URLA WIND POWER PROJECT
VALIDATION REPORT

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Summary:

Bureau Veritas Certification has made the validation of the "Urla Wind Power Project, Turkey" of Egenda Ege Enerji Üretim A.Ş. located in Aegean Region, İzmir province on south west of Urla, on the basis of UNFCCC criteria for the CDM methodology (ACM0002 Version 16), Voluntary Carbon Standard (VCS) v.3.4, 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.

Urla Wind Power Project is owned by Egenda Ege Enerji Üretim 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 15 MWe which is confirmed through the equipment purchase contract and wind assessment measurement. The power generation is achieved by installing and operating 5 sets of Enercon E82 with each 3 MW capacity combining a total installed capacity of 15 MWe. Project expects to generate and supply 45,738 MWh of electricity per year to the grid and expects to reduce 26,680 tCO_2e per year by replacing non-renewable generation sources in the national grid. The crediting period of the project activity is 01/06/2016 to 31/05/2026, 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, Future Camp Turkey on behalf of the project proponent, revised its project design document, final document being version 01, dated 24/02/2015, 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 16 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" and meets the relevant UNFCCC requirements for the CDM Methodology, Voluntary Carbon Standard (VCS) v.3.4 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.3.4 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.3.4 and associated interpretations.

The validation is not meant to provide any consulting towards the Egenda Ege Enerji and Future Camp Turkey. 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 high.

1.4 Summary Description of the Project

The project is wind power plant and involves 5 sets of Enercon E82 with each 4 MW capacity each combining a total installed capacity of 15 MWe. The project activity is located in Aegean Region, İzmir province on south west of Urla. The geographical coordinates of the proposed project activity is validated as follows during the site visit. The closest settlement is Barbaros village to the project site.

Urla WPP: 38° 24' 71" N / 26° 40' 45" E

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 expected annual GHG emission reductions are 26,680 tCO_2e.

Technical lifetime of the project activity validated for 25 years through “Tool to determine the remaining lifetime of equipment”, Version 01 (EB50 Annex15) for onshore wind turbines. This has also been assumed as the project lifetime.

On the other hand Plant Load Factor is confirmed as % 35 through EB48 Annex 11 by the validation team.

The crediting period of the project of the project activity is 10 years 0 months which may be renewed once. The crediting period will be 20 years and 0 month in total.

The raised corrective action requests and clarification requests for the description of the project activity can be seen as below;

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 04.0 of the Clean Development Mechanism Validation and Verification Standard, issued by CDM Executive Board after its 74th meeting on 29/07/2013. 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 VCS-VCU 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 B 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 its validity date is finished during the validation. Project activity is also determined through the VVS version 04.0 by the validation team.

2.2 Document Review

The Project Description (VCS-PD) submitted by Future Camp Turkey 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.3.2, Approved CDM methodology, VCS v.3.4 requirements, Kyoto Protocol, Clarifications (CL), Corrective Action Requests (CAR), and Forward Action Requests (FAR) on validation requirements to be checked by a Validation/Verification Body (VVB) were reviewed.

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, Future Camp Turkey revised the VCS-PD and resubmitted it on 24/02/2015.

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

2.3 Interviews

On 20/11/2013 Bureau Veritas Certification performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of Egenda Ege Enerji Üretim A.Ş. and Future Camp Turkey were interviewed (see References).

The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics:

Interviewed organization	Interview topics
Egenda Ege Enerji Üretim A.Ş. (Project Owner)	➢ Design of the project activity ➢ The planning and the construction phase of the project ➢ Working conditions ➢ Training of the employees ➢ Monitoring practices
Future Camp Turkey (Consultant)	➢ Additionality of the project activity ➢ Investment analysis ➢ Baseline determination ➢ Emission reduction calculations ➢ Document review ➢ CARs and CLs
Çağatay Aykut Barbaros Village - Local Yüksel Ersan Barbaros Village - Muhktar Ali Doğan Barbaros Village - Local	➢ Benefits of the project and any complaints/comments

2.4 Site Inspections

A site visit was performed on 20/11/2013, where representatives of Egenda Ege Enerji Üretim A.Ş. and Future Camp Turkey 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.

2.6 Forward Action Requests

1 forward action requests is raised during the validation by DOE.

FAR01: The project capacity is defined as 13 MW in the generation license dd. 29/05/2008. During the validation the project capacity is confirmed as 15 MW regarding to Equipment contract with Enercon. The DOE should check the project capacity through the revised generation license and turbines plates during the first verification period of the project activity.

3 VALIDATION FINDINGS

3.1 Project Details

The project is a large scale onshore type wind power plant project and located in Aegean Region, İzmir province on south west of Urla. Total installed capacity of the project is 15 MWe. Total capacity of the project is confirmed through the Equipment Purchase Contract dd. 15/05/2013 and Barlovento Wind Resource Assessment dd. February 2011.

Expected annual amount of the electricity generation is 45,738 MWh/year. Project is supplying electricity to the Turkish National Power Grid by generating electricity from renewable energy source. The estimated and calculated emission reduction is 26,680 tonnes of CO_2e.

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, reducing other pollutants from power generation industry in Turkey, help to reduce Turkeys increasing energy deficit and differentiate the electricity generation mix and reduce import dependency.

Project is being developed by Egenda Ege Enerji Üretim A.Ş. Other entities involved in the project are Future Camp Turkey 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 expected as 01/06/2016. The lifetime of the project activity validated for 25 years through “Tool to determine the remaining lifetime of equipment”, Version 01 (EB50 Annex15).

The project activity is located in Aegean Region, İzmir province on south west of Urla. The geographical coordinates of the proposed project activity is validated as 38° 24’ 71" N / 26° 40' 45" E during the site visit. The closest settlement is Barbaros village to the project site.

The project is wind power plant and involves 5 sets of Enercon E82 with each 3 MW capacity each combining a total installed capacity of 15 MWe. All technical details of the project activity is carefully examined and confirmed by the validation team through the Equipment contract with Enercon dd. 15/05/2013 and technical specifications of the equipment.

Mandatory laws are applicable to the project are Environmental Law (Nr. 2872 / 11.08.1983), Environmental Impact Assessment Regulation (Nr. 26939 / 17.07.2008), Electricity Market Law (Nr. 4628 / 20.02.2001), Electricity License Regulation (Nr. 24836 / 04.08.2002), Electricity Market Balancing and Conciliation Regulation (Nr. 27200 / 14.04.2009), Law on Utilization of Renewable Energy Resources for the Purpose of Generating Electrical Energy (Nr. 5346 / 18.05.2005) and Energy Efficiency Law (Nr. 5627 / 02.05.2007).

Sources of the validation have been confirmed through the Urla WPP Financial Report dd. 15/02/2013, official project documentation and publicly available laws and TEIAS data. The investment Decision date is confirmed through the turbine contract dated 15/05/2013. On the other hand, project construction activities are not started during the validation. The estimation is confirmed as 01/05/2015. However, expected starting date of the crediting period is confirmed as 01/06/2016.

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

DATE	MILESTONE	REFERENCE
29/05/2008	Issuance of Generation License	Generation License
30/03/2009	EIA Not Required Letter	Certificate
09/08/2011	Board Decision	Decision Document
28/12/2011	Signature with FutureCamp Türkiye for VER Development	Agreement
08/11/2012	Stakeholder Consultation Meeting Held at Barbaros Village	Meeting Minutes
15/02/2013	Urla WPP Financial Report	Report Document
15/05/2013	**Electro-Mechanical Equipment Agreement** *This is also the investment decision date*	**Equipment Agreement**
01/05/2015	Start Date of Construction Activities	Estimation
01/06/2016	**Commissioning Date of The Project** *This is also the starting date of the first crediting period*	**Estimation**

Investment decision date of the project activity is confirmed as 15/05/2013 through the electro-mechanical equipment agreement.

Prior consideration is not essential regarding to VCS rules but the project activity is taken into consideration of the prior consideration issue on 28/12/2011 through Carbon Consultancy Agreement.

Investment analysis are confirmed through the Urla WPP Financial Report dd. 15/02/2013 which is before the investment decision date.

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 01) 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 16 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" and utilized tools are "Tool for demonstration and assessment of additionality", v.07.0.0 for additionality and "Tool to calculate the emission factor for an electricity system" v.4.0.0 for calculation of the emission factor the national grid. Validation team has approved of the versions used.

3.2.2 Applicability

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

(1) The proposed project activity involves the installation of a new power plant for renewable electricity generation that will be connected to the National grid. This was confirmed through the site observations and EMRA generation license dd. 29/05/2008.

(2) The project activity consists in the installation of a wind power plant; therefore, the project activity complies with the last applicability condition. This condition is confirmed through the EMRA generation license and site observations.

(3) The project activity consists in the installation of a new wind power plant; therefore, the last condition of applicability does not apply because the project activity doesn't consist in a capacity addition, retrofit or replacement. This condition is confirmed through the EMRA Generation license and site observations.

Hydropower applicability conditions which are defined in the Methodology are not applicable for the project activity. The project activity is the wind power plant it is confirmed through the EMRA Generation license dd. 29/05/2008.

The methodology is not applicable to the following:

• *Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site.*

• *Biomass fired power plants.*

• *Hydro power plant that result in the creation of a new single reservoir or in the increase in an existing single reservoir where the power density of the power plant is less than 4 W/m2.*

(4) The project activity is not related with the not applicable conditions because the project is not involved with the use of fossil fuels or a biomass fired power plant, additionality the project activity use an existing reservoir with no modification of the volume. This condition is confirmed through the EMRA Generation license and site observations.

The VVB hereby confirms that the selected baseline and monitoring methodology (ACM0002, "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" version 16), tools "Tool for the demonstration and assessment of additionality" (version 07.0) and "Tool to calculate the emission factor for an electricity system" (version 04.0) 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:

a) Review of TEIAS System Connection Agreement dd. 15/08/2013, Single Line Diagram of Urla WPP, EMRA Generation License dd. 29/05/2008.

b) 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		Gas	Included	Justification/Explanation
Baseline	CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity	CO_2	Yes	Main emission source: 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	Minor emission source
		N_2O	No	Minor emission source
Project	Emissions during construction and operation of the project activity	CO_2	No	Minor emission source
		CH_4	No	Minor emission source
		N_2O	No	Minor emission source

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 Version 16, 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.04" under Section 2.4 and Section 3.1 of VCS-PD v.01.

In line with the requirements of the applied tool, the Simple Operating Margin Emission Factor (EFgrid,OM simple,y) has been calculated ex-ante, using TEIAS data for 2009-2011 period which is actual data during the investment decision date. The operating margin is calculated as **0,6542 tCO_2/MWh**. The operating margin calculation is checked and accepted by the Baseline specialist through the actual references for the project activity.

For BM Calculation the set of power capacity additions in the electricity system that comprise 20% of the system generation and that have been built recently. The most recent data TEIAS 2011 values are used. For the determination of the emission factor for the build margin calculation, the lower limit of the IPCC EF values are used. The build margin emission factor is the generation-weighted average emission factor (tCO_2/MWh) of all power units.

The build margin is calculated as **0,3707 tCO_2/MWh**. The build margin calculation is checked and accepted by the Baseline specialist through the actual references for the project activity.

In accordance with the methodology of the "Tool to calculate the emission factor for an electricity system" v.04.0, Project participant determined the Combined Margin Emission Factor as **0.5833 tCO_2/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 sectorial 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 Ver01 on this matter are described below.

Prior consideration is not essential regarding to VCS rules. The carbon income evaluation in the decision proves that the VER revenues are taken into account before the investment decision date. Investment decision date of the project activity is confirmed as 15/05/2013 through Electro-Mechanical Equipment Agreement. Carbon consultancy agreement is signed before this date on 28/12/2011. The project commissioning date and the crediting period start date is expected to be on 01/06/2016.

"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 1: The proposed project activity undertaken as a VER project activity.
Alternative 2: Construction of some other renewable energy plant with the same annual power output.
Alternative 3: Continuation of the current situation (in the situation that Urla WPP is not built).

Alternative 1 is a realistic alternative because Egenda may undertake project activity if he sees no risk for project and/or if the project turns out to be financially attractive without VCU credit income. However the equity IRR of the Project without VCU credit income is lower than the benchmark, which shows that the project is not economically feasible without VCU credit income.

Alternative 2, the project activity is power generation activity without any greenhouse gas emission harnessing the energy of the wind. Being a private entity, Egenda doesn't have to invest power investments even proposed project activity. Also, since Egenda has licence only for wind power investment and since in the proposed project area there is no hydro or other sources for electricity generation, other project activities delivering same electricity in the same project area is not realistic for project participant.

Alternative 3 is the only realistic alternative under these circumstances. In this case, Urla WPP is not built and the same amount of electricity will continue to be produced by the current power plant mix of Turkey. As a result, no emission reductions occur.

Alternative 1 and Alternative 3 is described as realistic scenarios. Investment analysis shows that the without VCU credit income the project is not feasible and if the Urla WPP is not built; the same amount of energy will be supplied by other private investors to the grid.

Under Step-2 Investment Analysis is performed to demonstrate the additionality of the project. Investment decision date of the project activity is confirmed as 15/05/2013 through the electrical equipment agreement. Investment analysis inputs are confirmed through the Urla WPP Financial Report dd. 15/02/2013 which is before the investment decision date.

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. "Tool for the demonstration and assessment of additionality" Version 07.0.0 which suggests *'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 the bankers views and private equity investors/funds'*. In relation to this, the benchmark is confirmed as 15% through the Worldbank loan appraisal document.

The Benchmark is confirmed through the most current reference of Worldbank loan appraisal dd. May 2009 for the wind power investments in Turkey. According to Worlbank loan appraisal document, threshold equity IRR for wind power investments is Turkey is 15%, so the Benchmark rate is found acceptable for the project activity by the validation team.

Under sub-step 2c financial parameters used for the investment analysis is determined. The investment analyses are determined regarding the Urla WPP Financial Report dd. 15/02/2013 which is prepared for the Urla Wind Power Plant project.

The project cost is confirmed as 24,253,752 $ through the Equipment agreements and Financial Analysis Reports. The all project IRR inputs are checked and accepted by the validation team. The annual electricity generation accepted as 45,738 MWh/year through the Barlovento Wind-Resource-Assessment and electricity generation license.

Operational life time of the Urla WPP is determined by using the 'Tool to determine the remaining lifetime of equipment''. In the tool it is said that default lifetime for the on-shore wind turbines is 25 years.

The Equity IRR for 25 years has been calculated and confirmed as **8.96 %** based on the parameters given in the financial report and the main financial parameters used for the investment analysis table. This is obviously below the financial benchmark of 15 % and the project activity cannot be considered to be a financially attractive alternative.

Main Financial Parameters used for the Investment Analysis

Item	Value	Units	Source
Installed Power	15	MWe	License of the Project
Operational lifetime of the project	25	years	Tool
Electricity Generation of the plant	45,738	MWh	Barlovento Wind-Resourcce-Assessment, page 45, alternative 6
Electricity tariff	73	USD Per MWh	For feed-in-tariff (www.epdk.gov.tr/documents/10157/4b360128-53aa-4174-8104-a6c10434ac9c)
Income Tax Rate	20%	-	Corporate Tax Rate (http://www.gib.gov.tr/index.php?id=860)
Annual Operating Cost	1,263,903	USD	Estimated: 1.2 eurocent per kWh (http://www.wind-energy-the-facts.org/en/part-3-economics-of-wind-power/chapter-1-cost-of-on-land-wind-power/operation-and-maintenance-costs-of-wind-generated-power.html)
Total Project Cost	24,253,752	USD	Equipment agreements and Financial Analysis Reports
EUR/USD Rate	1.29	-	Equipment Contract Date (Investment Decision Date TCMB rare (15/05/2013))

The plant load factor is calculated through the EB48 Annex 11 "Guidelines for the reporting and Validation of plant load factors, Version 01"

PLF calculated as follows; 45,738 MWh/year / (15 MWe * 8760 hours/year) = **35 %**

Equity IRR (8.96 %) is lower than the benchmark of 15 %. In the sensitivity analysis -10%, +10% range is applied for Investment Cost, Annual Operational Cost, Electricity Sales Price and Energy Yield. The calculated IRR figures are again below the benchmark rate.

All figures such as investment cost, fix rates, installed power, operation costs, energy tariffs are confirmed by the validation team.

Under sub-step 2d, sensitivity analysis is applied to the following items:

- Investment Cost
- Annual Operational Cost
- Electricity Sales Price
- Energy Yield

For a decrease of, %10 and for an increase %10 the results of the sensitivity analysis without carbon revenue are presented as below;

Parameter	Electricity Price			Investment Cost			Energy Yield			Operating Cost		
Variance	-10%	0%	10%	-10%	0%	10%	-10%	0%	10%	-10%	0%	10%
IRRs	4.63%	8.96%	13.72%	14.21%	8.96%	6.18%	4.63%	8.96%	13.72%	12.44%	8.96%	5.40%

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 analyses provide that the project activity is not financially attractive. The biggest value is 14.21% which is lower than the Benchmark IRR 15.00%. Therefore the project is considered as additional to the baseline scenario.

Barrier Analysis is not used for the project activity.

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 (EB69 Annex 8). 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 15 MWe. The range for the project activity is between 7.5 MWe and 22.5 MWe according to step 1.

Step 2: Identify similar projects (both CDM and non-CDM) which fulfil 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; (7.5 MWe – 22.5 MWe)

(f) The projects started commercial operation before the project design document (CDM-PDD) is published for global stakeholder consultation or before the start date of proposed project activity, whichever is earlier for the proposed project activity; (N.A.)

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 $\mathbf{N_{all}}$.

It was demonstrated that there is only one, which is Built Operate Transfer (BOT) project. The project name is BORES with 10.2 MW capacity. According to analysis $\mathbf{N_{all}}$ BORES (Bozcaada) is 1.
$\mathbf{N_{all}=1}$

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 $\mathbf{N_{diff}}$.

Between the 8MW and 24MW range there is only one project which is Built Operate Transfer (BOT) project of BORES (Bozcaada). Urla WPP is the private project which is different than the BORES (Bozcaada) so $\mathbf{N_{diff}}$ is 1.
$\mathbf{N_{diff}=1}$.

Step 5: Calculate factor $\mathbf{F=1-N_{diff}/N_{all}}$ 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.

$F= 1 – N_{diff}/N_{all}$
$= 1 – (1/1)$
$= 1 – 1$
$= 0$

Factor F is therefore 0.

N_{all} and N_{diff} values and calculation are confirmed through the *Common-Practice_Urla WPP_v1_2015.02.24* file.

F factor is not greater than 0.2 and N_{all} - N_{diff} is not greater than 3 so **the Urla WPP is not a "Common Practice"**.

Bureau Veritas Certification hereby confirms that the proposed VCS project activity is not common practice. The calculations are checked and confirmed through the TEIAS Capacity Projection Report dd. 2012. (http://www.teias.gov.tr/KAPASITEPROJEKSIYONU2012.pdf)

In conclusion, as demonstrated in accordance with ACM0002 / Version 16, "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 16 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources"; "Tool for the demonstration and assessment of additionality" v.07.0; "Tool to calculate the emission factor for an electricity system" v.04.0.

$BE_y = EG_{y*} EF_{grid,CM,y}$

Where:

BE_y Baseline emissions in year y (tCO_2)
EG_y Electricity supplied by the project activity to the grid (MWh)
$EF_{grid,CM,y}$ Combined margin CO_2 emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system"

Since project is a green-field implementation: **$EG_y = EG_{facility,y}$**

Where:

EG_y Electricity supplied by the project activity to the grid (MWh/yr)

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

3.2.6.2 Project Emissions

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

Where:

PE_y Project emissions in year y (tCO_2e/yr)
$PE_{FF,y}$ Project emissions from fossil fuel consumption in year y (tCO_2e/yr)
$PE_{GP,y}$ Project emissions from the operation of geothermal power plants due to the release of non-condensable gases in year y (tCO_2e/yr)
$PE_{HP,y}$ Project emissions from water reservoirs of hydro power plants in year y (tCO_2e/yr)

Project being based on wind energy, none of the PE parameters are applicable according to ACM0002 Version 16 and the **PE_y** (project emissions) are **0**.

3.2.6.3 Leakage Emissions

According to the ACM0002 Version 16, leakage emissions are neglected. As a result;

LE_y = 0 tCO_2

3.2.6.4 Summary of GHG emission reductions or removals

Accordingly the baseline emissions BE_y are calculated as following:

BE_y = $(EG_y - EG_{baseline}) \times EF_{grid,CM,y}$

Where:

BE_y	Baseline emissions in year y (tCO_2/y)
EG_y	Electricity supplied by the project activity to the grid (MWh)
$EG_{baseline}$	Baseline electricity supplied to the grid in the case of modified or retrofit facilities (MWh). For new power plants this value is taken as zero.
$EF_{grid,CM,y}$	Combined margin CO_2 emission factor for grid connected power generation in year y calculated by using the latest version of the "Tool to calculate the emission factor for an electricity system " (tCO_2/MWh)

Since project is a green-field implementation: $EG_y = EG_{facility,y}$

EG_y = 45,738 MWh/year
$EG_{baseline}$ = 0 (The figure is zero for the project as the project is new)

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

BE_y = (45,738 - 0) MWh * 0.5833 tCO_2e/MWh = **26,680 tCO_2e**

According to the ACM0002 Version 16, 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 (tCO_2e)
BE_y	Baseline emissions for the year y (tCO_2e)
PE_y	Project emission for the year y (tCO_2e)
LE_y	Leakage emission for the year y (tCO_2e)

As demonstrated **PE_y** and **LE_y** are "0" for the proposed project activity. Therefore **ER_y** is equal to **BE_y**.

As a result;

ER_y = **26,680 tCO_2e/yr.**

Starting date of the first crediting period is expected as 01/06/2016 which is also the commissioning date of the project activity.

Years	Estimated baseline emissions or removals (tCO_2e)	Estimated project emissions or removals (tCO_2e)	Estimated leakage emissions (tCO_2e)	Estimated net GHG emission reductions or removals (tCO_2e)
2016 (01/06/2016 - 31/12/2016)	15,563	0	0	15,563

2017	26,680	0	0	26,680
2018	26,680	0	0	26,680
2019	26,680	0	0	26,680
2020	26,680	0	0	26,680
2021	26,680	0	0	26,680
2022	26,680	0	0	26,680
2023	26,680	0	0	26,680
2024	26,680	0	0	26,680
2025	26,680	0	0	26,680
2026 (01/01/2026 - 31/05/2026)	11,117	0	0	11,117
Total	**266,800**	**0**	**0**	**266,800**

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 and 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 TEIAS, EMRA sources. All data, parameters and their sources, available at validation for the ex-ante calculation of the Combine 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 several parameters, the main parameter in the monitoring plan is 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
$EG_{gross,y}$	MWh	Turkey's Gross Electricity Generated by primary energy sources (2009 - 2011).	TEIAS (Turkish Electrical Transmission Company) Annual development of Turkey's gross electricity generation of primary energy sources between 1975-2011
$FC_{i,y}$	Ton (m^3 for Natural Gas)	Amount of fossil fuel consumed in the project electricity system by generation sources in the years of 2009, 2010 and 2011	TEIAS (Turkish Electricity Transmission Company) Fuels consumed in thermal power plants in Turkey by the electric utilities for year
$NCV_{i,y}$	TJ/Ton (TJ/m^3 for Natural Gas)	Amount of heat produced by the consumption of a unit quantity of fuel types consumed in thermal power plants	TEIAS (Turkish Electricity Transmission Company) Heating values of fuels consumed in thermal plants in Turkey by the electricity utilities (2009-2011)
$EF_{CO2,i,y}$	tCO_2/GJ	CO_2 emission factor of fossil fuel type i in year 2011	IPCC default values at the lower limit of the uncertainty at a 95% confidence interval as provided in Table 1.4 of Chapter 1 of Volume 2 (Energy) of the 2006 IPCC Guidelines for National Greenhouse Gas Inventory
EG_y	MWh	Net electricity generated by project electricity system in year 2009, 2010 and 2011	TEIAS (Turkish Electricity Transmission Company) www.teis.gov.tr - Generation units put into operation in 2009, 2010, 2011
$\eta_{i,y}$	%	Average net energy conversion efficiency of power unit m in year y	"Appendix 1, Default efficiency factors for power plants" of "Tool to calculate the emission factor for an electricity system" version 04.0.

Data and parameters monitored

Data / Parameter:	**Electricity Production / $EG_{facility,y}$**
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 TEIAS 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 TEIAS 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	Continuous monitoring and at least monthly recording
Value applied:	**45,738**
Monitoring equipment	Meters are in compliance with the communiqué for Metering Devices to be used in Electricity Market. They have an accuracy class 0.5s.
QA/QC procedures to be applied	According to the Article 2 of the Communiqué of Meters in Electricity Sector[1]: '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 +-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'[2] (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

[1] See, http://www.epdk.gov.tr/documents/elektrik/mevzuat/teblig/elektrik/sayaclar_hakkinda/Elk_Tblg_Sayaclar.doc
[2] See, http://www.mevzuat.gov.tr/Metin.Aspx?MevzuatKod=7.5.6381&MevzuatIliski=0&sourceXmlSearch=

	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 baseline emissions
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	The quantity of net electricity delivered to the grid will be cross checked with the meter reading records (OSF forms).

Monitoring plan given in VCS-PD, are in line with the monitoring requirements of the applied approved CDM methodology, ACM0002 Version 16. 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 v01.

Regarding monitoring of the quantity of net electricity delivered to the grid ($EG_{facility,y}$), the main source for the data has been determined as the PMUM (Market Financial Settlement Centre) records, the Meter Reading Records (OSF Forms) will be used as the basis for cross-checking the PMUM records.

For the project activity there will be two electricity meters (one main and one reserve) at the substation. The design of the metering system will be checked and approved by TEIAS before commissioning of the plant. The technical specifications of the power meters should be in line with Measure and Metering Devices Regulation by Ministry of Industry and Trade.

According to Communique of Meters in Electricity Sector; the meters to be used in the electricity market shall be compliant with the standard of Turkish Standards Institute or IEC and have obtained “Type and System Approval” certificate from the Ministry of Trade Industry.

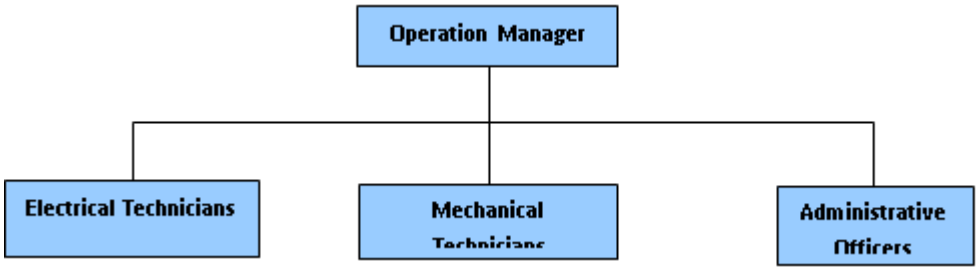
The meters will be in class of 0.5s and the Ministry of Trade and Industry (Ministry) is responsible from control and calibration of meters. The calibration of the meters will be done every 10 years according to ‘Regulation of Metering and Testing of Metering Systems’.

The meter measurements will be read and checked by the company and will be reported to TEIAS remotely. Remote readings include both the produced electricity and the electricity traction from the grid. As a result, net electricity supplied to the grid will be calculated.

Egenda will be responsible for the overall management of the monitoring procedures including recording, data collection, calculating emission reductions and project emissions.

The collected data will be kept by Egenda during the crediting period and until two years after the last issuance of VERs for the Urla WPP activity for that crediting period.

The monitoring team structure can be seen as below;



The VVB herby confirms that the project participants are able to implement the monitoring plan.

3.3 Environmental Impact

The project has received an "EIA is not required" according to Turkish environmental law by Ministry of Environment and Forestry on 30/03/2009.

A PIF has been prepared to evaluate possible environmental impacts and preventive measures that will be taken to eliminate and/or minimize those impacts of the project activity. Regarding to PIF no negative impact is identified for the project activity.

Another report, Ornithological and Ecologic Assessment Report, is also prepared for the project. This report which is prepared by the experts provides that the project activity does not have negative effect on local ecosystem.

The validation team confirms that the project activity does not have any negative environmental impact according to "EIA is not required" certificate and ecologic assessment report.

3.4 Comments by Stakeholders

Meeting for Participation of Local Community in EIA Process which needs to be held in order to achieve public participation in EIA process, enlighten them on the activity, to learn their opinions and suggestions relating to the Urla WPP Project as per the Article 9 of EIA Regulation. The meeting was conducted on 08/11/2012 at Barbaros village in Urla town, İzmir province.

Many participants from the villages and representatives of the head of the village attended. The participants are informed about the technical summary of the project activity and effects on the sustainable development of the project. The closest settlement is Barbaros village to the project site. Locals of the Barbaros village expressed their support for renewable energy project of Urla WPP.

The project proponent stated that people from local community were to be employed as much as possible. Participants' opinions are controlled by the validation team through the evaluation forms.

In addition to generation of clean energy, Urla WPP will provide economic and social benefits to its surrounding area. First of all, employment opportunities will be created during both construction and operational phases of the project activity. This will have a considerable impact on the income of the local people.

The validation team conducted live interviews with Barbaros village residents as well as community leaders during the site visit dd. 20/11/2013. Barbaros village is chosen for the interviews by the validation team regarding to select the closest district to the project site.

During the site visit, possible negative and positive impacts of the project activity were discussed with the stakeholders. Stakeholders declared that they support renewable energy investments in their region.

4 VALIDATION CONCLUSION

Bureau Veritas Certification has performed a validation of the "Urla Wind Power Project, Turkey". The validation was performed on the basis of UNFCCC criteria, applied CDM Methodology ACM0002 Version 16, 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 partially. 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 (26,680 tonnes CO_2e) 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 (26,680 tonnes CO_2e) that has been validated in the VCS-PD v01.

The review of the project design documentation (version 01) 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 16, VCS v.03.4 and the relevant host country criteria. Bureau Veritas Certification thus requests registration of "Urla Wind Power Project" as a VCS-VCU project activity.

5 REFERENCES

- Urla WPP VCS PD Ver. 01 – 24/02/2015
- Urla WPP IRR Calculation Excel Sheet Ver. 01
- Urla WPP Baseline Study Ver. 01
- Urla WPP Common Practice Analysis Ver. 01
- Urla EMRA Generation License (EÜ/1622-6/1179) – 29/05/2008
- Urla Ornithological and Ecologic Assesment Report – April 2013
- Egenda & Enercon Equipment Contract (Number: W-04964-V01) – 15/05/2013
- Barlovento Wind Resource Assessment – February 2011
- EIA Not Required Certificate (Decision No: 642) – 30/03/2009
- Egenda Board Decision (Decision No:223) – 09/08/2011
- Signature with FutureCamp Türkiye for VER Development – 28/12/2011
- Urla WPP Financial Report – 15/02/2013
- TEIAS System Connection Agreement – 15/08/2013
- Urla WPP Project Introduction File

PERSONS INTERVIEWED

Egenda Ege Enerji Üretim A.Ş

Vuslat Ayça D. Kaya	Technical Office Engineer - +90 530 011 33 39
Ali Uysal	Technician - +90 532 664 81 74

FutureCamp Türkiye

Engin Mert	Consultant - +90 312 481 21 42

Local Stakeholder

Çağatay Aykut	Barbaros Village Local - +90 535 691 97 79
Yüksel Ersan	Barbaros Village Muhtar - +90 535 472 32 30
Ali Doğan	Barbaros Village Local - +90 532 546 51 70

6. VALIDATION TEAM

Internal Technical Reviewer: Burcu Mutman – Environmental Engineer
Bureau Veritas Certification SAS – Internal Technical Reviewer

Burcu Mutman is an auditor for environment, safety and quality management systems. Has participated various online trainings, seminars and personal trainings on Gold Standard also participated in the Gold Standard Academy in 2009 and 2010.

Team Leader: Furkan Sadikoglu – 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 2 years' experience in energy sectors. He has participated online seminars in the Gold Standard Academy in 2012 and 2013 and is a lead verifier for GHG emission reduction projects.

Team Leader: Onur Yilmaz – Mechanical Engineer
Bureau Veritas Certification SAS – Lead Verifier

Onur Yilmaz is a Mechanical Engineer and also Energy Manager as 5 years of consulting experience on energy efficiency. He has experience in conducting pre audits and audits in industrial and buildings establishments. He has also participated online seminars and trainings on Gold Standard. He is a lead verifier for GHG emission reduction projects since 2013.

Investment Analysis Specialists: 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: CDM PROJECT VALIDATION PROTOCOL

Table 1 Validation requirements based on VVS version 04.0 (EB 74 Annex 4), PS version 04.0 (EB 74 Annex 3), PCP version 04.0 (EB 74 Annex 11), and Guidelines for completing the SSC PDD form version 01.0 (EB66 Annex 9)

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
Part I Cover Page					
(a) Is the title of the project activity provided?	PDD		Title of the project is given as Urla Wind Power Project	**OK**	**OK**
(b) Is the version number of the PDD indicated?	PDD		Version number of the VCS PD is given as 01	**OK**	**OK**
(c) Is the completion date of the PDD provided in DD/MM/YYYY format?	PDD		Completion date of the VCS PD is given as 24/02/2015.	**OK**	**OK**
(d) Are project participants indicated?	PDD		Project participant is given as Egenda Ege Enerji Üretim A.Ş.	**OK**	**OK**
(e) Is the host party(ies) indicated?	PDD		Host party is given as Turkey	**OK**	**OK**
(f) Is the sectoral scope and selected methodology(ies) indicated?	PDD		01 – ACM0002, v16	**OK**	**OK**
(g) Is the estimated amount of annual average GHG emission reductions indicated?	PDD		26,680 tCO_2e	**OK**	**OK**
Part II PDD					
Description of project activity					
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?	PDD PS	31(b)	A brief description of the project activity is provided under section A.1 of the VCS PD according to references transparently.	**OK**	**OK**
A.1.2 Are the scenario existing prior to the start of project and baseline scenario indicated?	PDD		The scenario existing prior to the start of project and baseline scenario are indicated	**OK**	**OK**

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			under section A.1.		
A.1.3 Does it explain how the project activity will reduce GHG emissions or increase GHG removals?	PS	31(c)	By the efficient utilization of the available wind energy by the project activity will replace the grid electricity.	**OK**	**OK**
A.1.4 Is the estimated of annual average and total GHG emission reductions for the chosen crediting period provided?	PDD		The electricity produced by project activity will result in a total emission reduction of 26,680 tCO_2e per year. Total emission reduction over the 10 year crediting period is expected to reach 266,800 tCO_2e.	**OK**	**OK**
A.1.5 Is a brief description of how the project activity contributes to sustainable development provided?	PDD		Sustainable development specific goals are provided under section A.1 of the VCS PD.	**OK**	**OK**
A.1.6 In order to determine whether the description of the proposed project activity in the PDD 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 20/11/2013 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 project activity is a small scale project and hence the DOE 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?	PDD		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?	PDD		Aegean Region, İzmir province	**OK**	**OK**
A.2.3 Is City/Town/Community etc. indicated?	PDD		The project is close to Urla city.	**OK**	**OK**
A.2.4 Are the details of physical location of the project activity, including information allowing the unique identification of this project activity and a map, provided?	PDD		The detail of the project location is provided under section A.2.4 of the VCS PD. Geographical coordinates are confirmed during the site visit.	**OK**	**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?	PDD		According to the Generation License, 6 wind turbines with unit capacity of 3000 kW were selected for the project. Justify the number of turbines and correct above statement under section A.3. Enercon is decided as equipment provider due to the outstanding features of its product regarding safety factors, simple durable design for low maintenance and long life operation, high efficiency, and also for fine visual appearance. The key parameters about the technical design of the selected model Enercon E82 are listed under section	**CL01**	**OK**

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			A.3.		
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 description?	PDD		Under section A.3 average lifetime of the equipment and plant load factor is not described through the clear references.	**CAR01**	**OK**
A.3.1.2 Are the monitoring equipments and their location in the systems included in the description?	PDD		The monitoring equipment's and their location in the system are not provided under section A.3.	**CAR02**	**OK**
A.3.2 Are energy and mass flows and balances of the systems and equipment included in the project activity provided?	PDD		Energy and mass flows and balances of the systems and equipment are included in the project activity.	**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?	PDD		*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?	PDD		Wind driven turbines will rotate in generators and electricity generated here will be transferred to the grid consumer without any greenhouse gas emissions.	**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?	PDD		Turkish national grid is the baseline.	**OK**	**OK**
A.3.6 Is a list of facilities, systems and equipment in the baseline scenario provided?	PDD		Turkish national grid is the baseline.	**OK**	**OK**
A.3.7 Is a description of how technologies and	PDD		It is described under section A.3 of the VCS	**OK**	**OK**

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
measures and know-how to be used are transferred to the Host Party (ies) included?			PD.		
A.4 Parties and project participants					
A.4.1 Are following information provided in a tabular format?					
A.4.1.1 List of project participants and parties	PDD		The project participant is given as Egenda Ege Enerji Üretim A.Ş under section A.4 of the VCS PD.	**OK**	**OK**
A.4.1.2 Identification of Host Party	PDD		Identification of Host Party is given as Turkey	**OK**	**OK**
A.4.1.3 Indication whether the Party wishes to be considered as project participant	PDD		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?	PDD		The A.5 section of the webhosted VCS PD mentions that “The project does not involve any public funding”.	**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**
A.6 Debundling for project activity					
A.6.1 Do the project participants demonstrate that the project activity is not a debundled component of a	PDD PS	87	N.A.	**OK**	**OK**

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large-scale project activity?					
A.6.2 Do the project participants follow the applicable provisions in the "Guidelines on assessment of debundling for SSC project activities"?	PS	88	N.A.	**OK**	**OK**
Application of selected approved baseline and monitoring methodology					
Reference of methodology					
Is the selected methodology (ies) indicated with exact reference (number, title and version)?	PDD		The selected methodology is indicated as "ACM0002 Version 16.0.0 *Consolidated baseline methodology for grid-connected electricity generation from renewable sources*".	**OK**	**OK**
Are the baseline and monitoring methodologies selected by the project participants the valid versions of those approved by the Board?	VVS	70	Latest version of the tools are referred as below; 1. Tool to calculate the emission factor for an electricity system (Version 04.0.0) 2. Tool for the demonstration and assessment of additionality (Version 07.0.0) 3. Combined tool to identify the baseline scenario and demonstrate additionality (Version 05.0.0) 4. Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion (Version 02.0.0)	**OK**	**OK**
Are there any tools and other methodologies to which the selected methodology indicated?	PDD		Latest version of the tools are referred as below;	**OK**	**OK**

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			1. Tool to calculate the emission factor for an electricity system (Version 04.0.0) 2. Tool for the demonstration and assessment of additionality (Version 07.0.0) 3. Combined tool to identify the baseline scenario and demonstrate additionality (Version 05.0.0) 4. Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion (Version 02.0.0)		
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**
Is there any deviation or clarification requested for the approved methodology?	VVS	78-81	N.A.	**OK**	**OK**
Project activity eligibility					
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	Project activity is renewable and small scale project so the valid version of ACM0002 methodology is used at the time of submission of the proposed project activity for registration.	**OK**	**OK**
Is the choice of the selected methodology(ies) justified by showing that the project activity meets each applicability conditions of the selected methodology(ies)?	PDD VVS	76	All applicability criteria listed In ACM0002 are met by the proposed VCS-VCU project activity. As it is a grid connected power plant, the applicability criteria of the EF Tool are	**OK**	**OK**

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			also met.		
Is it demonstrated that the project activity qualifies as Type I, II, and/or III during every year of the crediting period in accordance with applicable provisions for project activity eligibility in the Project standard?	PDD		N.A.	**OK**	**OK**
Is it determined that the project activity conforms to one or more of the approved small-scale methodologies applied in conjunction with the general guidelines to SSC CDM methodologies?	VVS	152	N.A.	**OK**	**OK**
Do the project participants explain the documentation that has been used as a basis for justification and provide the references, or include the documentation in Appendix 3 of the PDD?	PDD		References are indicated in Appendix 3 of the PDD. And also detailed emission factor calculations are indicated.	**OK**	**OK**
Project boundary					
Is the project boundary of the project activity defined based on the guidance of the selected methodology(ies)?	PDD		According to ACM0002, the spatial extent of the project boundary includes the project site and all power plants connected physically to the electricity system that the project power plant is connected to.	**OK**	**OK**
Is a flow diagram of the project boundary presented, physically delineating the project activity?	PDD		An operation diagram of the project is provided under Figure 3 of the VCS PD.	**OK**	**OK**
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?	PDD VVS	82	The flow diagram includes the equipment, systems and flows of mass and energy.	**OK**	**OK**

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
Establishment and description of baseline scenario					
Is an explanation how the baseline scenario is established in accordance with the selected baseline methodology provided?	PDD VVS	89	Explanation is establish in accordance with ACM0002 Ver.16 as follows; "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".	**OK**	**OK**
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**
Does the PDD explain and justify the key assumptions and rationale, provide and explain all data used to establish the baseline scenario (variables, parameters, data sources etc.) preferably in a tabular form, and provide all relevant documentation and/or references?	PDD		*Note: The data related to environment impact of the existing facilities shall be assessed and this assessment should be described in the report (when applicable to the project)*	**OK**	**OK**
To determine the performance of equipment used in the proposed small-scale CDM project activity, do project participants use:	PS	91			
The appropriate value specified in the selected methodology;	PS	91(a)	N.A.	**OK**	**OK**
The national standard for the performance of the	PS	91(b)			**OK**

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
equipment type (project participants shall identify the standard used) if the value specified in 0 is not available;			N.A.	**OK**	
An international standard for the performance of the equipment type, such as International Organization for Standardization (ISO) and International Electrotechnical Commission (IEC) standards (project participants shall identify the standard used) if the value specified in 0 is not available;	PS	91(c)	N.A.	**OK**	**OK**
The manufacturer's specifications, provided that they are tested and certified by national or international certifiers, if the value specified in 0 is not available;	PS	91(d)	N.A.	**OK**	**OK**
Performance data from test results conducted by an independent entity for equipment installed under the project activity if the value specified in 0 is not available.	PS	91(e)	N.A.	**OK**	**OK**
Are the documents and sources referred to in the PDD correctly quoted and interpreted and are they crosschecked with other verifiable and credible sources, such as local expert opinion, if available?	VVS	91	References are correctly provided.	**OK**	**OK**
Does the PDD provide a description of the identified baseline scenario, including a description of the technology that would be employed and/or the activities that would take place in the absence of the proposed project activity?	VVS	92	The baseline scenario is identified according to the "Baseline Methodology Procedure" of ACM0002 ver.16.	**OK**	**OK**
Have all applicable CDM requirements been taken into	VVS	93	The baseline scenario is identified according to the "Baseline Methodology Procedure" of	**OK**	**OK**

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
account in the identification of the baseline scenario for the proposed project activity?			ACM0002 ver.16.		
Has relevant national and/or sectoral policies and circumstances (type E+ or E-), such as sectoral 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**
Does the PDD provide a transparent description of the baseline scenario?	PDD		Transparent description of the baseline scenario is provided.	**OK**	**OK**
Demonstration of additionality					
Is the project activity demonstrated additional in accordance with one of options below?	PDD				
Attachment A of Appendix B: In such cases, project participants should also follow the "Non-binding practice examples to demonstrate additionality for SSC project activities".	PS VVS	96(a) 159	N.A.	**OK**	**OK**
Any applicable additionality tool;	PS	96(b)	N.A.	**OK**	**OK**
Guidelines for demonstrating additionality of microscale project activities"? if the proposed project activity meets one of the following criteria: a) Type I: Project activities up to 5 MW that employ renewable energy as their primary technology; b) Type II: Energy efficiency project activities that aim to achieve energy savings at a scale of no more than 20 GWh per year; or	PS VVS	96(c) 160	N.A.	**OK**	**OK**

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
c) Type III: Other project activities not included in Type I or Type II that aim to achieve GHG emissions reductions at a scale of no more than 20 $ktCO_2e$ per year.					
If investment analysis is used:					
Are all relevant assumptions and parameters used in the analysis listed?	PDD		Options are described according to "Tool for the demonstration and assessment of additionality" Version 7.0.0	**OK**	**OK**
Is the latest version of the "Guidelines on the assessment of investment analysis" applied?	VVS	118	Version 05 is applied.	**OK**	**OK**
Is project activity one of the following cases in regards to investment analysis:	VVS	119			
The proposed project activity would produce no financial or economic benefits other than CDM-related income;	VVS	119(a)	The project activity not produces any financial or economic benefits other than VCU credit income.	**OK**	**OK**
The proposed project activity is less economically or financially attractive than at least one other credible and realistic alternative;	VVS	119(b)	Two realistic and credible alternative scenarios are identified for the project activity. a) The proposed project activity undertaken without being registered as a VCS-VCU project activity. b) Continuation of the current situation.	**OK**	**OK**
The financial returns of the proposed project activity would be insufficient to justify the required investment.	VVS	119(c)	Investments analyze shows that the project is not economically feasible without VCU credit income.	**OK**	**OK**
Has the accuracy of financial calculations carried out for investment analysis been verified as follows:	VVS	120			
Cross-check the parameters against third-party or	VVS	120(b)	Provide the third-party or publicly available	**CAR04**	**OK**

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
publicly available sources, such as invoices or price indices			sources, such as invoices or price indices for cross-checking investment inputs.		
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 CAR04	**OK**	**OK**
Assess the correctness of computations carried out and documented by the project participants; and	VVS	120(d)	Refer to CAR04	**OK**	**OK**
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 analyses are correctly applied under Sub-step 2d.	**OK**	**OK**
If benchmark analysis is used:					
Is the benchmark clearly indicated?	PDD		Benchmark analysis is clearly indicated.	**OK**	**OK**
Is the type of benchmark applied suitable for the type of financial indicator presented?	VVS	121(a)	Equity IRR is selected as the financial indicator for the demonstration of the additionality of the project as permitted in the additionality tool.	**OK**	**OK**
Does the risk premiums applied in determining the benchmark reflect the risks associated with the project type or activity?	VVS	121(b)	As a banker view, according to World bank loan appraisal document, threshold equity IRR for wind power investments in Turkey is %15.	**OK**	**OK**
Is it reasonable to assume that no investment would be made at a rate of return lower than the benchmark?	VVS	121(c)	Without adding any risk premium to the benchmark, which is 15%, it doe clearly exceed the resulting equity IRRs (8.96%), thus rendering the project activity economically unattractive.	**OK**	**OK**

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
If cost comparison is used:					
Are the scenarios compared described?	PDD		N.A.	**OK**	**OK**
If PPs rely on values from FSR:	VVS	122			
Has the FSR been the basis of the decision to proceed with the investment in the project?	VVS	122(a)	Equipment agreement is given as investment decision date (15/05/2013).	**OK**	**OK**
Are the values used in the PDD and associated annexes fully consistent with the FSR? If inconsistencies occur, was the appropriateness of the values validated?	VVS	122(b)	See CAR04.	**OK**	**OK**
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)	See CAR04.	**OK**	**OK**
If barriers analysis is used:					
Is the "Guidelines for objective demonstration and assessment of barriers" followed?	PS	48	N.A.	**OK**	**OK**
Is it ensured that only the most relevant barriers selected?	PDD		N.A.	**OK**	**OK**
Is the credibility of the barriers justified with key facts and/or assumptions and the rationale?	PDD		N.A.	**OK**	**OK**
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:	VVS	125	N.A.	**OK**	**OK**

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
(a) Risk related barriers (b) Barriers related to the unavailability of sources of finance for the project activity					
Were the barriers determined as real?	VVS	126(a)	N.A.	**OK**	**OK**
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**
Prior consideration of the clean development mechanism					
If the project activity start date prior to the date of publication of the PDD for stakeholder comments, were the CDM benefits considered necessary in the decision to undertake the project as a proposed CDM project activity?	PDD VVS	105	VER benefits are considered on 09-08-2011. The Board decision is provided to the validation team.	**OK**	**OK**
Is the start date of the project activity, reported in the PDD, the earliest date at which either the implementation or construction or real action of a project activity begins?	VVS	106	Start date of the project activity is described through the equipment agreement with Enercon dd. as 15-05-2013.	**OK**	**OK**
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**
Is it a project activity with a start date on or after 02 August 2008, or before 02 August 2008?	VVS	106	A project activity with a start date is after 02 August 2008.	**OK**	**OK**
For a project activity with a start date on or after 02 August 2008, are the following provisions to					

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
be satisfied:					
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**
Do the project participants inform the secretariat of the progress of the project activity every subsequent two years after the initial notification, until the PDD regarding the project activity has been published for global stakeholder consultation or, a new 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?	PCP	9	N.A.	**OK**	**OK**
For a project activity with a start date before 02 August 2008, are the following elements to be satisfied:	VVS	108			
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**
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**
Is an implementation timeline of the proposed CDM	PS	28(c)	N.A.	**OK**	**OK**

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
project activity provided?					
Emission reductions					
Explanation of methodological choices					
Does the PDD explain how the methods or methodological steps in the selected methodology, for calculating project emissions, baseline emissions, leakage emissions and emission reductions are applied?	PDD VVS	96	The B.6.1 section of the VCS PD describes the steps for the calculation of emission reduction in accordance with ACM0002 Version 16.0.0.	**OK**	**OK**
In case the methogology(ies) provide different options to choose from, does the PDD indicate and justify which option is chosen for the project activity?	PDD VVS	97	The baseline emission cases are line with the methodology ACM0002 Version 16.0.0 and "Tool to calculate the emission factor for an electricity system Version 04.0.0".	**OK**	**OK**
In case the methodology(ies) allow different default values, does the PDD indicate and justify which of the default values have been chosen for the project activity?	PDD		The baseline emission cases are line with the methodology ACM0002 Version 16.0.0 and "Tool to calculate the emission factor for an electricity system Version 04.0.0".	**OK**	**OK**
Data and parameters fixed ex-ante					
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?	PDD VVS	98	The baseline emission cases are line with the methodology ACM0002 Version 16.0.0 and "Tool to calculate the emission factor for an electricity system Version 04.0.0".	**OK**	**OK**

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
c) Resulting in a conservative estimate of the emission reductions?					
For each piece of data or parameter, are tables provided in accordance with the instructions?	PDD		The baseline emission cases are line with the methodology ACM0002 Version 16.0.0 and "Tool to calculate the emission factor for an electricity system Version 04.0.0".	**OK**	**OK**
Ex ante calculations of emission reductions					
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?	PDD		The baseline emission cases are line with the methodology ACM0002 Version 16.0.0 and "Tool to calculate the emission factor for an electricity system Version 04.0.0".	**OK**	**OK**
Is the information how each equation is applied, in a manner that enables the reader to reproduce the calculation, provided?	PDD		The information is provided how each equation is applied, in a manner that enables the reader to reproduce the calculation.	**OK**	**OK**
Is the information of additional background information and/or data provided in Appendix 4, including relevant electronic spreadsheets?	PDD		An excel sheet for the baseline emission is provided. (CM_Urla WPP_v1_2015.02.24)	**OK**	**OK**
Is a sample calculation for each equation used provided, substituting the values used in the equations?	PDD		Sample calculations for each equation used are provided, substituting the values used in the equations.	**OK**	**OK**
If the proposed small-scale CDM project activity involves more than one component, does the project participants provide ex-ante calculations of baseline, project and leakage GHG emissions as well as GHG emission reductions for each year of the crediting	PDD PS	90	N.A.	**OK**	**OK**

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
period and for each component separately?					
In cases where leakage is to be considered in the proposed small-scale CDM project activity; do project participants consider leakage only within the boundaries of non-Annex I Parties?	PS	92	N.A.	**OK**	**OK**
In case of replacement of existing equipments, do project participants estimate the point in time where the existing equipments would be replaced in the absence of the proposed small-scale CDM project activity in accordance with the "Tool to determine the remaining lifetime of equipment"? For household devices/ appliances, project participants may disregard the remaining lifetime.	PS PS	93 94	N.A.	**OK**	**OK**
Do norms, specifications, standards and test procedures cited in the selected methodology refer to the latest version of the documentation available at the time of submission of the PDD to the DOE for validation?	PS	95	Norms, specifications, standards and test procedures are cited in the selected methodology refer to the latest version of the documentation.	**OK**	**OK**
Summary of the ex-ante estimates of emission reductions					
Are the results of the ex-ante estimation of emission reductions for all years of the crediting period, provided in a tabular format?	PDD		The results of the ex-ante estimation of emission reductions for all years of the crediting period are provided in a tabular format.	**OK**	**OK**
If the project activity involves more than one component, does the PDD provide a separate table for each of the component or each of the selected methodology(ies), and whether	PDD		N.A.	**OK**	**OK**

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
the PDD provide a table showing the aggregate emission reductions of the project activity?					
Monitoring Plan					
Data and parameters to be monitored					
Is specific information on how the data and parameters that need to be monitored would actually be collected during monitoring included?	PDD		$EG_{facility,y}$ parameter is provided under the monitoring plan section of the VCS PD.	**CAR05**	**OK**
For each data or parameter, is the information completed, in a tabular format:					
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.	PDD		The source of data for the $EG_{facility,y}$ parameter is not clear.	**CL02**	**OK**
Is an estimate of the data/ parameter that will be monitored during the crediting period provided?	PDD		Yes, estimate for all parameters that will be monitored during the crediting period, has been tabulated in the B.7.1 of VCS PD.	**OK**	**OK**
Is the estimate provided in the PDD for this monitored data or parameter reasonable?	VVS	98	The estimate provided in the VCS PD for the monitored data's is reasonable.	**OK**	**OK**
Where data or parameters are to be measured, does it specify the measurement methods and procedures, standards to be applied, accuracy of the measurements, person/entity responsible for the measurements, and, in case of periodic measurements, the measurement intervals?	PDD		Monitoring frequency for the parameters is clear.	**OK**	**OK**

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Is a description of the QA/QC procedures including the calibration procedures, where applicable, provided?	PDD		Calibration procedures of the meters are clearly described through the references. On the other hand source of the data and cross-check source are not described.	**CAR06**	**OK**
Is the purpose of data indicated?	PDD		Purpose of data is not described under the monitoring plan for the parameters.	**CAR07**	**OK**
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 16.0.0.	**OK**	**OK**
Does the monitoring plan contain all necessary parameters?	VVS	132(a)	The B.7.1 section of the VCS PD contains all the parameters in accordance with the applied methodology ACM0002 Version 16.0.0. Capacity parameter is not being monitored.	**OK**	**OK**
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 16.0.0.	**OK**	**OK**
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 16.0.0.	**OK**	**OK**
Are the means of implementation of the monitoring plan, including the data 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?	VVS	132(b)	The monitoring plan is based on the ACM0002 Version 16.0.0.	**OK**	**OK**
Sampling plan					

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Are there any data and parameters monitored in section B.7.1 above to be determined by a sampling approach?	PDD		Clarify that the sampling plan is applied project activity or not.	**CL03**	**OK**
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"?	PDD		Refer CL03.	**OK**	**OK**
Other elements of monitoring plan					
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 PDD?	PDD PS	56(a)	The operational and management structure is described under section B.7.3 of the VCS PD.	**OK**	**OK**
Are the responsibilities for and institutional arrangements for data collection and archiving clearly indicated?	PDD PS	56(c)	Yes the responsibilities for and institutional arrangements for data collection and archiving clearly indicated under section B.7.3 of VCS PD.	**OK**	**OK**
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)	Yes the monitoring plan described in the VCS PD states 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 VERs, whichever occurs later.	**OK**	**OK**
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)	Monitoring plan includes uncertainty levels, methods and the associated accuracy level of measuring instruments to be used for various parameters and variables under QA/QC procedures of $EG_{facility,y}$ parameter.	**OK**	**OK**
Does the monitoring plan include specifications of the	PS	56(f)	Monitoring plan includes specifications of the	**OK**	**OK**

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
calibration frequency for the measuring equipments?			calibration frequency for the measuring equipments under QA/QC procedures $EG_{facility,y}$ parameter.		
Duration and crediting period					
Duration of project activity					
Start date of project activity					
Is the start date of the project activity stated, in the format of DD/MM/YYYY?	PDD		The expected start date of the project activity is given as 01/06/2016.	**OK**	**OK**
Does it describe how the start date has been determined and provide evidence to support this date?	PDD		It is not described and provided that how the start date has been determined under section C.1.1.	**CAR08**	**OK**
Expected operational lifetime of project activity					
Is the expected operational lifetime of the project activity stated in years and months?	PDD		Expected operational lifetime is given as 25 years	**OK**	**OK**
Crediting period of project activity					
Type of crediting period					
Is the type of crediting period chosen for the project activity stated?	PDD		Renewable crediting period is chosen.	**OK**	**OK**
In case a renewable crediting period was chosen, does it indicate whether it is the first, second or third?	PDD		Provide whether the renewable crediting period is the first, second or third under section C.2.1	**CAR09**	**OK**
Start date of crediting period					
Is the start date of crediting period stated in the format of DD/MM/YYYY?	PDD		Start date of the crediting period is given as 01/06/2016.	**OK**	**OK**
Length of crediting period					

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Is the length of crediting period stated in years and months?	PDD		The length of the first crediting period is 10 years, 0 months.	**OK**	**OK**
Environmental impacts					
Analysis of the environmental impacts					
If required by the host Party, is an analysis of the environmental impacts of the proposed small-scale CDM project activity carried out and a summary of the analysis of the environmental impacts of the project activity and references to all related documentation provided?	PDD PS	99	A summary of the environmental impacts of the project activity and references are not described under section D.1 of the VCS PD. There is no requirement to perform a complete EIA according to Turkish environmental law which has a relevant decision document dated 30/03/2009.	**CAR10**	**OK**
Local stakeholder consultation					
Solicitation of comments from local stakeholders					
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	A brief description of LSC meeting date and Stakeholder feedback round is not described under section E.1.	**CAR11**	**OK**
Is the process by which comments from local stakeholders have been invited provided?	PDD		The process by which comments from stakeholder have been invited is not provided under section E.1.	**CAR12**	**OK**
Summary of comments received					
Are stakeholders that have made comments identified?	PDD		A brief summary of the comments received from the stakeholder is not described under E.2 section of the VCS PD.	**CAR13**	**OK**
Have comments by local stakeholders that can reasonably be considered relevant for the proposed CDM project activity been invited?	VVS	139 (a)	See CAR13	**OK**	**OK**

CHECKLIST QUESTION	Ref.	§	COMMENTS		Draft Concl	Final Concl
Is the summary of comments provided complete?	PDD VVS	139 (b)	See CAR13		**OK**	**OK**
Report on consideration of comments received						
Is information provided to demonstrate that all comments received have been considered?	PDD VVS	139 (c)	Considerations of comments received from the stakeholders are not added to section E.3.		**CAR14**	**OK**
Approval and authorization						
General						
Is it indicated whether the letter(s) of approval from Party(ies) available at the time of submitting the PDD to the validating DOE?	PDD		N.A.		**OK**	**OK**
Approval			COUNTRY A	COUNTRY B		
Has the DNA of each Party indicated as being involved in the proposed CDM project activity in section A.3 of the PDD provided a written letter of approval?	VVS	38	N.A.	N.A.	**OK**	**OK**
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 PDD being submitted for registration	VVS	39	N.A.	N.A.	**OK**	**OK**
Is(are) the letter(s) of approval unconditional with respect to (0) above?	VVS	40	N.A.	N.A.	**OK**	**OK**

CHECKLIST QUESTION	Ref.	§	COMMENTS		Draft Concl	Final Concl
Has(ve) the letter(s) of approval been issued by the respective Party's DNA? If there is doubt with respect to (0) 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**
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**
Authorization						
Has each project participant been authorized by at least one Party involved in a letter of approval?	VVS	45	N.A.		**OK**	**OK**
Is the information in tabular form in the PDD consistent with the contact information for project participants provided?	VVS	46	N.A.		**OK**	**OK**
Are any entities other than those approved as project participants included in the PDD?	VVS	47	N.A.		**OK**	**OK**
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 Legal Requirements

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
1. Legal requirements					
1.1. Is the project activity environmentally licensed by the competent authority?	2	DR	Project had EIA not required certificate dd. 30/03/2009.	**OK**	**OK**
1.2. Are the conditions of the environmental license being met?	2	DR	"EIA not required certificate" has been submitted to the validation team as a proof of compliance with Environment Law.	**OK**	**OK**
1.3 Are the conditions of the Designated National Authority being met?	2	DR	There is no DNA in Turkey. Hence, the checklist question is N/A.	**OK**	**OK**

Table 3 Resolution of Corrective Action /Clarification / Forward Action Requests

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
CAR01 Under section A.3 average lifetime of the equipment and plant load factor is not described through the clear references.		Response; Average lifetime and the PLF of the project is given under the section A.3 of the VCS PD.	**Review 1:** Average lifetime of the project activity is confirmed as 25 years according to "Tool to determine the remaining lifetime of equipment" and the PLF of the project is accepted as 35%. **The corrective action request is closed.**

CAR02 The monitoring equipment's and their location in the system are not provided under section A.3.		Response: Single line diagram of the project is added under the section A.3.	**Review 1:** Single line diagram of the project activity is provided under section A.3 of the VCS PD. **The corrective action request is closed.**
CAR03 Investment inputs are refer from the Eganda financial report. IRR inputs are not provided with references under investment analysis section of the PDD.		Reponse: All references for the IRR parameters are given in the IRR excel sheet. Equipment cost cannot be publicly published because of the confidentially agreement between Enercon and Egenda. So it is not possible to add the all IRR items in the VCS PD. However total project cost is added to the VCS PD.	**Review 1:** Investment analysis inputs are confirmed according to financial feasibility and equipment agreement between Enercon and Egenda dd.15/05/2013 with W-04962-V01 contract number. **The corrective action request is closed.**
CAR04 Provide the third-party or publicly available sources, such as invoices or price indices for cross-checking investment inputs.		Response: Because of the confidentiality agreement between Enercon and Enda, equipment agreement is provided to the DOE during the validation site visit. Equipment agreement is covered 62% of the total cost of the prject, so biggest part of the project cost is realized and provided to the DOE. And biggest cost could be validated through equipment agreement.	**Review 1:** The equipment agreement is equal to 62% of total investment cost. **The corrective action request is closed.**
CAR05 Start date of the project activity is described through the equipment agreement with Enercon dd. 15-05-2013. Please provide the equipment agreement to DOE.		Response: Refer to CAR 04.	**Review 1:** Equipment agreement is provided during the site visit. **The corrective action request is closed.**

CAR06 EG facility,y parameter is provided under the monitoring plan section of the PDD.		Response: In the methodology v14 page 25, it is defined taht CAPpj should be monitored for hydro power plants. So Cappj is not added under the monitoring plan. (http://cdm.unfccc.int/filestorage/A/0/4/A04BWNRKLUEP6O1QX75YVTH28JDICZ/EB%2075_repan13_ACM0002_ver%2014.0.pdf?t=c218bXhhMTBnfDDerclvlNr4EMOnwrLl5w6I)	**Review 1:** CAPj parameter will not be monitored according to methodology. **The corrective action request is closed.**
CAR07 Calibration procedures of the meters are clearly described through the references. On the other hand source of the data and cross-check source are not described.		Response: Cross-check source is defined under the QA/QC procedures of the monitoring parameter EG. It is stated 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."	**Review 1:** PMUM records are the main source for the electricity generation parameter. Net electricity delivered to the grid will be cross checked with the meter reading records. (OSF forms). **The corrective action request is closed.**
CAR08 Purpose of data is not described under the monitoring plan for the parameters.		Response: Purpose of data is described.	**Review 1:** PMUM records are the main source for the electricity generation parameter. **The corrective action request is closed.**
CAR09 It is not described and provided that how the start date has been determined under section C.1.1.		Response: Expected start date of the project is defined under the section C.1.1	**Review 1:** Expected start date of the project activity is 01/06/2016. **The corrective action request is closed.**

CAR10 Expected operational lifetime is not stated in years and months.		Response: It is corrected.	**Review 1:** The expected lifetime of the Urla WPP is 25 years 0 months. **The corrective action request is closed.**
CAR11 Provide whether the renewable crediting period is the first, second or third under section C.2.1		Response: It is corrected.	**Review 1:** It is corrected as 1st Crediting period. **The corrective action request is closed.**
CAR12 A summary of the environmental impacts of the project activity and references are not described under section D.1 of the VCS PD.		Response: For our previous project we asked about that issue to Gold Standard and there is answer is that " as long as issues are covered in the Passport and LSC, there is no need to provide any information in the VCS PD." Since we covered these issues detailed in GS passport, there is no need to duplicate information. Also e-mail that send from GS regarding to this issue but for another project is provided to the DOE	**Review 1:** Environmental impacts of the project activity are discussed in the GS Passport. Also EIA not required document dd. 30/03/2009 is provided to the validation team. **The corrective action request is closed.**
CAR13 EIA not required certificate dd. 30/03/2009 is provided to validation team. It is not described under section D.2 of the VCS PD.		Response: Refer to CAR12.	**Review 1:** Environmental impacts are discussed in the GS Passport. **The corrective action request is closed.**
CAR14 A brief description of LSC meeting date and Stakeholder feedback round is not described under section E.1.		Response: Refer to CAR12.	**Review 1:** LSC meeting and SFR details are discussed in the GS Passport. **The corrective action request is closed.**

CL01 According to the Generation License, 6 wind turbines with unit capacity of 3000 kW were selected for the project. Justify the number of turbines and correct above statement under section A.3.		Response: As it is validated through the equipment agreement 5 wind turbines with unit capacity of 3 MW were selected for the project. Miswriting in the section A.3 is corrected to 5 turbines.	**Review 1:** The capacity is confirmed through the equipment agreement. **The clarification request is closed.**
CL02 The source of data for the $EG_{facility,y}$ parameter is not clear.		Response: Source of the parameter is clarified.	**Review 1:** PMUM is the source for the $EG_{facility,y}$ parameter. **The clarification request is closed.**
CL03 Clarify that the sampling plan is applied project activity or not.		Response: Sampling plan is not applicable for the project. Related section is revised.	**Review 1:** Related section is revised. **The clarification request is closed.**
FAR01 The project capacity is defined as 13 MW in the generation license dd. 29/05/2008. During the validation the project capacity is confirmed as 15 MW regarding to Equipment contract with Enercon. The DOE should check the project capacity through the revised generation license and turbines plates during the first verification period of the project activity.			

CAR15 1. Please explain why there is difference between pdd and IRR rearding the Installed Power figure? (12 or 15?) 2. Please do some corrections in the formulas so that annual depreciation amounts and VAT amount are effected by the investment cost increase/decrease scenarios in the sensitivity analysis. 3. Investment (Equity) figure shouldn't have been included in the Earnings Before Tax (Million USD) calculations for the first year. 4. There are losses in some of years. So, please apply corporate tax deduction for the following years due to the previous years' financial losses. 5. Please exclude the Financial Costs During Investment figure from the investment costs. They are double counted. 6. Please indicate if there is any rental fee or not? 7. Please give reference for the loan interest rates. Please give information if the loan rates are floated or fixed. 8. Please calculate insurance cost for the construction phase as well. 9. Please explain why the investment cost per MW is relatively smaller than the other 2 projects; Germiyan and Alaçatı.		Response: 1. Installed power of the plant is corrected as 15 MW in the VCS PD. 2. It is corrected. Now annual depreciation and VAT is effected by the sensitivity analysis. 3. Investment (Equity) figure is not included in the Earnings Before Tax (Million USD) calculations for the first year. It is added for the 0th year or investment or construction period year of the project. 4. Last three years of the losses are excluded in the first positive income year of the cashflow (4th year) (article 9; http://www.gib.gov.tr/index.php?id=860). 5. It is excluded. 6. There is no rental fee. Exproporation fee is paid once to the state in the investment period which is explained under Financial report page 23. 7. Loan interest rate references are given ın the IRR excel sheet. (Urla Financial Report page 11). Loan rates are fixed. 8. It is added. 9. Even if the both three projects are owned by the same company they are different project. Their electricity generation figures and investment cost are different than the each other because both of them have their own conditions. That's why their investment cost per MW different than each other.	**Review 1:** Corrections have been done. **The corrective action request is closed.**