SECOND PERIODIC MONITORING REPORT OF DÜZOVA 30 MW WIND POWER PROJECT, TURKEY

Project Title	Düzova 30 MW Wind Power Project, Turkey
Version	2.2
Date of Issue	06 January 2012
Project ID	GS672
Monitoring Period	01.09.2010 – 30.09.2011
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Project Owner:

ÜTOPYA ELEKTRİK ÜRETİM SANAYİ VE TİCARET A.Ş

FİNA ENERJİ
POWER GENERATION | SALES | TRADING

Content

SECTION A GENERAL PROJECT ACTIVITY

This second periodic monitoring report was prepared to report emission reductions generated by DÜZOVA 30 MW Wind Power Project in the second monitoring period as follow: **01/09/2010 – 30/09/2011**

A.1. Title of the Project Activity

"Düzova 30 MW Wind Power Project, Turkey"

A.2. Gold Standard Registration

Validation date: 05 October 2010
Registration date: 22 November 2010
Gold Standard Number: GS672

A.3. Short Description of the Project Activity

Ütopya Elektrik Üretim Sanayi ve Tic. A.Ş. (Ütopya) was granted production license for Düzova Wind Power project by Energy Market Regulatory Authority (EMRA) on May 2007 for 15 MW, and amended to 30 with the propose to generate electricity and to feed it into the public grid. First 6 turbines with 15 MW capacity was put in operation on 11/08/2009 and additional 6 turbines with 15 MW capacity was put in operation on 01/09/2010 enabling installed capacity of project to reach to 30 MW. 12 wind turbines of the project consist of GE 2.5xl model with 2.5 MW output, 100m rotor diameter and 85m hub height. By project activity fossil fuel power generation is replaced, thus the greenhouse gas emission in Turkey is reduced.

A.4. Monitoring Period

Monitoring period covered by this report: 01/09/2010 – 30/09/2011 (both days are included)

A.5. Methodology Applied to the Project Activity

The reference for Baseline and Monitoring methodology is the following;

"Consolidated baseline methodology for grid-connected electricity generation from renewable sources (ACM0002) Version 11"[1]

[1] http://cdm.unfccc.int/UserManagement/FileStorage/HGY3TLRFPQVM016WA4I7XCZD92KE5S

A.6. Status of Implementation Including Time Table for Major Project Parts

The project installation is finished according to the description in the GS-VER PDD and completely operational. The most important milestones are included in the following table:

Table 1: milestones

Date	Milestone
03/05/2007	Issuance of the of the license
13.02.2009	Initial Stakeholder Consultation in Aşağıkırıklar Village
01/06/2009	Starting Erection of Turbines
11/08/2009	Starting to the Operation
20/02/2010	Starting date for construction of additional 6 turbines
08/04/2010	Amendment of license to 30 MW.
05.10.2010	Final Validation Report
22.11.2010	Gold Standard Registration
31.08.2010	End of the first monitoring period
01/09/2010	Starting to the Operation of additional 6 turbines

A.7. Intended Deviations or Revisions to the Registered GS-VER PDD or Monitoring Plan

No deviations to the monitoring procedure documented in the registered monitoring plan occurred.

A.8. Changes since the Beginning of the Last Verification

The changes since commissioning of the project is listed under A.6 table 1.

A.9. Persons Responsible for the Preparation and Submission of the Monitoring Report

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SECTION B CARBON MONITORING REPORT

B.1 Key Monitoring Activities According to the Monitoring Plan for the Monitoring Period as Stated in A.4

B.1.1 Monitoring Equipment

Table 2: Meters that are used in WPP

Serial Number	Device	Manufacturer	Model	Date of installation and calibration
00388184	MAIN METER	ELSTER	2009	July 2009
00388185	BACK UP METER	ELSTER	2009	July 2009

B.1.2 Data concerning GHG emissions by sources of the baseline:

Table 3: GHG data

ID	Data variable	Source of data	Data unit	Measured (m), calculated (c), estimated (e)	Recording frequency	Comment
1. GEN_y	Net electricity delivered to the grid	Electricity Meter	MWh	m	Continuously	The data will be taken from the monthly meter readings, documented in the "meter reading record".

B.1.3 List of fixed default values:

Table 4: Emission Factor

Parameter	Default value	Description
EF	0.6018 tCO_2/MWh	Emission factor of the Turkish grid determined ex- ante

B.1.4 Data concerning leakage:

No leakage needs to be considered.

B.1.5 Data concerning environmental impacts:

For this paragraph we refer to the Gold Standard Sustainability Monitoring Report (Section C).

B.2 Quality Assurance and Quality Control Measures of Data

B.2.1 Roles and Responsibilities

For ÜTOPYA A.Ş, Mr. Volkan Başkaya is the plant manager responsible for monitoring issues within this project.

B.2.2 Calibration Procedures:

The calibration of the monitoring equipment was carried out according to the information provided in the GS-VER PDD. The GS-VER PDD mainly includes the following obligation for the calibration of the appropriate meters:

According to the Article 2 of the 'Communiqué regarding the Meters to be used in the Electricity Market '[2]: 'The meters to be used in the electricity market shall be compliant with the standards of Turkish Standards Institute or IEC and have obtained ***"Type and System Approval" certificate from the Ministry of Trade and Industry.'*** *Therefore, Ministry of Trade and Industry (Ministry) is responsible from control and calibration of the meters. Paragraph b) of the Article 9 of the 'Regulation of Metering and Testing of Metering Systems'[3] (Regulation) of Ministry states that: ' b) Periodic tests of meters of electricity, water, coal gas, natural gas and current and voltage transformers are done* ***every 10 years****.' Therefore periodic calibration of the meters will be done every 10 years.*

Also according to Article 67 (page 20) of this regulation, the calibration shall be done in calibration stations which have been tested and approved by Ministry of Trade and Industry. Article 10 d) of Communiqué requires the meters shall be three phase four wire and Article 64 of Regulation clearly states how calibration shall be performed for this kind of meters.

According to Article 3 of System Usage Agreement[4] done by ÜTOPYA and TEIAS; other than periodic tests, if a party alleges the meters are not working appropriately tests of the meters will be done by presence of both parties. If, after controls, it is seen that the meter is not working appropriately, the measurements of reserve meters are taken into account beginning from date both meters are reading the same (page 3, 2-c)

While all documents regarding meter quality and approvals / acceptance was presented at the first verification, during second monitoring period there was no breakdown or disturbance of the meters.

B.2.3 Data Processing and Archiving

B.2.3.1. Data Processing

[2] See, http://www.epdk.org.tr/english/regulations/electric/meters.doc, page 1

[3] See, http://www.sanayi.gov.tr/download/osgm/olcu_aletleri_muayene_yonetmelik.zip , page 2

[4] See, http://www.teias.gov.tr/sistemkullanim1.doc , page 3, 2-b)

Data handling is carried out according to the description in the GS-VER PDD. The officials from TEIAŞ perform monthly the measurements for both main and back up meters, under the control of the plant personnel of ÜTOPYA. The TEIAŞ personnel comes to the plant in the first days of the month for reading the recorded values obtained at 24:00 of the last day of the month before. The data of meter reading protocols which form the basis of net electricity figures are filled on the first day of every month to record the generation of previous month. A reading protocol is then signed by both parties. An invoice (receipt of sale) is prepared by ÜTOPYA and delivered to TEIAŞ. The monthly meter reading data is stored in web server of PMUM which is an agency of TEIAS for financial conciliations.

The fact that two reliable best practice meters are installed in a redundant manner keeps the uncertainty level of the only parameter for baseline calculation low. High data quality of this parameter is not only in the interest of the emission reduction monitoring, but paramount for the business relation between the plant operator and the electricity buyer.

Since the meters are reading electricity supplied to the system and withdrawn from the system separately, the net electricity amount supplied to the grid will be calculated by electricity supplied minus electricity withdrawn which will be taken from monthly settlement notifications.

B.2.3.2 A Backup Unit for Systematic Storage (Availability of the Manually Read Data in the PCs of the Project Developer)

As the necessary baseline emission factors are all defined ex ante (Operating and Built Margin, see baseline description), the most important information to be monitored is the amount of electricity fed into the grid by Düzova WPP. This value will be monitored continuously by redundant metering devices, which provides the data for the monthly invoicing to TEİAŞ or other buyers

Quality of data handling and storage is assured by the business processes between ÜTOPYA and TEIAS. The monthly meter reading documents are stored by ÜTOPYA and TEIAS, the settlement notification, which is issued by TEIAS and includes the meter reading data, is stored on a PMUM/TEIAS file server and accessible by ÜTOPYA via a secured website[5]. The meters themselves can always be read as plausibility check for verification.

Moreover, there are always internal reviews of the meters data which is checked by different parties. First of all, data of the meters is collected by technicians daily in written forms. The data collected daily is saved in plant manager computer and backed up and shared by headquarter of Ütopya in Istanbul. Besides the data that can be get from meters, production amount can be checked from SCADA system of GE. SCADA figures differs a bit with meter data due to internal losses.

B.2.4 Involvement of Third Parties

Support and consultancy regarding the Gold Standard VER obligations is provided by FutureCamp GmbH.

[5] http://pmum.teias.gov.tr/UzlasmaWeb/

B.2.5 Troubleshooting Procedures

As the measuring devices are sealed by TEIAŞ, ÜTOPYA cannot intervene with the devices. In case of unforeseen problems or failures of the meters or if any differences occur between primary and secondary devices TEIAŞ has to be informed for necessary maintenance and calibration. There is an agreement between ÜTOPYA and TEIAŞ that in case of problems or failures of the meters TEIAŞ reacts as fast as possible to solve the problem.

B.2.6 Special Events

There is no special event other than described in A.6.

B.3 Calculation of GHG Emission Reductions

B.3.1 Used Formulas

The total emission reductions can be calculated with the results of the below described equations. The emission reduction is equal to the baseline emissions minus project emissions and leakage emissions. Leakage emissions in this project are considered to be zero. There are no project emissions in this kind of project. The general equation is as follows:

Emission reductions are calculated as follows:

$$ER_y = BE_y - PE_y - L_y$$

(1)

Where:

ER_y = Emission reduction

BE_y = Baseline emissions

PE_y = Project emissions

L_y = Leakage

y = Refers to a given period

The electricity meters are measuring two parameters: The electricity supplied to the grid (EG_{export}) and the electricity consumption from the grid (EG_{import}). To achieve the net amount of supplied electricity, the difference has to be calculated:

$$GEN_y = EG_{export} - EG_{import}$$

(2)

Where:

GEN_y = Net electricity supplied to the Grid in MWh (ID 1)

EG_{export} = Electricity supplied to the Grid in MWh

EG_{import} = Electricity consumption from the Grid in MWh

According to the applied methodology version the emission reduction are the baseline emissions calculated as the electricity supplied to the grid multiplied by the grid emission factor.

$$BE_y = GEN_y * EF$$

(3)

Where:

BE_y = Baseline emissions in tonnes CO_2e

EF = Grid emission factor for the electricity displaced due to the project activity during the year y [tCO_2e/MWh].

GEN_y = Net electricity supplied to the Grid in MWh (ID 1)

y = Refers to a given period

B.3.2. GHG Emission Reductions

B.3.2.1 Baseline emissions

The baseline emissions for the project activity according to the PDD are included in the following table. The values of second and third column are taken from monthly meter reading protocol that was signed by TEİAŞ officer and plant manager. For cross check of these data, monthly meter reading protocol and TEİAŞ webpage will be provided to the verifier.

Table 5: Baseline emission amount in the period of 01 September 2010 – 30 September 2011:

Months	Electricity supplied to the grid (MWh) (1)	Electricity consumption from the grid (MWh) (2)	Net electricity supplied to the grid[MWh] (3) =(1)-(2)	Baseline emission (acc. formulae 3): (ER = GEN * EF) [t CO2e]
Sep-10	7,259.75	17.91	7,241.84	4,358.14
Oct-10	7,755.34	21.91	7,733.43	4,653.98
Nov-10	4,817.07	36.94	4,780.13	2,876.68
Dec-10	5,906.09	32.59	5,873.50	3,534.67
Sum 2010	25,738.25	109.35	25,628.90	15,423.47
Jan-11	8,115.15	11.62	8,103.53	4,876.70
Feb-11	10,274.62	7.64	10,266.98	6,178.67
Mar-11	8,892.55	18.40	8,874.15	5,340.46
Apr-11	10,358.99	9.68	10,349.31	6,228.21
May-11	7,582.52	14.59	7,567.93	4,554.38
Jun-11	6,273.93	18.98	6,254.95	3,764.23
Jul-11	6,858.47	26.72	6,831.75	4,111.35
Aug-11	13,475.38	3.23	13,472.15	8,107.54
Sep-11	11,118.46	7.48	11.110,98	6,686.59
Sum 2011	82,920.07	118.34	82,831.73	49,848.13
Total Sum 2010-2011	**108,688.32**	**227.69**	**108,460.63**	**65,271.60**

B.3.2.2. Summary of Baseline emissions

Applying the above equation to the project data given in table for calculation, baseline emissions in 2010 and 2011 are as below. as also presented in 5th column of the table:

Baseline Emission in 2010:

$BE_{sep'10\text{-}Dec'10}$ = 25,628 [MWh] * **0.6018** [tCO_2/MWh] = 15,423 **tCO_2**[6]

Baseline Emission in 2011:

$BE_{Jan'11\text{-}Sep'11}$ = 82,831 [MWh] * **0.6018** [tCO_2/MWh] = 49,848 **tCO_2**[7]

B.3.2.3. Project Emissions

There is no project emission in this kind of project. However for emergency cases, there is a diesel generator to be used. For the monitoring period and applied methodology, diesel generator is not considered as project emissions.

B.3.2.4. Leakage

Leakage is considered to be negligible

B.3.2.5. Summary of the emissions reductions during the monitoring period

According to the general equation

$$\mathbf{ER_y = BE_y = EF * GEN_y}$$

Emission reduction = Baseline emissions = Emission Factor * Supplied Net Electricity

Emission reductions generated during the third monitoring period (01 September 2010 to 30 September 2011)	**65,271 tCO_2e**

Thereof, the following emission reductions were generated in 2010 and 2011:

Emission reductions generated in 2010 (01 September 2010 to 31 December 2010)	**15,423 tCO_2e**
Emission reductions generated in 2011 (1 January 2011 to 30 September 2011)	**49,848 tCO_2e**

[6] The calculation is carried out in a separate Excel file, which considers the values with more decimal places than presented here. The exact calculation is available for verification.

[7] The calculation is carried out in a separate Excel file, which considers the values with more decimal places than presented here. The exact calculation is available for verification.

SECTION C SUSTAINABILITY MONITORING REPORT

According to the requirements of Gold Standard Version 2.0, the project activity must be assessed against a matrix of sustainable development indicators. Project activity's contribution to sustainable development is based on indicators of;

- environmental sustainability,
- social sustainability & development
- economic & technological development

The indicators that have to be monitored is defined in the Gold Standard Passport of the Düzova 30 MW WPP under a monitoring plan.

C.1. Sustainable Development Indicators that have to be monitored

According to the Gold Standard Passport of the Düzova 30 MW WPP, eight indicators were added to the monitoring plan.

C.1.1: Air Quality

C.1.1.a: Monitoring Table from Passport of Düzova 30 MW WPP

No		1
Indicator		Air Quality
Mitigation measure		No mitigation measure is required.
Chosen parameter		Amount of avoided NOx, CO, NMVOC emissions
Current situation of parameter		According to latest official data, NOx, CO and NMVOC emissions due to electricity generation in 2007 are: 1.102 tons/GWh, 0.146 tons/GWh and 0.037 tons/GWh respectively[8].
Estimation of baseline situation of parameter		No quantitative information is available for projection of described emission rates. Continuation of current emission rates is estimated in case of baseline situation.
Future target for parameter		Reductions of proportionate amount in described emissions during operational life of the project activity. When the minimum electricity generation amount (118.6 GWh/y) is chosen for the project activity then expected annual emission avoidances with project implementation becomes 130.7 tons, 17.3 and 4.4 tons respectively for each parameter.
Way of monitoring	How	No quantitative monitoring with respect to the different pollutants. The reporting of the amount of avoided electricity generation from the Turkish generation mix shall be sufficient to demonstrate that associated pollutants are accordingly avoided.
	When	Once a year during crediting period.
	By who	Measurement technicians of ÜTOPYA as stated B.7.2 part of the PDD

C.1.1.b: Monitoring of Air Quality Indicator

No	1

[8] The unit emissions are calculated as dividing emission amount for each parameter with net electricity amount. (For emission amount see TUIK: http://www.tuik.gov.tr/PreHaberBultenleri.do?id=4078; For net electricity generation in 2007 see TEİAŞ: http://www.teias.gov.tr/ist2007/30(84-07).xls. Calculation is further substantiated in Monitoring Plan of CM Calculation Worksheet, which is available to DOE.

Indicator	Air Quality
Remarks on the monitoring process of the parameter	Monitoring of the parameter is based on the data available from TUİK and electricity generation of the plant.
Current situation of parameter	According to the current data available from TUIK which based on on the data of 2009 and electricity amount produced (71.7 GWh) by Düzova WPP, the amount of avoided emissions are as below: NOx= 173.08 CO= 9.83 NMVOC=2,48
Other Data Sources	No other data sources then TUIK official data and electricity generation of the plant.
Scoring of the indicator compared to Baseline	+

C.1.2: Water Quality and Quantity

C.1.2.a: Monitoring Table from Passport of Düzova 30 MW WPP

No		2
Indicator		Water Quality and Quantity
Mitigation measure		Wastewater produced by workers during construction and operation will not be released to the environment but will be collected in an impermeable septic tank, which will be constructed on the site. Later they will be periodically transferred to the wastewater treatment plant of Yenikent Municipality by sewage truck
Chosen parameter		Amount of Wastewater discharged to the environment
Current situation of parameter		No waste water discharge to the environment in the project area.
Estimation of baseline situation of parameter		Continuation of current situation
Future target for parameter		Continuation of current situation: No direct discharge of waste water to the environment due to project activity.
Way of monitoring	How	Records of transfer of waste water by sewage truck and statement of Village Mayor (Muhtar).
	When	On an annual base
	By who	Health & Safety technicians of ÜTOPYA as stated B.7.2 part of the PDD

C.1.2.b: Monitoring of Water Quality and Quantity Indicator

No	2
Indicator	Water Quality and Quantity
Remarks on the monitoring process	Monitoring process was handled by statement from Mayor of the village
Current situation of parameter	Wastewater produced by workers during construction and operation is not released to the environment but collected in an impermeable septic tank and periodically transferred to the wastewater treatment plant of Yenikent Municipality by sewage truck.
Other Data Sources	No other sources of data then statement of the Mayor of the village.
Scoring of the indicator compared to Baseline	0

C.1.3: Soil Condition

C.1.3.a: Monitoring Table from Passport of Düzova 30 MW WPP

No		3
Indicator		Soil condition
Mitigation measure		1) Rehabilitation of the land which were used for construction of turbines will be implemented after construction. 2) Any waste oil used for cooling of transformer or maintenance work will be collected in leak-proof containers and removed to a licensed recycling facility.
Chosen parameter		Land utilization in the Project area after completion of project construction.
Current situation of parameter		Land in the project area is used for pasture
Estimation of baseline situation of parameter		Continuation of current situation
Future target for parameter		Other than spots of project facilities, all surrounding lands in the project area will be used for pasture again.
Way of monitoring	How	Photos of the project area before and after construction and Statements of Mayor of the village (Muhtar) indicating the post construction condition of project area
	When	Once only after completion of construction (during first and second monitoring periods).
	By who	Health & Safety technician of ÜTOPYA as stated B.7.2 part of the PDD
Chosen parameter		Amount of waste oil spilled to the environment
Current situation of parameter		No waste oil as the area is used for pasture.
Estimation of baseline situation of parameter		Continuation of current situation
Future target for parameter		No spilling of waste oil used for operation of the project activity.
Way of monitoring	How	Photos of leak-proof oil tanks and receipt for transfer to recycling facility.
	When	On annual base
	By who	Health & Safety technician of ÜTOPYA as stated B.7.2 part of the PDD

C.1.3.b:Monitoring of Soil Condition Indicator

No	3
Indicator	Soil Condition
Remarks on the monitoring process	Monitoring process was handled by photos of the turbine location and the receipt of waste oil transfers.
Current situation of parameters	a) Rehabilitation of the land which were used for construction of turbines was implemented after construction. b) Any waste oil used for cooling of transformer or maintenance work was collected in leak-proof containers and removed to a licensed recycling facility.
Other Data Sources	No other sources of data then statement of the Mayor of the village.
Scoring of the indicator compared to Baseline	0

C.1.4: Other Pollutants

C.1.4.a: Monitoring Table from Passport of Düzova 30 MW WPP

No		4
Indicator		Other pollutants
Mitigation measure		*1) Dust emissions:* Digging materials will be stored in site area near to each hole drilled for base of towers for later usage for landscaping. ÜTOPYA pledged to comply with regulation related with Handling Digging Materials Regulation to minimize the dust emission caused by construction works. According to this regulation, digging materials will be loaded, transferred and unloaded with minimum winnowing. Then they will be shaded with bale cloths to prevent dispersing.No mitigation measures are required *2) Building Rubbish:* Both during the construction and operation phase, all rubbish and waste caused by the workers and machines will be collected in separate closed bins (plastic, metals etc.) and then they will be collected by Yenikent Municipality. Non-recyclable waste will be collected in impermeable closed bins.
Chosen parameter		Level of dust emissions during construction of the project activity.
Current situation of parameter		There is dust emission from close high way and other roads as well as natural dust emission by wind.
Estimation of baseline situation of parameter		Continuation of current situation
Future target for parameter		With implementation of above described mitigation measures the dust emission due to construction of the power plant will be minimized and neighbouring residents will not be disturbed.
Way of monitoring	How	Photos of the project area during construction and statement of Mayor of village (Muhtar).
	When	Once after completion of construction (During first and second monitoring periods)
	By who	Health & Safety technician of ÜTOPYA as stated B.7.2 part of the PDD
Chosen parameter		Building rubbish during construction and operation of the project activity.
Current situation of parameter		There is rubbish around the project area because of usual activities of farmers.
Estimation of baseline situation of parameter		Continuation of current situation
Future target for parameter		There will be no additional rubbish caused by project activity
Way of monitoring	How	By official letter from local municipality (Yeniköy) indicating regular collection of building rubbish from Düzova PP and transfer to central collection area.
	When	On an annual base
	By who	Health & Safety technician of ÜTOPYA as stated B.7.2 part of the PDD
Chosen parameter		Noise during construction and operation of the project activity
Current situation of parameter		Natural noise from trees, wind, close railway and daily

		activities
Estimation of baseline situation of parameter		Continuation of current situation
Future target for parameter		Noise from construction and rotating turbines shall have negligible impact to the closest inhabited house and shall be below legal limits (i.e. 60 dBA during day time and 50 dBA during night time)
Way of monitoring	How	During construction: Since calculated noise level during construction is low than allowed level and construction period of wind power plants are short comparing with other kind of technologies such as coal and hydro, only statement of Muhtar shall be enough as evidence of negligible impact of noise during construction. During Operation: Qualified equipped measurement (after installation and operation of whole turbines) at the nearest inhabited house and statement of the inhabitants.
	When	Only during first and second monitoring periods.
	By who	Health & Safety technicians of ÜTOPYA_as stated B.7.2 part of the PDD

C.1.4.b: Monitoring of Other Pollutants Indicator

No	**4**
Indicator	**Other Pollutants**
Remarks on the monitoring process of the parameters	Monitoring process was handled by; a) Photos of the project area during construction and statement of Mayor of village. b) Official letter from local municipality (Yeniköy) indicating regular collection of building rubbish from Düzova PP and transfer to central collection area c) Statement of Mayor of the village and noise measurement.
Current situation of parameter	a) Digging materials was stored in site area near to each hole drilled for base of towers for later usage for landscaping. According to Handling Digging Materials Regulation, digging materials was loaded, transferred and unloaded with minimum winnowing. Then they was shaded with bale cloths to prevent dispersing. b) Rubbish caused by construction was collected and transferred to Municipality waste collection area. c) There is no disturbance of local people because of the noise from power plant.
Other Data Sources	No other sources of data then photos of the plant, statement of the Municipality, statement of local resident and noise measurement.
Scoring of the indicator compared to Baseline	0

C.1.5: Biodiversity

C.1.5.a: Monitoring Table from Passport of Düzova 30 MW WPP

No	5
Indicator	Biodiversity
Mitigation measure	An expert (ornitolog) study on impact of the project to the birds will be prepared and necessary mitigation measures, as a result of the study, will be implemented

		by project owner.
Chosen parameter		Number of bird strikes to the turbines
Current situation of parameter		Not applicable as there was no turbine in the project area before the project.
Estimation of baseline situation of parameter		Not Aplicable
Future target for parameter		None.
Way of monitoring	How	Monitoring will be based on the results of the study and suggestion of the expert.
	When	Study Report including the initial findings and results will be submitted during second monitoring period. The frequency of monitoring will be based on the findings and suggestion of the study.
	By who	In case of periodic monitoring suggested by the result of the study, project owner will assign a technician for monitoring.

C.1.5.b. Monitoring of Biodiversity Indicator

No	5
Indicator	Biodiversity
Remarks on the monitoring process of the parameters	Monitoring process was handled by; Ornithology report prepared by Dr. Riyat Gül
Current situation of parameter	No impact of the project on migrating and local birds
Other Data Sources	No other sources of data than ornithology report.
Scoring of the indicator compared to Baseline	+

C.1.6: Quality of Employment

C.1.6.a: Monitoring Table from Passport of Düzova 30 MW WPP

No		6
Indicator		Quality of employment
Mitigation measure		Employees will be trained to increase their health and safety skills and occupational. There will be strict control to restrict access to turbines.
Chosen parameter		Health & Safety Trainings
Current situation of parameter		0 (No similar project in the project area)
Estimation of baseline situation of parameter		Continuation of current situation
Future target for parameter		All employees will be trained to have necessary Health & Safety trainings and correspondent certificates.
Way of monitoring	How	Documented with the help of training certificates
	When	On an annual base.
	By who	Health & Safety technician of ÜTOPYA as stated B.7.2 part of the PDD
Chosen parameter		Operation and Maintenance Trainings
Current situation of parameter		0

Estimation of baseline situation of parameter		Continuation of current situation
Future target for parameter		3 (as indicated in B.7.2 part of the PDD) for the first verification period. For later periods only any changes for this parameter will be reported.
Way of monitoring	How	Certificates of Operation and Maintenance related trainings
	When	On an annual base.
	By who	Health & Safety technician of ÜTOPYA as stated B.7.2 part of the PDD

C.1.6.b. Monitoring of Quality of Employment Indicator

No	6
Indicator	Quality of employment
Remarks on the monitoring process of the parameters	Monitoring process was handled by; a)Training certificates b)Certificates of Operation and Maintenance related trainings
Current situation of parameter	a) Employees were trained to increase their health and safety and occupational skills.
Other Data Sources	No other sources of data than training certificates
Scoring of the indicator compared to Baseline	+

C.1.6.c: Training certificates

Description of Training	**Administered By**	**Attendee**	**Duration**	**Certificate**	**Date of Training**
Health and safety at work	MESS(Turkish Employers' Association of Metal Industries)	Ahmet Şimşir	3 days	MESS Health and Safety at Work Certificate	October 2010
Health and safety at work	MESS	Mahmut Odabaşı	3 days	MESS Health and Safety at Work Certificate	October 2010
Health and safety at work	MESS	Halil İbrahim Ertuğrul	3 days	MESS Health and Safety at Work Certificate	October 2010
Health and safety at work	MESS	Mehmet Kurunaz	3 days	MESS Health and Safety at Work Certificate	October 2010
Health and safety at work	MESS	Levent Ayman	3 days	MESS Health and Safety at Work Certificate	October 2010
Health and safety at work	MESS	Ahmet Gülbezen	3 days	MESS Health and Safety at Work Certificate	October 2010

Fire-fighting training		Mahmut Odabaşı, Ahmet Şimşir, İbrahim Ertuğrul, Kazım Akçay, Mahmet Kurunaz,Levent Ayman, Ahmet Gülbezen, Mert Eraslan	1 day		June 2011

C.1.7: Quantitative employment and income generation

C.1.7.a: Monitoring Table from Passport of Düzova 30 MW WPP

No		6
Indicator		Quantitative employment and income generation
Mitigation measure		No mitigation measures are required.
Chosen parameter		Number of employment
Current situation of parameter		No new similar employment due to activities in the project area
Estimation of baseline situation of parameter		Continuation of the current situation
Future target for parameter		7 (as indicated in B.7.2 part of the PDD). ÜTOPYA will seek to employ as much as staff from local people and target to have at least 3 non-technical employers (safety guards) from close settlements (ie. Aşağıkırıklar village and Bergama district etc). For the second and later verification periods, only any changes for this parameter will be reported.
Way of monitoring	How	Employment contracts
	When	On an annual base
	By who	Measurement technicians of ÜTOPYA as stated B.7.2 part of the PDD

C.1.7.b:Monitoring of Quantitative employment and income generation

No	6
Indicator	Quantitative employment and income generation
Remarks on the monitoring process of the parameters	Monitoring process was handled by; a)Employment Contract
Current situation of parameter	All of employees working at plant are from local region as indicated in the table below.
Other Data Sources	No other sources of data than employment contract
Scoring of the indicator compared to Baseline	+

C.1.7.c: Employed Staff

Employment Position	**Description of the Position**	**Number of employee**	**Employment; Local or not?**
Plant Manager	Responsible from all kind of operational activities as well as maintenance and management. Reports to head office in Istanbul.	1	Local
Electric Technicians	Work on alternating shifts. Apart from routine controls, intervene to electrical	3	Local

	breakdowns.		
Security Guards	Work on alternating shifts, maintain security of plant.	3	Local

C.1.8: Balance of Payment and Investments

C.1.8.a: Monitoring Table from Passport of Düzova 30 MW WPP

No		8
Indicator		Balance of payment and investments
Mitigation measure		No mitigation measures are required.
Chosen parameter		Amount of avoided natural gas to be imported
Current situation of parameter		According to TEİAŞ; 21,637,605 thousand m^3 natural gas is consumed for electricity generation in 2008. In 2008 Electricity generation amount from natural gas is 98,685.3 GWh and share of natural gas in the electricity mix is 49.3%. Since Turkey imports 97% of consumed natural gas, it is calculated that for 1 GWh electricity generation 105,068 m3 natural gas is imported in 2008.
Estimation of baseline situation of parameter		According to the projections of TEİAŞ (See Table-4 in B.4 part of the PDD), dependency to natural gas for electricity generation will remain high till the end of 2017 with 38.8% share of the electricity mix in this year.
Future target for parameter		Avoidance of around 12.46 million m3 natural gas import each year by generation of project activity[9].
Way of monitoring	How	TEİAŞ statistics for natural gas share in the electricity mix shall help to demonstrate the high import dependency. No further quantitative monitoring is planned.
	When	On an annual base
	By who	Measurement technicians of ÜTOPYA as stated B.7.2 part of the PDD

C.1.8.b: Monitoring of Balance of Payment and Investments

No	8
Indicator	Balance of Payment and investments
Remarks on the monitoring process of the parameters	The parameter is based on the data from TEİAŞ for 2009
Current situation of parameter	According to TEİAŞ; 20,978,040 thousand m^3 natural gas is consumed for electricity generation in 2009. In 2009 Electricity generation amount from natural gas is 96,094.7 GWh and share of natural gas in the electricity mix is 49.3%. Since Turkey imports 97% of consumed natural gas, it is calculated that for 1 GWh electricity generation 104,396 m3 natural gas is imported in 2009. By project activity, avoidance of around 7.487 million m^3 natural gas import each year by generation of project activity[10].
Other Data Sources	No other sources of data than TEİAŞ database.
Scoring of the indicator compared to Baseline	+

[9] See TEİAŞ statistics for 2008: http://www.teias.gov.tr/istatistik2008/index.htm.

[10] See TEİAŞ statistics for 2009: http://www.teias.gov.tr/istatistik2009/index.htm.

C.1.8: Technology transfer and technological self reliance

C.1.8.a: Monitoring Table from Passport of Düzova 30 MW WPP

No		9
Indicator		Technology transfer and technological self-reliance
Mitigation measure		No mitigation measures are required.
Chosen parameter		Total number of employee having operation and maintenance certificates
Current situation of parameter		0 (No similar activities in the project)
Estimation of baseline situation of parameter		Continuation of current situation
Future target for parameter		Project will have positive impact on technological transfer and self-reliance by training employees.
Way of monitoring	How	Number of trained employees on operation and maintenance with related certificates
	When	On an annual base
	By who	Measurement technicians of ÜTOPYA as stated B.7.2 part of the PDD

C.1.8.b: Monitoring of Technology transfer and technological self reliance

No	9
Indicator	Technology transfer and technological self-reliance
Remarks on the monitoring process of the parameters	Monitoring of the parameter is handled by total number of employee having operation and maintenance certificates
Current situation of parameter	Project had positive impact on technological transfer and self-reliance as shown by training of employees.
Other Data Sources	No other sources of data than training certificates.
Scoring of the indicator compared to Baseline	+

SECTION D OPEN ISSUES FROM PREVIOUS VERIFICATION

There were two Forward Action Requests (FAR) from extension review by Gold Standard and one FAR from initial verification that took place in 2011 which were agreed by Project participants to be discussed in second verification:

FARs issued by Gold Standard:

- **Forward Action Request 1:** The DOE shall please ensure to interview stakeholders that might have been affected by the design change during the second periodic verification.

RESPOND: During second periodic verification on site visit, a meeting will be organized so that DOE can question local people on relevant topics.

- **Forward Action Request 2**: According to the PIF, a bird impact study shall be conducted by an ornithology. The **PP** shall please ensure that this is done prior to the second periodic verification of the project based on its new capacity. The **DOE** shall please verify the findings from this study.

RESPOND: The ornithology report was prepared by Dr. Riyat Gül with findings that there

is no negative impact of the project on migrating and local birds.

FARs issued by DOE:

- **FAR1-** The capacity addition does not affect the first monitoring period which is defined as 11/08/2009 to 31/08/2010. This capacity addition has been informed to GS by PP however no guideline is provided on this. The capacity addition shall be assess in the second monitoring period which is going to be affected since the generated electricity will be measured with the same measurement equipment.

RESPOND: The capacity of the Project was extended to 30 MW with 15 MW addition as indicated in the Project description. All information will be provided to DOE on meeting second periodic verification.

Annex 1: Definitions and Acronyms

ACM	: Approved Consolidated Methodology
DOE	: Designated Operational Entity
GHG	: Greenhouse Gases
GS	: Gold Standard
PDD	: Project Design Document
TEIAŞ	: Turkish Electricity Transmission Company
TUİK	: Turkish Statistical Institution
VER	: Verified Emission Reductions
EPDK	: Turkish Electricity Market Regulation Agency
PMUM	: Market Financial Conciliation Centre