



July 2018

#2

Monthly Energy Bulletin

As of 27/07/2018

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TSKB Economic Research

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TSKB Ekonomik Arařtırmalar

Key Appointments in the Energy Sector

On July 9, Fatih Dönmez was nominated as Minister of Energy and Natural Resources of the new Cabinet under the Presidential System. Fatih Dönmez, who had managed several Energy and Telecommunication companies at different levels, had been appointed as the Undersecretary of the Ministry of Energy and Natural Resources in 2015. Mr. Dönmez worked on issues such as supply security, energy poverty, natural gas projections, R&D, strategic planning, performance management and the adaptation of companies to EU norms .

Abdullah Tancan, Alparslan Bayraktar and Mithat Cansız were appointed as Deputy Ministers of the Ministry of Energy and Natural Resources. Mithat Cansız had been in charge of the General Directorate of Mining Affairs before the appointment. Alparslan Bayraktar was Deputy Undersecretary of the Ministry of Energy and Natural Resources; before being appointed as Deputy Undersecretary, he had led the External Relations and European Union General Directorate of the Ministry of Energy and Natural Resources. Like Alparslan Bayraktar, Deputy Minister Abdullah Tancan has also previously served as Deputy Undersecretary of the Ministry of Energy and Natural Resources .

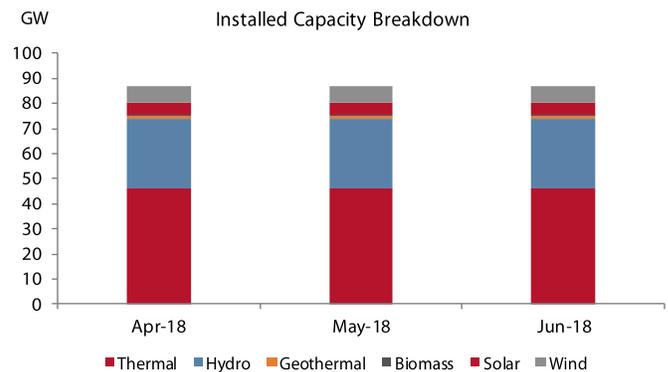
Installed Capacity Analysis

Turkey's total installed capacity increased from 85,200 MW at the end of 2017 to 87,139 MW by the end of the first half of 2018, with solar power accounting for two thirds of the 1,939 MW increase in the first six months, and most of this in the first five months of the year (only 4MW added to solar capacity in June). The total installed capacity of thermal power plants in operation continued to decline in June, but there were significant increases in the total installed capacity of hydroelectric power plants and solar power plants. There was a decline of 142 MW in the total installed capacity of thermal power plants in June, but an increase of 180 MW in the total installed capacity of hydroelectric power plants .

Renewables accounted for approximately 47% of the total operational capacity of the power plants in June. Even though there was a decrease in total installed capacity of thermal power plants, they still accounted for 53% of the country's total installed capacity in June .

Plant Type (MW)	Apr-18	May-18	Jun-18
Thermal	46,416	46,203	46,061
Hydro	27,509	27,722	27,912
Geothermal	1,129	1,129	1,144
Biomass	583	616	624
Solar	4,628	4,703	4,726
Wind	6,665	6,667	6,671
Total	86,930	87,041	87,139

Source: Turkey Electricity Transmission Corporation (TEİAŞ), TSKB Economic Research



Source: TEİAŞ, TSKB Economic Research

Electricity Generation Analysis

A total of 169,864 gigawatt-hours (GWh) of electricity was generated in the first seven months of 2018, while the total generation in July had reached 24,480 GWh as of July 26*. Thermal power plants accounted for 72% of the total electricity generated in July, followed by 20% for hydroelectric power plants. Wind provided 5% of the total electricity generated.

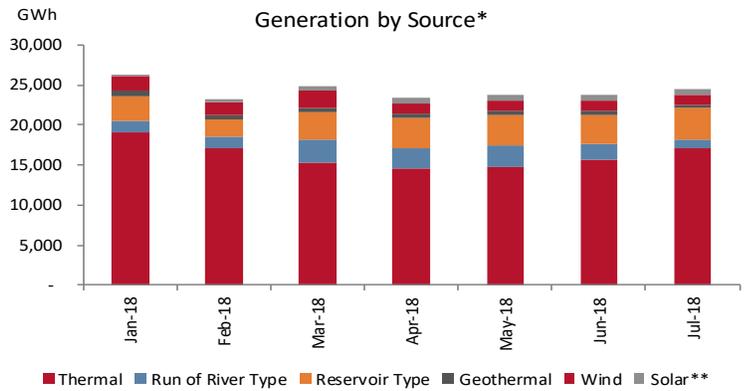
In March, April and May, thermal power plants provided 62% of the electricity generated; this share increased to 66% in June and 70% in July. One cause of this increase is thought to have been the lack of rainfall in June and in the first half of July, leading to insufficient electricity generation from hydroelectric power plants.

*July data consist of data up to July 27.

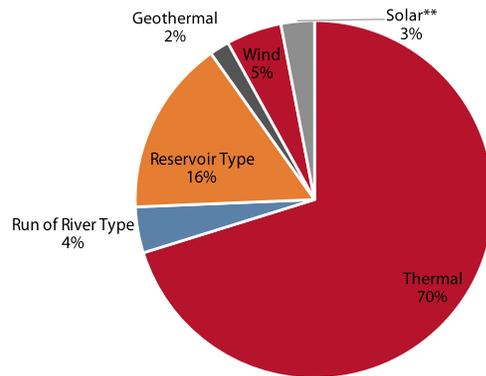
**Since the unlicensed solar power plant generation data has not yet been released by TEİAŞ, the total electricity generation by solar power plants was assumed as 735 GWh for both June and July.

In July, daily generation from licensed power plants averaged 913,304 megawatt-hours (MWh), a decrease of 1.8% when compared to July of last year. Approximately 72% of this electricity was generated by thermal power plants and 28% from renewable resources, with hydroelectric power plants accounting for three quarters of the electricity generated from renewable resources.

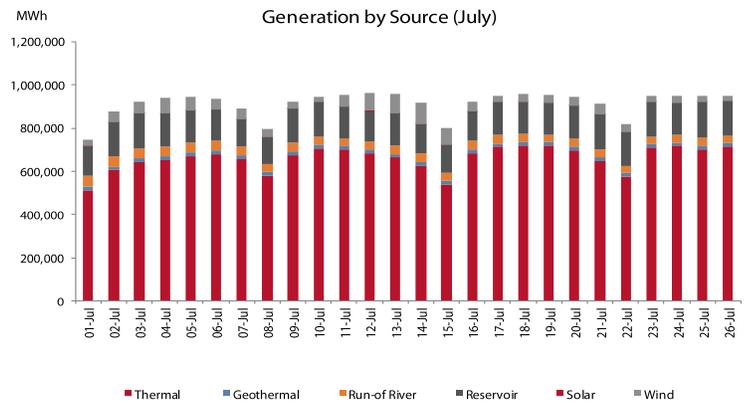
The average daily consumption in July stood at approximately 912,390 MWh with the highest daily consumption in July recorded on Thursday, July 12, at 960,064 MWh; the highest electricity generation, also 960,624 MWh, was recorded on the same day. The lowest consumption of the month was recorded on Sunday, July 1, with 749,906 MWh of consumption and 744,070 MWh of generation.



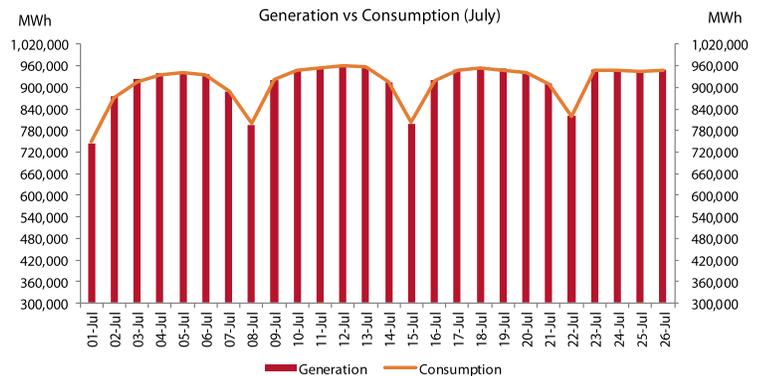
Source: TEİAŞ, YTBS Daily Reports, TSKB Economic Research



Source: TEİAŞ, YTBS Daily Reports, TSKB Economic Research



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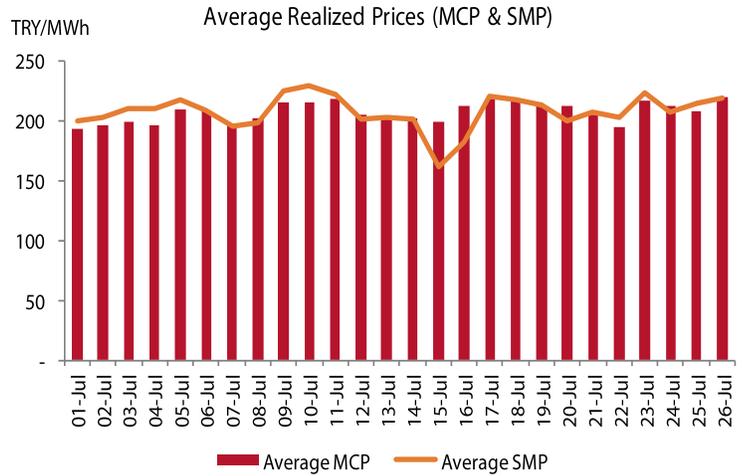
Kaynak: TEİAŞ, YTBS Daily Reports, TSKB Economic Research

Electricity Price Analysis

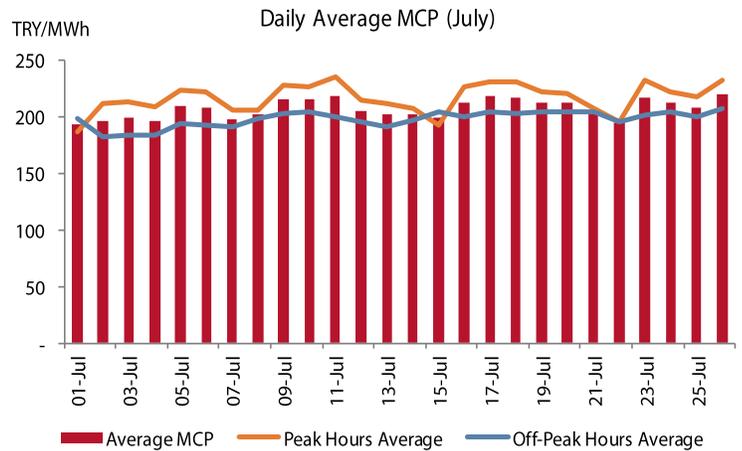
The average market clearing price (MCP) and system marginal price (SMP) fluctuated between TRY160/MWh and TRY230/MWh during the first 26 days of July. The average MCP between July 1-26 was TRY207.12/MWh while the SMP averaged TRY207.32/MWh. The lowest average MCP was recorded as TRY192.47/MWh on Sunday, July 1, and the lowest average SMP was TRY160.78/MWh on Sunday, July 15.

An analysis of July's daily average MCP finds an average tariff of TRY216.43/MWh for peak hours (from 8AM to 8PM) - 4.5% higher than the daily average value. The highest peak-hour average was TRY235.27/MWh on Wednesday, July 11 while the lowest peak-hour average was TRY181.44/MWh on Monday, July 2. The average pricing in off-peak periods (from 8PM to 8AM) was found to be TRY197.82/MWh between July 1-26.

The highest recorded MCP in July was TRY248.70/MWh, on Wednesday, July 11 at 4PM. The highest SMP was recorded at 9PM on Sunday, July 22, as TRY260.00/MWh.



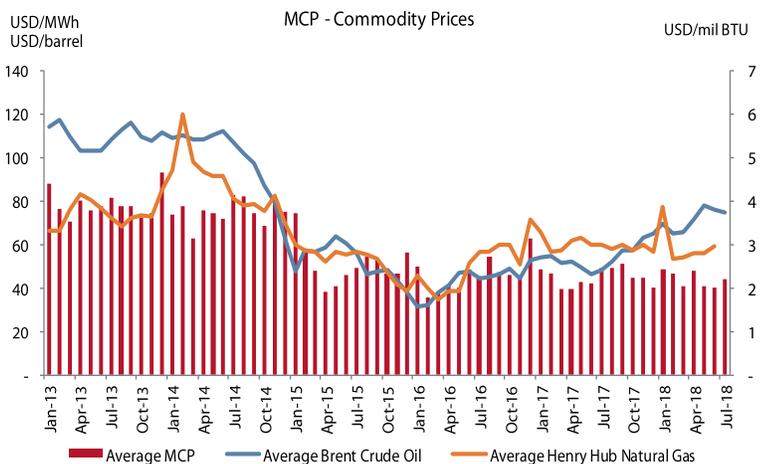
Source: EXIST, TSKB Economic Research



Source: EXIST, TSKB Economic Research

The annual average market clearing price in 2013 was US\$78.80/MWh while the annual average MCP in 2017 was US\$45.02/MWh. As presented in the figure, electricity tariffs have been moving in line with Henry Hub natural gas prices and Brent crude oil prices in the global markets. The average electricity price, which declined to US\$50.99/MWh in 2015, increased back to US\$56.26/MWh in 2016 before declining to US\$45.02/MWh in 2017 on the back of movements in the USD/TRY exchange rate. The average electricity price in the first seven months of 2018 was realized as US\$44.03/MWh.

Electricity prices average US\$40.11/MWh in June while the average electricity price for the first 26 days of July was recorded as US\$43.85/MWh.



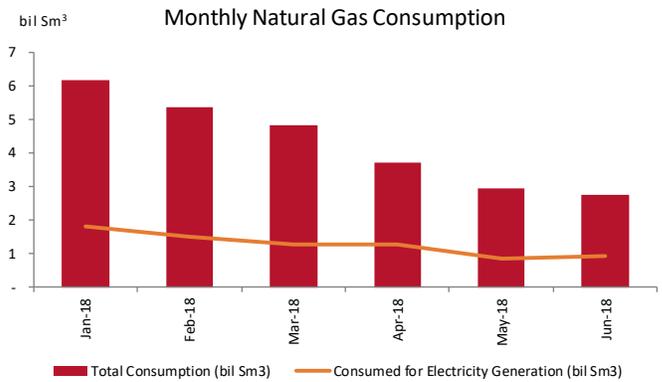
Source: EXIST, CBRT, International Energy Agency (IEA) TSKB Economic Research

*July data consist of data up to July 27.

Natural Gas Consumption

A total of 3.0 billion cubic meters (bcm) of natural gas was consumed in May, with a slight decline to 2.7 bcm in June, with 29% of natural gas consumption directed to electricity generation in May – a proportion which increased to 35% in June.

It is thought that the increase in the share of natural gas consumption directed to electricity generation was caused by the reduced contribution from hydro-electric power in the electricity generation mix due to the lower levels of rainfall.



Source: Ministry of Energy and Natural Resources (MENR), TSKB Economic Research

Sector News

- The Minister for Energy and Natural Resources, Fatih Dönmez, stated that the Fatih Drilling Ship would open the first well in the Mediterranean in 2018.** Dönmez, who spoke at the “Generation and Road Investment and Financial Cooperation Summit”, said that the government had stepped up seismic exploration and drilling activities with the Barbaros Hayreddin Paşa and Oruç Reis seismic research ships located in the Mediterranean and in the Black Sea. Dönmez also emphasized the importance of natural gas supply security, adding that the government was continuing to develop the existing capacities of Silivri and Tuz Gölü Natural Gas Storage Facilities in the natural gas storage gas field and that the government was seeking to ensure there was a strong natural gas infrastructure which could store at least 20% of Turkey’s natural gas consumption. (27 July 2018)
- Work carried out within the scope of the National Energy Efficiency Action Plan is aimed at achieving savings amounting to 23.9 million tonnes of oil equivalent in Turkey’s final energy consumption.** In an address to the Chairman of the Energy Efficiency Association, Murat Kalsın, and his board members, the Minister for Energy and Natural Resources, Fatih Dönmez, highlighted the importance of energy savings, with energy efficiency being one of the national strategic goals for 2023. (27 July 2018)
- A new adjustment is scheduled for the Final Resource Supply Tariff.** The Minister, Fatih Dönmez, stated that the government would address situations where an industry owner in the Organized Industrial Zones (OSB) receives electricity at a higher tariff than an industry owner outside the OSB, and if there are situations that cause unfair competition among equal parties. A new measure will be introduced in due course. (27 July 2018)
- The pace at Europe’s wind energy capacity grew slowed down in the first half of 2018.** According to WindEurope data, the wind energy capacity in Europe increased by 4.5 gigawatts (GW) in the first six months of 2018. The capacity grew by 6.1 GW in the same period of 2017. Germany provided the highest increase at 1.6 GW, with Turkey ranked sixth with an increase of 141 megawatts (MW) in its wind capacity. (27 July 2018)
- The Turkish Petroleum Refineries Corporation (TÜPRAŞ) will open an office in order to support its import and export operations and add additional value to the supply and sales chains.** In a statement to the Public Disclosure Platform (PDP), TÜPRAŞ announced that the establishment of the London Office would be completed by the end of the year. (26 July 2018)

Sector News (continued)

- **Construction permit works for the second reactor of the Akkuyu Nuclear Power Plant (NGS) have been completed.** The Akkuyu Nuclear Inc. plans to obtain a construction permit for a 1,200 MW reactor in July through an application to the Turkey Atomic Energy Agency (TAEA). The construction permit process for the first reactor within the scope of Akkuyu NGS took three years. (26 July 2018)
- **Electricity Generation Inc (EÜAŞ) will install a 240 MW floating power plant in Yenikapı, İstanbul.** In order to prevent power cuts in due to generation interruptions in Istanbul, a floating power plant, which will generate electricity from natural gas, is planned to be established in the Yenikapı area. The Environmental Impact Assessment (EIA) Report for the power plant will be evaluated at the Monitoring and Evaluation Committee (MEC) to be held on August 2. The floating power plant is projected to operate for around 1,500 hours per year and generate approximately 360 million kilowatt-hours (kWh) of electricity. The plant will use 108 million cubic meters of natural gas if operated in line with projections. Diesel oil will be the secondary fuel of the power plant. (25 July 2018)
- **A new EIA report was prepared for Ağan Thermal Power Plant project, which was canceled by the Council of State in April.** The A. an Thermal Power Plant is planned to be located in Biga, Çanakkale. The new EIA report for the construction work of two 790.1 MW thermal power plants and an ash storage area was prepared by the investor firm, DD Elektrik Üretim ve Enerji Yatırımlar A.Ş. The project, which is estimated to cost US\$2 billion, envisages the generation of 12.7 billion kWh of electricity and bring 1,000 jobs to the area during the land preparation and construction phase, with 500 employed during the operation phase. (25 July 2018)
- **The share of renewable energy sources in global electricity generation rose to a record 25% in 2017.** Global electricity demand grew more rapidly than the global energy demand in 2017 with demand for electricity in the world increasing by 3.1% in 2017 and China and India accounting for 70% of the increase. The growth in electricity demand in developed countries, which accounted for 10% of the electricity demand growth, rose at a rate of 1 percentage point less than the rate of global growth. Despite the robust increases in wind and solar PV generation, hydroelectric power remains the largest source of renewable energy-based electricity generation, with a 65% share in total renewable energy generation. (25 July 2018)
- **Pipeline laying operations for the Turkish Stream Project have begun in the Black Sea coastal town of Kırıkköy.** Work on a new stage in the natural gas pipeline transmission project, which will have a capacity of 31.5 billion cubic meters, got underway. The Turkish Stream Project consists of two transmission lines built in the Black Sea directly linking Russia to Turkey, with an extension to Turkey's border with neighbouring countries. Construction work on seabed trenches with a length of about 2.4 km began on Sunday, July 22 with the work expected to continue for between four and eight weeks. According to Sander van Rootselaar, the press agent for the Turkish Stream Project, the project envisages that the flow of natural gas will start in 2019, with work progressing in accordance with the project schedule. (24 July 2018)

Sector News (continued)

- **Following the news of a reduction of oil purchases from Iran, TÜPRAŞ issued a statement referring to the on-going “Wind Down” transition process with operations having been carried out as planned in the framework of the optimization programs.** The corporation added that that negotiations between the parties regarding the port-transition period were continuing. (24 July 2018)
- **The highest offer for the Tortum Hydroelectric Power Plant (HEPP) was submitted by Tayfurlar Enerji Üretim A.Ş in a tender which was operated by the Directorate of Privatization Administration.** The highest offer for the 26.2 MW Tortum HEPP and the property surrounding the plant, which was owned by EÜAŞ, was TRY 11 million. (23 July 2018)
- **Turkey was the second largest importer of LNG in Europe in 2017.** European countries imported a total of 47 million tonnes of LNG last year, with Spain importing the most at 12.2 million tonnes. Most of the LNG imported by European Countries was provided from Africa and the Middle East. Turkey imported a total of 3.45 million tonnes of LNG from Algeria, a total of 1.51 million tonnes from Nigeria and approximately 1 million tonnes from Qatar. Turkey also imported LNG from Equatorial Guinea, Norway, Trinidad and Tobago and the USA in 2017. According to a report prepared by the International Gas Union (IGU), the amount of electricity generated by hydroelectric power plants played a role in the increase of LNG demand in Turkey. (23 July 2018)
- **OPEC increased its oil production.** The compliance rate relative to the global production quotas of OPEC and non-OPEC oil producers declined from 147% in May to 120% in June. At the meeting held at the end of June, the decision was taken to reduce the compliance rate to 100%. (20 July 2018)
- **In the energy sector, work on the establishment of the Natural Gas Energy Exchange was completed.** Turkey will be playing an active role in pricing after this step. The Energy Market Regulatory Authority (EMRA) recently updated the Principles and Procedures of the Operation of the Organized Wholesale Natural Gas Sales Market. These principles, defined as trade rules of natural gas Exchange, can be thought of as one of the most important steps towards meeting the objective of being Turkey’s center of natural gas trade. With this amendment, the rights and obligations of the parties were defined so that the sales market, which will officially be opened on September 1, can be operated smoothly. The natural gas market will be operated by EXIST. After the establishment of the natural gas market, a further step will be completed for the natural gas pricing in Turkey and Turkey’s goal of becoming a regional gas trade center. The Natural Gas Continuous Trading Platform, a natural gas exchange, was implemented virtually on April 1. The system was tested intensively by natural gas supply license holders during the virtual application. (19 July 2018)

Sector News (continued)

- **There will be three priorities of the energy sector in the new period.** According to a statement issued by the Minister of Energy and Natural Resources, Fatih Dönmez, these priorities are financial sustainability, political sustainability and participation. Dönmez also stated that these priorities may be reviewed, depending on time and conditions. Dönmez noted that the General Directorate of Energy Affairs of the General Directorate of Renewable Energy were combined within this context and the main issues such as renewable energy and energy efficiency were integrated with supply security and energy policies, adding that the government had combined the General Directorate of Mining Affairs and the General Directorate of Petroleum Affairs and that the two general directorates in the field of mines and hydrocarbons had been merged to become the General Directorate of Mining and Petroleum Affairs (MAPEG), and that the General Directorate of Nuclear Energy and the Nuclear Regulatory Authority had been established. Fatih Dönmez added that the merger between Electricity Generation Inc. (EÜAŞ) and the Turkish Electricity Trade and Contracting Corporation (TETAŞ) was aimed at achieving greater efficiency while expressing the importance of continuity for investment and investors. (19 July 2018)
- **Global energy investments declined by 2% in 2017 compared to the previous year.** In 2017, the largest share of the investments were made in electricity. According to the "World Energy Investments 2018 (WEI 2018)" report prepared by the International Energy Agency (IEA), a total of US\$1.8 trillion was invested in energy projects globally with a 5% fall in investments made in electricity generation and supply to US\$750 billion. Investments in natural gas and petroleum, on the other hand, grew by 2% YoY last year to US\$716 billion, with investments in energy efficiency projects increasing by 3% YoY to US\$236 billion, but with coal investments decreasing by 13% YoY to US\$79 billion and investments in renewable transportation and heating also down by 13% YoY to US\$20 billion. Renewable energy and energy efficiency investments decreased by 3% in 2017 compared to the previous year. (18 July 2018)
- **The Chinese refinery, Dongming Petrochemical, will start importing oil from Iran.** The independent refinery announced that it would start importing crude oil from Iran instead of the USA. According to an article in the Ministry of Trade's "News Blog", the company with 6,300 employees and approximately US\$4.5 billion of assets has an annual petroleum processing capacity of 15 million tonnes. (18 July 2018)
- **The United States rejected demands that European companies be exempted from Iranian sanctions.** The US Secretary of State Mike Pompeo said in his letter to EU Countries that they rejected the EU's request for their wish to exert maximum pressure on Iran. Pompeo said the US administration would put unprecedented financial pressure on the Iranian regime, while adding that there may only be exceptions in certain situations which concerned EU national security interests. (17 July 2018)
- **Zekeriya Gökşenli was appointed as the second chairman of the Energy Market Regulatory Authority (EMRA).** According to the Presidency's decision dated July 14, 2018 and numbered 2018/6, which was published in the Official Gazette on Sunday, July 15, İbrahim Tan and Dr. Muhammed Mustafa İzgeç was appointed as a member of the board. (16 July 2018)

- **Nuclear Regulatory Authority (NDK) became the relevant institution under the Ministry of Energy and Natural Resources with the Presidential Memorandum numbered 2018/1.** Nuclear Regulatory Authority will give licenses to the activities regarding nuclear energy and ionising radiation. (16 July 2018)
- **The "Rare Earth Elements Research Institute" (NATEN) affiliated to the Ministry of Energy and Natural Resources was established.** The institute will investigate rare elements that contain the valuable chemicals of scandium, yttrium and lanthanides. The NATEN will publish the necessary information for short, medium and long term policy and strategic decisions in rare elements. The Institute will conduct research in order to develop, produce and use products and technology in a wide range of rare earth elements. (16 July 2018)
- **TEİAŞ published "Capacity Allocation Table July 2018" within the scope of the Regulation on Electricity Generation in Unlicensed Electricity Market.** According to the table, the solar energy plant capacity presented in the table was around 6,294 MW, while the wind power plant capacity presented in the table was around 163 MW. (13 July 2018)
- **The new Russian gas pipeline, named "Turkish Stream" started to enter Turkish territory from Kırıkköy, in the Kırklareli province.** The Petroleum Pipeline Corporation (BOTA₈) opened a tender for the 69 km length of the pipeline between the Black Sea coast at Kırıkköy and Misinli/Çorlu. According to the EIA Report, the project investment cost that BOTAŞ will award is approximately TRY200 million. In order to lay the natural gas pipes, a channel will be excavated with a 3 meter depth and 2 meter width. A 20 meter wide line for natural gas pipes will be expropriated. (13 July 2018)
- **Global petroleum supply increased by 600,000 barrels a day in June compared to the previous month.** According to a July report published by OPEC on Wednesday, July 11, the global supply of oil averaged 98.01 million barrels a day. OPEC announced that its production had reached 31.87 million barrels per day - an increase of 173,000 barrels per day. OPEC's share in global oil production remained unchanged from its previous month's level, at 33%. Saudi Arabia accounted for the biggest increase in crude oil production in the OPEC region in June, raising its production by 405,400 barrels per day to 10.42 million barrels. In the same period, the biggest fall in daily oil production among OPEC member states was in Libya, where daily production decreased by 254,300 barrels to 708,000 barrels per day. (12 July 2018)
- **TETAŞ and EÜAŞ have been merged under the name of EÜAŞ, which will carry out energy purchase and sale agreements signed under the existing contracts that TETAŞ is party to.** The Decree Law No. 703, which sets out amendments to certain Laws and Decrees for the purpose of harmonization with the constitutional amendments, was published in the Official Gazette. EÜAŞ will carry out those energy purchase and sale agreements signed under the existing contracts which the former TETAŞ was party to. EÜAŞ will be able to carry out bilateral agreements on the purchase and sale of electric energy and capacity within the scope of this Law and the related legislation, and to operate in organized wholesale electricity markets. EÜAŞ will be able to sign energy exchange agreements with the electricity exchange, import and export agreements, and energy purchase and sale agreements under the existing concession and application agreements. (10 July 2018)

- **Investors in electricity generation facilities will now no longer require approval for the preliminary project before starting construction work, but will instead be required to obtain approval for the design or final design.** The Regulation on the Amendment of the Electricity Market Licensing Regulation of the Energy Market Regulatory Authority was published in the issue of the Official Gazette dated on July 10 and entered force. However, pre-design approval may be submitted instead of design or final design approvals up until December 31, 2018. If the legal entities applying for a license in the electricity market are to be established as joint stock companies, the requirement that all of their shares (other than those traded on the stock exchange) shall be written in accordance with capital market legislation will no longer be sufficient in itself. (10 July 2018)
- **The General Directorate of Mining Affairs and the General Directorate of Petroleum Affairs merged to become General Directorate of Mining and Petroleum Affairs (MAPEG).** All goods and assets belonging to MAPEG shall be transferred to the state and shall not be seized in the framework of the provisions added to the Mineral Decree and the Mineral Law (Law 3212). The transfer procedures shall be completed within a 6 months of the date of publication of the Decree-Law and within the principles and procedures to be determined by the Ministry of Energy and Natural Resources and the MAPEG. (10 July 2018)
- **German auto giant BMW will use batteries supplied from CATL, the largest maker of batteries in China's electric vehicles.** BMW signed a \$US1.16 billion deal with CATL to secure the future of electric vehicle production. Within the scope of the agreement, CATL will establish a manufacturing facility in Europe. With a production capacity of 17.5 gigawatt-hours (GWh), CATL completed a US\$2 billion IPO in the last few months to set up a new plant. The company's future plans include raising this capacity to 24 GWh by 2020. Manufacturers working with CATL include Volkswagen, Daimler, Honda, Byton and NEVS. (6 July 2018)
- **The European Bank for Reconstruction and Development (EBRD) approved a EUR 500 million loan for Trans Adriatic Pipeline (TAP), which will carry Azerbaijani natural gas to Europe via Turkey.** The EBRD stated that the TAP was a key priority for the European Union and the Energy Community. The 878 kilometer-long pipeline will start on the border between Turkey and Greece, and terminate in the Southern Region of Italy, traversing Albania and the Adriatic Sea. The partners in the TAP are BP (20%), SOCAR (20%), Snam (20%), Fluxys (19%), Enagás (16%) and Axpo (5%). (6 July 2018)
- **The Tuz Lake Natural Gas Storage Facility continues to fill up.** During the first week of July, a total of \$US1.2 billion in financing agreements were signed with the World Bank and the Asian Infrastructure and Investment Bank. The capacity of the plant is planned to be gradually increased through intensive efforts, to reach 5.4 billion cubic meters of capacity by 2023. (4 July 2018)
- **The first natural gas delivery from Shah Deniz 2, the largest natural gas field in Azerbaijan, to Turkey was realized on June 30.** 16 billion cubic meters of natural gas is planned to be produced from the Shah Deniz 2 field. Accordingly, 6 billion cubic meters of the produced natural gas is planned to be transmitted to Turkey and the remaining 10 billion cubic meters of natural gas is planned to be transmitted to Europe through Turkey in 2019. The Shah Deniz 2 Consortium consists of British Petroleum (BP), SOCAR, the Turkish Petroleum Corporation (TPAO), Petronas, Lukoil, Nico and the Southern Gas Corridor (SGC). (3 July 2018)

Sector News (continued)

- **Saudi Arabia will increase its oil production by 2 million barrels per day.** US President Donald Trump announced the decision by Saudi Arabian Government, which was taken due to the sanctions imposed on Iran and the turmoil in Venezuela, on his twitter account. (2 July 2018)
- **In contrast with expectations of an increase in natural gas tariffs on July 1, there was no change in July tariffs.** BO-TAŞ was expected to raise natural gas prices after the decision to increase the balancing natural gas price by 20% at the end of June. Instead, the July tariff has been maintained at its April, May and June level. (2 July 2018)

For Your Notes:



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