KARACABEY WIND POWER PROJECT

Document Prepared by Life İklim ve Enerji Ltd. Şti.

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Monitoring Period	01-April-2021 to 28-February-2023 (both days are included)
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1 PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

The project of Yalova Rüzgar Enerjisinden Elektrik Üretim Anonim Şirketi (hereafter referred to as "Yalova"), Karacabey Wind Power Project (hereafter referred to as the "Project" or "Karacabey WPP"), involves installation and operation of 33.3 MWm/27.9 MWe[1] large-scale wind power plant by Energy Market Regulatory Authority (EMRA) and this license was issued on 12-November-2015.

The project activity contributed further dissemination of wind energy and extension of national power generation. Construction work started in 01-April-2016 and operation of the plant started on 21-October-2016 and have an operational life of 49 years[2]. The 1st phased implementation of the 6 wind turbines was on 21-October-2016, 2nd phased implementation of the 7th - 10th wind turbines was on 07-December-2016. The 3rd and last phased implementation 11th and 12th wind turbine were on 16-March-2017[3].

The project consists of 12 wind turbines. The key parameters about the technical design of the selected model Nordex N100 turbines are listed below in **Error! Reference source not found.**.

Error! Reference source not found.. Technical specifications of Nordex N100 Turbines[4]

Specifications	NORDEX N100/2.5
Rated Power (kW)	2500
Rotor Diameter (m)	99.8
Num. of Blades	3
Swept Area (m^2)	7823

[1] See: Karacabey Generation License

[2] See: Karacabey Generation License for 12 turbines

[3] See: Provisional Acceptance Certificates

[4] See: Technical Description – Nordex N100/2500

The generated energy will be fed to the national grid. An estimated electricity net generation of 101,900 MWh per year by the efficient utilization of the available wind energy by project activity will replace the grid electricity, which is constituted of different fuel sources, mainly fossil fuels. The electricity produced by project activity will result in a total emission reduction of 56,264 tonnes of CO_2e/year. The total emission reduction by the project activity is estimated to be 562,640 tonnes of CO_2e for the first crediting period, which is 21-October-2016 to 20-October-2026. Moreover, project activity will contribute further dissemination of wind energy and extension of national power generation.

The third monitoring period covers the period from 01-April-2021 to 28-February-2023 (both days included). Generated net electricity achieved during the third monitoring period is 195,948.56 MWh, and total actual emission reduction is achieved as 108,181 tonnes of CO_2e for the third monitoring period.

Audit history of the project is given for the project lifetime is given below.

Audit Type	Period	Program	VVB Name	Number of years
Validation	22- February-2017	VCS	Rina Services S.p.A	N/A
Verification	21-October-2016 – 30-September-2018	VCS	Rina Services S.p.A	1 year 11 months
Verification	01-October-2018 – 31-March-2021	VCS	Rina Services S.p.A	2 years 5 months
Verification	01-April-2021 – 28-February-2023	VCS	LGAI Technological Center S.A.(Applus+ Certification)	1 year 9 months
Total	21-October-2016 – 28-February-2023	N/A	N/A	6 years and 4 months

1.2 Sectoral Scope and Project Type

According to guidance from VCS, Karacabey WPP falls under sectoral scope no. 1 "Energy Industries (renewable/non-renewable)".1 The project type is Renewable Energy. More specifically, it is a wind power project. Karacabey WPP is not a grouped project if referring to the relevant VCS rules. Referring to CDM rules it is also neither a project bundle nor a debundled component of a large-scale project activity.

1.3 Project Proponent

Organization name	Yalova Rüzgar Enerjisinden Elektrik Üretim Anonim Şirketi
Contact person	Çağdaş Karakurt Ülkebay
Title	Project Manager
Address	Koru Mahallesi Akmeşe Sokak No:4 06810 Çankaya Ankara/Turkey
Telephone	+90 312 466 60 70
Email	info@artienerji.com.tr

1.4 Other Entities Involved in the Project

Organization name	Life İklim ve Enerji Ltd. Şti.
Role in the Project	Project Representative
Contact person	Doğukan Arıkan
Title	Carbon Consultant
Address	Oğuzlar Mahallesi, 1377. Sk. No:19, 06520 Çankaya/Ankara/ TURKEY
Telephone	+90 312 481 2142
Email	dogukan.arikan@lifeenerji.com

1.5 Project Start Date

The Project was commissioned and started to feed energy to the grid on 21-October-2016. This is the date on which the project started to produce emission reductions. This is the official start date of the project.

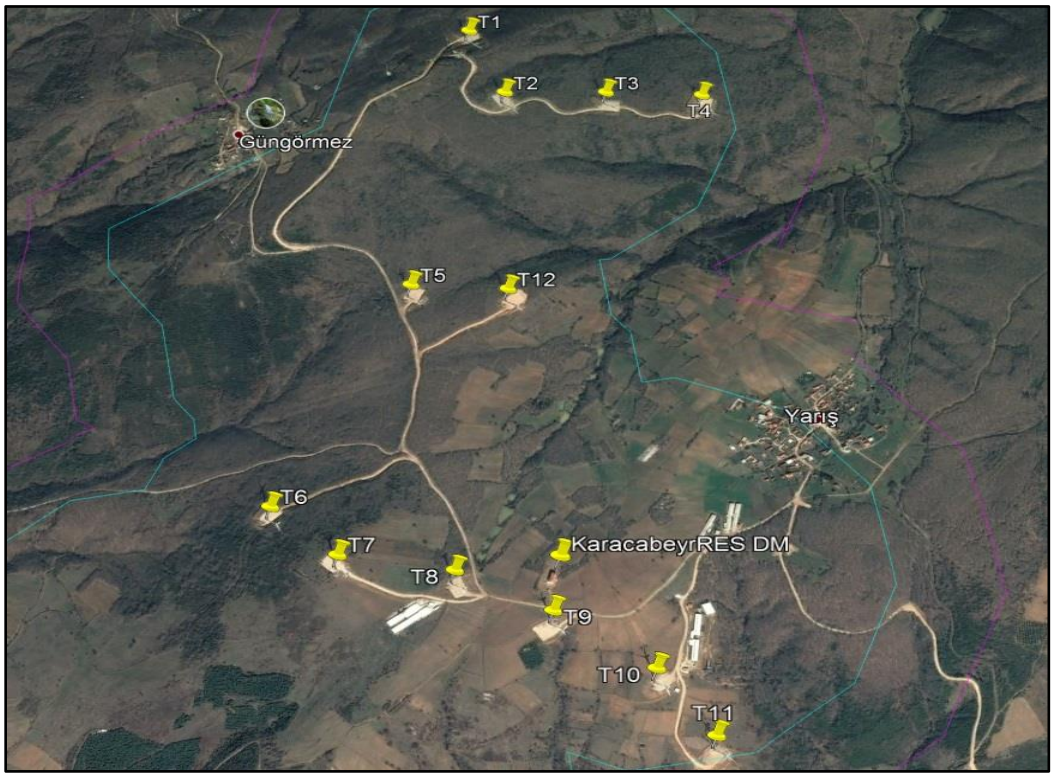
1.6 Project Crediting Period

The start date of the crediting period is 21-October-2016. Project started operating on 21-October-2016, therefore starting date of first crediting and monitoring period were taken as 21-October-2016.

In accordance with VCS rules, the project crediting period is 10 years, and it will be renewed twice. First crediting period is 21-October-2016 to 20-October-2026 (both days included).

1.7 Project Location

The project area is in Marmara region, Bursa province. The project is located in Karacabey and Kıranlar Village; Pelitdüzü, Çalbayır, Çataltepe. Moreover, the site of the project is located at Kıranlar Village and is situated on several hills, between Pelitdüzü, Çalbayır, Çataltepe. The closest settlement is Yarış Village by 743 m[5]. The project location is taken from the accepted licence. The Project description was prepared with the pre-license. Because of the technical problem and legislation, these coordinates of the project is different than the project description.



Map 1: Location of Karacabey Wind Power Plant Project[6]

Table 1: Geographical coordinates of the wind turbines of the project activity[7]

Wind Turbine No.	Latitude (N)	Longitude (E)
1	40°19'3.59"	28°21'28.91"
2	40°18'54.76"	28°21'35.09"

[5] See: According to the distance between T10 and Yarış Village – Deutsche Wind Guard Consulting, Wind Assessment Report

[6] See: Deutsche Wind Guard Consulting, Wind Assessment Report - page 7

[7] See: Generation License

3	40°18'56.26"	28°21'48.25"
4	40°18'57.28"	28°22'1.02"
5	40°18'28.59"	28°21'26.94"
6	40°18'1.00"	28°21'14.95"
7	40°17'56.02"	28°21'24.38"
8	40°17'55.29"	28°21'37.92"
9	40°17'51.67"	28°21'49.83"
10	40°17'46.33"	28°22'2.31"
11	40°17'39.74"	28°22'9.79"
12	40°18'29.03"	28°21'39.06"

1.8 Title and Reference of Methodology

Title: Grid Connected Electricity Generation from Renewable Sources

Reference: ACM0002 (Version 17.0)

Version 17 of 'ACM0002: Large-scale Consolidated baseline methodology for grid-connected electricity generation from renewable sources' is applied as baseline and monitoring methodology to the project activity.

For the determination of the baseline, the official methodology ACM0002 version 17, "Large-scale Consolidated baseline methodology for grid-connected electricity generation from renewable sources" is applied, using conservative options and data as presented in the following section.

This methodology refers to five tools, which are:

1. TOOL07 - Tool to calculate the emission factor for an electricity system (Version 05.0)[8]
2. TOOL01 - Tool for the demonstration and assessment of additionality (Version 07.0.0)[9]

[8] See: https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v5.0.pdf

[9] See: http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf

3. TOOL02 - Combined tool to identify the baseline scenario and demonstrate additionality (Version 06.0)[10]

4. TOOL03 - Tool to calculate project or leakage CO2 emissions from fossil fuel combustion (Version 02.0)[11]

5. TOOL10 - Tool to determine the remaining lifetime of the equipment (Version 01.)[12]

The first tool *(Tool to calculate the emission factor for an electricity system (Version 06.0))* is used for baseline calculation and second tool *(Tool for the demonstration and assessment of additionality (Version 07.0.0)* is used for additionality assessment. As third tool *(Combined tool to identify the baseline scenario and demonstrate additionality (Version 06.0))* is the combination of the first and second tool, it is not used. Since no project emission or leakage calculation is required for wind power project, fourth tool (*Tool to calculate project or leakage CO2 emissions from fossil fuel combustion (Version 02.0))* is not used. To determine the remaining lifetime of the equipment, fifth tool *(Tool to determine the remaining lifetime of the equipment (Version 01))* is used.

Since the project activity is a wind power plant, the respective sectoral scope is scope 1: "Energy Industry – Renewable/Non-renewable Sources". Project participant hereby confirms that this is not a grouped project.

1.9 Participation under other GHG Programs

Karacabey WPP does not participate in any GHG program other than the VCS.

1.10 Other Forms of Credit and Supply Chain (Scope 3) Emissions

No GHG related environmental credits are applied to the Turkish power sector. Moreover, the project is not included in an ETS or other GHG trading mechanism. Since an ETS is not implemented in Turkey, an emission reduction cap has not been enforced for any sector.

The project will not generate other form of environmental credits.

Karacabey WPP project is generating renewable energy by using wind power and supply to the national grid. There is no product other than the electricity generated by the plant. Therefore, the project cannot affect Scope 3 emissions.

[10] See: https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-02-v6.0.pdf

[11] See: http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-03-v2.pdf

[12] See: http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-10-v1.pdf

1.11 Sustainable Development Contributions

The project is expected to contribute 2 SDGs which are SDG 13 and 7 for the first crediting period.

SDG 13 Climate Change: The project produces clean renewable energy by diminishing CO2 emissions. Therefore, it contributes SDG Target 13.3 "Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning" and Indicator 13.2.2.

SDG 7 Energy: The project contributes SDG Target 7.2 "By 2030, increase substantially the share of renewable energy in the global energy mix" and Indicator 7.2.1 by the utilization of hydro power as a renewable energy source.

The project helps Turkey to stimulate and commercialize the use of grid connected renewable energy technologies and markets. The specific economic, social and technological benefits are:

- Reducing Turkeys expanding energy deficit;
- Diversification of Turkish electricity generation mix and reduction of import dependency;
- Creation of local employment and income during construction and operation of WPP (directly as well as indirectly via contracts with local providers for supply of construction material);

This project is located on Marmara region, Bursa province, Turkey. Electricity generated by the Karacabey WPP is fed into the national electricity grid, displacing energy that would otherwise be generated by fossil fuels. The project facilitated 195,949 MWh renewable electricity generation, 108,181 tCO_2e during its third monitoring period.

Table 2: Sustainable Development Contributions

Row number	SDG Target	SDG Indicator	Net Impact on SDG Indicator	Current Project Contributions	Contributions Over Project Lifetime
1)	13.0	Tonnes of greenhouse gas emissions avoided or removed	Electricity generation from Wind Power Plant to decrease CO_2 emission	108,181 tCO_2 emission reduction during this MP	347,848 tCO2 emission reduction over the project lifetime (21 October-2016 to 28-February-2023)

2)	7.2	Renewable energy electricity generation in the national grid	Implemented activities to increase	195,948.56 MWh during this MP	630,055.20 MWh over the project lifetime (21 October-2016 to 28-February-2023)

2 SAFEGUARDS

2.1 No Net Harm

No negative environmental and socio-economic impacts have been observed/recorded for this project. Detailed information of Karacabey WPP's social and environmental performance can be gained via Sustainable Development chapter. According to the relevant Environmental Impact Assessment Regulation for Karacabey WPP, an Environmental Impact Assessment was not required.

Based on interviews with local stakeholders and feedback from stakeholders during the site visit, mitigation measure against potentially negative indicators was discussed under this section. Indicators to be discussed under this section are Dust, Noise, Status of Roads, Water Quality and Quantity, Livelihood of the Poor and Biodiversity.

Monitoring way of dust, noise, status of the roads and livelihood of the poor parameters is to interview with locals according to the registered PDD. During the remote site visit, discussed with the mukhtar (head of the village), local people and Karacabey WPP personnel about these parameters and no negative feedback was received regarding these indicators for the third monitoring period. So, these indicators did not have a negative impact on the Karacabey Wind Power Project.

2.2 Local Stakeholder Consultation

Stakeholder engagement procedure was conducted with the local stakeholders on 05-August-2023.

Logbook is available for comments of local stakeholders. What's more, thanks to the Grievance Mechanism, local stakeholders have a chance to submit their requests and complaints to the project owner about the project. In addition, mukhtar (head of the village) had already taken the contact information (e.g mobile phone) of public relationships expert, project manager and assistant general director of the company so that the local stakeholders can be able to reach these people whenever they have any complaints, suggestions, or ideas about the project. They can be able to communicate with them in case of any problems.

Since mukhtar is the head of the village, he is the main contact person between the project owner and the local stakeholders. Mukhtar make sure that there's continuous communication between the two parties.

As validated during the site visit, although the general outcome of the discussions with the local people is positive verbally, the project owner is regularly following up with the local people whether they have any problems or requests. As a result of the follow-up, there was not any complaint received from the stakeholders during the site visit. There is not any significant update in the project implementation which may affect the project activity, implementation, stakeholders, and environment.

The village head also confirmed that during the period that covers the third monitoring period, no negative comments or complaints were received regarding the operation of Karacabey WPP.

2.3 AFOLU-Specific Safeguards

It is not a AFOLU project. So, not applicable.

3 IMPLEMENTATION STATUS

3.1 Implementation Status of the Project Activity

The project includes the installation of wind power plant (WPP) with an installed capacity of 33.3 MWm/27.9 Mwe in Bursa city of Turkey. The purpose of the project activity is to generate electricity and supply it into the public grid. The project activity reduces greenhouse gas (GHG) emissions that would have otherwise occurred in the absence of the project activity by avoiding electricity generation from fossil fuel sources.

Karacabey WPP started to generate and provide electricity to the Turkish National Grid on 21-October-2016. There is no operation of project activity during this monitoring period that affect GHG emission reductions/ removal and monitoring.

Table 2. Milestone Table of the Project

Date(DD-MM-YYYY)	Milestone
02-12-2011	Agreement with Carbon consultant (Life İklim ve Enerji)
28-12-2012	EIA Not Required Certificate for 15 turbines
11-07-2013	Wind Farm Energy Yield Assessment- Amendment (Karacabey)
08-11-2013	EIA Not Required Decision for 12 turbines
22-04-2014	Loan Agreement Date
01-04-2016	The date for start of construction (Field delivery record)
12-11-2015	Issuance of the Licence
25-11-2015	Nordex Agreement
21-10-2016	Start date of operation, the first crediting period and also the first monitoring period

22-02-2017	The registration date of the project
30-09-2018	End of the first monitoring period
01-10-2018	Start of the second monitoring period
31-03-2021	End of the second monitoring period
01-04-2021	Start of the third monitoring period
28-02-2023	End of the third monitoring period

Table 3. Technical Specifications of Electricity Meters[13]

Name	Brand & Model	Serial Number	Accuracy Class	Rated Frequency
Main Meter-I	Landis+Gyr-ZMD402CR44.0457.c2 S3	51118076	0.2S	50 Hz
Back-up Meter-I	Landis+Gyr-ZMD402CR44.0457.c2 S3	51118077	0.2S	50 Hz

3.2 Deviations

3.2.1 Methodology Deviations

There has not been any methodology deviation during the third monitoring period.

3.2.2 Project Description Deviations

A revision has been made regarding geographical coordinates. This revision was made because the coordinates given during registration did not reflect the exact location. There has been no change in the positions of the location. This is just a correction and has no impact on the project's additionality or baseline scenario.

3.3 Grouped Projects

Karacabey WPP is a single project not a grouped project activity.

[13] Please see Meter Protocols and Calibrations documents.

4 DATA AND PARAMETERS

4.1 Data and Parameters Available at Validation

<table>
<tr><td>Data / Parameter</td><td>Gross electricity generation</td></tr>
<tr><td>Data unit</td><td>MWh</td></tr>
<tr><td>Description</td><td>Gross Electricity supplied to the grid by relevant sources (2012-2014)</td></tr>
<tr><td>Source of data</td><td>Turkish Electricity Transmission Company (TEİAŞ), Annual Development of Turkey’s Gross Electricity Generation by Primary Energy Resources (2012-2014) TEİAŞ https://webapi.teias.gov.tr/file/318ec34c-139d-4971-a50f-56ab95edd8d3?download</td></tr>
<tr><td>Value applied</td><td>Please see Table 5.
Table 5: Gross electricity production by fossil energy sources 2012-2014 (GWh)
<table>
<tr><td colspan="4">Gross Electricity Production by Energy Source 2012-2014 [GWh]</td></tr>
<tr><td>Natural Gas</td><td>104,499.2</td><td>105,116.3</td><td>120,576.0</td></tr>
<tr><td>Lignite</td><td>34,688.9</td><td>30,262.0</td><td>36,615.4</td></tr>
<tr><td>Coal</td><td>33,324.2</td><td>33,524.0</td><td>39,647.3</td></tr>
<tr><td>Fuel Oil</td><td>981.3</td><td>1,192.5</td><td>1,662.9</td></tr>
<tr><td>Motor Oil</td><td>657.4</td><td>546.3</td><td>482.4</td></tr>
<tr><td>Naphtha</td><td>0.0</td><td>0.0</td><td>0.0</td></tr>
<tr><td>LPG</td><td>0.0</td><td>0.0</td><td>0.0</td></tr>
<tr><td>Total fossil fuels</td><td>174,151.0</td><td>170,641.2</td><td>198,984.0</td></tr>
</table></td></tr>
<tr><td>Justification of choice of data or description of measurement methods and procedures applied</td><td>TEIAS is the national electricity transmission company, which makes available the official data of all power plants in Turkey.</td></tr>
<tr><td>Purpose of Data</td><td>Calculation of baseline emissions.</td></tr>
<tr><td>Comments</td><td>No additional comments</td></tr>
</table>

Data / Parameter	$EF_{grid, CM, y}$
Data unit	tCO_2/MWh
Description	Combined margin CO_2 emission factor for the project electricity system in the year 2014
Source of data	As per "Tool 7 - Tool to calculate the emission factor for an electricity system (Version 05.0)"
Value applied	0.5521 tCO_2/MWh
Justification of choice of data or description of measurement methods and procedures applied	As per "Tool to calculate the emission factor for an electricity system" Calculated from data provided by the TEIAS for Turkish Power Sector; Operating Margin = 0.6285 tCO_2/MWh Build Margin = 0.3230 tCO_2/MWh Combined Margin = 0.5521 tCO_2/MWh
Purpose of Data	Calculation of baseline emissions.
Comments	No additional comments

Data / Parameter	$EG_{facility,y}$
Data unit	MWh/yr
Description	The quantity of net electricity generation by the project plant in a year
Source of data	Turkish Electricity Transmission Company (TEIAS), Annual Development of Electricity Generation- Consumption and Losses in Turkey (1984-2014) TEIAS, see: https://webapi.teias.gov.tr/file/891a44de-2d6f-45de-a464-e0f5290a6a09?download
Value applied	Please see Table 6 and Table 7. **Table 6:** Net/gross electricity production 2012-2014 (GWh)[14]

Relation Net/Gross Electricity Production 2012-2014			
Gross Production [GWh]	239,496.80	240,153.95	251,962.82
Net Production [GWh]	227,707.30	228,977.00	239,448.83
Relation	**95.08%**	**95.35%**	**95.03%**

[14] For Net Production See, http://www.teias.gov.tr/T%C3%BCrkiyeElektrik%C4%B0statistikleri/istatistik2014/istatistik2014.htm excel file number 35.

	Table 7: Electricity supplied to the grid, relevant for OM (GWh)

Net El. Production by fossil fuels and Import 2012-2014 [GWh]			
Net El. Prod. by fossil fuels	165.578,2	162.699,4	189.101,3
Electricity Import	5.826,7	7.429,4	7.953,5
Electricity supplied to grid by relevant sources	**171.404,9**	**170.128,8**	**197.054,8**

Justification of choice of data or description of measurement methods and procedures applied	TEİAŞ is the national electricity transmission company, which makes available the official data of all power plants in Turkey. This data is used to find relation between the gross and net electricity delivered to the grid by fossil fuel fired power plants. Please see: Table 12 in registered PD Import and Export data is used to identify total net electricity fed into the grid in the years of 2012, 2013 and 2014 Please see: Table 13 in registered PD
Purpose of Data	Calculation of baseline emissions.
Comments	No additional comments

Data / Parameter	$EF_{CO2,i,y}$
Data unit	tCO_2/GJ
Description	CO2 emission factor of fuel type i used in year y
Source of data	IPCC default values at the lower limit of the uncertainty at a 95% confidence interval as provided in table 1.4 of Chapter1 of Vol. 2 (Energy) of the IPCC Guidelines on National GHG Inventories. See http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf
Value applied	See Table 8 and Table 9 in Appendix 3.
Justification of choice of data or description of measurement methods and procedures applied	No plant-specific and national emission factor data is available in Turkey. So, IPCC default data is used. For Fuel Oil Power Plants: 'Gas/Diesel Oil' data is used for conservativeness.
Purpose of Data	No plant-specific and national emission factor data is available in Turkey. So, IPCC default data is used.

Comments	No additional comments

Data / Parameter	Sample Group for BM emission factor
Data unit	Name of the plants, MW capacities, fuel types, annual electricity generations and dates of commissioning.
Description	Most recent power plants which compromise 20% of total generation
Source of data	Annual Development of Fuels Consumed in Thermal Power Plants in Turkey by The Electric Utilities, TEIAS: https://webapi.teias.gov.tr/file/1cece6b3-4b05-4b7e-ba49-ac649449b0ec?download Energy Investments: (2011-2012-2013) https://enerji.gov.tr/eigm-raporlari
Value applied	Please see Table 10 in Appendix 3.
Justification of choice of data or description of measurement methods and procedures applied	TEIAS is the national electricity transmission company, which makes available the official data of all power plants in Turkey. The latest data available during PD preparation was for 2013.
Purpose of Data	Calculation of baseline emissions.
Comments	No additional comments

Data / Parameter	$\eta_{m,y}$
Data unit	-
Description	Average energy conversion efficiency of power unit m in year y
Source of data	Annex I the "Tool to calculate the emission factor for an electricity system"
Value applied	Please see Table 8 in Appendix 3.
Justification of choice of data or description of measurement methods and procedures applied	For efficiency rates of Coal and Lignite Power Plants See Annex-1 of the Tool (highest rate is applied to be conservative) For Natural Gas and Oil plants efficiencies, default value given in the tool is applied: https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v5.0.pdf
Purpose of Data	Calculation of baseline emissions.

Comments	No additional comments

Data / Parameter	$HV_{i,y}$
Data unit	Mass or volume unit
Description	Heating Values of fuels consumed for electricity generation in the years of 2012, 2013 and 2014
Source of data	Heating Values of Fuels Consumed in Thermal Power Plants in Turkey by The Electric Utilities, TEİAŞ. See: https://webapi.teias.gov.tr/file/eb411dea-0b71-4586-a776-4941a54eecee?download
Value applied	Please see Table 11. **Table 11:** HVi,y (Heating Values for Fossil Fuels for Electricity Generation (TCal)[15]

Energy Sources	2012	2013	2014
Hard Coal+Imported Coal	71.270	68.785	82.874
Lignite	93.587	81.676	97.916
Fuel Oil	5.625	5.837	7.444
Diesel Oil	1.884	1.363	1.245
Lpg	0	0	0
Naphta	0	0	0
Natural Gas	203.766	203.244	227.649

Justification of choice of data or description of measurement methods and procedures applied	There is no national NVC data in Turkey. However, TEİAŞ announces Heating values of fuels. This data is used to calculate annual NCVs for each fuel type
Purpose of Data	Calculation of baseline emissions.
Comments	No additional comments

Data / Parameter	$FC_{i,y}$
Data unit	Mass or volume unit
Description	Amount of fuel type i consumed in the project electricity system in year y
Source of data	Annual Development of Fuels Consumed in Thermal Power Plants In Turkey by The Electric Utilities, TEİAŞ. See:

[15] See; http://www.teias.gov.tr/T%C3%BCrkiyeElektrik%C4%B0statistikleri/istatistik2014/istatistik2014.htm excel file 52.

	https://webapi.teias.gov.tr/file/1cece6b3-4b05-4b7e-ba49-ac649449b0ec?download
Value applied	Please see Table 12. **Table 12:** FCi,y (Fuel Consumptions for Fossil Fuels for Electricity Generation (million m3 for Natural Gas and ton for others)[16]

Energy Sources	2012	2013	2014
Hard Coal+Imported Coal	12.258.462	12.105.930	14.501.934
Lignite	55.742.463	47.120.306	57.696.139
Fuel Oil	564.796	573.534	754.283
Diesel Oil	176.379	129.359	119.988
LPG	0	0	0
Naphta	0	0	0
Natural Gas	23.090.121	22.909.746	25.426.014

Justification of choice of data or description of measurement methods and procedures applied	TEİAŞ is the national electricity transmission company, which makes available the official data of all power plants in Turkey.
Purpose of Data	Calculation of baseline emissions.
Comments	No additional comments

Data / Parameter	$NCV_{i,y}$
Data unit	TJ/Gg
Description	Net Calorific Value of fuel types in the years of 2012, 2013 and 2014
Source of data	Calculated by using HVi,y to FCi,y as Net Calorific Values of fuel types are not directly available in Turkey.
Value applied	Please see Table 9 in Appendix 3.
Justification of choice of data or description of measurement methods and procedures applied	TEİAŞ is the national electricity transmission company, which makes available the official data of power plants in Turkey.
Purpose of Data	Calculation of baseline emissions.
Comments	No additional comments

[16] See; http://www.teias.gov.tr/T%C3%BCrkiyeElektrik%C4%B0statistikleri/istatistik2014/istatistik2014.htm excel file 50.

4.2 Data and Parameters Monitored

Data / Parameter	$EG_{facility,y}$
Data unit	MWh/yr
Description	Quantity of net electricity generation supplied to the grid in year y
Source of data	The data from the Electricity Meters are the basis for the settlement notification of EPIAS. Data are gathered electronically from the meters by TEIAS and stored in secured website of EPIAS, which is accessible to project developer with a private password. For monitoring, web screenshots of EPIAS are used as source of data.
Description of measurement methods and procedures to be applied	Two electricity meters are placed (one main and one reserve) at the substation. These meters are sealed by TEIAS and intervention by project proponent is not possible. The fact that two meters are installed in a redundant manner keeps the uncertainty level of the only parameter for baseline calculation low. High data quality of this parameter is not only in the interest of the emission reduction monitoring, but paramount for the business relation between the plant operator and the electricity buyers. • Monthly settlement notifications of EPIAS consist hourly electricity production and withdrawn from the grid. • Since the meters are reading electricity supplied to the system and withdrawn from the system separately, the net electricity amount supplied to the grid is calculated by electricity supplied minus electricity withdrawn which is taken from monthly settlement notifications. The above-described measurement method follows Article 81 of the official regulation "Electricity Market Balancing And Settlement Regulation"[17]
Frequency of monitoring/recording	*Continuous measurement with monthly recording*
Value monitored	195,949 MWh
Monitoring equipment	Meters are in compliance with the communiqué for Metering Devices to be used in Electricity Market. Table 3: Specification of the electricity meters

Vintage		Electricity supplied to the grid (MWh)	Electricity consumption from the grid (MWh)	Net electricity supplied to the grid [MWh]
01/04/2021	31/12/2021	73,937.91	98.53	73,839.38
01/01/2022	31/12/2022	107,072.35	106.33	106,966.02
01/01/2023	28/02/2023	15,156.38	13.22	15,143.16
Total		196,166.64	218.08	195,948.56

[17]See:https://www.mevzuat.gov.tr/File/GeneratePdf?mevzuatNo=12985&mevzuatTur=KurumVeKurulusYonetmeligi&mevzuatTertip=5

Name	Serial Number	Brand - Model	Accuracy Class	Rated Frequency
Main Meter	51118076	Landis+Gyr-ZMD402CR44.0457.c2 S3	0.2 S	50 Hz
Backup meter	51118077	Landis+Gyr-ZMD402CR44.0457.c2 S3	0.2 S	50 Hz

QA/QC procedures to be applied

According to the Article 2 of the Communique of Meters in Electricity Sector[18]: '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 Science, Industry and Technology.' Therefore, Ministry of Science, Industry and Technology (Ministry) is responsible for control and calibration of the meters. Also according to Article 11 of this Communiqué, meters shall be in a class of 0.5s, which means error interval for measuring is in +-0.5% range which is well acceptable according to rules.

Paragraph b) of the Article 9 of the 'Regulation of Metering and Testing of Metering Systems'[19] (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 is 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 Science, Industry and Technology. Article 10 d) of Communiqué requires the meters shall be three phase four wire and Article 64 of Regulation clearly states how calibration shall be performed for this kind of meters.

As above mentioned, the data acquisition and management and quality assurance procedures that are anyway in place, no additional procedures have to be established for the monitoring plan. In addition to that, the quantity of net electricity delivered to the grid is cross-checked with the meter reading records (OSF forms) provided to the company by distribution company (TEIAS) and internal reports provided to the head of the company by the plant manager.

The specification of meters is provided below:

Table 4: Specification of the electricity meters

Name	Serial Number	Brand - Model	Accuracy Class	Rated Frequency
Main Meter	51118076	Landis+Gyr-ZMD402CR44.0457.c2 S3	0.2 S	50 Hz

[18]See: https://www.epdk.gov.tr/Detay/DownloadDocument?id=+6B2PMv4N4A=

[19]See:http://www.mevzuat.gov.tr/Metin.Aspx?MevzuatKod=7.5.6381&MevzuatIliski=0&sourceXmlSearch=

	Backup meter	51118077	Landis+Gyr-ZMD402CR44.0457.c2S3	0.2 S	50 Hz

First protocol date is 21/10/2016 for both of the meters.[20]

Calibration date of the metering devices are 26/03/2015.[21]

Purpose of the data	Calculation of baseline emissions
Calculation method	The net electricity is calculated by: a) Subtracting self consumption value from gross generation value for each month to find the net electricity supplied to the grid. b) Adding up all monthly net electricity values to calculate the total net electricity supplied to the grid during the monitoring period. c) Multiplying the total net electricity value with the CM emission factor.
Comments	No additional comments

4.3 Monitoring Plan

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 Karacabey WPP. This value will be monitored continuously by redundant metering devices, one of them being the main one in the substation, which provides the data for the monthly invoicing to TEIAS.

There is not any specific internal auditing and non-conformities procedures regarding to VCS verification or validation. Test and calibration of the meters is under TEIAS responsibility.

Under data handling process, the meter is read remotely at the end of every month and published through website of TEIAS which can be accessed by project owner to check the correctness of the data. Besides, project owner carries monthly protocol to cross-check the data. By this way a cross check is done. Once the meter data is correct then the amount is also published in EPIAS website which is also accessible by project owner. When all data is correct, an invoice (receipt of sale) is prepared by Yalova and delivered to TEIAS. The electricity generation amount, the collected data, are kept in both hardcopy and softcopy in daily and monthly basis indefinitely. Moreover, these data are submitted to several authorized people. Thus, several additional copies

[20] See: Index Protocols

[21] See: Calibration Certificate

of these data are stored at different computers. The collected data during the monitoring period will be kept by the project owner at least two years after the last issuance of VCUs.

Karacabey Personnel at the plant keep records for electricity generation amount and reports to operation manager on a monthly basis. Records are kept in electronic format for 2-years basis. The data is monitored via electricity meters. Meter is read by Karacabey WPP staff monthly. Yearly electricity generation will be calculated by summing up monthly meter reading records. Data monitored will be kept in electronic form and hard copy until the end of second year after the end of crediting period. These records can be used for monitoring in case of any problem will arise in meters.

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

Given a data vintage based on ex ante monitoring and selection of a renewable 10-year crediting period, the Combined Margin will be recalculated at any renewal of the crediting period using the valid baseline methodology.

Potential leakage emissions in the context of power sector projects are emissions arising due to activities such as power plant construction, fuel handling and land inundation. However, according to the methodology, those emission sources do not need to be taken into account.

Operational and Management Structure

As described before, there are two main factors important for the calculation of emission reductions. The only relevant data that have to be monitored is only net electricity generation ($EG_{facility,y}$) per year. Since project emission is zero no additional monitoring is required. The generation data are subject to the strict internal quality control systems of both parties. The monthly meter reading documents are stored by Yalova and TEIAS. The meters themselves can always be read as plausibility check for verification. The other important parameter is the emission factor. It is approved according to strict quality control parameters from an independent external party. With this, no additional structures or processes have to be implemented to insure the availability and high quality of the necessary data for monitoring.

At the end of each monitoring period, which is planned to generally last one year, from the monthly meter reading records the net electricity generation amounts as calculated by electricity supplied to the grid minus withdrawn from the system, will be added up to the yearly net electricity generation and total project emissions will be subtracted from this amount and result data will be multiplied with the combined margin emission factor with the help of an excel spread sheet

that also contains the combined margin calculation. Thus, the complete baseline approach is always transparent and traceable.

For the elaboration and quality assurance of the monitoring report, Life Enerji, an expert in the project mechanisms who already supported in the project design, is assigned. However, in order to continue improving the monitoring procedures and therefore also the future monitoring reports, internal quality check shall be fulfilled by Life Enerji. The monitoring reports are checked and in cases of mistakes and inconsistencies in the monitoring report, revisions with improvements shall be done. Furthermore, external year verification assures that the emission reductions calculations are transparent and traceable.

Yalova will keep all the data needed for the calculation of emission reductions during the crediting period and until two years after the last issuance of VCS VCUs for Karacabey WPP. Organizational structure is as follows:

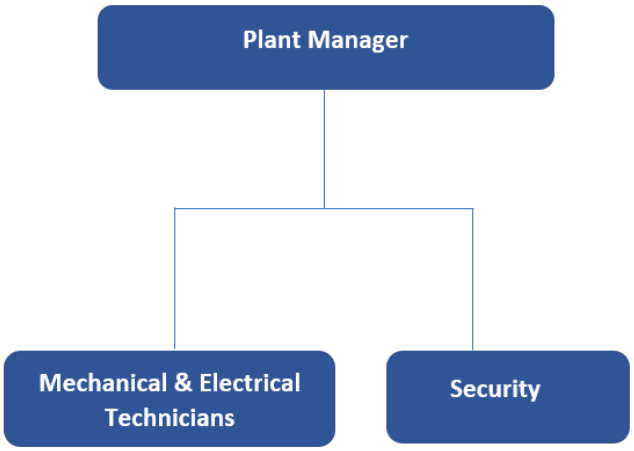


Figure 1. The Operational Flow of Karacabey WPP

5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

5.1 Baseline Emissions

The baseline scenario is identified according to the "Baseline Methodology Procedure" of ACM0002 Version 17. Baseline emissions include only CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity. The methodology

assumes that all project electricity generation above baseline levels would have been generated by existing grid-connected power plants and the addition of new grid-connected power plants.

Baseline emissions include only CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity, calculated as follows:

$BE_y = EG_{PJ,y} \times EF_{grid,CM,y}$

Where:

BEy = Baseline emissions in year y (tCO_2/yr)

EGPJ,y = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr)

$EF_{grid,CM,y}$ = Combined margin CO2 emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system" (t CO2/MWh)

Then:

$$BE_y = EG_{PJ,y} * EF_{grid,CM,y} = 195{,}948.56\ MWh * 0.5521\ tCO_2/MWh = 108{,}181\ tCO_2$$

The Combined margin CO_2 emissions factor in year y (tCO_2/MWh), $EF_{grid,CM,y}$, is fixed ex-ante for the duration of the crediting period, and is $0.5521tCO_2e/MWh$.

5.2 Project Emissions

The proposed project activity involves the generation of electricity by development of a wind farm. The generation of electricity does not result in greenhouse gas emissions and therefore is taken as 0 $tCO_2/year$.

5.3 Leakage

There is no leakage related to the project activity.

5.4 Net GHG Emission Reductions and Removals

According to ACM0002 (version 17), emission reductions are calculated as:

$$ER_y = BE_y - PE_y$$

Where

ER_y	=	Emission reductions in year y (t CO_2/yr)
BE_y	=	Baseline emissions in year y (t CO_2/yr)
PE_y	=	Project emission in year y (t CO_2/yr)

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

$EF_{grid, OMsimple, y}$ = 0.6285 tCO_2/MWh[22]

$EF_{grid, BM, y}$ = 0.3230 tCO_2/MWh[23]

$EF_{grid, CM, y} = w_{OM} * EF_{grid, OMsimple, y} + w_{BM} * EF_{grid, BM, y}$

According to the Tool for wind power generation project activities:

w_{OM} = 0.75 and w_{BM} = 0.25.

Based on the formula above, baseline emission factor is calculated as;

$EF_{grid, CM, y}$ = 0.6285 tCO_2/MWh * 0.75 + 0.3230 tCO_2/MWh * 0.25

$EF_{grid, CM, y}$ = 0.5521

With an actual annual project electricity generation of amounts which was given in the Appendix 1 of this report, and $EF_{grid,CM,y}$ calculated in Registered PD as 0.5521 tCO_2/MWh[24], net GHG emission reductions/removals are:

Year	Baseline emissions or removals (tCO_2e)	Project emissions or removals (tCO_2e)	Leakage emissions (tCO_2e)	Net GHG emission reductions or removals (tCO_2e)
01-April-2021-31-December-2021	40,766	0	0	40,766
01-January-2022-31-December-2022	59,055	0	0	59,055

[22] Registered PD (Dated: 24-January-2017)

[23] Registered PD (Dated: 24-January-2017)

[24] Registered PD (Dated: 25-October-2021)

01-January-2023-28-February-2023	8,360	0	0	8,360
Total Sum **01-April-2021-28-February-2023**	**108,181**	**0**	**0**	**108,181**

Comparison of actual and estimated emission reduction is given in the table below.

Ex-ante emissions reductions/removals	Achieved emissions reductions /removals	Percent difference	Justification for the difference
42,391	40,766	-4%	This is caused by unexpected wind trend in the project location. Wind potential might have changed.
56,264	59,055	5%	This is caused by unexpected wind trend in the project location. Wind potential might have changed.
9,095	8,360	-9%	This is caused by unexpected wind trend in the project location. Wind potential might have changed.
107,749	108,181	0.4%	An overall difference of 0.4% is quite reasonable.

Estimated emission reduction is 107,749 tCO_2 for the third monitoring period (from 01-April-2021 to 28-February-2023), and actual emission reduction achieved during the third monitoring period is 108,181 tCO_2. When they are compared, the actual emission reduction achieved during the third monitoring period is 0.4% more than the estimated figure which is quite close to estimated value calculated in the registered PDD.

APPENDIX 1: NET ELECTRICITY GENERATION DATA

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)
Apr-21	5,991.89	16.62	5,975.27
May-21	6,384.93	15.67	6,369.26
Jun-21	3,519.93	19.2	3,500.73
Jul-21	9,848.52	8.74	9,839.78
Aug-21	9,093.85	9.03	9,084.82
Sep-21	10,947.34	6.19	10,941.15
Oct-21	10,700.65	5.88	10,694.77
Nov-21	8,288.13	10.42	8,277.71
Dec-21	9,162.67	6.78	9,155.89
Sum 2021	73,937.91	98.53	73,839.38
Jan-22	7,164.47	14.92	7,149.55
Feb-22	7,018.11	10.48	7,007.63
Mar-22	8,703.95	6.75	8,697.20
Apr-22	7,703.24	12.85	7,690.39
May-22	6,499.21	13.77	6,485.44
Jun-22	9,555.09	5.89	9,549.20
Jul-22	15,088.38	0.17	15,088.21
Aug-22	10,438.69	8.04	10,430.65
Sep-22	7,694.53	9.88	7,684.65
Oct-22	10,865.62	7.50	10,858.12
Nov-22	8,712.16	7.23	8,704.93
Dec-22	7,628.90	8.85	7,620.05
Sum 2022	107,072.35	106.33	106,966.02
Jan-23	7,645.60	7.60	7,638.00
Feb-23	7,510.78	5.62	7,505.16
Sum 2023	15,156.38	13.22	15,143.16
Total Sum 01-April-2021-28-February-2023	***196,166.64***	***218.08***	***195,948.56***

APPENDIX 2: SUPPORTING EVIDENCE FOR SDGS

Row 1- SDG13: Air Quality

Current Project Contributions/ Contributions Over Project Lifetime: The project's emissions reduction has been verified as 108,181 tCO_2e during the third monitoring period. The amount of emission reduction over project lifetime is 347,848 tCO_2e.

Monitoring Period #	tons CO_2
1st Verification	96,378
2nd Verification	143,289
3rd Verification	108,181
Total	**347,848**

Row 2- SDG7: Renewable energy share in the total final energy consumption

Current Project Contributions/ Contributions Over Project Lifetime: The project's net renewable electricity generation has been verified as 195,948.56 MWh during the third monitoring period. The amount of electricity generation over project lifetime is 630,055.20 MWh.

Monitoring Period #	MWh
1st Verification	174,569.19
2nd Verification	259,537.45
3rd Verification	195,948.56
Total	**630,055.20**

APPENDIX 3: TABLES OF DATA RELATED TO PARAMETERS

Table 8: BM emission factor calculation using equation (2) and (3)

Energy Source	Sample Group Total Generation (GWh)	Effective CO_2 emission factor (tCO_2/TJ)	Average Efficiency ($\eta_{m,y}$)	CO_2 Emission ($ktCO_2$)
Natural Gas	**23,411.4**	54.3	60.00%	7,627.4
Lignite	**40.0**	90.9	50.00%	26.2
Coal	**12,533.0**	89.5	50.00%	8,076.3
Fuel Oil	**701.2**	72.6	46.00%	398.4
Hydro	**12,421.2**	0.0	0.00%	0.0
Renewables	**829.4**	0.0	0.00%	0.0
Total	**49,936.2**			**16,128.3**
$EF_{grid,BM,y}$ (tCO_2/MWh)	**0.3230**			

Table 9: NCVi,y (Average Net Calorific Values for Fossil Fuels for Electricity Generation (TJ/million m3 for Natural Gas and TJ/kton for others) and EFi (Emission Factor of Fossil Fuels)

Energy Sources	NCVi 2012 (TJ/Gg)	NCVi 2013 (TJ/Gg)	NCVi 2014 (TJ/Gg)	EFCO2, I (kg/TJ)
Hard Coal+Imported Coal	24,34	23,79	23,93	*89,50*
Lignite	7,03	7,26	7,11	*90,90*
Fuel Oil	41,70	42,61	41,32	*72,60*
Diesel Oil	44,71	44,12	0,00	*72,60*
LPG	0,00	0,00	0,00	*61,60*
Naphta	0,00	0,00	0,00	*69,30*
Natural Gas	36,95	37,14	37,49	*54,30*

Table 10: Sample Group PPs for BM Emission Factor Calculation

No	Information to clearly identify the Plant (Name of the Plant)	Date of Commissioning	Capacity in MW	Fuel Type	Annual Generation (GWh)
1	Eren Enerji (Addition)	2010	600.0	Imported coal	4006.00
2	Eren Enerji (Addition)	2010	600.0	Imported coal	4006.00
3	MARMARA PAMUKLU MENS. SN.TİC.A.Ş. (Addition)	2010	26.2	Natural Gas	203.76
4	Aliağa Çakmaktepe Enerji A.Ş.(Aliağa/İZMİR) (Addition)	2010	69.8	Natural Gas	556.00
5	FRİTOLAY GIDA SAN.VE TİC. AŞ. (Addition)	2010	0.3	Biogas	2.40
6	Sönmez Enerji Üretim (Uşak) (Addition)	2010	2.6	Natural Gas	19.77
7	Ak-Enerji (Uşak OSB)	2010	-15.2	Liqued Fuel + N.Gas	0.00
8	Ak-Enerji (DG+N) (Deba-Denizli)	2010	-15.6	Liqued Fuel + N.Gas	0.00
9	Polyplex Europa Polyester Film	2010	7.8	Natural Gas	61.00
10	ALTEK ALARKO Elektrik Santralleri	2010	21.9	Natural Gas	151.36
11	Aksa Enerji (Demirtaş/Bursa)	2010	-1.1	Natural Gas	0.00
12	RASA ENERJİ (VAN) (Addition)	2010	10.1	Natural Gas	64.41
13	SİLOPİ ELEKTRİK ÜRETİM A.Ş.(ESENBOĞA)	2010	-44.8	Fuel Oil	0.00

14	International Hospital Istanbul	2010	0.8	Natural Gas	6.00
15	Tuzla Jeotermal	2010	7.5	Geothermal	0.00
16	Menderes Jeotermal Dora-2	2010	9.5	Geothermal	0.00
17	Selimoğlu Reg. Ve Hes	2010	8.0	Hydro (run of river)	0.00
18	Kulp IV HES	2010	12.3	Hydro (run of river)	46.00
19	Cindere HES (Denizli) (Addition)	2010	9.1	Hydro (With Dam)	28.29
20	Bayburt Hes	2010	14.6	Hydro (run of river)	51.00
21	UZUNÇAYIR HES (Tunceli) (Addition)	2010	27.3	Hydro (With Dam)	105.00
22	Alakır Hes.	2010	2.1	Hydro (run of river)	6.00
23	Peta Müh. En. (Mursal II Hes.)	2010	4.5	Hydro (run of river)	19.00
24	Asa Enerji (Kale Reg. Ve Hes.)	2010	9.6	Hydro (run of river)	0.00
25	Hetaş Hacısalihoğlu (Yıldızlı Hes)	2010	1.2	Hydro (run of river)	5.00
26	Doğubay Elektrik (Sarımehmet Hes)	2010	3.1	Hydro (run of river)	10.00
27	Nuryol Enerji (Defne Reg. Ve hes.)	2010	7.2	Hydro (run of river)	22.00

28	ÖZGÜR ELEKTRİK (AZMAK I REG.VE HES)	2010	5.9	Hydro (run of river)	0.00
29	Birim Hidr. Üretim A.Ş. (Erfelek Hes)	2010	3.2	Hydro (run of river)	19.00
30	Beytek El. Ür. A.Ş. (Çataloluk Hes.)	2010	9.5	Hydro (run of river)	0.00
31	Nisan E. Mekanik En. (Başak Reg. Hes.)	2010	6.9	Hydro (run of river)	22.00
32	UZUNÇAYIR HES (Tunceli) (Addition)	2010	27.3	Hydro (With Dam)	105.00
33	Fırtına Elektrik Üretim A.Ş. (Sümer Hes)	2010	21.6	Hydro (run of river)	70.00
34	KAR-EN Karadeniz El. A.Ş. Aralık Hes	2010	12.4	Hydro (run of river)	0.00
35	Birim Hidr. Üretim A.Ş. (Erfelek Hes)	2010	3.2	Hydro (run of river)	19.00
36	Karadeniz El. Üret. (Uzundere-1 Hes)	2010	62.2	Hydro (run of river)	165.00
37	Akım Enerji (Cevizli Reg. Ve Hes.)	2010	91.4	Hydro (run of river)	330.00
38	Çakıt Hes. (Çakıt Enerji)	2010	20.2	Hydro (run of river)	0.00
39	Ceyhan Hes. (Oşkan Hes.) (Enova En.)	2010	23.9	Hydro (run of river)	98.00
40	Erenler Reg. Ve Hes. (BME Bir. Müt. En.)	2010	45.0	Hydro (run of river)	85.00
41	Paşa Reg. Ve Hes (Özgür Elektrik)	2010	8.7	Hydro (run of river)	0.00

42	Güzelçay-I-II Hes (İlk Elektrik Enerji)	2010	8.1	Hydro (run of river)	0.00
43	Kale Reg. Ve Hes (Kale Enerji Ür.)	2010	34.1	Hydro (run of river)	116.00
44	Erikli-Akocak Reg. Ve Hes	2010	82.5	Hydro (run of river)	0.00
45	Çamlıkaya Reg. Ve Hes	2010	5.6	Hydro (run of river)	19.00
46	Dinar Hes. (Elda Elekrik Üretim)	2010	4.4	Hydro (run of river)	15.00
47	Damlapınar Hes. (Cenay Elektrik Üretim)	2010	16.4	Hydro (run of river)	0.00
48	Dim Hes (Diler Elektrik Üretim)	2010	38.3	Hydro (run of river)	123.00
49	ÖZGÜR ELEKTRİK (AZMAK I REG.VE HES)	2010	5.9	Hydro (run of river)	0.00
50	Kirpilik Reg. Ve Hes (Özgür Elektrik)	2010	6.2	Hydro (run of river)	22.00
51	Yavuz Reg. Ve Hes (Masat Enerji)	2010	22.5	Hydro (run of river)	83.00
52	Kayabükü Reg. Ve Hes (Elite Elektrik)	2010	14.6	Hydro (run of river)	0.00
53	Gök Reg. Ve Hes (Gök Enerji El. San.)	2010	10.0	Hydro (run of river)	43.00
54	Bulam Reg. Ve Hes (MEM Enerji ELK.)	2010	7.0	Hydro (run of river)	0.00
55	Karşıyaka HES (Akua Enerji Üret.)	2010	1.6	Hydro (run of river)	8.00

56	Ceyhan Hes. (Berkman Hes) (Enova En.)	2010	25.2	Hydro (run of river)	103.00
57	Güdül I Reg. Ve HES (Yaşam Enerji)	2010	2.4	Hydro (run of river)	14.00
58	Tektuğ Elektrik (Andırın Hes)	2010	40.5	Hydro (run of river)	106.00
59	Selen Elektrik (Kepezkaya Hes)	2010	28.0	Hydro (run of river)	0.00
60	REŞADİYE 2 HES (TURKON MNG ELEKT.)	2010	26.1	Hydro (run of river)	0.00
61	Kozan Hes (Ser-Er Enerji)	2010	4.0	Hydro (run of river)	9.00
62	Kahraman Reg. Ve Hes (Katırcıoğlu)	2010	1.4	Hydro (run of river)	6.00
63	Narinkale Reg. Ve Hes (EBD Enerji)	2010	3.1	Hydro (run of river)	10.00
64	Erenköy Reg. Ve Hes (Türkerler)	2010	21.5	Hydro (run of river)	87.00
65	Kahta I HES (Erdemyıldız Elektrik Üretim)	2010	7.1	Hydro (run of river)	35.00
66	Azmak II Reg. Ve Hes	2010	-18.1	Hydro (run of river)	0.00
67	Ulubat Kuvvet Tüneli ve Hes	2010	97.0	Hydro (With Dam)	372.00
68	REŞADİYE 1 HES (TURKON MNG ELEKT.)	2010	15.7	Hydro (run of river)	0.00
69	Egemen 1 HES (Enersis Elektrik)	2010	19.9	Hydro (run of river)	0.00

70	Sabunsuyu II HES (Ang Enerji Elk.)	2010	7.4	Hydro (run of river)	21.00
71	Burç Bendi ve Hes (Akkur Enerji)	2010	27.3	Hydro (run of river)	113.00
72	Murgul Bakır (Ç.kaya) (Addition)	2010	19.6	Hydro (run of river)	40.50
73	Güzelçay II Hes (İlk Elektrik Enerji) (Addition)	2010	5.0	Hydro (run of river)	0.00
74	REŞADİYE 1 HES (TURKON MNG ELEKT.)	2010	15.7	Hydro (run of river)	0.00
75	Egemen 1 HES (Enersis Elektrik)	2010	8.8	Hydro (run of river)	0.00
76	Yedigöze HES (Yedigöze Elektrik)	2010	155.3	Hydro (With Dam)	474.00
77	Umut III Reg. Ve HES (Nisan Elek.)	2010	12.0	Hydro (run of river)	26.00
78	FEKE 2 Barajı ve HES (Nisan Elek.)	2010	69.3	Hydro (With Dam)	223.00
79	Egemen 1B HES (Enersis Elektrik)	2010	11.1	Hydro (run of river)	0.00
80	Kalkandere Reg. Ve Yokuşlu HES.	2010	14.5	Hydro (run of river)	63.00
81	ROTOR ELEKTRİK (OSMANİYE RES)	2010	55.0	Wind	0.00
82	Asmakinsan (Bandırma 3 RES)	2010	24.0	Wind	0.00
83	Soma Enerji Üretim (Soma Res)	2010	34.2	Wind	0.00

84	Deniz Elektrik (Sebenoba Res)	2010	10.0	Wind	0.00
85	Akdeniz Elektrik (Mersin Res)	2010	33.0	Wind	0.00
86	Boreas Enerji (Boreas I Enez Res)	2010	15.0	Wind	0.00
87	Bergama Res En. Ür. A.Ş. Aliağa Res	2010	90.0	Wind	0.00
88	Bakras En. Elek. Ür. A.Ş. Şenbük Res	2010	15.0	Wind	0.00
89	ALİZE ENERJİ (KELTEPE RES)	2010	1.8	Wind	0.00
90	ROTOR ELEKTRİK (Gökçedağ Res)	2010	22.5	Wind	0.00
91	MAZI-3 RES ELEKT.ÜR. A.Ş. (MAZI-3 RES)	2010	7.5	Wind	0.00
92	BORASKO ENERJİ (BANDIRMA RES)	2010	12.0	Wind	0.00
93	Ziyaret Res (Ziyaret Res Elektirk)	2010	35.0	Wind	0.00
94	Soma Res (Bilgin Rüzgar San. En. Ür.)	2010	90.0	Wind	0.00
95	Belen ELEKTRİK BELEN Res (Addition)	2010	6.0	Wind	0.00
96	ÜtOPYA ELEKTRİK (DÜZOVA RES) (Addition)	2010	15.0	Wind	0.00
97	Kuyucak Res (Alize Enerji Ür.)	2010	25.6	Wind	0.00

98	Sares Res (Garet Enerji Üretim)	2010	15.0	Wind	0.00
99	Turguttepe Res (Sabaş Elektrik Ür.)	2010	22.0	Wind	0.00
100	AKIM ENERJİ BAŞPINAR (SÜPER FİLM)	2011	25.3	Natural Gas	177.00
101	AKSA AKRİLİK (İTHAL KÖM.+D.G)	2011	25.0	Natural Gas	189.08
102	AKSA ENERJİ (Antalya)	2011	600.0	Natural Gas	3600.00
103	ALİAĞA ÇAKMAKTEPE ENERJİ (İlave)	2011	139.7	Natural Gas	1051.60
104	BEKİRLİ TES (İÇDAŞ ELEKTRİK EN.)	2011	600.0	Imported coal	4320.00
105	BOLU BELEDİYESİ ÇÖP TOP. TES. BİYOGAZ	2011	1.1	Landfill Gas	0.00
106	BOSEN ENERJİ ELEKTRİK ÜRETİM AŞ.	2011	93.0	Natural Gas	698.49
107	CENGİZ ÇİFT YAKITLI K.Ç.E.S.	2011	131.3	Natural Gas	985.00
108	CENGİZ ENERJİ SAN.VE TİC.A.Ş.	2011	35.0	Natural Gas	281.29
109	CEV ENERJİ ÜRETİM(GAZİANTEP ÇÖP BİOGAZ)	2011	5.7	Landfill Gas	0.00
110	FRAPORT IC İÇTAŞ ANTALYA HAVALİMANI	2011	8.0	Natural Gas	64.00
111	GLOBAL ENERJİ (PELİTLİK)	2011	4.0	Natural Gas	29.91

112	GORDİON AVM (REDEVCO ÜÇ EMLAK)	2011	2.0	Natural Gas	15.00
113	GOREN-1 (GAZİANTEP ORGANİZE SAN.)	2011	48.7	Natural Gas	277.00
114	GÜLLE ENERJİ(Çorlu) (İlave)	2011	3.9	Natural Gas	17.97
115	HASIRCI TEKSTİL TİC. VE SAN. LTD. ŞTİ.	2011	2.0	Natural Gas	15.00
116	HG ENERJİ ELEKTRİK ÜRET. SAN.TİC. A.Ş.	2011	52.4	Natural Gas	366.00
117	ISPARTA MENSUCAT (Isparta)	2011	4.3	Natural Gas	33.00
118	ITC ADANA ENERJİ ÜRETİM (İlave)	2011	1.4	Landfill Gas	0.00
119	ITC-KA EN. (ASLIM BİYOKÜTLE) KONYA	2011	5.7	Landfill Gas	0.00
120	ITC-KA ENERJİ (SİNCAN) (İlave)	2011	1.4	Landfill Gas	0.00
121	ITC-KA ENERJİ MAMAK KATI ATIK TOP.	2011	2.8	Landfill Gas	0.00
122	İSTANBUL SABİHA GÖKÇEN UL.AR. HAV.	2011	4.0	Natural Gas	32.00
123	KARKEY (SİLOPİ 1)	2011	100.4	Fuel Oil	701.15
124	KAYSERİ KATI ATIK DEPONİ SAHASI	2011	1.6	Landfill Gas	0.00
125	KNAUF İNŞ. VE YAPI ELEMANLARI SN.	2011	1.6	Natural Gas	12.00

126	LOKMAN HEKİM ENGÜRÜ SAĞ.(SİNCAN)	2011	0.5	Natural Gas	4.00
127	MARDİN-KIZILTEPE (AKSA ENERJİ)	2011	32.1	Natural Gas	225.00
128	NUH ENERJİ EL. ÜRT.A.Ş. (ENERJİ SANT.-2)	2011	120.0	Natural Gas	900.00
129	ODAŞ DOĞALGAZ KÇS (ODAŞ ELEKTRİK)	2011	55.0	Natural Gas	415.00
130	POLYPLEX EUROPA POLYESTER FİLM	2011	3.9	Natural Gas	30.70
131	SAMSUN TEKKEKÖY EN. SAN. (AKSA EN.)	2011	131.3	Natural Gas	980.00
132	SAMUR HALI A.Ş.	2011	4.3	Natural Gas	33.00
133	SARAY HALI A.Ş.	2011	4.3	Natural Gas	33.00
134	TEKİRDAĞ-ÇORLU TEKS.TES.(NİL ÖRME)	2011	2.7	Natural Gas	21.00
135	TİRENDA TİRE ENERJİ ÜRETİM A.Ş.	2011	58.4	Natural Gas	410.00
136	YENİ UŞAK ENERJİ ELEKTRİK SANTRALI	2011	8.7	Natural Gas	65.00
137	ZORLU ENERJİ (B.Karıştıran)	2011	7.2	Natural Gas	54.07
138	ŞANLIURFA OSB (RASA ENERJİ ÜR. A.Ş.)	2011	116.8	Natural Gas	800.00
139	AYDIN/GERMENCİK JEOTERMAL	2011	20.0	Geothermal	150.00

140	ÇEŞMEBAŞI REG. VE HES (GİMAK EN.)	2011	8.2	Hydro (run of river)	39.00
141	ÇUKURÇAYI HES (AYDEMİR ELEKTRİK ÜR.)	2011	1.8	Hydro (run of river)	8.00
142	DARCA HES (BÜKOR ELEKTRİK ÜRETİM)	2011	8.9	Hydro (run of river)	0.00
143	DERME (KAYSERİ VE CİVARI ENERJİ)	2011	4.5	Hydro (run of river)	14.00
144	DURU 2 REG. VE HES (DURUCASU ELEK.)	2011	4.5	Hydro (run of river)	22.00
145	ERENKÖY REG. VE HES (NEHİR ENERJİ)	2011	21.5	Hydro (run of river)	87.00
146	ERKENEK (KAYSERİ VE CİVARI ENERJİ)	2011	0.3	Hydro (run of river)	0.00
147	EŞEN-1 HES (GÖLTAŞ ENERJİ ELEKTRİK)	2011	60.0	Hydro (run of river)	240.00
148	GİRLEVİK (BOYDAK ENERJİ)	2011	3.0	Hydro (run of river)	21.00
149	GÖKMEN REG. VE HES (SU-GÜCÜ ELEKT.)	2011	2.9	Hydro (run of river)	13.00
150	HACININOĞLU HES (ENERJİ-SA ENERJİ)	2011	142.3	Hydro (run of river)	360.00
151	HAKKARİ (Otluca) (NAS ENERJİ A.Ş.)	2011	1.3	Hydro (run of river)	6.00
152	HASANLAR	2011	9.4	Hydro (run of river)	39.00
153	HASANLAR HES (DÜZCE ENERJİ BİRLİĞİ)	2011	4.7	Hydro (run of river)	0.00

154	İNCİRLİ REG. VE HES (LASKAR ENERJİ)	2011	25.2	Hydro (run of river)	126.00
155	KALKANDERE REG. VE YOKUŞLU HES	2011	23.4	Hydro (run of river)	0.00
156	KARASU 4-2 HES (İDEAL ENERJİ ÜRETİMİ)	2011	10.4	Hydro (run of river)	0.00
157	KARASU 4-3 HES (İDEAL ENERJİ ÜRETİMİ)	2011	4.6	Hydro (run of river)	0.00
158	KARASU 5 HES (İDEAL ENERJİ ÜRETİMİ)	2011	4.1	Hydro (run of river)	0.00
159	KARASU I HES (İDEAL ENERJİ ÜRETİMİ)	2011	3.8	Hydro (run of river)	0.00
160	KARASU II HES (İDEAL ENERJİ ÜRETİMİ)	2011	3.1	Hydro (run of river)	13.00
161	KAZANKAYA REG. VE İNCESU HES (AKSA)	2011	15.0	Hydro (run of river)	48.00
162	KESME REG. VE HES (KIVANÇ ENERJİ)	2011	4.6	Hydro (run of river)	16.00
163	KIRAN HES (ARSAN ENERJİ A.Ş.)	2011	9.7	Hydro (run of river)	0.00
164	KORUKÖY HES (AKAR ENERJİ SAN. TİC.)	2011	3.0	Hydro (run of river)	22.00
165	KOVADA-I (BATIÇİM ENERJİ ELEKTRİK)	2011	51.2	Hydro (run of river)	36.20
166	KOVADA-II (BATIÇİM ENERJİ ELEKTRİK)	2011	8.3	Hydro (run of river)	4.10
167	KOZDERE HES (ADO MADENCİLİK ELKT.)	2011	3.1	Hydro (run of river)	0.00

168	KÖYOBASI HES (ŞİRİKOĞLU ELEKTRİK)	2011	1.1	Hydro (run of river)	5.00
169	KULP I HES (YILDIZLAR ENERJİ ELK.ÜR.)	2011	22.9	Hydro (run of river)	78.00
170	KUMKÖY HES (AES-IC İÇTAŞ ENERJİ)	2011	17.5	Hydro (run of river)	98.00
171	AKSU REG. VE HES (KALEN ENERJİ)	2011	5.2	Hydro (run of river)	16.00
172	ALKUMRU BARAJI VE HES (LİMAK HİD.)	2011	261.3	Hydro (run of river)	828.00
173	AYRANCILAR HES (MURADİYE ELEKTRİK)	2011	32.1	Hydro (run of river)	0.00
174	BALKONDU I HES (BTA ELEKTRİK ENERJİ)	2011	9.2	Hydro (run of river)	33.00
175	BAYRAMHACILI BARAJI VE HES	2011	47.0	Hydro (run of river)	175.00
176	BERDAN	2011	10.2	Hydro (run of river)	47.20
177	BOĞUNTU HES (BEYOBASI ENERJİ)	2011	3.8	Hydro (run of river)	17.00
178	CEVHER I-II REG. VE HES (ÖZCEVHER EN.)	2011	16.4	Hydro (run of river)	0.00
179	ÇAKIRMAN REG. VE HES (YUSAKA EN.)	2011	7.0	Hydro (run of river)	22.00
180	ÇAMLIKAYA REG.VE HES (ÇAMLIKAYA EN)	2011	2.8	Hydro (run of river)	0.80
181	ÇANAKÇI HES (CAN ENERJİ ENTEGRE)	2011	9.3	Hydro (run of river)	39.00

182	MENGE BARAJI VE HES (ENERJİSA ENERJİ)	2011	44.7	Hydro (run of river)	0.00
183	MOLU ENERJİ (Zamantı-Bahçelik HES)	2011	4.2	Hydro (run of river)	30.00
184	MURATLI REG. VE HES (ARMAHES EL.)	2011	26.7	Hydro (run of river)	94.00
185	NARİNKALE REG. VE HES (EBD ENERJİ)	2011	30.4	Hydro (run of river)	108.00
186	OTLUCA I HES (BEYOBASI ENERJİ ÜR.)	2011	37.5	Hydro (run of river)	0.00
187	OTLUCA II HES (BEYOBASI ENERJİ ÜR.)	2011	6.4	Hydro (run of river)	0.00
188	ÖREN REG. VE HES (ÇELİKLER ELEKTRİK)	2011	6.6	Hydro (run of river)	16.00
189	POYRAZ HES (YEŞİL ENERJİ ELEKTRİK)	2011	2.7	Hydro (run of river)	10.00
190	SARAÇBENDİ HES (ÇAMLICA ELEKTRİK)	2011	25.5	Hydro (run of river)	0.00
191	SARIKAVAK HES (ESER ENERJİ YAT. AŞ.)	2011	8.1	Hydro (run of river)	0.00
192	SAYAN HES (KAREL ELEKTRİK ÜRETİM)	2011	14.9	Hydro (run of river)	0.00
193	SEFAKÖY HES (PURE ENERJİ ÜRETİM AŞ.)	2011	33.1	Hydro (run of river)	0.00
194	DAREN HES ELEKTRİK (SEYRANTEPE)	2011	49.7	Hydro (run of river)	181.13
195	SIZIR (KAYSERİ VE CİVARI EL. T.A.Ş)	2011	5.8	Hydro (run of river)	46.00

196	SÖĞÜTLÜKAYA (POSOF III) HES	2011	6.1	Hydro (run of river)	31.00
197	TEFEN HES (AKSU MADENCİLİK SAN.)	2011	33.0	Hydro (run of river)	141.00
198	TUZTAŞI HES (GÜRÜZ ELEKTRİK ÜR.)	2011	1.6	Hydro (run of river)	10.00
199	ÜZÜMLÜ HES (AKGÜN ENERJİ ÜRETİM)	2011	11.4	Hydro (run of river)	41.00
200	YAMAÇ HES (YAMAÇ ENERJİ ÜRETİM A.Ş.)	2011	5.5	Hydro (run of river)	0.00
201	YAPISAN (KARICA REG. ve DARICA I HES)	2011	13.3	Hydro (run of river)	0.00
202	YAPRAK II HES (NİSAN ELEKTROMEK.)	2011	10.8	Hydro (run of river)	32.00
203	YAŞIL HES (YAŞIL ENERJİ ELEKTRİK)	2011	3.8	Hydro (run of river)	15.00
204	YEDİGÖL REG. VE HES (YEDİGÖL HİDR.)	2011	21.9	Hydro (run of river)	77.00
205	YEDİGÖZE HES (YEDİGÖZE ELEK.) (İlave)	2011	155.3	Hydro (run of river)	425.00
206	SARES RES (GARET ENERJİ ÜRETİM)	2011	7.5	Wind	0.00
207	SEYİTALİ RES (DORUK ENERJİ ELEKTRİK)	2011	30.0	Wind	0.00
208	SOMA RES (SOMA ENERJİ) (İlave)	2011	36.9	Wind	0.00
209	SUSURLUK RES (ALANTEK ENERJİ ÜRET.)	2011	45.0	Wind	0.00

210	ŞAH RES (GALATA WİND ENERJİ LTD. ŞTİ)	2011	93.0	Wind	0.00
211	TURGUTTEPE RES (SABAŞ ELEKTRİK)	2011	2.0	Wind	0.00
212	ZİYARET RES (ZİYARET RES ELEKTRİK)	2011	22.5	Wind	0.00
213	AKRES (AKHİSAR RÜZGAR EN. ELEKT.)	2011	43.8	Wind	0.00
214	AYVACIK RES (AYRES AYVACIK RÜZG.)	2011	5.0	Wind	0.00
215	BAKİ ELEKTRİK ŞAMLI RÜZGAR (İlave)	2011	24.0	Wind	0.00
216	ÇANAKKALE RES (ENERJİ-SA ENERJİ)	2011	29.2	Wind	0.00
217	ÇATALTEPE RES (ALİZE ENERJİ ELEKTRİK)	2011	16.0	Wind	0.00
218	İNNORES ELEKTRİK YUNTDAĞ RÜZGAR	2011	10.0	Wind	0.00
219	KİLLİK RES (PEM ENERJİ A.Ş.)	2011	40.0	Wind	0.00
220	ACARSOY TERMİK KOM.ÇEV.SANT. (ACARSOY EN.)	2012	50.0	Natural Gas	375.00
221	AFYON DGKÇ (DEDELİ DOĞALGAZ ELEKTRİK ÜR.)	2012	126.1	Natural Gas	945.00
222	AGE DOĞALGAZ KOM. ÇEV. SANT. (AGE DENİZLİ)	2012	141.0	Natural Gas	1057.00
223	AKDENİZ KİMYA SAN. VE TİC. A.Ş.	2012	4.0	Natural Gas	30.00

224	AKKÖPRÜ (DALAMAN)	2012	115.0	Hydro (run of river)	176.00
225	AKKÖY II HES (AKKÖY ENERJİ A.Ş.)	2012	229.7	Hydro (run of river)	508.00
226	AKKÖY-ESPİYE HES (KONİ İNŞAAT SAN. A.Ş.)	2012	8.9	Hydro (run of river)	40.00
227	AKSA AKRİLİK KİMYA SAN. A.Ş. (İTHAL KÖM.+D.G)	2012	42.5	Natural Gas	298.00
228	AKSU RES (AKSU TEMİZ ENERJİ ELEKTRİK ÜRETİM)	2012	72.0	Wind	0.00
229	ALABALIK REG. VE HES SANTRALI I-II (DARBOĞAZ ELK. ÜR. SAN.)	2012	13.8	Hydro (run of river)	0.00
230	ALES DOĞALGAZ KOM. ÇEV. SANT. (ALES ELEKT.)	2012	49.0	Natural Gas	370.00
231	ALPASLAN I (ELEKTRİK ÜRETİM A.Ş.)	2012	80.0	Hydro (run of river)	0.00
232	ALTINYILDIZ MENSUCAT VE KONF. FAB. (Tekirdağ)	2012	5.5	Natural Gas	38.00
233	ANAK HES (KOR-EN KORKUTELİ ELEK. ÜRET. SAN.)	2012	3.8	Hydro (run of river)	9.00
234	ARAKLI-1 REG. VE HES(YÜCEYURT ENERJİ ÜRETİM)	2012	13.1	Hydro (run of river)	0.00
235	ARCA HES (GÜRSU TEMİZ ENERJİ ÜRETİM A.Ş.)	2012	5.5	Hydro (run of river)	0.00
236	AREL ENERJİ BİYOKÜTLE TESİSİ (AREL ÇEVRE)	2012	2.4	Biomass	0.00
237	ARPA REG. VE HES (MCK ELEKTRİK ÜRETİM A.Ş.)	2012	32.4	Hydro (run of river)	44.00

238	ASAŞ ALÜMİNYUM SANAYİ VE TİCARET A.Ş.	2012	8.6	Natural Gas	65.00
239	ATAKÖY (ZORLU DOĞAL ELEKTRİK ÜRETİMİ A.Ş.)	2012	5.5	Hydro (run of river)	11.00
240	AVCILAR HES (AVCILAR ENERJİ ELEKTRİK ÜRET.)	2012	16.7	Hydro (run of river)	28.00
241	AYANCIK HES (İLK ELEKTRİK ENERJİ ÜRETİMİ SN.)	2012	15.6	Hydro (run of river)	37.00
242	AYRANCILAR HES (MURADİYE ELEKTRİK ÜRETİM)	2012	9.3	Hydro (run of river)	0.00
243	BAĞIŞTAŞ II HES (AKDENİZLİ ELEKTRİK ÜRETİM)	2012	32.4	Hydro (run of river)	69.00
244	BALIKESİR RES (BARES ELEKTRİK ÜRETİM A.Ş.)	2012	30.3	Wind	0.00
245	BALIKESİR RES (ENERJİSA ENERJİ ÜRETİM A.Ş.)	2012	82.5	Wind	0.00
246	BALKUSAN BARAJI VE HES 1 NOLU SANT. (KAREN)	2012	13.0	Hydro (run of river)	0.00
247	BALKUSAN BARAJI VE HES 2 NOLU SANT. (KAREN)	2012	25.0	Hydro (run of river)	0.00
248	BALSUYU MENSUCAT SAN. VE TİC. A.Ş.	2012	9.7	Natural Gas	68.00
249	BAMEN KOJENERASYON (BAŞYAZICIOĞLU TEKSTİL)	2012	2.1	Natural Gas	14.00
250	BANDIRMA RES (YAPISAN ELEKTRİK ÜRETİM A.Ş.)	2012	5.0	Wind	0.00
251	BANGAL REG. VE KUŞLUK HES (KUDRET ENERJİ)	2012	17.0	Hydro (run of river)	32.00

252	BEKTEMUR HES (DİZ-EP ELEKTRİK ÜRETİM LTD.)	2012	3.5	Hydro (run of river)	11.00
253	BEREKET ENERJİ ÜRETİM A.Ş. (BİOGAZ)	2012	0.6	Biogas	5.00
254	BEYKÖY (ZORLU DOĞAL ELEKTRİK ÜRETİMİ A.Ş.)	2012	16.8	Hydro (run of river)	87.00
255	BEYPİ BEYPAZARI TARIMSAL ÜRETİM PZ. SN. A.Ş.	2012	8.6	Natural Gas	63.00
256	BİLECİK DOĞALGAZ ÇS. (TEKNO DOĞALGAZ ÇEV.)	2012	25.8	Natural Gas	190.00
257	BİLECİK DOĞALGAZ KÇS. (DEDELİ DOĞALGAZ EL.)	2012	126.1	Natural Gas	945.00
258	BİLKUR TEKSTİL BOYA TİC. A.Ş.	2012	2.0	Natural Gas	14.00
259	BİNATOM ELEKTRİK ÜRETİM A.Ş. (Emet/KÜTAHYA)	2012	10.4	Natural Gas	78.00
260	BİS ENERJİ(Sanayi/ Bursa)	2012	48.0	Natural Gas	361.00
261	BOSEN ENERJİ ELEKTRİK ÜRETİM AŞ.(Bursa)	2012	27.9	Natural Gas	210.00
262	BOYABAT BARAJI VE HES (BOYABAT ELEKTRİK)	2012	513.0	Hydro (run of river)	830.00
263	BOZYAKA RES (KARDEMİR HADDECİLİK VE ELEKT.)	2012	12.0	Wind	32.00
264	BÜYÜKDÜZ HES (AYEN ENERJİ A.Ş.)	2012	68.9	Hydro (run of river)	192.00
265	CAN 1 HES (HED ELEKTRİK ÜRETİM A.Ş.)	2012	1.8	Hydro (run of river)	6.00

266	CEYHAN HES (BERKMAN HES) (ENOVA EN ÜRET.)	2012	12.6	Hydro (run of river)	31.00
267	CUNİŞ REG. VE HES (RİNERJİ RİZE ELEKTRİK ÜR.)	2012	8.4	Hydro (run of river)	21.00
268	ÇAĞLAYAN HES (ÇAĞLAYAN HES ENERJİ ÜRETİM)	2012	6.0	Hydro (run of river)	12.00
269	ÇARŞAMBA HES (ÇARŞAMBA ENERJİ ELEKTRİK)	2012	11.3	Hydro (run of river)	36.00
270	ÇILDIR (ZORLU DOĞAL ELEKTRİK ÜRETİMİ A.Ş.)	2012	15.4	Natural Gas	20.00
271	ÇINAR-1 HES (AYCAN ENERJİ ÜRETİM TİC. VE SN.)	2012	9.3	Hydro (run of river)	19.00
272	ÇUKURÇAYI HES (AYDEMİR ELEKTRİK ÜRETİM A.Ş.)	2012	1.8	Hydro (run of river)	2.00
273	DAĞPAZARI RES (ENERJİSA ENERJİ ÜRETİM A.Ş.)	2012	39.0	Wind	0.00
274	DEMİRCİLER HES (PAK ENERJİ ÜRETİMİ SAN.)	2012	8.4	Hydro (run of river)	0.00
275	DENİZ JEOTERMAL (MAREN MARAŞ ELEKTRİK)	2012	24.0	Geothermal	0.00
276	DENİZLİ JEOTERMAL (ZORLU DOĞAL ELEK. ÜR.A.Ş.)	2012	15.0	Geothermal	105.00
277	DİNAR RES (OLGU ENERJİ YATIRIM ÜRETİM)	2012	16.1	Wind	51.00
278	DOĞANKAYA HES (MAR-EN ENERJİ ÜRET. TİC.)	2012	20.6	Hydro (run of river)	56.00
279	DUMLU HES (DUMLU ENERJİ ELEKTRİK ÜRETİM)	2012	4.0	Hydro (run of river)	5.00

280	DURMAZLAR MAKİNA SANAYİ VE TİCARET A.Ş.	2012	1.3	Natural Gas	10.00
281	DURUM GIDA TERMİK KOJEN. SANT. (DURUM GIDA)	2012	3.6	Natural Gas	29.00
282	EGE SERAMİK ENERJİ SANTRALI	2012	13.1	Natural Gas	90.00
283	EGER HES (EGER ELEKTRİK ÜRETİM LTD. ŞTİ.)	2012	1.9	Hydro (run of river)	6.00
284	EKİM BİYOGAZ (EKİM GRUP ELEKTRİK ÜRETİM)	2012	1.2	Biogas	10.00
285	ENERJİ-SA (ÇANAKKALE)	2012	0.9	Wind	0.00
286	ENERJİ-SA (KÖSEKÖY)	2012	120.0	Natural Gas	930.00
287	ENERJİ-SA (MERSİN)	2012	1.4	Natural Gas	11.00
288	ERDEMİR(F.O+K.G+Y.F.G+DG)(Ereğli-Zonguldak)	2012	53.9	Natural Gas	355.00
289	EREN ENERJİ ELEKTRİK ÜRETİM A.Ş.	2012	30.0	Imported coal	195.00
290	ERİK HES (ELEKTRİK ÜRETİM A.Ş.)	2012	6.5	Hydro (run of river)	21.00
291	ERMENEK (ELEKTRİK ÜRETİM A.Ş.)	2012	302.4	Hydro (run of river)	1187.00
292	ERZURUM MEYDAN AVM (REDEVKO BİR EMLAK)	2012	2.4	Natural Gas	16.00
293	ES ES ESKİŞEHİR ENERJİ SAN. VE TİC. A.Ş.	2012	2.0	Biogas	15.00

294	ESENDURAK HES (MERAL ELEKTRİK ÜRETİM)	2012	9.3	Hydro (run of river)	0.00
295	FEKE 1 HES (AKKUR ENERJİ ÜRETİM TİC. VE SAN.)	2012	29.4	Hydro (run of river)	0.00
296	FEKE 2 BARAJI VE HES (AKKUR ENERJİ ÜRETİM)	2012	69.3	Hydro (run of river)	0.00
297	FINDIK I HES (ADV ELEKTRİK ÜRETİM LTD. ŞTİ.)	2012	11.3	Hydro (run of river)	27.00
298	GOODYEAR (İzmit/Köseköy)	2012	5.2	LPG	35.00
299	GÖKGEDİK HES (UHUD ENERJİ ÜRETİM TİC.)	2012	24.3	Hydro (run of river)	75.00
300	GÖKNUR GIDA MAD. EN. İM. İT. İH. TİC. VE SAN. AŞ.	2012	1.6	Imported coal	6.00
301	GÜDÜL 2 HES (YAŞAM ENERJİ ELEKTRİK ÜRETİM)	2012	4.9	Hydro (run of river)	15.00
302	GÜLLÜBAĞ BARAJI VE HES (SENENERJİ ENERJİ)	2012	96.0	Hydro (run of river)	280.00
303	GÜNAYDIN RES (MANRES ELEKTRİK ÜRETİM A.Ş.)	2012	10.0	Wind	0.00
304	GÜNDER REG. VE HES (ARIK ENERJİ ÜRETİM A.Ş.)	2012	28.2	Hydro (run of river)	0.00
305	GÜRTEKS İPLİK SANAYİ VE TİCARET A.Ş.	2012	6.7	Natural Gas	53.00
306	HATİPOĞLU PLASTİK YAPI ELEMANLARI SAN.	2012	2.0	Natural Gas	14.00
307	HORU REG. VE HES (MARAŞ ENERJİ YATIRIM SN.)	2012	8.5	Hydro (run of river)	25.00

308	HORYAN HES (HORYAN ENERJİ A.Ş.)	2012	5.7	Hydro (run of river)	15.00
309	ITC ADANA ENERJİ ÜRETİM (ADANA BİOKÜTLE SNT)	2012	4.2	Waste	35.00
310	ITC BURSA ENERJİ ÜRETİM SAN. VE TİC. A.Ş.	2012	9.8	Waste	37.00
311	İKİZDERE (ZORLU DOĞAL ELEKTRİK ÜRETİMİ A.Ş.)	2012	18.6	Hydro (run of river)	100.00
312	İNNORES ELEKTRİK YUNTDAĞ RÜZGAR (Aliağa-İZMİR)	2012	5.0	Wind	0.00
313	İŞBİRLİĞİ ENERJİ ÜRETİM SAN. VE TİC. A.Ş.	2012	19.5	Natural Gas	146.00
314	İZAYDAŞ (İZMİT ÇÖP)(Köseköy)	2012	0.3	Waste	2.00
315	İZMİR BÜYÜK EFES OTELİ KOJENERASYON TES.	2012	1.2	Natural Gas	9.00
316	JTI TORBALI KOJENERASYON SANTR. (JTI TÜTÜN)	2012	4.0	Natural Gas	30.00
317	KARADAĞ RES (GARET ENERJİ ÜRETİM)	2012	10.0	Wind	0.00
318	KARTALKAYA HES (SIR ENERJİ ÜRETİM SAN.)	2012	8.0	Hydro (run of river)	15.00
319	KAYADÜZÜ RES (BAKTEPE ENERJİ A.Ş.)	2012	39.0	Wind	0.00
320	KAYAKÖPRÜ 2 HES (ARSAN ENERJİ A.Ş.)	2012	10.2	Hydro (run of river)	36.00
321	KAYSERİ KATI ATIK DEPONİ SAHASI (HER ENERJİ)	2012	1.4	Waste	10.00

322	KESKİNOĞLU TAVUKÇULUK VE DAMIZLIK İŞLET.	2012	6.0	Natural Gas	45.00
323	KILAVUZLU HES (ELEKTRİK ÜRETİM A.Ş.)	2012	40.5	Hydro (run of river)	150.00
324	KIRIKDAĞ HES (ÖZENİR ENERJİ ELEKTRİK ÜRET.)	2012	16.9	Hydro (run of river)	40.00
325	KIVANÇ TEKSTİL SAN.ve TİC.A.Ş.	2012	2.1	Natural Gas	11.00
326	KOCAELİ ÇÖP BİYOGAZ (LFG) (KÖRFEZ ENERJİ)	2012	2.3	Waste	18.00
327	KOZBEYLİ RES (DOĞAL ENERJİ ELEKTRİK ÜRETİM)	2012	20.0	Wind	60.00
328	KOZDERE HES (ADO MADENCİLİK ELEKTRİK ÜR.)	2012	6.1	Hydro (run of river)	5.00
329	KÖKNAR HES (AYCAN ENERJİ ÜRETİM TİC.)	2012	8.0	Hydro (run of river)	15.00
330	KUZGUN (ZORLU DOĞAL ELEKTRİK ÜRETİMİ A.Ş.)	2012	20.9	Hydro (run of river)	0.00
331	KÜÇÜKER TEKSTİL SAN. VE TİC. A.Ş.	2012	5.0	Lignite	40.00
332	KÜRCE REG. VE HES (DEDEGÖL ENERJİ)	2012	12.0	Hydro (run of river)	36.00
333	MENGE BARAJI VE HES (ENERJİSA ENERJİ)	2012	44.7	Hydro (run of river)	58.00
334	MERCAN (ZORLU DOĞAL ELEKTRİK ÜRETİMİ A.Ş.)	2012	20.4	Hydro (run of river)	78.00
335	METRİSTEPE RES (CAN ENERJİ ENTEGRE ELEKT.)	2012	39.0	Wind	0.00

336	MİDİLLİ REG. VE HES (MASAT ENERJİ ELEKTRİK)	2012	20.9	Hydro (run of river)	45.00
337	MURAT I-II REG. VE HES (MURAT HES ENERJİ EL.)	2012	35.6	Hydro (run of river)	107.00
338	MURATLI REG. VE HES (ARMAHES ELEKTRİK ÜR.)	2012	11.0	Hydro (run of river)	17.00
339	MURSAL I HES (PETA MÜHENDİSLİK ENERJİ)	2012	4.2	Hydro (run of river)	13.00
340	MUTLU MAKARNACILIK SANAYİ VE TİCARET A.Ş.)	2012	2.0	Natural Gas	18.00
341	NAKSAN ENERJİ ELEKTRİK ÜRETİM A.Ş.	2012	16.0	Natural Gas	120.00
342	NİKSAR HES (NİKSAR ENERJİ ÜRETİM LTD. ŞTİ.)	2012	40.2	Hydro (run of river)	140.00
343	ODAŞ DOĞALGAZ KÇS (ODAŞ ELEKTRİK ÜRETİM)	2012	128.2	Natural Gas	450.00
344	OFİM ENERJİ SANTRALI (OSTİM FİNANS VE İŞ MER.)	2012	2.1	Natural Gas	16.00
345	ORTADOĞU ENERJİ (KÖMÜRCÜODA) (Şile/İSTANBUL)	2012	2.8	Waste	17.00
346	ORTADOĞU ENERJİ (ODA YERİ) (Eyüp/İSTANBUL)	2012	4.1	Waste	22.00
347	ÖREN REG. VE HES (ÇELİKLER ELEKTRİK ÜRETİM)	2012	19.9	Hydro (run of river)	12.00
348	ÖZMAYA SANAYİ A.Ş.	2012	5.4	Hydro (run of river)	40.00
349	PAMUKOVA YEN. EN. VE ELEK. ÜR. A.Ş.	2012	1.4	Waste	0.00

350	PANCAR ELEKTRİK ÜRETİM A.Ş.	2012	34.9	Natural Gas	731.00
351	PAPART HES (ELİTE ELEKTRİK ÜRETİM)	2012	26.6	Hydro (run of river)	80.00
352	PİSA TEKSTİL VE BOYA FABRİKALARI (İstanbul)	2012	1.0	Natural Gas	7.00
353	POLAT HES (ELESTAŞ ELEKTRİK ÜRETİM A.Ş.)	2012	6.6	Hydro (run of river)	20.00
354	POYRAZ RES (POYRAZ ENERJİ ELEKTRİK ÜRETİM)	2012	50.0	Wind	0.00
355	SAMSUN AVDAN KATI ATIK (SAMSUN AVDAN EN.)	2012	2.4	Waste	18.00
356	SAMURLU RES (DOĞAL ENERJİ ELEKTRİK ÜRET.)	2012	22.0	Hydro (run of river)	60.00
357	SARIHIDIR HES (MOLU ENERJİ ÜRETİM A.Ş.)	2012	6.0	Hydro (run of river)	18.00
358	SELÇUK İPLİK SAN. VE TİC. A.Ş.	2012	8.6	Natural Gas	65.00
359	SELVA GIDA SAN. A.Ş.	2012	1.7	Natural Gas	14.00
360	SEYRANTEPE HES (SEYRANTEPE ELEKT. ÜRET.)	2012	56.8	Hydro (run of river)	161.00
361	SEZER BİO ENERJİ (KALEMİRLER ENERJİ ELEKTR.)	2012	0.5	Waste	4.00
362	SIRAKONAKLAR HES (2M ENERJİ ÜRETİM A.Ş.)	2012	18.0	Hydro (run of river)	39.00
363	SİNEM JEOTERMAL (MAREN MARAŞ ELEKTRİK)	2012	24.0	Geothermal	191.00

364	SODA SANAYİ A.Ş. (Mersin)	2012	252.2	Natural Gas	1765.00
365	SOMA RES (SOMA ENERJİ ELEKTRİK ÜRETİM A.Ş.)	2012	24.0	Wind	0.00
366	SÖKE-ÇATALBÜK RES (ABK ENERJİ ELEKTRİK)	2012	18.0	Wind	0.00
367	SÖKE-ÇATALBÜK RES (ABK ENERJİ ELEKTRİK)	2012	12.0	Wind	0.00
368	SULUKÖY HES (DU ELEKTRİK ÜRETİM A.Ş.)	2012	6.9	Hydro (run of river)	18.00
369	ŞANLIURFA OSB (RASA ENERJİ ÜRETİM A.Ş.)	2012	11.7	Natural Gas	82.00
370	ŞENKÖY RES (EOLOS RÜZGAR ENERJİSİ ÜRETİM)	2012	26.0	Wind	0.00
371	ŞİFRİN REG. VE HES (BOMONTİ ELK. MÜH. MÜŞ.)	2012	6.7	Hydro (run of river)	10.00
372	TELEME REG. VE HES (TAYEN ELEKTRİK ÜRET.)	2012	1.6	Hydro (run of river)	6.00
373	TELLİ I-II HES (FALANJ ENERJİ ELEKTRİK ÜRET.)	2012	8.7	Hydro (run of river)	18.00
374	TERCAN (ZORLU DOĞAL ELEKTRİK ÜRETİMİ A.Ş.)	2012	15.0	Hydro (run of river)	28.00
375	TRAKYA YENİŞEHİR CAM SAN. A.Ş.	2012	6.0	Biogas	45.00
376	TUĞRA REG. VE HES (VİRA ELEKTRİK ÜRETİM A.Ş.)	2012	4.9	Hydro (run of river)	10.00
377	TUNA HES (NİSAN ELEKTROMEKANİK ENERJİ)	2012	37.2	Hydro (run of river)	0.00

378	TUZKÖY HES (BATEN ENERJİ ÜRETİMİ A.Ş.)	2012	8.4	Hydro (run of river)	0.00
379	TUZLAKÖY-SERGE REG. VE HES (TUYAT ELEKT.)	2012	7.1	Hydro (run of river)	0.00
380	UMUT I REG. VE HES (NİSAN ELEKTROMEKANİK)	2012	5.8	Hydro (run of river)	0.00
381	ÜÇKAYA HES (ŞİRİKÇİOĞLU ELEKTRİK ÜRETİM A.Ş.)	2012	1.0	Hydro (run of river)	3.00
382	VİZARA REG. VE HES (ÖZTÜRK ELEKT. ÜRET. LTD.)	2012	8.6	Hydro (run of river)	0.00
383	YAĞMUR REG. VE HES (BT BORDO ELK. ÜR.)	2012	8.9	Hydro (run of river)	0.00
384	YAMANLI III KAPS. GÖKKAYA HES (MEM ENERJİ)	2012	28.5	Hydro (run of river)	0.00
385	YAMANLI III KAPS. HİMMETLİ HES (MEM ENERJİ)	2012	27.0	Hydro (run of river)	0.00
386	YAVUZ HES (AREM ENERJİ ÜRETİM A.Ş.)	2012	5.8	Hydro (run of river)	0.00
387	YEDİSU HES (ÖZALTIN ENERJİ ÜRETİM VE İNŞAAT)	2012	22.7	Hydro (run of river)	41.00
388	YENİ UŞAK ENERJİ ELEKTRİK SANTRALI	2012	9.7	Natural Gas	62.00
389	YILDIRIM HES (BAYBURT ENERJİ ÜRETİM VE TİC.)	2012	10.7	Hydro (run of river)	22.00
390	YOKUŞLU KALKANDERE HES (SANKO ENERJİ)	2012	5.2	Hydro (run of river)	0.00
391	YONGAPAN (KASTAMONU ENTEGRE)(D.İskelesi)	2012	15.0	Natural Gas	90.00

392	ZORLU ENERJİ (B.Karıştıran)	2012	25.7	Natural Gas	195.00
393	YAĞMUR REG. VE HES (BT BORDO ELK. ÜR.)	2012	8.9	Hydro (run of river)	0.00
394	YAMANLI III KAPS. GÖKKAYA HES (MEM ENERJİ)	2012	28.5	Hydro (run of river)	0.00
395	YAMANLI III KAPS. HİMMETLİ HES (MEM ENERJİ)	2012	27.0	Hydro (run of river)	0.00
396	YAVUZ HES (AREM ENERJİ ÜRETİM A.Ş.)	2012	5.8	Hydro (run of river)	0.00
397	YEDİSU HES (ÖZALTIN ENERJİ ÜRETİM VE İNŞAAT)	2012	22.7	Hydro (run of river)	41.00
398	YENİ UŞAK ENERJİ ELEKTRİK SANTRALI	2012	9.7	Natural Gas	62.00
399	YILDIRIM HES (BAYBURT ENERJİ ÜRETİM VE TİC.)	2012	10.7	Hydro (run of river)	22.00
400	YOKUŞLU KALKANDERE HES (SANKO ENERJİ)	2012	5.2	Hydro (run of river)	0.00
401	YONGAPAN (KASTAMONU ENTEGRE)(D.İskelesi)	2012	15.0	Natural Gas	90.00
402	ZORLU ENERJİ (B.Karıştıran)	2012	25.7	Natural Gas	195.00