VERIFICATION REPORT

SOMA WIND POWER PLANT

(GOLD STANDARD PROJECT ID: GS655)

Monitoring Period:
13 August 2010 to 30 June 2012

REPORT NO. 2012-1384
REVISION NO. 01

DET NORSKE VERITAS

VERIFICATION REPORT

Date of first issue: 6 November 2012	Project No.: PRJC-351229-2011-CCS-NOR
Approved by: Michael Lehmann	Organisational unit: DNV KEMA Energy & Sustainability Accredited Climate Change a Services
Client: EcoSecurities International Limited	Client ref.: Kristin Eldon Whylly

DNV CLIMATE CHANGE SERVICES AS

Veritasveien 1,
1322 HØVIK, Norway
Tel: +47 67 57 99 00
Fax: +47 67 57 99 11
http://www.dnv.com
Org. No: NO 994 774 352 MVA

Summary:

DNV Climate Change Services AS (DNV) has performed the verification of the emission reductions reported for the Gold Standard project activity "Soma Wind Power Plant"(Gold Standard Project ID: GS655) for the period 13 August 2010 to 30 June 2012.

In our opinion, the GHG emission reductions and information on the project's Gold Standard Sustainable Indicators reported for the project in the monitoring report (Version 02) of 24 October 2012 are fairly stated.

The GHG emission reductions were calculated correctly on the basis of the approved monitoring methodology ACM0002 (version 12.1) and the monitoring plan contained in the Project Design Document version 3.3 of 4 July 2012.

DNV Climate Change Services AS is able to verify that the emission reductions from the Gold standard project activity "Soma Wind Power Plant" during the period of 13 August 2010 to 30 June 2012 amount to 315 415 tonnes of CO_2 equivalent.

Report No.: 2012-1384			**Indexing terms**
Report title: Soma Wind Power Plant			Key words Climate Change Kyoto Protocol Validation Clean Development Mechanism Service Area Verification Market Sector Process Industry
Work carried out by: Wen, Bo and Patrice Massicard			☒ No distribution without permission from the client or responsible organisational unit ☐ free distribution within DNV after 3 years ☐ Strictly confidential ☐ Unrestricted distribution
Work verified by: Agnes Dudek			
Date of this revision: 6 November 2012	Rev. No.: 01	Number of pages: 23	

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Abbreviations

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CEF	Carbon Emission Factor
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 / Piyasa Mali Uzlaştırma Merkezi
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 "Soma Wind Power Plant" (the project) for the period 13 August 2010 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: GS655) on 23 January 2012 and has a crediting period starting on 13 August 2010 /1/, which correspond to the commissioning date of the first set of turbines implemented (ref. section 3.2 for details). This is within two years prior to the registration with GS, so that all emission reductions achieved from the commissioning date can be claimed. This verification has verified the emission reductions occurring from the start date of this crediting period until 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 Soma Wind Power Plant for the period 13 August 2010 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 information on the project's Gold Standard Sustainable Indicators and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data and information on the project's Gold Standard Sustainable Indicators, respectively, 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:	*Soma Wind Power Plant*
Baseline and monitoring methodology	*ACM0002 (version 12.1)*
Project Participants:	*Bilgin Rüzgar Santrali Enerji Üretimi A.Ş.*
	JPMorgan Ventures Energy Corporation

Location of the project activity: *Soma and Kırkağaç towns, Manisa province, Turkey*
Project's crediting period: *13 August 2010 to 12 August 2017 (renewable)*
Period verified in this verification: *13 August 2010 to 30 June 2012*

1.4 Methodology for determining emission reductions

In line with the applied methodology ACM0002 version 12.1 /54/, 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 (hereafter referred to as PDD and validation report) and as per the methodology /1/ /5/ /54/. 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 (tCO_2/MWh), which has been fixed *ex-ante* for the entire first crediting period at 0.59384 tCO_2/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/ - /6/ ;
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 tCO_2/MWh /1/ /5/;
iii) The actual installed capacity of the power plant to ensure the conformance with the descriptions in the registered PDD /1/;

Moreover, DNV has reviewed the information provided on the project's Gold Standard Sustainable Indicators.

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.

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)	Massicard	Patrice	Norway	✓	✓	✓	✓		
Verifier with local knowledge of Turkey	Wen	Bo	Norway	✓	✓	✓			✓
Technical reviewer	Dudek	Agnes	Norway					✓	✓

Duration of verification

Preparations: *From 15 September 2012 to 3 October 2012*

On-site verification: *4 October 2012*

Reporting, calculation checks and QA/QC*: From 5 October 2012 to 6 November 2012*

2.1 Review of documentation

The verification has been performed based on the review of the following documentation provided by the project participants:

- The monitoring report of the monitoring period from 13 August 2010 to 30 June 2012, version 01 dated 7 September 2012 and Version 02 dated 24 October 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/
- 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/,/10/
- Baseline and monitoring methodology ACM0002 version 12.1 applied by the project /54/
- Gold Standard Sustainable Indicators of the proposed project during this monitoring period from 13 August 2010 to 30 June 2012 /18/-/52/
- Other information and references relevant to the project activity's resulting emission reductions /12//15//16/.

2.2 Site visit

DNV team performed an on-site visit for Soma Wind Power Plant project on 4 October 2012.

The key personnel of the project were interviewed or assisted the verification team /60//61//62//63//64//65//66/.

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/-/6/,/15/;
- 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/ /10/ /54/;
- A review of calculations and assumptions made in determining the GHG data and emission reductions /3/ /6/;
- An identification that quality control and quality assurance procedures are in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters /8/ ; and
- Gold Standard Sustainable Indicators of the proposed project during this monitoring period /18/-/52/

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, 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 12.1 and the management system were assessed during the site visit /54/.

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 one CAR and eight CLs and one FAR which have been adequately responded to by the project proponent by among others revising the monitoring report to Version 02- dated 24 October 2012. The CAR and CLs have been clearly addressed and thus been closed by DNV. The CAR, CLs and FAR raised and the response provided is as attached in Appendix A of this report.

3 VERIFICATION FINDINGS

This section summarises the findings from the verification of the emission reductions reported for the "Soma Wind Power Plantfor the period 13 August 2010 to 30 June 2012.

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

There was one FAR pending from validation for the proposed project activity, which deals with further clarification on the environmental impacts of the project, in particular with regards to biodiversity. In response to this request, the project participant has provided DNV with a study /12/, which was conducted to identify the effects of the project on the movements and inhabitancy of birds in the project area. The conclusion of the report is that there are no birds' migration routes passing over the project area. Also, the project employs precautionary measures to make sure that the birds, which do exist in the project area, do not get affected by the wind turbines. Based on these arguments and assessments, FAR 1 was closed by DNV.

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 4 July 2012 /1/.

The verification team confirmed through visual inspection and document review that all physical features of the proposed GS project activity including data collection systems and storage systems have been implemented in accordance with the registered GS PDD. DNV confirmed during the on-site visit that the GS project is completely operational. The project is a wind (*renewable type*) power plant, located in Soma and Kırkağaç towns in Manisa province of 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 4 July 2012 /1/.

The turbines are divided in two groups: Soma I, which contains 24 turbines and Soma II, which has 12 turbines. The electricity produced by each set of turbines is delivered to the 154 kV substation via underground cabling and 3 MVA step up transformers. The electricity from Kırkağaç substation (Soma II) is combined with electricity from Soma I and the total 90 MW are then transmitted to the Turkish national grid via 154 kV TEİAŞ Soma B Substation. Two meters (one main and one backup) of Actaris SL7000 type have been installed to measure the electricity produced for each set of turbine (total 4 meters) /10/.

The project was implemented in 3 phases which was confirmed by Acceptance protocols from the Ministry of Energy and Natural Resources /9/. The implementation was confirmed as follows:

- Turbines T1 to T13, with total of 32.5MW, started operation on 13 August 2010
- Turbines T14 to T24, with total of 27.5MW, started operation on 23 September 2010
- Turbines T25 to T36, with total of 30 MW (ie Soma II) were in operation from 11 November 2010

The monitoring procedure of electricity supplied to the grid were verified during the site visit /8/, and are considered to be adequate. The electricity meters are bi-directional with accuracy of 0.2 and the serial numbers 53042303, 53042305 (main meters) and 53042304, 53042306 (backup meters) 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.

Electricity meters' maintenance and calibration is undertaken by TEİAŞ (the grid operator) 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 /1/. The control system at the wind power plant (SCADA system) 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, turbine technology and electrical system training carried out by Nordex Academy, Concycle Wind Training by Woodward, theoretical and practical safety instruction training carried out by Triowind, technique, health and safety training carried out and Ideal, etc. /29//30//31//32//33//34/. 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 and interviewing the key personnel of the plant /29//30//31//32//33//34//35/

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

The estimated annual gross electricity generation in the registered PDD is 307 500 MWh, which correspond to 578 774 MWh for a period equivalent to this monitoring period (from 13 August 2012 to 30 June 2012) i.e. 687 days /1/ /2/. The actual measured gross electricity generation from the project during this monitoring period is 531 146.21 MWh for this monitoring period. Therefore, the actual electricity generation for this monitoring period is lower than the value estimated in the registered PDD /1/. This is because this monitoring period includes periods when the project was only partially operational (the project came into full operation on 11 November 2010, while the monitoring period starts from 13 August 2010 as explained in section 3.2).

As per the PDD, the estimated total emission reductions equivalent for this monitoring period are 343 698 tCO_2, while the actual emission reductions achieved during this monitoring period are 315 415 tCO_2, which is lower than the estimation in the PDD. The reason for this is again attributed to time taken by the project to become fully operational after its start on 13 August 2010. This is considered to be reasonable by DNV.

3.4 Compliance of monitoring plan with monitoring methodology

DNV is able to confirm that the monitoring plan contained in the registered PDD of 4 July 2012 is in accordance with the approved methodology applied by the project activity, i.e. ACM0002 (version 12.1) /1/ /54/.

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 4 July 2012 /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 for these parameters (i.e. from data generation, aggregation, to recording, calculation and reporting) is provided in the monitoring report /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 4 July 2012, there is only one parameter to be monitored, which is $EG_{facility,y}$, 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):	$EG_{facility,y}$: Net electricity supplied to the grid by the project
Measuring frequency:	continuously
Reporting frequency:	Reported monthly in the PMUM/MFRC reports /6/ and monthly readings report /7/ provided by TEİAŞ
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the measuring and reporting frequency is in accordance with the monitoring plan and monitoring methodology. The monitoring plan specifies monthly recording frequency /1/. Until January 2012, the electricity readings were done monthly by authorized person from TEIAS and a representative of the project participant, co-signing the monthly report. From January 2012 onwards, the electricity is measured automatically and remotely so that no representative of TEIAS is needed on site /11/. The monthly report from TEIAS is verified and signed by the project participant. Copies of these monthly reports have been provided to DNV /7/. The monthly electricity data by TEIAS are further processed by MFRC/PMUM for invoicing purposes. The MFRC/PMUM reported data are based on TEIAS reading after deducting the transmission losses between the soma power plant and the Soma B substation (refer to CL 2 for details). DNV finds this procedure of reporting the electricity data to be acceptable and in accordance with the monitoring plan /1/and monitoring manual developed with the project participant /8/.
Type of monitoring equipment:	Bi-directional electricity meters Actaris SL7000 • Main meter A with serial number

	53042303 (used for ER calculation) • Main meter B with serial number 53042305 (used for ER calculation) • Backup meter A with serial number 53042304 (not used for ER calculation) • Backup meter B with serial number 53042306 (not used for ER calculation) It is stated in the registered PDD that there are two electricity meters /1/. It was confirmed during the site visit that there are two meters each for Soma I and Soma II (one main and one backup). Readings from the main meters are recorded on the remote station by TEİAŞ and is used for invoicing and calculation purposes. Both the main and backup meters are bi-directional, i.e. measuring both imported and exported electricity to the grid. The accuracy of these meters is 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/. The data is cross checked with the data generated by the MFRC/PMUM system /6/, DNV considers that the set-up of the meters accurately measures the electricity generated by the proposed project.
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, it is stated 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 once every 10 years /1/ /13/. DNV checked the document and can confirm the same.
Company performing the calibration:	Electricity meters' maintenance and calibration is undertaken by the grid operator TEİAŞ, which ensures the accuracy and measurement

	quality.
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	Yes. Both the main meters (serial number 53042303 and 530423035) and the backup meters (serial number 530423034 and 530423036) were calibrated when they were installed in the year 2010. Certificates by Kesir Engineering were provided confirming the correct functioning within specified accuracy of the installed meters on-site /10/.
Is(are) calibration(s) valid for the whole reporting period?	Yes. The calibrations are valid until year 2020 /1//10//13/. However the quality of the meter is checked monthly by 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.
If applicable, has the reported data been cross-checked with other available data?	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 monthly reading reports /7/ provide values of the gross imported and exported electricity, while the PMUM reports provide /6/ the net electricity (gross minus the transmission losses), which are used by TEİAŞ for invoicing purposes. The project emission reduction spreadsheet presents both values and the most conservative of the two is used towards emission reduction calculation. DNV was provided with the monthly reading report /7/ and PMUM reports /6/ and it was verified that the values reported in the spreadsheet are correct. The monthly reading reports by TEIAS /7/ also include the backup meters' reading, which is used as a plausibility check of the main meters. DNV verified that the difference between the readings of the main and the backup meters were within the accuracy range of the meter.
How were the values in the monitoring report verified?	Monthly meter records of the electricity exported to and imported from the grid have been provided by the project participant and verified by DNV. Both the monthly reading reports /7/ and MFRC/PMUM /6/ data have been verified by

	DNV during the verification. DNV was able to verify the calculation process and the conclusion is transparent and in accordance with the evidence reviewed /3/ /6/.
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?	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. Before, January 2012. representative from TEİAŞ joined the monthly meters reading with the plant manager of the proposed project to confirm that the data are recorded correctly. Since January 2012, however, the data is being recorded at remote station and monthly PMUM reports are obtained by the project participant from TEİAŞ. DNV confirms through the site visit that these meters are sealed and locked in the main control room of the project site. 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/14/. 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/. All data is in compliance with the figures stated in the monitoring report Version 02 dated 24 October 2012 /2/ and ER spreadsheet /3/. The data management system 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/. An update of the QA/QC processes described in the monitoring manual /8/ has been identified and raised in FAR 1.
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	N/A

theoretically possible been applied or has a request for deviation been approved?	

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 /13/. This is stated in the monitoring plan of the registered PDD, 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 /54/.

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 /54/.

$ER_y = BE_y - PE_y - L_y$

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) /54/.

$EF_{grid,CM,y}$ 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/ /54/,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 13 August 2010 to 30 June 2012.

The net amount of electricity generation and the resulting emission reductions are correctly reported in the final monitoring report Version 02 dated 24 October 2012 /2/. The designed load factor is not specified in the registered PDD /1/. DNV verified that the monthly load factor for the proposed project is 36%, which is reasonable based on DNV's industrial knowledge. Hence, DNV was able to confirm the power generated during this monitoring period was reasonable.

The total net electricity exported to the grid by the project during this monitoring period from 13 August 2010 to 30 June 2012 was verified to be 531 629.88 MWh and the emission reductions for the same period are 315 415 tCO_2e /2/ /3/.

$EG_{facility,y} = EG_{output,y} – EG_{import,y}$ = 531 629.88 MWh, and

$BE_y = EF_{grid,CM,y} * EG_{facility,y}$ = 315 415 tCO_2e

3.6.2 Project emissions

The project emissions are regarded as zero according to the methodology ACM0002 version 12.1 /54/.

3.6.3 Leakage

There are no leakages that need to be considered in applying the methodology ACM0002 version 12.1 /54/.

3.6.4 Emission reductions

Therefore, the emission reductions in this monitoring period are:

$ER_y = BE_y - PE_y - L_y = 315\,415 - 0 - 0 = 315\,415\ tCO_2e$.

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 sustainability monitoring plan of the project's gold standard. 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 and the warning sign among others. This is to minimize the dust dispersion and erosion during the excavation. DNV also interviewed the local villages who gave positive feedback concerning the measures taken by the project participant to reduce the dust during the construction process /60//61//62//63/

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 secondary roads within the area of project activity, and the work was completed in September 2010 /44/. The project participant also renewed the infrastructure of the roads at the Kozluoren Village in the end of 2010 after project construction /42/,/39/.

The references were provided to DNV during the verification process /42//43//44//39/.

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 9 September 2010, which demonstrated that the project participant paid the fee to replant of trees cut due to the construction of the proposed project /24/. It has been specified in the payment notification that the forestation fee is for the forestation of 3 208.72 square meter area /24/.

According to the Sustainability Monitoring Plan of the GS Passport for the proposed project, "the necessary amount of trees will be planted around the project area in coordination with the local forestry" /4/. To fulfill this requirement, the project participant has hired local villagers to plant 110 trees at the project site in June 2012. The newly planted trees could be counted during site visit by DNV in October 2012. The project participant also presented DNV with

the agreements with local villagers in June 2012 to plant the trees /52/. Relevant photos were also presented to DNV. The confirmation of tree plantation by local forestry was also provided /51/

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/.

3.7.3 Other pollutant: Noise and waste disposal

Alka Environmental Laboratory issued an External Ambient Noise Measurement Report for Soma Wind Farm in December 2010 /36/. Alka Environmental Laboratory is an independent third party certified by Turkish Accreditation Agency. 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 for the project is below the legal limits of 80 dBA applicable at the project site, and 65 dBA (in day time), 60 dBA (in the evening) and 55 dBA (at night) at the nearby residential area /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.

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. This was confirmed through the review of the relevant invoices /26/ and national waste removal forms available for 2011 and 2012 /25/ were provided to DNV during the verification process 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.

3.7.4 Water quality and quantity

According to the Sustainability Monitoring Plan of the GS Passport for the proposed project, the project needs to provide water by tankers and big bottles, and dispose the waste water in accordance with current laws and regulation. The waste water from the project activity is collected in sceptic tanks that are regularly emptied by the local municipalities at Soma I and Soma II, as confirmed by the receipts available for 2010, 2011 and 2012 /19//20/ .

The project participant provided DNV with the receipts for utility water delivered to the project site in 2010, 2011 and 2012 /21/.

The drinking water receipt samples from local shop at Soma were also provided to DNV, which is for the water purchased by the project participant for its employees working at the plant site during the construction period /22/. 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 /23/.

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 gold standard passport /4/, that the project is not located within migration path of birds. Nevertheless, as precaution measure, it was requested that a detailed study by

independent party shall be prepared before the first verification with regards to migratory route of birds /1/. The independent study has been made in autumn 2012 during bird migration season and it was confirmed that there is no migration path at the project site /12/. Additionally, 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 gold standard passport, the project participant shall "keep security logbook on each shift member to monitor if any birds/bats are found or not" /4/. DNV checked the Security Logbook at the project site and found that the logbook was started in November 2011 /40/. The plant manager explained that it was first understood by the plant employees that if there was any bird found, this should be recorded, but since no bird were found in the past, no record was kept. 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 /41/. Therefore, the record started since November 2011 /40/. DNV interviewed the local villagers and they confirmed that no bird body were found around the project site, so DNV accepted the explanation of the plant manager.

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 hospital as well as private doctors, and these reports confirmed that the technical personnel could continue their current work /49/. İDEAL Occupational Health and Safety Private Company, which is an accredited and independent third party, also issued the Occupational Health and Safety Report for the Soma wind power plant, 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 /50/. Meanwhile, the Report also identifies the potential risks and suggested actions for the proposed project on 17 November 2011 /50/, for project participant to further improve the health and safety situation for the proposed project. This Report /50/ was prepared in November 2011 by the assigned specialists from IDEAL for the proposed project, i.e. one year after full implementation of the project. Monitoring of health of safety is required annually by the GS passport and next report is therefore due by end of 2012. Therefore, DNV consider that this parameter has been monitored adequately during the monitoring period.

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 /46//47//47//48/. 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 /29//30//31//32//33//34/.

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/, and the project owner should keep

employee records including gender city and position. The list of employee at the time of the site visit has been provided and verified by DNV /37/. The list of employee is continuously updated when necessary, thus complies with the annual monitoring requirement. There are in total 12 local employees as electrical technician or security staff, out of 36 employees in the proposed project /37/. DNV verifier interviewed one of them who was at the plant site on 4 October 2012 when the site visit was carried out, and he gave positive feedback for working conditions and the compensation for his work /63/. The project participant also provided the annual salary report for the employees working at the plant site, and the average salary of the local people is above that stated in the Structure of Earnings Survey 2010 for Aegean Region, which is the latest information available published by Turkish Statistical Institute /27//28/.

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 Soma Wind Power Project provided to DNV for this monitoring period /38/. The project participant contributed to road rehabilitation during construction phase in 2010 and provided construction material to villages. The project participant also donated food packages to nearby villagers during ramadan period in august 2011 and 2012, Finally, the project participant donated warm clothes to villagers for the winter 2010 and 2011. The relevant photographs, invoices, donation receipts and thanks letter of the above activities have been scanned and included in the Social Responsibility Report of Soma Wind Power Project /38/ DNV therefore could confirm that for each year in this monitoring period, 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 direct observations during the site visit as well as photographs provided by the project participant /39/ that the project site is secured to safeguard the public from potential electricity-related risks. All the turbines are fenced at the project site 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/.

It can be concluded that Gold Standard Sustainable Indicators have been properly recorded and no negative deviations with regard to the target of the selected parameters can be reported. The interviews with several stakeholders during the on-site assessment have not resulted in any complaints, the overall feedback to the project was positive.

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 4 July 2012 /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 reading reports of the electricity imported and output from the grid /7/;
- Hourly and daily readings from the bidirectional meter of electricity output to and imported from the grid for the project activity, recorded manually in logbook/14/;
- Electricity data generated by MFRC/PMUM used for invoicing, from 13 August 2010 to 30 June 2012 /6/.

During the site visit and documents' review, DNV could confirm that internal hourly records regarding the electricity produced by Soma Wind Farm and dispatched to the grid were correctly maintained. The monthly electricity readings 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 Soma 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 /1/. The monthly recorded data were correctly transferred to the spreadsheet /3/.

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

Bilgin Rüzgar Santrali Enerji Üretimi A.Ş. is responsible for operating the wind power plant and monitoring the project activity. The management system 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:

- The operation of each individual turbine is monitored continuously by a SCADA system in the control room. Operating parameters are recorded in the SCADA system as well as special events, shutdowns or maintenance requirements.
- Data of electricity exported is continuously measured and automatically recorded by the bidirectional meters (main and back up) on a monthly basis by TEIAS /7/;
- These reports are verified and signed by the Soma wind power plant manager monthly.
- 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 which is used as basis for invoicing /6/.

- An excel spreadsheet is used to calculate project emission reductions. The project participant collects data for electricity generation (EGy) from both monthly readings/7/ and consolidated PMUM reports /6/. The most conservative values is used towards emission reduction calculations. .
- Plausibility check of the reported values is done by back up meter monthly readings./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 monitoring plan /1/ /2/.

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 activity "Soma Wind Power Plant" (Gold Standard Project ID: GS655) for the period 13 August 2010 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 and reported information on the project's Gold Standard Sustainable Indicators. 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 12.1), the monitoring plan contained in the registered Project Design Document of 4 July 2012 and the monitoring report (Version 02) dated 24 October 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 and information on the project's Gold Standard Sustainable Indicators for the Gold Standard project activity "Soma Wind Power Plant" for the period 13 August 2010 to 30 June 2012 are fairly stated in the monitoring report (Version 02) dated 24 October 2012.

The GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodology ACM0002 (version 12.1) and the monitoring plan contained in the registered PDD of 4 July 2012.

DNV Climate Change Services AS is able to verify that the emission reductions from the Gold Standard project activity "Soma Wind Power Plant" during the period 13 August 2010 to 30 June 2012 amount to 315 415 tonnes of CO_2 equivalent.

Oslo, 6 November 2012

Patrice Massicard
Verifier
DNV Climate Change Services AS

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 Soma Wind Power Plant* version 3.3 dated 4 July 2012.

/2/ EcoSecurities International Limited: *Monitoring Report of Soma Wind Power Plant* for the period of 13 August 2010 to 30 June 2012, version 01 of 7 September 2012 and version 02 of 24 October 2012

/3/ EcoSecurities International Limited: ERs calculation spreadsheet: *Soma M1 workbook 24 Oct 2012.xlsx*

/4/ EcoSecurities International Limited: *Gold Standard Passport for Soma Wind Power Plant*

/5/ Bureau Veritas: Validation report for *Soma Wind Power Plant* version 06 dated 6 July 2012

/6/ Market Financial Reconciliation Center (MFRC/PMUM): *Data generated in MFRC/PMUM from August 2010 to June 2012 for Soma Wind Farm*

/7/ TEIAS: monthly electricity metering reports for Soma I and Soma II *from August 2010 to June 2012 for Soma Wind Farm*

/8/ Ecosecurities International Limited: Monitoring Manual for Soma Wind Power Plant, version 01 of June 2012

/9/ Ministry of Energy and Natural Resources: Acceptance protocols for Soma wind power plant, dated 13 August 2010, 23 September 2010 and 11 November 2010

/10/ Kesir Mühendislik Elektrik A.Ş.: *Calibration of the meters used in the Soma Wind Power Plant (meter no. 53042303, 53042304, 53042305, 53042306),* dated 19 June 2010

/11/ TEİAŞ: *Notification regarding change in monitoring mode of electricity (moving to remote reading and reporting rather than on-site reading),* dated 23 October 2012

/12/ Prof. Dr. Levent Turan: Report on bird migration over the Soma Wind Farm project area, *Manisa Soma-WPP, Monitoring Studies, 2012 Autumn Season*, dated September 2012

/13/ Turkish Ministry of Industry and Commerce: *Inspection of Measurement and Measuring Instruments Regulation* dated 24 July 1994

/14/ Bilgin Enerji Yatırım Holding A.Ş.: *Logbook for hourly records of main and backup meters electricity data for the monitoring period*, from 13 August 2010 to 30 June 2012

/15/ TEİAŞ: *Sample Invoices for the electricity for the months of September 2010*, October 2011 and April 2012

/16/ Bilgin Enerji Yatırım Holding A.Ş.: *Soma diesel consumption and operating hours records for the on-site backup generators,* for the years 2010, 2011 and 2012

/17/ Nordex Enerji A.S. and Bilgin Rüzgar Santrali Enerji Üretimi A.Ş.: *Maintenance and Service Agreement for a period of 12 years, dated 6 July 2009*

/18/ ALKA Construction and Environmental industry Ltd: *Soma noise measurement report* dated 2 December 2010

/19/ Municipality of Soma, Finance service division: samples receipt of waste water for

years 2010, 2011 and 2012

/20/ Municipality of Gelenbe, Finance service division: samples receipt of waste water for years 2010, 2011 and 2012

/21/ Yazar Ercan : *Receipts for Utility Water* for 2010, 2011 and 2012.

/22/ Menzil Ticaret: *Sample Receipts for 19l drinking water* tanks for 2010, 2011 and 2012

/23/ 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 10 November 2011, and 26 March 2011

/24/ Regional Directorate of Forestry, Ministry of Environment and Forestry: *Payment notification and the bank receipt for the payment for forestation fee* dated 03 September 2010

/25/ Ministry of Environment and Environmental affairs: National Waste transportation formsNordex Enerji A.S, dated 13 August 2011 and 16 March 2012,

/26/ Nordex Enerji A.S: receipt of waste disposal from Soma wind power plant (not dated)

/27/ Turkish Statistical Institute: *TurkStat, Structure of Earnings Survey, 2010* www.tuik.gov.tr/IcerikGetir.do?istab_id=166

/28/ Bilgin Enerji Üretim A.Ş.: *Monthly salary report for the employees of Soma Wind Power Plant for year 2010 and 2011*

/29/ Woodward: *Training Certificate for the employees of Soma Wind Farm for Concycle Wind Training held on 7 to 11 February 2011*

/30/ Nordex Energy GmbH: *Service Training Basic Level, held from 21 to25 June 2010*

/31/ Nordex Academy: *Training Certificate for the employees of Soma Wind Farm for Turbine Technology on 29 October 2010*

/32/ Nordex Academy: *Training Certificate for the employees of Soma Wind Farm for Electrical system from 25 to 29 November 2010*

/33/ Triowind: *Training Certificate for the employees of Soma Wind Farm for theoretical and practical safety instruction training carried out in 2009, 2010 and 2011*

/34/ İDEAL: *Occupational Health and Safety Law Awareness Training Certificates for Soma wind farm employees, 17 November 2011*

/35/ Vali Yardimesa: *Private Security Training Certificates for Soma wind employee*

/36/ Alka Environmental Laboratory (accredited/independent third party): *Noise Measurement Report,* dated 2 December 2010, report No 2010 /851

/37/ Bilgin Rüzgar Santrali Enerji Üretimi A.S.: *Employment Information Summary of Soma Wind Power Plant for the period August 2010 to June 2012.*

/38/ Bilgin Enerji Yatırım Holding A.Ş.: *Social Responsibility Report for Soma Wind Power Plant for the period August 2010 to June 2012.*

/39/ Bilgin Enerji Yatırım Holding A.Ş.: Photopraghs of site's protection measures.

/40/ Bilgin Enerji Üretimi A.S.: *Security Logbook for recording if there is any bird found around the project site area starting since 11 November 2011*

/41/ Bilgin Rüzgar Santrali Enerji Üretimi A.S.: *Internal notification to security guards of Aliağa Wind Farm that finding of birds should be photographed and recorded in security logbook* dated 7 June 2011 and 10 November 2011

/42/ Nimtas Insaat : *Invoice for supply of beton to road constuction*, 3 November 2010

/43/ Alpibilge Ltd Sti; *Invoice for materials for road reconstruction at Kozluoren village*, dated 7 September 2010

/44/ Bilgin Rüzgar Santrali Enerji Üretimi A.S.. and Özyavuzlar İnşaat San.Ltd.Şti.: *Rehabilitation of Roads Contract*, signed 14 August 2010

/45/ Umit Askin CAN (CAN FAST FOOD) and Bilgin Rüzgar Santrali Enerji Üretimi A.S.: *Contract for the personnel meals of Soma Wind Farm*, dated 1 May 2010

/46/ Umit Askin CAN: *sample receipts for the daily meal service for employees of Soma Wind Farm*, dated October 2010.

/47/ Ismail Isik Minibus transport and Bilgin Rüzgar Santrali Enerji Üretimi A.S.: *Contracts for the transport service for employees of Soma I Wind Farm , dated 19 May, 2010, 20 May 2011 and 20 May 2013 (valid 1 year)*

/48/ COBAN Minibuscu and Bilgin Rüzgar Santrali Enerji Üretimi A.S.: *Contracts for the transport service for employees of Soma II Wind Farm, dated 4 November 2010 and 4 November 2011 (valid 1 year)*

/49/ Bastabigli State Hospital and private doctors: *Health Check-ups of Technical Personnel of Soma Wind Farm in year 2011*

/50/ İDEAL Occupational Health and Safety Private Company (accredited/independent third party): *Occupational Health and Safety Reports for Soma I and Soma II wind power plants*, carried out 17 November 2011

/51/ Ministry of Environment and Forestry: *Confirmation of demand of tree plantation*, 28 June 2012

/52/ Bilgin Buzgar Santrali Enerji Uretmi A.S.: *Agreement with 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, dated 26 and 27 June 2012.*

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

/53/ CDM Executive Board: *Validation and Verification Manual version 01.2*

/54/ CDM Executive Board: *ACM0002 " Consolidated baseline methodology for grid-connected electricity generation from renewable sources" version* 12.1

/55/ 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

/56/ IPCC: *Revised 2006 IPCC Guidelines for National Greenhouse Gas Inventories Reference Manual*.

/57/ The Gold Standard: *Gold Standard Requirements version 2.1*

/58/ The Gold Standard: *Gold Standard Toolkit version 2.1*

/59/ 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.

/60/ Mustafa Isik, head of the village

/61/ Ismail Sen, villager

/62/ Erol iccon, villager, employed for road construction work
/63/ Tuncay Sen, villager and employee of SomaWind Farm as safety guard
/64/ Burcu Kılıç, Verification Project Manager, Bilgin Enerji A.Ş.
/65/ Tayyar Iragac, Plant Manager, Soma wind power plant
/66/ Steve Anzarouth, Project 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
CAR 1	The project implementation was verified during site visit and it was confirmed that the project include 24 turbines at Soma and 12 turbines at Kirkagac, (called Soma II), which are connected to Soma I by a 154kV transmission line. However, the schematic representation of the project in the monitoring report (figure 4) does not reflect the different location of the project, and need to be updated as per actual implementation. The location of electricity meters should also be represented.	The Monitoring Report has been updated with a more detailed schematic representation (figure 4).	The schematic diagram (Figure 4 in section A.4 of MR) has been updated as per the actual implementation of the project, showing locations of each of the electricity meters. CAR 1 is closed.

Clarification requests

CL ID	Corrective action request	Response by Project Participants	DNV's assessment of response by Project Participants
CL 1	Copy of contract for transformers and transmission line should be provided to confirm the project implementation as per the PDD.	The documents 'Soma - Areva Contract for Switchyard', 'Soma- ABB Contract for Transformer' and 'Soma- Karpa Contract for Transmission Line' are now provided to the verification team.	Copies of contracts for the transformers, switchyard and transmission lines have been provided to DNV. This confirms the project implementation as per the PDD. CL 1 is closed.
CL 2	The monitoring plan specify that the electricity meters will be read by TEIAS representatives together with the plant manager monthly, and the data will be cross checked with the PMUM reports. However it was explained during site	Before January 2012, an authorized person from TEİAŞ used to come to the project site to record the meters readings at the end of each month; and accordingly create a protocol which clearly states the net electricity generation and plant's energy	A copy of the notification received from TEİAŞ has been provided to DNV, which confirms from January 2012, the electricity meters' readings are recorded at a remote station. PMUM monthly reports covering the whole monitoring period have been

CL ID	Corrective action request	Response by Project Participants	DNV's assessment of response by Project Participants
	visit that the monthly readings is now done remotely and no TEIAS representative is coming to the site. The correct reporting procedure should be clarified in the monitoring report. Furthermore, the difference between PMUM reported data and TEIAS monthly report should be clarified considering they are based on the same meter.	consumption values. From January 2012 onwards (refer to document 'Notification received from TEİAS' from 23/01/2012), the meter reading is recorded electronically. TEİAŞ is not coming to the site to read the meters any more but has a remote connection to the main meter. The data is now read remotely, and stored in the PMUM/ MFRC (Market Finance Reconciliation Center) website and visible to the users of the meters (companies). Just for project's internal records purposes, a company representative goes to TEİAŞ at the end of each month to take the original copy of the meter protocol. This protocol is duly signed and approved by the authorized person from TEİAŞ and the project owner's representative. It can be observed that the PMUM reports provide both the meter reading data (ISVM - İletim Sistemine Veriş Miktarı, which matches the TEIAS monthly reports from meter readings) and invoiced amount (UEVM – Uzlaştırmaya Esas Veriş Miktarı) accounting for transmission losses (the meters are located 18 km away from the connection point to the grid so the project developer is charged for the losses beyond the metering point). Screen dumps of PMUM system are provided to the verification team for each month covered by the monitoring period. The transmission losses are worked out by TEIAS on a	provided to DNV and it was confirmed by DNV that correct values of electricity from these reports have been used for emission reductions calculation. The PMUM reports provide two types of values: 1) ISVM: total electricity produced reported by the electricity meters 2) UEVM: Net invoiced electricity after accounting for the transmission losses. The emission reduction calculation uses the more conservative values of electricity between the inviocable PMUM values and the ones reported by the meters on-site. This ensures the estimation of emission reductions in the most conservative manner and is hence considered acceptable by DNV. Section C of the MR has been updated to elaborate this procedure. CL 2 is closed.

CL ID	Corrective action request	Response by Project Participants	DNV's assessment of response by Project Participants
		monthly and national basis (across all meters in Turkey) according to the Article 86 of Balancing and Settlement Regulation (http://epdk.gov.tr/documents/elektrik/mevzuat/yonetmelik/elektrik/dengeleme_uzlastirma/DUYson.doc p.57). From Dec 2011 onwards, the PMUM interface changes and the metered electricity and invoiceable electricity are presented on two different tables. However, the principle remains the same, the difference between the two values being the transmission losses calculated by TEIAS. The project developer has no control over this transmission losses component, and hence the emission reduction calculation conservatively considers the monthly lower value between the PMUM invoiceable value and the meter reading.	

CL ID	Corrective action request	Response by Project Participants	DNV's assessment of response by Project Participants
CL 3	Invoices from the grid should be provided for cross checking the PMUM reported values and the electricity tariff (one invoice in 2010, one in 2011 and one in 2012 is requested as minimum).	The invoiceable amount of electricity is directly provided by TEIAS in the PMUM reports under the label UEVM (Uzlaştırmaya Esas Veriş Miktarı, meaning Seller's Settlement Amount in Turkish). Consequently the company invoices do not contain the amount of electricity sold or the tariff but the settled amount in local currency only (invoices for the months of September 2010, October 2011 and April 2012 are provided to the verification team) so no cross checking is possible with the invoices. However, screen dumps of the PMUM interface, which is the official system used in Turkey for settlement of electricity transactions, are provided to the verification team for each month covered by the monitoring period. There, it can be verified that the ISVM value (İletim Sistemine Veriş Miktarı, meaning Amount of transmitted electricity) matches the TEIAS monthly reports for metered electricity, and that the UEVM (= settled amount, accounting for transmission losses) value is correctly used in the VER Workbook under the column "Electricity Exported as per PMUM".	Invoices for the months of September 2010, October 2011 and April 2012 have been provided /15/. The invoices do not show the amount of electricity sold but gives only the amount invoiced for the periods. However, it was verified that the ISVM values reported in the PMUM reports are the same as reported by the TEIAS monthly reports. Also, the UEVM values reported in the excel sheet are the same as reported in the PMUM reports. DNV finds this crosscheck to be reasonable to prove the authenticity and correctness of the data used. CL 3 is closed.

CL ID	Corrective action request	Response by Project Participants	DNV's assessment of response by Project Participants
CL 4	One diesel generator was identified during the site visit at each site (total 2), used as backup in case of emergency. The project participant is requested to clarify the amount of fuel consumed during the monitoring period in order to assess whether the project emissions related to the diesel generator are less than 1% of the emission reductions.	There is indeed one genset of 20kW (=25kVA x 0.8 as shown on the gensets name plates) at each site of Soma I and Soma II. Logsheets of diesel consumption and usage time of diesel gensets at both sites is provided to the verification team. In total over the monitoring period, Soma I genset was used 93h and Soma II 1,642h (very high figure due to damages caused to the transmission line in March 2011 which is reflected in the low electricity generated figure for that month by the Soma II group of turbines). By conservatively assuming a 100% load factor during those hours when the gensets were used we obtain a total electricity potentially generated from fossil fuel combustion by the project of 35MWh. If we consider a 1.3tCO2/MWh emission factor for the diesel gensets as suggested by the CDM tool to calculate baseline, project and leakage emissions from electricity consumption, this corresponds to 45tCO2 over this monitoring period. Compared to the 315,415 ER claimed during this monitoring period, these emissions from diesel correspond to 0.014% which is below the 1% threshold suggested by the VVS para. 87 for raising concerns over project emission that are not covered by the applied methodology.	Log sheets of the generators showing their diesel consumption and operating hours during the monitoring period have been provided /16/. DNV verified the number of hours of operation from the log sheets. Based on the calculation presented in response to the clarification request, DNV confirms that the project emissions from the operation of generators do not exceed the limit set by para.87 of VVS i.e. 1% of the expected average annual emission reductions, and does not raise concern with the applicability of the methodology and identified emission sources for the project. CL 4 is closed.

CL ID	Corrective action request	Response by Project Participants	DNV's assessment of response by Project Participants
CL 5	By checking the certificates, it was observed that calibration dates of electricity meter indicated in the monitoring report correspond to the installation date of the meter by the grid. It needs to be clarified how the calibration of the meter was performed before the installation by the grid (factory calibration or calibration by independent party).	Calibration certificates for the meters are provided to the verification team. They are signed by representatives of Kesir Engineering (AREVA's subcontractor for the electrical works on site and who carried out the calibration of the meters), AREVA, Bilgin and TEIAS.	Certificates by Kesir Engineering were provided confirming the correct functioning within specified accuracy of the installed meters on-site. This is considered as correct calibration evidence of the meter. CL 5 is closed.

CL ID	Corrective action request	Response by Project Participants	DNV's assessment of response by Project Participants
CL 6	The report on bird movements from independent third party should be provided	The report on bird movements dated Sept 2012 is provided to the verification team.	The report has been provided, which confirms that there is no migration of birds taking place in the Soma area. CL 6 is closed.

CL ID	Corrective action request	Response by Project Participants	DNV's assessment of response by Project Participants
CL 7	The monitoring report states that legal noise limits should be 65 dBA during the day, 60 dBA during the evening, and 55 dBA during the night. However in the noise measurement report, the allowable value is stated 80dBA, and the measured noise exceed 70 dBA is some cases. Please clarify the applicable noise limit according to the regulation in Turkey.	The official noise measurement was carried out once full operation was achieved, and the report is provided to the verification team (please refer to the document 'Soma Noise Measurement Report 02.12.2010'). There are two relevant regulations with regards to noise limits in Turkey: 1) The first one is the Article 22 of the Legislation of Occupational Health and Safety dated 11.01.1974 and published on Official Gazette no.14765, where it is stated that maximum noise limit is 80 dBA on industrial sites. Consequently, the report provides in p.10-11 the noise levels measured at the 16 measurement points on the site near the turbines where the noise levels is supposed to be the highest. 2) The second one is the Article 22 of the Regulation of Environmental Noise Assessment and Management dated 4 June 2010 and published on Official Gazette no.27601, the noise limits for commercial buildings located near residential areas are defined as: 65 dBA during the day, 60 dBA during the evening and 55 dBA during the night time. This is presented in the report on p.11 with noise measurements taken from Gökçukur Village, which is the nearest residential area to the project project and is located more than a kilometer away from the nearest turbine.	It is clarified that there are 2 applicable regulations for noise limit in Turkey, which is confirmed in the Soma noise measurement report provided to DNV /18/. The report confirms that the maximum noise level in the operating areas (L_{max}) lie within a range of 56.7-71.6 dBA, which is below the legal limit of 80 dBA for industrial area. The report also presents the result of noise measurement done in the nearby Gökçukur Village, where the maximum noise level was found to be 55.2dBA, which is again below the legal limit of 65dBA for the residential areas. This is considered acceptable by DNV. Section C of the MR was updated to provide more detail on the issue. CL 7 is closed.

CL ID	Corrective action request	Response by Project Participants	DNV's assessment of response by Project Participants
CL 8	It was explained during site visit that the maintenance of wind turbine will be done by Nordex for a period of 10 years-. The maintenance contract should be provided.	The maintenance contract is provided to the verification team. Please refer to the document 'Soma_Nordex M&S Contract pg'.	A copy of the contract has been provided which is valid for 12 years after the after the date of completion of the last group of 9 turbines /17/. CL 8 is closed.

Forward Action Requests From Previous Validation/Verification

FAR ID	Forward action request	Summary of how FAR has been addressed in this reporting period	Assessment of how FAR has been addressed
FAR 1	A FAR01 has been raised to further clarify the environmental impacts of the project in particular with regards to biodiversity. An independent detailed study of the issue discussing the location of the project with regards to bird migratory routes and any mitigation measures which might be necessary.	Please refer to CL6.	A report (conducted by an independent third party) has been provided to DNV. The report discusses bird movements over the project area and confirms that there is no migration of birds taking place in the Soma area. Also, the project employs precautionary measures to avoid having any negative impacts on the biodiversity of the area. These measures include: • Painting the tips of turbine blades with red to improve visibility • Installation of pinned barriers on the top of transmission line poles and wires • Installation of bright aviation balls on the transmission lines to make them visible • Keeping a record of dead birds found in the project area, if any Based on the bird migration report and keeping in view the precautionary measure, DNV confirms that the biodiversity of the area is not expected to be affected by the project. FAR1 is closed.

Forward Action Requests From This Verification

FAR ID	Forward action request	Response by Project Participants	DNV's assessment of response by Project Participants
FAR 1	The monitoring manual version 01 dated June 2012, specify that main and back up meter readings from the grid operator should be collected monthly and reported in spreadsheets. The difference should be verified to be within accuracy range of the meters. However the backs up meter monthly reading were not reported in the spreadsheet for the monitoring period. Instead, the main and back up meters are reported hourly in manual logbook on site, which is also considered acceptable by DNV. The monitoring manual need to be updated according to the actual practice on site.	The Monitoring Manual will be updated accordingly in order to describe GHG monitoring practice more accurately. This will be made available to the verifier at the next monitoring period	The update monitoring manual will be verified during next verification

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APPENDIX B

CURRICULA VITAE OF THE VERIFICATION TEAM MEMBERS

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. She has also experience in verification of Gold Standard wind farm projects in Turkya, together with person with direct local knowledge of the country. Hence by previous work experience, Wen Bo has gained sufficient local knowledge for GS verifications of wind farm projects in Turkya.

Her qualifications and experience in CDM demonstrate her sectoral competence in the renewable energy sector.

Patrice Massicard holds a Master degree in Mechanical Engineering and has an overall experience of around 10 years. Prior to joining DNV, having around 3 years' experience in Oil& Gas industry and 5 years' experience in mechanical industry covering equipment design. He has experience of around 2 years in DNV for the certification of oil & gas processing equipments, and 2 years' experience in the validation and verification of CDM projects.

His qualification, industrial experience and experience in CDM demonstrate him sufficient sectoral competence in the filed oil & gas and mechanical industries.

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 modelling and air pollution dispersion modelling 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 sectoral competence in energy generation from renewable energy sources.

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