



VERIFICATION REPORT



The Gold Standard
Premium quality carbon credits

ALIAĞA WIND FARM IN TURKEY

(GOLD STANDARD PROJECT ID: GS735)

Monitoring Period:
1 January 2012 to 30 June 2012

REPORT No. 2012-1102

REVISION No. 02

DET NORSKE VERITAS



VERIFICATION REPORT

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Approved by: Michael Lehmann	Organisational unit: DNV KEMA Energy & Sustainability Accredited Climate Change a Services
Client: EcoSecurities International Limited	Client ref.: Kristin Eldon Whyllly

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Summary:
 DNV Climate Change Services AS (DNV) has performed the verification of the emission reductions reported for the Aliğa Wind Farm in Turkey (Gold Standard Project ID: GS735) for the period 1 January 2012 to 30 June 2012.
 In our opinion, the GHG emission reductions reported for the project in the monitoring report (Version 01) of 30 July 2012 are fairly stated.
 The GHG emission reductions were calculated correctly on the basis of the approved monitoring methodology ACM0002 (version 12) and the monitoring plan contained in the Project Design Document of 17 November 2011.
 DNV Climate Change Services AS is able to verify that the emission reductions from the Aliğa Wind Farm in Turkey during the period of 1 January 2012 to 30 June 2012 amount to 75 127 tonnes of CO₂ equivalent.

Report No.: 2012-1102	Indexing terms	
Report title: Aliğa Wind Farm in Turkey	Key words Climate Change Kyoto Protocol Validation Clean Development Mechanism	Service Area Verification
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		Process Industry
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Abbreviations

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CEF	Carbon Emission Factor
CER	Certified Emission Reduction(s)
CL	Clarification request
CO ₂	Carbon dioxide
CO _{2e}	Carbon dioxide equivalent
DNV	Det Norske Veritas
DOE	Designated Operational Entity
EMRA	Energy Market Regulatory Authority
FAR	Forward Action Request
GHG	Greenhouse gas(es)
GS	Gold Standard
IPCC	Intergovernmental Panel on Climate Change
MP	Monitoring Plan
PDD	Project Design Document
MFRC/PMUM	Market Financial Reconciliation Center
TEİAŞ	Turkish Electricity Transmission Company
UNFCCC	United Nations Framework Convention on Climate Change
WEPP	Wind Energy Power Plant



1 INTRODUCTION

EcoSecurities International Limited has commissioned DNV Climate Change Services AS (DNV) to carry out the verification of emission reductions reported for the Gold Standard project Aliğa Wind Farm in Turkey (the proposed project) for the period 1 January 2012 to 30 June 2012. This report contains the findings from the verification and a verification statement for the verified emission reductions.

The project was registered as a Gold Standard (GS) project activity (Project ID: GS735) on 3 April 2012. As per the PDD section C.2.1.1 /1/ the start of the crediting period is 1 April 2010 and the start of the project activity is 9 April, 2010 /2/. This verification covers emission reductions occurring from 1 January 2012 to 30 June 2012.

1.1 Objective

Verification is the periodic independent review and *ex post* determination by a Designated Operational Entity (DOE) of the monitored reductions in GHG emissions that have occurred as a result of the registered GS project activity during a defined monitoring period.

The objective of this verification was to verify emission reductions reported for the Aliğa Wind Farm in Turkey for the period 1 January 2012 to 30 June 2012 along with the GS indicators for sustainability criteria.

1.2 Scope

The scope of the verification is:

- To verify that actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan.
- To evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement.
- To verify that reported GHG emission data is sufficiently supported by evidence.

The verification shall ensure that reported emission reductions are complete and accurate in order to be certified by the Gold Standard.

1.3 Description of the project activity

Title of project activity:	<i>Aliğa Wind Farm</i>
Baseline and monitoring methodology	<i>ACM0002 (version 12)</i>
Project Participants:	<i>Bergama RES Enerji Üretim A.Ş</i> <i>JPMorgan Ventures Energy Corporation</i>
Location of the project activity:	<i>Aliğa Town, Province of İzmir, Turkey</i>
Project's crediting period:	<i>1 April 2010 to 31 March 2017</i>
Period verified in this verification:	<i>1 January 2012 to 30 June 2012</i>



1.4 Methodology for determining emission reductions

In line with the applied methodology ACM0002 version 12 /59/, the emission reductions are determined as the difference between baseline emissions, project emissions and leakage:

$$ER_y = BE_y - PE_y - L_y.$$

PE_y and L_y are considered to be zero as stated in the registered GS PDD and GS validation report (thereafter referred to as PDD and validation report) and as per the methodology /1//5//59/. Therefore, the emission reductions are accounted as:

$$ER_y = BE_y = EG_{facility,y} \times EF_{grid,CM,y}.$$

$EF_{grid,CM,y}$ is the emission factor of the grid (tCO₂/MWh), which has been fixed *ex-ante* for the entire first crediting period at 0.59384 tCO₂/MWh, as per the registered PDD and the validation report /1//5/.

$EG_{facility,y}$ is the net electricity generation supplied to the grid, which is determined by the electricity output to the grid minus the electricity imported from the grid /1//2/.

2 METHODOLOGY

The verification of the emission reductions has assessed all factors and issues that constitute the basis for emission reductions from the project. These include:

- i) Review of project documentation /1//2//3//4//5//6//7/
- ii) The net electricity supplied by the project to the grid which is multiplied by a fixed grid baseline combined emission factor of 0.59384 tCO₂/MWh /1/;
- iii) The actual installed capacity of the power plant to ensure the conformance with the descriptions in the registered PDD /1/;

The verification of the emission reductions has assessed all factors and issues that constitute the basis for emission reductions from the project. DNV has for this assignment checked all factors and issues with the same emphasis. Despite this, DNV has during its preparations identified the key reporting risks and used the assessment to determine to which extent the project operator's control systems were adequate for mitigation of these key reporting risks. In addition, other areas that can have an impact on reported emission reductions have also undergone a detailed audit testing.



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Verification team

Role	Last Name	First Name	Country	Type of involvement					
				Desk review	Site visit	Reporting	Supervision of work	Technical review	TA 1.2 competence
Team leader (Verifier)	Němeček	Lumír	Czech Republic	✓	✓	✓	✓		✓
Verifier	Wen	Bo	Norway	✓		✓			✓
Technical reviewer	Dudek	Agnes	Norway					✓	✓

Duration of verification

Preparations:

From 6 August 2012 to 7 August 2012

On-site verification:

*From 9 August 2012*Reporting, calculation checks and QA/QC: *From 13 August 2012 to 29 August 2012***2.1 Review of documentation**

This is the 2nd verification of the proposed project for the monitoring period from 1 January 2012 to 30 June 2012.. This verification has been performed based on the review of the following documentation provided by the project participants:

- The monitoring report for the monitoring period from 1 January 2012 to 30 June 2012, version 01 dated 30 July 2012 /2/
- The registered PDD, including the monitoring plan and the corresponding validation report /1/5/
- The emission reduction calculations provided in the form of a spreadsheet submitted by EcoSecurities International Limited /3/
- Data generated from the Market Financial Reconciliation Center (MFRC/PMUM) from 1 January 2012 to 30 June 2012 for the proposed project /7/
- An evaluation of data management, the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions /1/2/5/6/7/8/13/15/16/
- Baseline and monitoring methodology ACM0002 version 12 applied by the project /59/
- Gold Standard Sustainable Indicators of the proposed project during this monitoring period from 1 January 2012 to 30 June 2012 /18/19/20/21/22/23/24/25/27/28/29/30/31/32/33/34/35/36/37/38/38/39/40/41/42/44/45/46/47/48/.
- Other information and references relevant to the project activity's resulting emission reductions /58/60/61/62/63/64/.



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2.2 Site visit

Verifier Lumír Němeček from DNV performed an on-site visit for Aliğa Wind Farm project in Aliğa Town, Izmir, Turkey on 9 August 2012. The key personnel of the project were interviewed or assisted the verification team /65//66//67//68//69//70/, who are also listed below:

- Mr. Mehmet Akdeniz-Atcilar Muhtari, head of Atçılar Village
- Mr. Selim Akdeniz, villager from Atallar village and employee of Aliğa Wind Farm
- Mr. Yusuf Snder, villager from Atallar village and employee of Aliğa Wind Farm
- Ms. Burcu Kılıç, Carbon Project Manager, Bilgin Energy Investment Holding Inc.
- Mr. Burhan Kıraç, Bergama Plant Manager, Bilgin Energy Investment Holding Inc.

During this site visit, DNV has applied standard auditing techniques to assess the quality of information provided. The following aspects of the GS project activity have been verified:

- The implementation and operation of the GS project activity as per the registered PDD /1/;
- The information flow for generating, aggregating and reporting of the monitoring parameters /1//2//5/; and
- The operational and data collection procedures are implemented in accordance with the monitoring plan in the PDD /1/.

Further, the following activities were performed:

- A cross-check between information provided in the monitoring report and data from other sources /1//3//4//5//6//7//8/
- A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the PDD and the selected methodology /1//2//13//15//16//59/;
- A review of calculations and assumptions made in determining the GHG data and emission reductions /3//7/
- An identification that quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters /8//27//28//29//38//39/; and
- Gold Standard Sustainable Indicators of the proposed project during this monitoring period /18//19//20//21//22//23//24//25//27//28//29//30//31//32//33//34//35//36//37//38//38//39//40//41//42//44//45//46//47//48/

The data presented in the monitoring report was assessed by review of the detailed project documentation and production records, as well as by interviews with personnel at project site /65//66//67//69/, and observation of collection of measurements, observation of established monitoring and reporting practices and assessment of the reliability of monitoring equipment. This has enabled the verification team to assess the accuracy and completeness of reported monitoring results; to verify the correct application of the approved monitoring methodology and the determination of the emission reductions. It can be confirmed through the site visit that quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.

In addition, all parameters required by the monitoring methodology ACM0002 version 12 and the management system were assessed during the site visit /59/.



2.3 Reporting of findings

A corrective action request (CAR) is issued, where:

- i. Non-conformities with the monitoring plan or methodology are found in monitoring and reporting, or if the evidence provided to prove conformity is insufficient;
- ii. Mistakes have been made in applying assumptions, data or calculations of emission reductions which will impair the estimate of emission reductions;
- iii. Issues identified in a FAR during validation to be verified during verification have not been resolved by the project participants.

A clarification request (CL) shall be raised if information is insufficient or not clear enough to determine whether the applicable requirements have been met.

A forward action request (FAR) is issued for actions if the monitoring and reporting require attention and/or adjustment for the next monitoring period.

The verification identified three CLs. The CLs raised are attached in Appendix A of this report. One FAR has been identified from 1st verification. No CAR was raised for this monitoring period.



3 VERIFICATION FINDINGS

This section summarises the findings from the verification of the emission reductions reported for the GS project Aliğa Wind Farm in Turkey for the period 1 January 2012 to 30 June 2012.

3.1 Remaining issues, CARs, FARs from previous validation / verification

There is one FAR pending from the 1st verification for the proposed project activity, which is to request the project participant to fill in the log book concerning the biodiversity continuously after November 2011. To fulfil this request the project participant has continuously filled the log book since November 2011 to the end of the verification period regardless of whether or not a dead bird or bat is found on site and neither dead birds nor bats were found /39/. Based on the site visit verification DNV can confirm that the log book has been continuously filled since November 2011 to the end of the verification period and therefore DNV confirms that the FAR is closed /39/.

3.2 Project implementation

As part of the site visit, DNV confirms that the project implementation is in accordance with the project description contained in registered PDD of 17 November 2011, and that the GS project started operation since 9 April 2010 /1//2/.

The project is located in Aliğa, İzmir, Turkey. As verified by DNV during the site visit, through visual inspection of the project site and control room, the actual installed capacity of the project activity (36*2.5 MW) is consistent with the capacity stated in the registered PDD of 17 November 2011 /1/.

The monitoring procedures of electricity supplied to the grid were verified during the site visit and considered adequate. As specified in the registered PDD, two main meters have been installed to measure the electricity generation by the proposed project, with the manufacturer/model of the meters as Actaris SL7000 /1/. The two main meters are bi-directional with accuracy of 0.2 and the serial numbers are 53031823 and 53031826 as verified by DNV through visual inspection of the meters during the site visit. The accuracy of the meters and the serial numbers are not specified in the registered PDD /1/. DNV confirms that the accuracy represents the current good practice in Turkey.

Backup meters are also mentioned in the registered PDD /1/ yet the number of the backup meters is not specified. DNV confirmed through the site visit that there are two backup meters installed for the proposed project with serial number as of 53031824 and 53031825 as verified by DNV through visual inspection of the meters during the site visit. These two meters are bi-directional with accuracy of 0.2, which represents the good practice in Turkey.

Electricity meters' maintenance and calibration is undertaken by TEİAŞ who ensures the accuracy and measurement quality /1//2/. Both main and back-up meters are sealed and locked in the main control room at the project site to guarantee the integrity of the instruments. The installation and operation of the monitoring meters were consistent with the registered PDD of 12 November 2011 /1/. The control system at the wind power plant is automated and assures continuous operation according the availability of wind resource.

On-site training for operating and maintaining the equipment was provided by the equipment supplier, e.g. the service basic and turbine technology training carried out by Nordex

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Academy, Concycle Wind Training carried out by Nordex Energy GmbH, theoretical and practical safety instruction training carried out by Triowind, technique of high voltage training carried out by Yasar Univerisy, safety training carried out by Bureau Veritas and A.Serdar Anlas, etc. /27//28//29//30//31//32//33//34//35/. Employees of the proposed project participated in different trainings to fulfil the request of their work, and DNV confirms that the training certificates have been provided during the site visit. DNV was able to confirm that this training certificates and procedure implementation were appropriate by checking the training record/17/ and interviewing the key personnel of the plant /27//28//29//30//31//32//33//34//35//65//66//67//69/.

Malfunctioning of equipment has been monitored and no report of malfunctioning was issued for this monitoring period.

3.3 Information (data and variables) provided in the monitoring report that is different from that stated in the registered PDD

(Will be finalised in the final report)

The estimated annual gross electricity generation in the registered PDD is 294 900 MWh, which correspond to 147 450 MWh for a period equivalent to this monitoring period (from 1 January 2012 to 30 June 2012) i.e. 182 days /1//2/. The total actual measured gross electricity generation of the proposed project is 126 511.99 MWh for this monitoring period.

The actual electricity generation measured for this monitoring period is approximately 86% of the value estimated in the registered PDD /1//2//3/. As per the PDD the estimated total emission reductions for this monitoring period are 87 561.5 tCO₂, while the actual emission reductions achieved during this monitoring period are 75 127.9 tCO₂, which is approximately by 14 % lower than the estimation in the PDD /1//2//3/.

As this is only a six month monitoring period, it is expected for the values to be slightly different than the estimate in the PDD for over a twelve month period as there are different wind seasons where the emission reductions will be higher for some months and lower for others. In the past two years, May has experienced significantly lower electricity generation, hence lower emission reductions than other months /57/. As May was a part of this monitoring period, this is a reason why there is a slight under generation.

3.4 Compliance of monitoring plan with monitoring methodology

DNV is able to confirm that the monitoring plan contained in the registered PDD of 17 November 2011 is in accordance with the approved methodology applied by the project activity, i.e. ACM0002 (version 12) /1//59/.

3.5 Compliance of monitoring with the monitoring plan

The monitoring has been carried out in accordance with the monitoring plan contained in the registered PDD of 17 November 2011 /1/.

All parameters stated in the validated monitoring plan are monitored and reported appropriately. The monitoring report lists each parameter required by the registered monitoring plan and the information flow (i.e. from data generation, aggregation, to recording, calculation and reporting) for these parameters is provided in the monitoring report /1//2/. The information flow for the each parameter is further verified in the following sections.



3.5.1 Monitoring parameters

According to the monitoring plan of registered PDD of 17 November 2011, there is only one parameter to be monitored, which is $EG_{\text{facility},y}$, the net electricity supplied to the grid by the proposed project /1/.

The table 1 below relates to the parameters in the monitoring plan / methodology:

	Assessment/ Observation
Data / Parameter: (as in monitoring plan of PDD):	Net electricity supplied to the grid by the proposed project
Measuring frequency:	continuously
Reporting frequency:	Record and report monthly
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	<p>Yes</p> <p>It has been specified in the monitoring plan that the electricity will be read and recorded monthly /1/, and this has been implemented during this monitoring period. In the monitoring report for this monitoring period /2/, the data was measured continuously and reported monthly, which in DNVs opinion satisfies the requirements of the methodology and PDD /1//59/.</p> <p>The meters are read electronically and remotely by TEIAS on a monthly basis and the readings are then co-signed by the project owner and TEIAS at a slightly later date. This is still in line with the Monitoring Plan in the PDD.</p>
Type of monitoring equipment:	<p>Electricity meters Actaris SL7000</p> <ul style="list-style-type: none"> • Main meter #1 with serial number 53031823 (used for ER calculation) • Main meter #2 with serial number 53031826 (used for ER calculation) • Backup meter #1 with serial number 53031824 (not used for ER calculation) • Backup meter #2 with serial number 53031825 (not used for ER calculation) <p>It is stated in the registered PDD that there are two electricity meters /1/. In the Annex 4 monitoring plan of the registered PDD, however, it also mentions that there are main meters and auxiliary meters, although the number of the backup meters is not specified /1/. DNV confirms via the site visit that there are two main meters and two backup meters for the proposed project, and both main meters and backup meters are bi-directional, i.e. measuring both imported and exported</p>



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	<p>electricity to the grid. Both main meters and backup meters are with accuracy of 0.2, which represents the good practice in Turkey. Only data generated from the main meters is used for the ER calculation, and no data from the backup meters is used /3/.</p> <p>The data is crosschecked with the data generated by the MFRC/PMUM system /7/</p> <p>DNV considers that the set-up of the meters accurately measures the electricity generated by the proposed project.</p>
Is accuracy of the monitoring equipment as stated in the PDD? If the PDD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	No meter accuracy is defined in the registered PDD /1/. DNV checked during the site visit through a visual inspection that the electricity meters have an accuracy class of 0.2, which represents good monitoring practice in Turkey.
Calibration frequency /interval:	Every 10 years
Is the calibration interval in line with the monitoring plan of the PDD? If the PDD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?	Yes. The calibration interval is in line with the monitoring plan of the PDD /1/. In the registered PDD dated 17 November 2011, it states that in accordance with the Inspection of Measurement and Measuring Instruments Regulation published in Turkish Official Gazette, the inspection of meters needs to be done in every 10 years /1//15/. DNV checked the document and could confirm the same.
Company performing the calibration:	<p>Both the main meters (serial number 53031823 and 53031826) and the backup meters (serial number 53031824 and 53031825) were calibrated when they were installed in year 2010 and corresponding calibration certificates were issued by Kesir Engineering and certified by Buro Veritas on 2 February 2010 /13/.</p> <p>Electricity meters' maintenance and calibration is undertaken by the grid operator TEİAŞ who ensure the measurement quality.</p> <p>According to regulation published in the Official Gazette No: 27200 on 14 April 2009 by the Energy Market Regulatory Authority (which is the only government body who makes regulations in the Turkish energy market), pg 14 Article 16(b) says that "ensuring the accuracy of measurement equipments for settlement by undertaking meters test, control and inspection works; and reading meters through OSOS (Automatic Meter Reading System) are the responsibility of TEİAŞ". This</p>



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	<p>confirms that TEİAŞ is authorised to provide the calibration of the measuring equipment. A copy of the regulation is provided, but the regulation can be downloaded from the following link: _ http://epdk.gov.tr/index.php/elektrik-piyasasi/mevzuat?id=36</p> <p>First Index Protocol Issued at the time of installation of the meters /16/</p> <table border="1" data-bbox="783 707 1378 958"> <thead> <tr> <th>Meter</th> <th>Serial Number</th> <th>Calibration Dates</th> <th>Validity of Calibration</th> </tr> </thead> <tbody> <tr> <td>Main Meter A</td> <td>53031823</td> <td>09/042010</td> <td>09/04/2020</td> </tr> <tr> <td>Main Meter B</td> <td>53031826</td> <td>26/10/2010</td> <td>25/10/2020</td> </tr> <tr> <td>Backup Meter A</td> <td>53031824</td> <td>09/04/2010</td> <td>08/04/2020</td> </tr> <tr> <td>Backup Meter B</td> <td>53031825</td> <td>26/10/2010</td> <td>25/10/2020</td> </tr> </tbody> </table>	Meter	Serial Number	Calibration Dates	Validity of Calibration	Main Meter A	53031823	09/042010	09/04/2020	Main Meter B	53031826	26/10/2010	25/10/2020	Backup Meter A	53031824	09/04/2010	08/04/2020	Backup Meter B	53031825	26/10/2010	25/10/2020
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Main Meter B	53031826	26/10/2010	25/10/2020																		
Backup Meter A	53031824	09/04/2010	08/04/2020																		
Backup Meter B	53031825	26/10/2010	25/10/2020																		
<p>Did calibration confirm proper functioning of monitoring equipment? (Yes / No):</p>	<p>Yes. Both the main meters (serial number 53031823 and 53031826) and the backup meters (serial number 53031824 and 53031825) were calibrated when they were installed in year 2010, and Kesir Engineering issued the First Index Protocol on 9 April 2010 and 26 October 2010 to confirm that all the four meters were properly functioning /16/.</p>																				
<p>Is(are) calibration(s) valid for the whole reporting period?</p>	<p>Yes. The calibrations are valid until year 2020 /1//16/. However the quality of the meter is checked monthly jointly by the project participant and the grid operator TEİAŞ, to ensure that the meters are working properly /1//2/. Any evidence of the malfunction of the meters will trigger an earlier calibration or other corrective measures.</p>																				
<p>If applicable, has the reported data been cross-checked with other available data?</p>	<p>The exported and imported electricity generation are measured and electronically recorded by the main meters and the backup meters, and all meters are sealed and belong to the grid operator TEİAŞ. The representatives from TEİAŞ and from Bergama RES Enerji Üretim A.Ş. jointly record, on a monthly basis, the meter readings to ensure the accuracy of the record /6/. DNV confirmed that the monthly records of the electricity generated measured by the meters have been signed by the project participant and by the TEİAŞ /6/.</p>																				



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	<p>DNV has cross checked the gross electricity generation from the signed meter protocols /6/ against the data generated by MFRC/PMUM (Market Finance Reconciliation Center), which is the monthly settlement document declared by the MFRC/PMUM for the purpose of invoicing the electricity produced and published electronically/7/. DNV confirm that the values are in accordance with the evidence reviewed /6//7/.</p>
<p>How were the values in the monitoring report verified?</p>	<p>Monthly meter record from bidirectional meters of electricity exported to and imported from the grid have been provided by the project participant and verified by DNV /6/.</p> <p>The monthly meter record and MFRC/PMUM data have been verified by DNV during the verification /6//7/.</p> <p>DNV was able to verify the calculating process and the conclusion is transparent and in accordance with the evidence review /3//6//7/</p>
<p>Does the data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?</p>	<p>Yes. DNV confirmed via the site visit that there are two bi-directional main meters used to continuously measure the electricity generated by the project and delivered to the grid /1//2/. These meters are owned by TEİAŞ, and TEİAŞ is responsible for the Maintenance and calibration of the meters. DNV confirms through the site visit that these meters are sealed and locked in the main control room of the project site.</p> <p>Hourly and daily readings log book of the meters were also checked during the site visit and DNV confirms that the data were properly recorded for this monitoring period from 1 January 2012 to 30 June 2012. /52/.</p> <p>Furthermore, the electronic copies of the original data are also kept at the plant site, which is in accordance with the monitoring plan of the registered PDD /1/.</p> <p>Critical parameters used for the determination of the emission reductions are:</p> <ul style="list-style-type: none"> • Net electricity supplied to the grid /6/; • MFRC/PMUM data/7/; <p>All data is in compliance with the figures stated in the monitoring report version 01 dated 30</p>



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	<p>July 2012 /2/ and ER spreadsheet /3/. The data management system /9/ has been set up in accordance with registered monitoring plan /1/. The correct transfer of data is checked by internal control process. The emission reductions are calculated using excel worksheet, and verified /3/. The QA/QC processes have been followed.</p>
<p>In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?</p>	<p>N/A</p>

In accordance with the “Inspection of Measurement and Measuring Instruments Regulation” which was published in the Turkish Official Gazette (No. 22000, dated 24/7/1994) by Turkish Ministry of Industry and Commerce, the inspection of meters needs to be undertaken every 10 years /15/. This is stated in the monitoring plan of the registered PDD of 17 November 2011, and in the monitoring report /1//2/. DNV therefore confirms that the meters were calibrated covering this monitoring period as per the registered PDD, as the next calibration time would be in year 2020.

3.6 The Assessment of data and calculation of emission reductions

DNV confirms that appropriate methods and formula for calculating baseline emissions, project emissions and leakage have been followed, and the assumptions, emission factors and default values that are applied in the calculation have been justified /59/.

As stated in the section 1.4, the emission reductions ER_y by the project activity during the monitoring period is the difference between the baseline emission, project emissions and leakage /59/.

$$ER_y = BE_y - PE_y - L_y$$

3.6.1 Baseline emissions

Baseline emissions (BE_y in tCO_2) is the baseline emission factor ($EF_{grid,CM,y}$ in tCO_2/MWh) times the net electricity supplied by the project activity to the grid ($EG_{facility,y}$ in MWh) /59/.

$EF_{grid,CM,y}$ is emission factor of the grid, which was calculated *ex-ante* and will not be updated during the first crediting period. $EF_{grid,CM,y}$ of the proposed project in the registered PDD is 0.59384 tCO_2/MWh , which has been verified to be consistent with the registered PDD /1/.

$EG_{facility,y}$ is the net electricity supplied to the grid by the proposed project, which is determined by the electricity supplied to the grid minus the imported electricity from the grid /1//2//59/, i.e. $EG_{facility,y} = EG_{export, main meter 1} + EG_{export, main meter 2} - EG_{import, main meter 1} - EG_{import, main meter 2}$, while y represents the monitoring period from 1 January 2012 to 30 June 2012.



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Table 2 Electricity supplied to the grid and imported from grid by the project (MWh)

Period	Electricity exported to the Grid [MWh]		Electricity imported from the Grid [MWh]		Electricity exported as per PMUM [MWh]	Electricity imported as per PMUM [MWh]	Net electricity exported [MWh]
	Main meter A	Main meter B	Main meter A	Main meter B			
01/01/2012 - 31/01/2012	14 671.95	13 367.37	17.49	17.70	28 039.32	35.19	28 004.13
01/02/2012 - 29/02/2012	10 058.89	9 246.47	14.18	15.41	19 305.36	29.59	19 275.77
01/03/2012 - 31/03/2012	11 343.58	9 506.65	24.31	25.37	20 850.23	49.68	20 800.55
01/04/2012 - 30/04/2012	9 260.07	7 785.34	13.88	15.47	17 045.41	29.35	17 016.06
01/05/2012 - 31/05/2012	5 692.46	4 836.50	27.10	30.92	10 528.96	58.02	10 470.94
01/06/2012 - 30/06/2012	16 009.62	14 970.82	17.31	18.59	30 980.44	35.90	30 944.54
Total	67 036,57	59 713,15	114,27	123,46	126 749,72	237,73	126 511,99

BE_y	Baseline emissions in year y [tCO ₂ /yr] $BE_y = EF_{grid,CM,y} * EG_{facility,y}$	75 127
$EG_{facility,y}$	Net electricity supplied by the project activity to the grid [MWh]; $EG_{facility,y} = EG_{output,y} - EG_{import,y}$	126 511.99
$EF_{grid,CM,y}$	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" [tCO ₂ /MWh]	0.59384

The emission reductions achieved during the second monitoring period which covers the 6 months period from 1 January 2012 to 30 June 2012 (both days included) is shown in the Table below:

Period	Baseline Emissions [tCO ₂]	Project Emissions [tCO ₂]	Leakage Emissions [tCO ₂]	Emissions Reductions [tCO ₂]
January 2012	16 629.97	0	0	16 629.97
February 2012	11 446.72	0	0	11 446.72
March 2012	12 352.20	0	0	12 352.20
April 2012	10 104.82	0	0	10 104.82
May 2012	6 218.06	0	0	6 218.06
June 2012	18 376.11	0	0	18 376.11
Total	75 127.88	-	-	75 127.88
Rounded down	75 127	-	-	75 127

The net amount of electricity generation and the resulting emission reductions are correctly reported in the monitoring report version 01 dated 30 July 2012 /2/. DNV was able to confirm



the power generated during this monitoring period was reasonable.

The project has accounted for emission reductions generated by the proposed project 1 January 2012 to 30 June 2012. In the ER calculation spreadsheet, the net electricity of this monitoring period is 126 511.99 MWh /3/ and the emission reductions for the same period at 75 127 tCO_{2e} (rounded down) /2//3/.

3.6.2 Project emissions

The project emissions are regarded as zero according to the methodology ACM0002 version 12 /59/.

$$PE_y = 0$$

3.6.3 Leakage

There are no leakages that need to be considered in applying the methodology ACM0002 version 12 /59/.

$$LE_y = 0$$

3.6.4 Emission reductions

Therefore, the emission reductions in this monitoring period are:

$$ER_y = BE_y - PE_y - L_y = 75\,127 - 0 - 0 = 75\,127 \text{ tCO}_{2e}.$$

As outlined above, the input data for calculating the emission reductions, the calculating process and the result are complete and transparent. Therefore, DNV is able to confirm the accuracy of the emission reductions.

3.7 Monitoring of Gold Standard Sustainable Indicators

Additional parameters monitored are in accordance with the monitoring plan for sustainability indicators as per requirements referred in Gold Standard Annexure to PDD /64/ and registered PDD /1/. No substantial changes have been reported for the selected indicators during the verification period of the project.

I. Local/regional/global environment

3.7.1 Air quality

DNV confirmed through visual inspection during the site visit that at the project site the necessary road signs have been placed to request the proper use of the road, such as the speed limit sign (speed limit for roads crossing the site is 20 km/h) and the careful loading/unloading sign among others. This is to minimize the dust dispersion and erosion during the excavation. DNV also interviewed the local villages Mr. Mehmet Akdeniz-Atcilan Muhtari, Mr. Selim Akdeniz and Mr. Yusuf Snder, and all of them gave positive feedback concerning the measures taken by the project participant to reduce the dust during the construction process /65//66//67/.

To further reduce the dust after the construction of the project, the project participant signed the Rehabilitation of Road contract with Özyavuzlar İnşaat San.Ltd.Şti. in August 2010 to construct and rehabilitate the main and secondary roads within the area of project activity, and the work was completed in September 2010 /42/. The project participant also renewed the

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infrastructure and asphalt surface of the roads between İsmailli and Atçılar Villages after the construction of the project power plant in October 2010. The local village of İsmailli and Atçılar issued a statement to thank the project participant for renewing the roads on 20 October 2010 /41/. The references were provided to DNV during the verification process /41//42/.

3.7.2 Soil condition

DNV confirms that during the verification process, the project participant presented DNV the payment notification and forestation fee receipts issued by Regional Directorate of Forestry, Turkish Ministry of Environment and Forestry to the project participant on 7 August 2009, which demonstrated that the project participant paid the fee to replant of trees cut due to the construction of the proposed project /21/. It has been specified in the payment notification that the forestation fee is for the forestation of 291 144.76 square meter area /21/. The project participant also provided DNV with the statement issued by the Ministry of Environment and Forestry, İzmir Regional Directorate of Forestry on 12 June 2012, which confirms that the forestry management will plant 48 500 trees after the generation license of the proposed project expires /53/.

According to the Sustainability Monitoring Plan of the GS Passport for the proposed project, the project participant should “remediate soil movements as a result of the construction of the project” /4/. The project participant provided DNV with the 2012&2013 Action Plan Protecting And Planting in and around the Aliğa Wind Farm issued by the project participant on 2 May 2012 /54/. It is stated in the “2012&2013 Action Plan” that 100 trees will be planted each year for year 2012 and 2013 for the propose project to remediate soil movements, while local villagers will be hired to plant the trees /54/. DNV confirms that the project participant presented DNV with the invoices issued by Oktay Sever Company to the project participant on 10 May 2012 for the purchase of 50 saplings and 20 flower seeds for the proposed project /55/. DNV also confirms that the project participant presented DNV with the payment receipts of 550 Lira for hiring four local villagers in May and June 2012 to re-plant the trees cut during the construction of the proposed project together with the payment receipts /56/. DNV also saw the planting of the 50 plants when it was on the most recent site visit. GS might like to know that this was verified during this site visit while last site visit only pictures were shown /56/. To fulfil the *2012&2013 Action Plan* that 100 trees should be planted in year 2012, 50 saplings will be planted in September 2012, and this will be further verified in the following verification.

Therefore it is in DNV’s opinion that the project has been carried out according to the Sustainability Monitoring Plan of the GS Passport /4/, and the implementation of reforestration can be further checked via the site visit of the subsequent verifications.

Concerning the waste disposal of the proposed project, the project participant agreed with Nordex Enerji A.Ş. that any waste material resulted from the construction of the proposed project would be disposed of by Nordex Enerji A.Ş. /51/. The relevant invoices and national waste removal forms were provided to DNV during the verification process /23//24/ and DNV was able to confirm that the national waste removal forms include both the solid waste and the waste oil.

DNV could also confirm via the site visit that solid waste undergoes collection, where recyclables are separated and dispatched to recycling centres.



3.7.3 Other pollutant: Noise

Alka Environmental Laboratory issued an External Ambient Noise Measurement Report for Aliğa Wind Farm in June 2010 /36/. Alka Environmental Laboratory is an independent third party certified by Turkish Accreditation Agency /36/. The report is prepared in accordance with the Provisions of Article 14 of Environmental Law No. 2872; Ministry of Environment and Forestry Law No. 4856; and the Regulation for the Evaluation and Management of Environmental Noise /36/. The report confirmed that the maximum noise measured of the project is below the legal limits: 65 dBA (in day time), 60 dBA (in the evening) and 55 dBA (at night) /36/. As the reported was carried out by an independent third party accredited by Turkish government, and it is based on the data when all turbines started operation, DNV considers the result reliable and reflected the conditions at the project site.

3.7.4 Water quality and quantity

Same as the solid waste and the waste oil, the waste water is also disposed by Nordex Enerji A.Ş. as agreed between Nordex and the project participant /51/. The relevant disposal invoices were provided to DNV at the verification stage /24/. The project participant also provided DNV with the receipts for utility water issued by Sema Yaman on 20 February and 7 March 2012 /18/. The drinking water receipt samples from local shop of Yaman Ticaret, Aliğa were also provided to DNV, which is for the water purchased by the project participant for its employees working at the plant site /19/. The Public Hygiene Centre of Turkish Ministry of Health issued a Drinking Water Quality Report on 19 December 2011 to confirm that the sample water of the proposed project site area is in compliance with the Regulation Concerning Water Intended for Human Consumption /20/.

In the Social Responsibility Report of Aliğa Wind Power Project provided to DNV during the verification process, it has detailed description that the project participant tried twice to help the neighbour village of Atçılar to find the water resource, as the village of Atçılar has been suffering from the lack of water for many years /38/. The first trial in December 2009 was unsuccessful, but the second trial in June 2011 was successful and the project participant found the water for Atçılar village /38/. The relevant photographs and invoices have been included in the Report /38/. Mr. Mehmet Akdeniz-Atçılan Muhtari, the head of Atçılar Village, joined the interview carried out on site visit by DNV verifier on 9 August 2012, and he confirmed that the water was found by the project participant and expressed his gratitude for that /65/. Therefore it is DNV's opinion that this indicator reflects the conditions at the project site.

3.7.5 Biodiversity

As confirmed by the registered PDD and the validation report, the project complies with the terms of the EIA-exemption letter from Ministry of Environment and Forest /1//5/. It is also stated in the registered PDD that the project site is not located along the migratory route of birds /1/. Nevertheless, DNV could confirm via the site visit that red colour were painted on the tips of the turbine blade for the proposed project, and the flashing lights were installed on the nacelles' tops to increase turbine visibility at night, which is consistent with that in the monitoring plan and monitoring report /1//2/.

According to the registered PDD "Regular patrols of the site are made by the company's security guards on each shift. The guards are instructed to look out for any dead birds (and



bats) that may have been struck by the turbines. The project participant issued two notifications later addressing this issue, and requesting a daily record to be kept no matter birds were found or not in June 2011 and November 2011 /40/. If such birds (or bats) are found, these are photographed and recorded in a book that is kept at the site office. If no birds (or bats) are found on a shift, that is also recorded/1/. DNV checked the Security Logbook at the project site and found that the logbook was started in November 2011 /39/ and has been recorded regularly daily during this monitoring period.

II. Social Sustainability and Development

3.7.6 Quality of Employment

The project participant provided DNV with records of Health Check-up Report of Technical Personnel issued by State as well as private hospitals in Aliğa Town, and these reports confirmed that the technical personnel could continue their current work /47/. İDEAL Occupational Health and Safety Private Company, which is an accredited and independent third party, also issued the Aliğa Occupational Health and Safety Report, confirming that the proposed project complies with Labour Law No. 4857, and the Regulation of the Ministry of Labour and Social Security No.: 25426 on occupational safety and health services. Meanwhile, the report also identifies the potential risks and suggested actions for the proposed project on 16 November 2011, for project participant to further improve the health and safety situation for the proposed project /48/. This Report is prepared by the assigned specialists from IDEAL for the proposed project.

In addition to the health and safety system, the project participant provided services to employees of the propose project, such as the personnel bus services and the daily meal. The relevant contracts and the payment receipts were provided to DNV during the verification process /44//45//46/. Furthermore, the project participant also organized extensive trainings for the employees of the proposed project based on the work requests, including the technical training, the safety training, the management of high voltage and facilities training, the wind turbine training, etc. DNV confirms that all the training certificates have been provided at the verification stage /27//28//29//30//31//32//33//34//35/.

3.7.7 Quantitative employment and income generation

It is stated in the registered PDD that the project should provide employment opportunities for local people with wages above the local average /1/. There are in total 9 local employed in the proposed project. DNV verifier interviewed two of them who were at the plant site on 9 August 2012 when the site visit was carried out, and they gave positive feedback for working conditions and the compensation for their work /66//67/. The project participant also provided the monthly salary report for the employees working at the plant site (2 561 TL), and the average salary of the local people is above that stated in the Structure of Earnings Survey 2010 for Aegean Region (1 250 TL), which is the latest information available published by Turkish Statistical Institute /25//26/.

3.7.8 Livelihood of the poor

In addition to the employment opportunities provided to the local people for the proposed project, the project participant contributed to the livelihood of the local poor people in several ways, which is listed in the Social Responsibility Report of Aliğa Wind Power Project provided to DNV during the verification process /38/.



During this (second) monitoring period:

- The project has made donations of computers, desks and cupboards to a nearby village school in January 2012
- Donated stationary to the commandership of gendarmerie in February 2012
- Organised and supplied a leader board for the local elementary school of Ismailli in May 2012

The Project provides jobs to nine people from Aliğa Town, and the Project has made various contributions to the poorest people in the vicinity (e.g. computers and projectors for İsmaili elementary school, relief supply kits for locals during Ramadan, and scholarships for the children of some employees, stationary equipment for commandership of gendarmerie in Ismailli Village etc.). The relevant photographs, invoices, donation receipts and thanks letter of the above activities have been scanned and included in the Social Responsibility Report of Aliğa Wind Power Project /38/. DNV therefore could confirm that the project made various contributions to the poorest people in the vicinity of the project area, as requested in the registered PDD /1/.

3.7.9 Public health and safety

DNV could confirm via the site visit that in order to safeguard the public from any potential electricity-related risks, the site is secured, with access only possible with the supervision of security. All the turbines are fenced, and the fences are grounded to avoid any third party injury or accident related to high voltage. The switchgear area, the main control chamber, and the substation are also fenced in and guarded. These precautions are taken to protect the public from any potential high voltage hazard, and it is consistent with that requested in the registered PDD /1/.

3.8 Quality of evidence to determine emission reductions

DNV confirms that a complete set of data for this monitoring period was available to be verified and was in accordance with the registered PDD dated 17 November 2011 /1/.

All data in the project site are stored in an electronic server of the power plant that has a regular and systematic backup. The monitoring data recorded from the substation are stored as a hard copy as well as a soft copy and will be kept at least for 2 years after the end of the last crediting period /1//2/.

All necessary documentation were collected, referenced and aggregated and were easily accessible in hard-copy and electronic format. Measurements are performed by calibrated equipment, and the key data were cross-checked via other sources. No assumptions are used that have any material influence on reported emission reductions.

The only monitoring indicator is the net electricity supplied to the grid by the proposed project, which has been monitored with calibrated electricity meters.

Critical parameters used for the determination of the emission reductions were checked and confirmed during the site visit, which are listed below:

- Monthly statistics transcribed from the original data of the electricity imported and output from the grid /6/;
- Hourly and daily readings from the bidirectional meter of electricity output to and imported from the grid for the project activity /52/;



- Electricity data generated in MFRC/PMUM from 1 January 2012 to 30 June 2012 /7/.

During the site visit on 9 August 2012 and document review, all internal records regarding the electricity produced by Aliğa Wind Farm and dispatched to the grid, and the MFRC/PMUM data related to the proposed project during this monitoring period were assessed by DNV /6//7/. DNV was able to verify that Aliğa Wind Farm has an automated control system where the operation and electricity generated, consumed and exported to the grid is continuously monitored.

All the data is in compliance with the figures stated in the monitoring report, emission reduction spreadsheet and the registered PDD of 17 November 2011 /1/. The monthly recorded data were correctly transferred to the spreadsheet /3//6/.

It is concluded that in this monitoring period, the evidence for determination of ER is sufficient and reasonable. DNV was able to confirm that the result of ER calculation is reliable /3/.

3.9 Management system and quality assurance

Bergama RES Enerji Üretim A.Ş. is responsible for operating the wind power plant and monitoring the project activity in accordance with the Monitoring Manual /8/ prepared and updated for the use of Bergama RES Enerji Üretim A.Ş. The management system /9/ for the project has been verified to be in place by DNV on site. The organization structure with the responsibilities, personnel competencies, monitoring procedure and monitoring management have been properly identified and put into operation.

DNV confirmed through the site visit that the monitoring and reporting of electricity data is in accordance with the established operational procedures.

Data was collected according to the well-defined data collection procedures:

- Data of electricity exported is automatically recorded on a daily/hourly basis;
- The data is recorded and consolidated hourly by the local computer of the power plant;
- These reports are monthly consolidated and submitted to the management department. The electricity data, including the electricity dispatched to the grid and imported from the grid by the power plant, is compared with the electricity data generated by MFRC/PMUM /6//7/.
- The electric circuit (Single Line Diagram) at the power plant, including the connection with the grid, and the electricity metering procedures of electricity generation of the project delivered to the grid were verified during the site visit and considered adequate /14/.
- An excel spreadsheet is used to calculate project emission reductions. The project participant collects data for electricity generation (EGy). Generation is measured and recorded monthly through two high precision meters sealed and controlled by TEIAS (according to their stringent regulations). Data may also be cross-checked against MFRC/PMUM values /3//6//7/.

DNV confirms that the responsibilities and authorities in the management and operational system for monitoring and reporting are in accordance with the responsibilities and authorities stated in the registered PDD and its monitoring plan /1/.



4 VERIFICATION STATEMENT

DNV Climate Change Services AS (DNV) has performed the verification of the emission reductions that have been reported for the Gold Standard Project Aliğa Wind Farm in Turkey (Gold Standard Project ID: GS735) for the period 1 January 2012 to 30 June 2012.

The project participants are responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the project.

It is DNV's responsibility to express an independent verification statement on the reported GHG emission reductions from the project. DNV does not express any opinion on the selected baseline scenario or on the validated and registered PDD.

DNV conducted the verification on the basis of the monitoring methodology ACM0002 (version 12), the monitoring plan contained in the registered Project Design Document of 17 November 2011 and the monitoring report (Version 01) dated 30 July 2012. The verification included i) checking whether the provisions of the monitoring methodology and the monitoring plan were consistently and appropriately applied and ii) the collection of evidence supporting the reported data.

DNV's verification approach draws on an understanding of the risks associated with reporting of GHG emission data and the controls in place to mitigate these. DNV planned and performed the verification by obtaining evidence and other information and explanations that DNV considers necessary to give reasonable assurance that reported GHG emission reductions are fairly stated.

In our opinion the GHG emissions reductions of the Gold Standard Project Aliğa Wind Farm in Turkey (Gold Standard Project ID: GS735) for the period 1 January 2012 to 30 June 2012 are fairly stated in the monitoring report (Version 01) dated 30 July 2012.

The GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodology ACM0002 (version 12) and the monitoring plan contained in the registered PDD of 17 November 2011.

DNV Climate Change Services AS is able to verify that the emission reductions from the Gold Standard Project Aliğa Wind Farm in Turkey during the period 1 January 2012 to 30 June 2012 amount to 75 127 tonnes of CO₂ equivalent.

Prague, 2012-09-28

Lumír Němeček
Verifier
DNV Prague, Czech Republic

Michael Lehmann
Director of Services and Technologies
DNV Climate Change Services AS



5 REFERENCES

Documents provided by the Project Participants that relate directly to the GHG components of the project. These have been used as direct sources of evidence for the periodic verification conclusions, and are usually further checked through interviews with key personnel.

- /1/ EcoSecurities International Limited: *Project Design Document of Aliğa Wind Farm* version 2.5 dated 17 November 2011.
- /2/ EcoSecurities International Limited: *Monitoring Report of Aliğa Wind Farm* for the period of 1 January 2012 to 30 June 2012 , version 01 of 30 July
- /3/ EcoSecurities International Limited: *ERs calculation spreadsheet - Aliğa M2 workbook.*
- /4/ Ecofys, TÜV-SÜD and FIELD : *Gold Standard Passport for Aliğa Wind Farm*
- /5/ Bureau Veritas: Validation report for Aliğa Wind Farm version 06 dated 15 March 2012
- /6/ Bergama RES Enerji Üretim A.S.: Aliğa monthly meter reading from 1 January 2012 to 30 June 2012 ,
- /7/ Market Financial Reconciliation Center (MFRC/PMUM): Data generated in MFRC/PMUM from the from 1 January 2012 to 30 June 2012 , for Aliğa Wind Farm
- /8/ EcoSecurities International Limited: Monitoring Manual of Aliğa Wind Farm version 01 dated April 2012
- /9/ Bergama RES Enerji Üretim A.S.: Aliğa Wind Farm Data Management System dated July 2012
- /10/ Bergama RES Enerji Üretim A.S.: Diesel generator logbook
- /11/ Turkish Electricity Transmission Company (TEİAŞ) and Bergama RES Enerji Üretim A.Ş.: Aliğa WPP Grid Usage Agreement dated 24 February 2010
- /12/ Energy Market Regulatory Authority(EMRA): Aliğa Electricity Generation License dated 17 July 2008
- /13/ Kesir Mühendislik Elektrik A.Ş.: Calibration of the meters used in the Aliğa Wind Farm(meter no.53031823, 53031824, 53031825, 53031826) dated 2 February 2010
- /14/ TEİAŞ and Bergama RES Enerji Üretim A.Ş.: Aliğa WEPP Single Line Diagram dated 26 October 2010
- /15/ Turkish Ministry of Industry and Commerce: Inspection of Measurement and Measuring Instruments Regulation dated 24 July 1994
- /16/ TEİAŞ: First Index Protocol issued at the time of installation of the meters (meter no.53031823, 53031824, 53031825, 53031826) dated 9 April 2010 and 26 October 2010
- /17/ Bergama RES Enerji Üretim A.S.: Training records
- /18/ Sema Yaman: Receipts for Water, 2 February, 7 March 2012
- /19/ / Aliğa Local Shop: Sample Receipts dated 14-16-27 January, 8 February, 7 March, 11 April, 2 May, 16 June 2012
- /20/ Public Hygiene Centre, Turkish Ministry of Health: Drinking Water Quality Report confirming that the sample water is in compliance with the "Regulation Concerning Water Intended for Human Consumption" dated 19 December 2011
- /21/ Regional Directorate of Forestry, Ministry of Environment and Forestry: Payment



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- notification and the bank receipt for the payment for forestation fee dated 7 August 2009
- /22/ Vacuum Truck Service, Yenişakran Municipality: invoice for the transportation of waste to cesspool from 1 January 2012 to 30 June 2012
- /23/ Ministry of Environment and Forestry: Disposal of Nordex Turbines' Wastes National Waste Removal Form with no date specified
- /24/ Nordex Enerji A.Ş.: Invoices of Disposal of Nordex Turbines' Wastes in year 2012
- /25/ Turkish Statistical Institute: TurkStat, Structure of Earnings Survey, 2010
www.tuik.gov.tr/IcerikGetir.do?istab_id=166
- /26/ Bergama RES Enerji Üretim A.Ş.: Monthly salary report for the employees of Aliğa Wind Farm for year 2012
- /27/ Nordex Energy GmbH: Training Certificate for the employees of Aliğa Wind Farm for Concycle Wind Training 31 January 2012
- /28/ Nordex Energy GmbH: Introduction to Service Training from 15 to 19 February, 21 – 25 June 2010
- /29/ Nordex Academy: Training Certificate for the employees of Aliğa Wind Farm for Service Basic and Turbine Technology from 21 June to 9 July 2010
- /30/ Triowind: Training Certificate for the employees of Aliğa Wind Farm for theoretical and practical safety instruction training carried out in 2010 and 2011
- /31/ Yaşar University: Technique of High Voltage Training certificate from 25 – 26 November 2010, 30 May 2011
- /32/ Triowind Training Certificated BURHAN KIRAÇ
- /33/ A.Serdar ANLAS:: Working in High Voltage Facilities CİHAD EKMEK
- /34/ A.Serdar ANLAS: Poliya Training SABRİ BARIŞ BİLGİN
- /35/ Security NEZİH SALMAZ
- /36/ Alka Environmental Laboratory (accredited/independent third party): Noise Measurement Report dated 29 June 2010
- /37/ Bergama RES Enerji Üretim A.Ş.: Current Employment Information Summary of Aliğa Wind Farm
- /38/ Bergama RES Enerji Üretim A.Ş. and Bilgin Enerji Yatırım Holding A.Ş.: Social Responsibility Report for Aliğa Wind Farm dated March 2012 and June 2012
- /39/ Bergama RES Enerji Üretim A.Ş.: Security Logbook for recording if there is any bird found around the project site area starting since 11 November 2011 to 30 June 2012
- /40/ Bergama RES Enerji Üretim A.Ş. and Bilgin Enerji Yatırım Holding A.Ş.: Internal notification to security guards of Aliğa Wind Farm that finding of birds should be photographed and recorded in security logbook dated 7 June 2011 and 10 November 2011
- /41/ Memorandum signed by Atçılar and Yuntdağ Village, Bergama RES Enerji Üretim A.Ş. and individual Construction Technician Contractor: *The renewal of the infrastructure and asphalt surface of the roads between İsmaili and Atçılar Villages which were corrupted during the construction of Aliğa Wind Farm* dated 20 October 2010
- /42/ Bergama RES Enerji Üretim A.Ş. and Özyavuzlar İnşaat San.Ltd.Şti.: *Rehabilitation of Roads Contract* signed 20 August 2010



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- /43/ DEWI GmbH: *Site-related Wind Potential Analysis and Energy Yield Assessment at the site Aliğa*
- /44/ Osman Duman Yemek Tabildot Tic.Ltd.Şti. and Bergama RES Enerji Üretim A.Ş.: *Contract for the personnel meals (breakfast, lunch, dinner) of Aliğa Wind Farm dated 1 August 2010 and Ticket restaurant invoice of 27 March 2012*
- /45/ Osman Duman Yemek Tabildot Tic.Ltd.Şti.: *sample receipts and weekly menu for the daily meal service for employees of Aliğa Wind Farm 7, 14,21, 28 of February 2012*
- /46/ Sen-ay Taşımacılık Ltd. Şti. and Bergama RES Enerji Üretim A.Ş.: *Contracts for the transport service for employees of Aliğa Wind Farm in year 2012*
- /47/ State and Private Hospitals in Aliğa Town: *Health Check-ups of Technical Personnel of Aliğa Wind Farm in year 2012*
- /48/ İDEAL Occupational Health and Safety Private Company (accredited/independent third party): *Aliğa Occupational Health and Safety Report carried out 16 November 2011*
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- /50/ DEWI GmbH: *Company profile*
<http://www.dewi.de/dewi/index.php?id=35>
- /51/ Bergama RES Enerji Üretim A.Ş. and Nordex Enerji A.Ş.: *Maintenance and Service Agreement Premium dated 8 May 2009*
- /52/ Bergama RES Enerji Üretim A.Ş.: *Log book for hourly electricity generation of Aliğa Wind Farm for this monitoring period from 1 January 2012 to 30 June 2012*
- /53/ İzmir Regional Directorate of Forestry, Turkish Ministry of Environment and Forestry: *statement to confirm that the forestry management will plant 48,500 trees after the generation license of Aliğa Wind Farm project expires issued on 12 June 2012*
- /54/ Bergama RES Enerji Üretim A.Ş.: *2012&2013 Action Plan Protecting And Planting In and around the Aliğa Wind Farm dated on 2 May 2012,*
- /55/ Oktay Sever Company: *Invoices of 50 saplings and 20 flower seeds issued to Bergama RES Enerji Üretim A.Ş. dated 10 May 2012*
- /56/ Bergama RES Enerji Üretim A.Ş.: *Payment receipts of 550 Lira for hiring four local villagers in May and June 2012 to re-plant the trees cut during the construction of the proposed project, as well as the relevant photos for the tree planting process..*
- /57/ DNV: *The 1st verification report of Aliğa Wind Farm Project in Turkey, 22 June 2012.*

Background documents related to the design and/or methodologies employed in the design or other reference documents.

- /58/ CDM Executive Board: *Validation and Verification Manual version 01.2*
- /59/ CDM Executive Board: *ACM0002 “ Consolidated baseline methodology for grid-connected electricity generation from renewable sources” version 12*
- /60/ CDM Executive Board: *Tool to calculate baseline, project and/or leakage emissions from electricity consumption Version 01*
<http://cdm.unfccc.int/methodologies/PAMethodologies/tools/am-tool-05-v1.pdf>
- /61/ IPCC: *Revised 2006 IPCC Guidelines for National Greenhouse Gas Inventories*



VERIFICATION REPORT

Reference Manual.

- /62/ The Gold Standard: *Gold Standard Requirements version 2.1*
- /63/ The Gold Standard: *Gold Standard Toolkit version 2.1*
- /64/ The Gold Standard: *Gold Standard Annexes to Toolkit version 2.1*

Persons interviewed during the initial verification, or persons who contributed with other information that are not included in the documents listed above.

- /65/ Mehmet Akdeniz-Atcilan Muhtari, Mayor of the village
- /66/ Selim Akdeniz, villager from Atallar village and employee of Aliğa Wind Farm
- /67/ Yusuf Snder, villager from Atallar village and employee of Aliğa Wind Farm
- /68/ Burcu Kılıç, Carbon Project Manager, Bilgin Energy Investment Holding Inc.
- /69/ Burhan Kıraç, Bergama Plant Manager, Bilgin Energy Investment Holding Inc.
- /70/ Kristin Eldon Whyllly, Verification Portfolio Manager, EcoSecurities International Limited

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APPENDIX A

CORRECTIVE ACTION REQUESTS, CLARIFICATION REQUESTS AND FORWARD ACTION REQUESTS

Corrective action requests

CAR ID	Corrective action request	Response by Project Participants	DNV's assessment of response by Project Participants
N/A	N/A	N/A	N/A

Clarification requests

CL ID	Corrective action request	Response by Project Participants	DNV's assessment of response by Project Participants
CL 1	<p>The diesel generator serves as a backup in case of emergency. Clarify how frequent the diesel generator is used and if the emission from the diesel generator is taken into consideration during the emission reduction calculation to make the calculation most conservative. Provide the operational log book.</p>	<p>Although it is not required by the monitoring plan of the PDD, nor is it a parameter, the project developer has kept a record of amount of diesel is used in the generator when back-up power was required during the monitoring period. The generator ran for 74 minutes during the monitoring period. At most when the generator is at full load, it uses 22.8 litres of diesel per hour. Using this figure (even though the generator was not being used at full potential), the generator used 28.12 litres of diesel. Using an emission factor of 0.00271 (IPCC) tonnes Co2/litre of diesel, this equates to 0.076 t/CO2 which is less than 1% of the total emission reductions and insignificant. For the reasons above, this has not been used in the emission reduction calculation. A copy of the generator log has been provided as well as the brochure of the generator which provides the amount of litres of diesel that the generator uses per hour at 100% load.</p>	<p>DNV confirms that the operating hours of the back-up diesel generator is 74 minutes by checking with the log book during this monitoring period.. DNV checked this emission amount using the following calculation. $0.26676 \text{ tCO}_2/\text{MWh}(\text{IPCC } 2006 \text{ the default value of CO}_2 \text{ emission factor for diesel}) * 0.088\text{MW}(\text{DG output}) * 1,2\text{hr} / 0.37 \text{ (energy efficiency of DG set)} = 0.076 \text{ tCO}_2$, which less than 1% ($1.01 * 10^{-4} \%$) of the total emission reductions of 75 127 tCO₂ for this monitoring period. Therefore, in accordance with VVM paragraph 77, the emissions from the diesel generator do not contribute for more than 1% of the emission reduction for this monitoring period /58/, hence DNV considers appropriate not to discount the emission due to the negligible utilisation of the back-up diesel generator. Moreover DNV could confirm that according to the Tool to calculate baseline, project and/or leakage emissions from electricity consumption /60/, the conservative default value of the emission factor is defined as 1.3 tCO₂/MWh and the calculation of 1.2 hrs x 0.088 MW* 1.3 tCO₂/MWh = 0.137 tCO₂ which represents $1,83 * 10^{-4} \%$ of the total claimed emission reductions.</p>

CL ID	Corrective action request	Response by Project Participants	DNV's assessment of response by Project Participants
CL 1			<p>The calculation in both ways shows that the emissions from the diesel generator do not contribute for more than 1% of the emission reduction for this monitoring period /58/ and therefore draws the same conclusion of not to discount the emissions of the back-up diesel generator due to the negligible utilisation according to VVM paragraph 77 /58/.</p> <p>CL has been closed.</p>

CL ID	Corrective action request	Response by Project Participants	DNV's assessment of response by Project Participants
CL2	<p>Under the Monitoring report Electricity meters' (main and back-up meters) maintenance and calibration is undertaken by TEİAŞ who ensure the accuracy and measurement quality monthly. Confirm that TEİAS is authorized for this activity and provide evidence that TEİAS is authorized to provide the calibration of measuring equipment. In opposite case revise the text of corresponding paragraphs</p>	<p>The Monitoring Report has been updated to reflect that the practice has changed slightly in that the grid company is no longer attending the site on a monthly basis to take the meter readings. The meters are read electronically and remotely by TEİAS on a monthly basis and the readings are then co-signed by the project owner and TEİAS at a slightly later date. This is still in line with the Monitoring Plan in the PDD. Calibration of the meters was done by TEİAS when the meters were installed and according to regulation, the meters have to be calibrated every 10 years.</p> <p>According to regulation published in the Official Gazette No: 27200 on 14 April 2009 by the Energy Market Regulatory Authority (which is the only government body who makes regulations in the Turkish energy market), pg 14 Article 16(b) says that "ensuring the accuracy of measurement equipments for settlement by undertaking meters test, control and inspection works; and reading meters through OSOS (Automatic Meter Reading System) are the responsibility of TEİAS". This confirms that TEİAS is authorised to provide the calibration of the measuring equipment. A copy of the regulation is provided, but the regulation can be downloaded from the following link: _ http://epdk.gov.tr/index.php/elektrik-piyasasi/mevzuat?id=36</p>	<p>Monitoring report has been updated under the current practise. The meters are read electronically and remotely by TEİAS on a monthly basis and the readings are then co-signed by the project owner and TEİAS at a slightly later date. This is still in line with the Monitoring Plan in the PDD.</p> <p>According to regulation published in the Official Gazette No: 27200 on 14 April 2009 by the Energy Market Regulatory Authority it has been confirmed that TEİAS is authorised to provide the calibration of the measuring equipment.</p> <p>CL has been closed</p>

CL ID	Corrective action request	Response by Project Participants	DNV's assessment of response by Project Participants
CL3	<p>Explain why the electricity production and ERs were lower than estimated in the PDD.</p>	<p>As this is only a six month monitoring period, it is expected for the values to be slightly different what is expected from the PDD for over a twelve month period as there are different wind seasons where the emission reductions will be higher for some months and lower for others. In the past two years, May has experienced significantly lower electricity generation, hence lower emission reductions than other months. As May was a part of this monitoring period, this is a reason why there is a slight under generation. This explanation has also been included in the Monitoring Report.</p>	<p>Lower electricity production as well as lower ERs have been explained.</p> <p>Because of only the six month monitoring period, the above values have been slightly different than expected in the PDD.</p> <p>For over a twelve month period there are different wind seasons where the emission reductions will be higher for some months and lower for others. In the past two years, May has experienced significantly lower electricity generation, hence lower emission reductions than other months. As May was a part of this monitoring period, this is a reason why there is a slight under generation. This explanation has also been included in the Monitoring Report.</p> <p>CL has been closed</p>

Forward Action Request from 1st Verification

FAR ID	Forward action request	Response by Project Participants	DNV's assessment of response by Project Participants
<p>FAR 1 (Raised during the last verification)</p>	<p>DNV checked during the site visit the security log book of site patrols concerning birds found around the site area addressing the request of biodiversity for the category of sustainable development parameters, and found the record only started from November 2011. The project participant explained that no record was made if no bird was found during the site patrols in the past, yet this was corrected since November 2011 by keeping a record even if no birds were found. It should be checked during next verification that the log book has been continuously filled in concerning the biodiversity after November 2011 for next verification period.</p>	<p>The log book has been continuously filled since November 2011 to the end of the verification period regardless of whether or not a dead bird or bat is found on site and neither dead birds nor bats were found. This was expected as the site is not located in a migratory route of the birds.</p>	<p>This was checked day by day during this (second) verification. DNV can confirm that the log book has been continuously filled since November 2011 to the end of the verification period regardless of whether or not a dead bird or bat is found on site and neither dead birds nor bats were found. This was expected as the site is not located in a migratory route of the birds.</p> <p>FAR has been closed</p>

APPENDIX B

CURRICULA VITAE OF THE VERIFICATION TEAM MEMBERS

Lumír Němeček

Mr. Lumír Nemecek holds a MSc. Degree in Energy industries.. Prior to joining DNV having 33 years' experience in nuclear, hydro, fossil-fuelled power and other renewables. He worked for large and medium size energy companies in different roles and capacities including project management, project engineering and consulting. He has acquired his experience in energy industry markets from both Subcontractor and Client Company's perspective combined with understanding of business climate and adopted practice covering

1. Staff member of power plant during the construction - direct participation on construction and equipment installations, supervision of suppliers and designers, safety aspects of construction and operation
2. Energy utility - project preparation and project management activities, preparation and supervision of the plants technical development, site visits, supervision of suppliers installations., bidding procedures and construction preparation of new power plants, plant operations support, project management, supervision individual plants technical departments.
3. Consultancy activities in energy sector - feasibility studies, site visits, supervision of suppliers, supervision of installations, bidding procedures, supervision of reengineering and plant renovations, time scheduling, administrative and legal procedures during projects preparations
4. Export/import of complete power plants, equipment and technology bidding procedures, preparation and realization supervision of power facilities, project management, planning, monitoring, and reporting.

He has experience more than 1 year in validation and verification of numerous CDM projects. His qualification, industrial experience and experience in CDM demonstrate him sufficient sectorial competence in Thermal energy generation from fossil fuels as well as thermal electricity from solar and energy generation from renewable energy sources.”

Wen, Bo

Wen, Bo holds a Master Degree in International Business and a Master Degree in Business Administration. Having an overall working experience of more than 10 years, Ms. Wen worked for auto industry before joining DNV, covering product management and fleet sales marketing. She has experience of around 4 years in validation and verification of numerous CDM projects since she joined DNV in year 2008. Her qualifications and experience in CDM demonstrate her sectorial competence in the renewable energy sector.

Agnes Dudek

Agnes Dudek holds a PhD Degree in applied physics. Having an overall experience of around 12 years. Prior to joining DNV having 7 years' experience in scientific research covering satellite remote sensing, mesoscale weather forecast modeling and air pollution dispersion modeling and monitoring. She has experience of around 5 years in validation and verification of numerous CDM projects. Her qualification, research experience and experience in CDM demonstrate her sufficient sectorial competence in energy generation from renewable energy sources.