant DNA? And if in doubt, was it verified with the DNA that the approval of participation is valid for the proposed CDM project participants?	VVS	48	N/A	OK	OK

Table 2 Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
CAR01 Under section 1.1 of VCS PD the project capacity is given as 57 MWe through EIA Not Required Decision for 19 turbines, but on EIA Decision capacity is given as 53 MWe. Please revise the reference accordingly.		Project capacity has been revised according to EIA Not Required Decision.	Review 1: The capacity has been revised accordingly. <u>The corrective action request has been closed.</u>
CAR02 The project start date is given as 20 March 2015 under section 1.1 of VCS		Related section has been revised according to actual project start date which is 20 March 2015. The	Review 1: Revised accordingly.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
PD. On the other side start date is given as 11 January 2015 under section 1.5. Please provide the actual date through the reference and revise related sections.		reference has been provided to validation team.	<u>The corrective action request has been closed.</u>
CAR03 Expected total emission reductions for the chosen crediting period is not provided under section 1.1 of VCS PD.		The expected total emission reduction per year is provided under section 1.1 of VCS-PD. Response to Review 1: Expected total emission reduction per crediting period is provided under section 1.1 of VCS PD.	<u>Review 1:</u> Expected total emission reduction per crediting period is not provided under section 1.1 of VCS PD. <u>The corrective action request is still open.</u> <u>Review 2:</u> Expected total emission reduction is added as 1,116,203 tCO ₂ e. <u>The corrective action request has been closed.</u>
CAR04 System usage agreement and connection agreement are not provided.		System usage agreement and connection agreement have been provided to the validation team.	<u>Review 1:</u> System usage agreement and connection agreement are provided. <u>The corrective action request has been closed.</u>
CAR05 Benchmark analysis method applied. World Bank 2009 reference has been used. Please use more new reference for Benchmark determination.		Medium term investment estimated by Turkish Development Bank has been used as a new reference for benchmark analysis. Response to Review 1: The loan rate defined in the Turkish Development Bank can be accepted	<u>Review 1:</u> Please see CAR09. <u>The corrective action request is still open.</u> <u>Review 2:</u> Please note that the loan rate defined in the Turkish Development Bank can not

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
		as a benchmark rate since it was used and approved in the previous projects. Response to Review 2: According to Investment Analysis Tool, benchmark can be determined by the values given in Appendix or adjustment to the CAPM or use of other financial models may be proposed through a request of revision of the Tool for the demonstration and assessment of additionality. In the appendix of Investment Tool Analysis, there is not any benchmark value for Turkey. According to Tool for the demonstration and assessment of additionality, benchmark rates shall 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), government bond rates and government approved benchmark where benchmarks are used for investment decisions. (Page 10, Article 38) https://cdm.unfccc.int/methodologies/PAMethodologies/tools/am-tool-01-	be a accepted as a benchmark rate. Project owner can calculate the benchmark by using the available market figures (loan rate, risk premiums etc) and this is especially done by following CAPM rules So, please follow this procedure to obtain the benchmark rate. <u>The corrective action request is still open.</u> <u>Review 3:</u> Corrections have been done. <u>The corrective action request has been closed.</u>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
		v7.0.0.pdf Hence, Ministry of Development publishes “Main Economic Indicators” on a monthly basis. Since the project is a mid-term investment (exceeding one year), lending rate for medium term investment has been selected as the benchmark. The lending rate for the medium term investment as estimated by the Turkish Development Bank is 13% for the March 2013. Moreover, it can be used since it is a government bond rate and government approved benchmark in Turkey.	
CAR06 Under investment analysis net generation is given as 160,250,810 MWh but it is given as 184.017 MWh under section 1.1 of VCSPD.		Section 1.1 of the VCS-PD has been revised according to P90 value of the electricity generation given in Fichtner Bankable Energy Yield Assessment Report. Estimated electricity generation value is 164,221 MWh however, net generation has been calculated as 160,250.810 MWh when transmission loss is taken into account. Response to Review 1: Net electricity generation considered the transmission loss is provided	<u>Review 1:</u> Please provide the net generation under section 1.1 of the VCS PD. <u>The corrective action request is still open.</u> <u>Review 2:</u> <u>Net electricity generation is provided as 184,017 MWh.</u> <u>The corrective action request has been closed.</u>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
		under 1.1 of the VCS PD.	
CAR07 The loan agreement is not provided DOE.		The loan agreement and other financial documents will be shown to DOE during site visit. Response to Review 1: The loan agreement has been shown to DOE during site visit. Other financial documents are provided.	Review 1: Not provided yet. <u>The corrective action request is still open.</u> Review 2: Agreements are provided. <u>The corrective action request has been closed.</u>
CAR08 Total project cost is given as 68,695,516 Euro. But equipment agreement and other references are not provided to DOE.		References related to financial agreements will be shown to DOE during site visit. Response to Review 1: The total project cost has been revised and all the references are provided to DOE.	Review 1: Not provided yet. <u>The corrective action request is still open.</u> Review 2: Agreements are provided. <u>The corrective action request has been closed.</u>
CAR09 1. Please exclude the fair value at the end of analysis period. Assets will have been already depreciated in 25th year. But if the problem stated in 5th item is solved, there may be a need of calculating the fair value again but just for the construction activities. 2. The some of loan payments is		1. 5 th item is solved and fair value has been corrected. 2. Loan payments have been revised and corrected. 3. Different depreciation periods applied. 4. It has been revised as 0.5% premium rate for the insurance. 5. According to CDM Investment	Review 1: 1. 5 th item is solved and fair value has been corrected. See 3 rd point at below. 2. Loan payments have been revised and corrected. OK 3. Different depreciation periods

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
not equal to debt amount. 3. Please apply different depreciation periods for each asset class. Depreciation period for the construction activities should be 40 years. 4. 1% Premium rate for the insurance seems very high. Please make a validation. 5. Please link the sensitivity cost parameter to each asset class, so that depreciation calculations can be affected		Analysis Guideline, only variables that constitute more than 20% of either total project cost or total project revenues should be subjected to reasonable variation. Therefore, only turbine cost constitute more than 20% of the total project cost and it has been subjected to reasonable variation. That CDM rule can be seen from Article 20 of the Guideline. : https://cdm.unfccc.int/Reference/Guidclarif/reg/reg_guid03.pdf Response to Review 1: The loan rate defined in the Turkish Development Bank can be accepted as a benchmark rate since it was used and approved in the previous projects. Depreciation period for construction has been revised as 40 years. Response to Review 2: Please see the response of CAR05.	applied. Depreciation period for construction activities should be 40 years. Please make the necessary corrections. Please note that, this correction would have an impact on the fair value calculation. 4. It has been revised as 0.5% premium rate for the insurance. OK 5. According to CDM Investment Analysis Guideline, only variables that constitute more than 20% of either total project cost or total project revenues should be subjected to reasonable variation. Therefore, only turbine cost constitute more than 20% of the total project cost and it has been subjected to reasonable variation. That CDM rule can be seen from Article 20 of the Guideline. : https://cdm.unfccc.int/Reference/Guidclarif/reg/reg_guid03.pdf OK New: Please note that the loan rate defined in the Turkish Development Bank can not be accepted as a benchmark rate.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
			Project owner can calculate the benchmark by using the available market figures (loan rate, risk premiums etc) and this is especially done by following CAPM rules. So, please follow this procedure to obtain the benchmark rate. <u>The corrective action request is still open</u> <u>Review 2:</u> Please note that the loan rate defined in the Turkish Development Bank can not be a accepted as a benchmark rate. Project owner can calculate the benchmark by using the available market figures (loan rate, risk premiums etc) and this is especially done by following CAPM rules. So, please follow this procedure to obtain the benchmark rate. <u>The corrective action request is still open.</u> <u>Review 3:</u> Corrections have been done. <u>The corrective action request has been closed.</u>
CAR10 Sensitivity analysis is need to be revised		Sensitivity analysis has been revised according to new calculations.	<u>Review 1:</u> Sensitivity analysis has been revised.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
according to correct electricity generation value.			<u>The corrective action request has been closed.</u>
CAR11 Time Schedule is given on Table 5 of the PD. Please provide references for Carbon consultant agreement, turbine agreement, loan agreement and start date of project.		Turbine agreement and loan agreement will be shown to the validation team during site visit. Carbon consultant agreement is provided. Response to Review 1: Turbine agreement and loan agreement has been shown to validation team during site visit.	<u>Review 1:</u> Not provided yet. <u>The corrective action request is still open.</u> <u>Review 2:</u> Provided during the site visit. <u>The corrective action request has been closed.</u>
CAR12 The reference of the starting date of the project activity is not provided under Table-5.		According to executive board of the CDM 41 st meeting, "the earliest start date at which either the implementation or construction or real action of a project activity begins." Date of turbine agreement has been decided as the investment decision date since it was the earliest agreement. The reference had already been given under Table-5 of the VCS-PD. Response to Review 1: Turbine agreement has been shown to validation team during site visit. However, project start date has been revised as 01/11/2013 which is the date of foundation agreement. This agreement is provided to validation team.	<u>Review 1:</u> Turbine agreement is not provided to validation team. <u>The corrective action request is still open.</u> <u>Review 2:</u> Provided during the site visit. <u>The corrective action request has been closed.</u>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
CAR13 The start date of the crediting period is estimated as 11/01/2015. But in related sections and tables starting date is given differently.		The estimated start date of the crediting period has been revised under section 1.6 of VCS-PD.	Review 1: Revised accordingly. <u>The corrective action request has been closed.</u>
CAR14 The environmental impacts are not determined in a table format as a monitoring parameter.		In VCS Project Description Format, environmental impact table is not added as a monitoring parameter.	Review 1: OK <u>The corrective action request has been closed.</u>
CAR15 Local Stakeholder Consultation meeting was held on 06/12/2013 in Kömürçukuru Village of Belen District. Please add invitation letter to validation team.		Invitation letter has been provided to validation team.	Review 1: Invitation letter is provided to validation team. <u>The corrective action request has been closed.</u>
CL01 Average annual electricity production is determined based on Confidence Level P75 through the Energy Yield Assessment Report. Why P90 or P50 values are not used?		P90 value has been used in order to determine average annual electricity production. This value has been used so as to be conservative and to be on the safe side.	Review 1: This value has been used so as to be conservative and to be on the safe side. <u>The corrective action request has been closed.</u>
CL02 Coordinates or formats under table 2 of VCS PD are not line with EIA Not Required Document please clarify.		Turbine coordinates was converted UTM to Lat/Lon Coordinates. Unit conversion reference has been given in VCS-PD.	Review 1: Reference has been provided. <u>The corrective action request has been closed.</u>