



July 2019

#14

Monthly Energy Bulletin

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Fatih Dönmez, Minister of Energy and Natural Resources evaluates energy sector's agenda

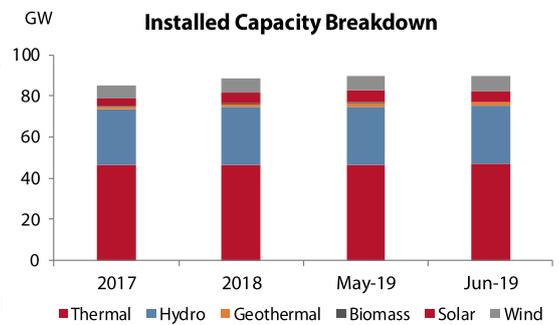
Fatih Dönmez made a speech at the groundbreaking ceremony of the expansion project to increase the capacity of the Tuz Gölü Underground Natural Gas Storage Facility from 1.2 billion cubic meters to 5.4 billion cubic meters. Dönmez stated, "with the investments in areas such as natural gas storage, the floating storage and regasification unit (FSRU), Liquefied Natural Gas (LNG), international pipeline projects such as the Trans-Anatolian Natural Gas Pipeline (TANAP) and TurkStream, the worries over Turkey's natural gas supply are completely off the agenda". Dönmez additionally stated that the expansion work was aimed to be completed by the end of 2023.

In his another speech, he stated that the Sinop Nuclear Power Plant project had neither been cancelled nor abandoned. He also added that the results of the work on the feasibility reports submitted to the Ministry of Energy and Natural Resources by the Japanese side would be announced in August. Moreover, in the event that expectations were not met, the process could be finalized but collaboration on the energy field with Japan would continue. The works for mini Renewable Energy Resource Area (YEKA) contests were underway and that the competitions may be held in the last quarter of the year.

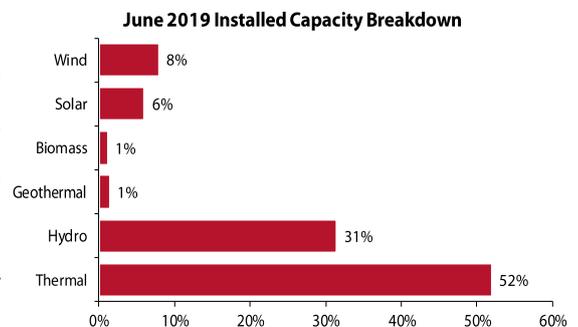
Installed Capacity Analysis

After reaching 88,551 megawatts (MW) at the end of 2018, Turkey's total installed capacity increased further to 90,421 MWs by the end of June 2019. A 0.8% increase was realized in the sixth month of the year, with natural gas and coal power plants using domestic coal accounting for most of the increase. During this period, natural gas power plants with a total installed capacity of 318 MW and coal power plants using domestic coal with a total capacity of 255 MW were commissioned. The total installed capacity of wind power plants increased by 61 MW, while installed capacity of biomass power plants edged up by 30 MW. Solar power and hydropower plants recorded an increase of 16 MW and 5 MW in their installed capacities, respectively. There was no recorded change in the total installed capacity of geothermal and coal power plants operating with imported coal.

Of all the power plants in operation during June, 48.1% (in terms of capacity) were renewable power plants, with hydropower power plants accounting for 31.4% of the total installed renewables capacity. Wind power and solar power plants, which had a total 13.6% share in capacity at the end of 2018, raised their share to 14% by the end of June 2019.



Source: TEİAŞ, TSKB Economic Research



Source: TEİAŞ, TSKB Economic Research

Electricity Generation Analysis

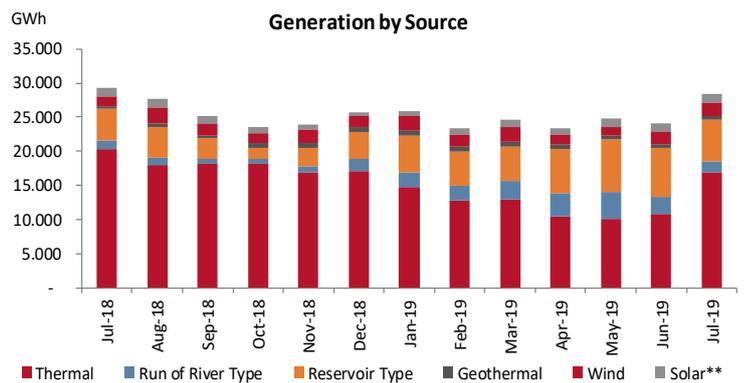
Approximately 28.39 terawatt-hours (TWh) of electricity was generated in July 2019, while the total electricity generation in June reached 24.04 TWh. There was an increase of 14.3% in average daily electricity generation in July 2019 when compared to June 2019. The main reason for this increase was the unseasonably warm weather, which was a feature of the month.

Thermal power plants, which had supplied 45.1% of all electricity in June, generated 59.6% of the total electricity generated in July 2019, with the decrease in the electricity generation through both run-of-river and reservoir hydropower plants likely to have been the main reason for the 14.5 point increase.

Accounting for 7.1% of electricity generation in June, wind farms provided 6.9% of the total electricity generated in July. Another noteworthy development was the increase in the share of renewable power plants in electricity generation, from the average of 33.3% in the first seven months of 2018 to 49.4% for the same period in 2019.

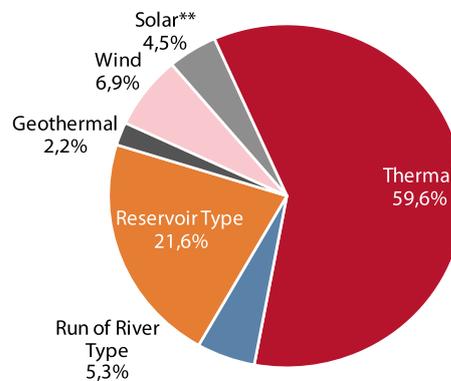
The average daily generation of licensed plants in July 2019 stood at 883,752 megawatt-hours (MWh). The highest electricity generation from licensed power plants was realized on Wednesday, July 31, at 963,950 MWh; this was the highest figure recorded since August 2018, as a matter of fact, while the lowest was realized on Sunday, July 14 at 739,296 MWh.

Daily consumption averaged 883,218 MWh in July 2019, peaking at 963,172 MWh on Wednesday, July 31, while the lowest electricity consumption, of 743,700 MWh, was recorded on Sunday, July 14.



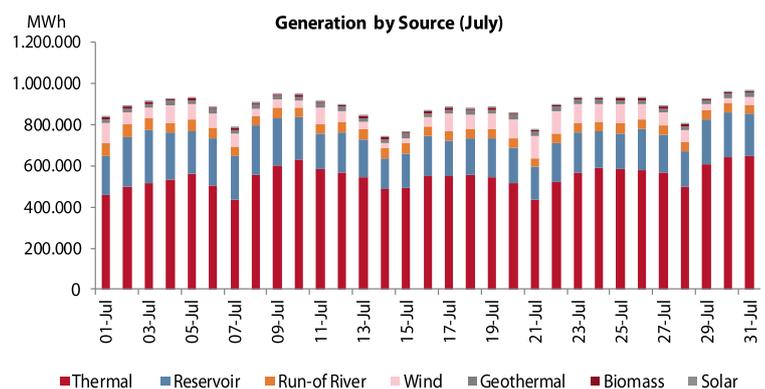
Source: TEİAŞ, YTBS Daily Reports, TSKB Economic Research

**Since July unlicensed solar power plant generation data has not yet been released by TEİAŞ, the total energy generation by unlicensed solar power plants in July was accepted as same as the total generation of June 2019.

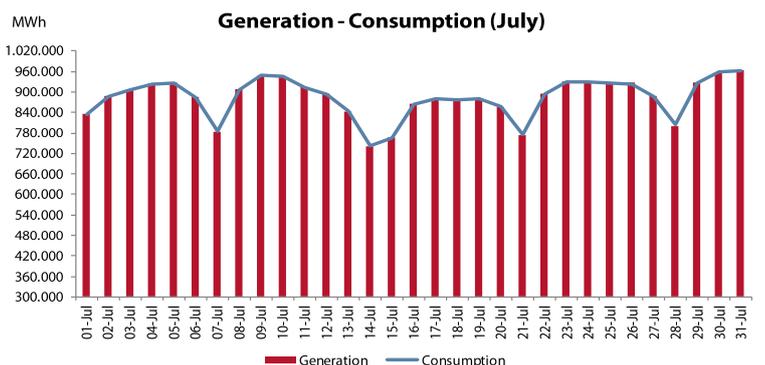


Source: TEİAŞ, YTBS Daily Reports, TSKB Economic Research

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Source: TEİAŞ, YTBS Daily Reports, TSKB Economic Research



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Electricity Price Analysis

The average market-clearing prices (MCP) and system marginal price (SMP) fluctuated between TL 81/MWh and TL 381 /MWh in July 2019. In the same period, the average MCP stood at TL 304.55 /MWh, while the SMP averaged TL 290.09 /MWh. The lowest average MCP, of TL 249.67 /MWh was recorded on Sunday, July 21, and the lowest average SMP, of TL 81.17 /MWh was recorded on Monday, July 1.

Compared to the June 2019 average, the average MCP for July 2019 was 37.6% higher.

The daily average MCP for July stood at TL312.79 TL/MWh for peak hours (from 8AM to 8PM), 2.7% higher than the daily average value. The highest peak-hour average recorded was TL 347.64 /MWh on Tuesday, July 9, while the lowest peak-hour average was TL 226.42/MWh, on Sunday, July 21.

The average pricing in off-peak hour (from 8PM to 8AM) for the same period was calculated as 296.31 TL/MWh. The highest off-peak hour average was TL322.26 /MWh on Wednesday, July 10, with the lowest off-peak-hour average of TL201.34 /MWh

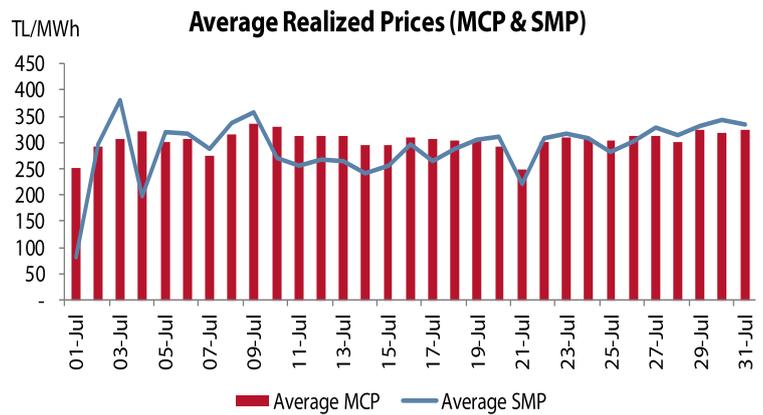
recorded on Monday, July 1. A noteworthy point was that the daily average MCP exceeded TL300 /MWh on 23 days in July. In the first six months of 2019, the daily average MCP only exceeded TL300 /MWh on five days.

The annual average MCP in 2018 stood at USD47.39 /MWh, while the average MCP in June was USD 37.38 /MWh, while July 2019 it stood at USD53.69 /MWh.

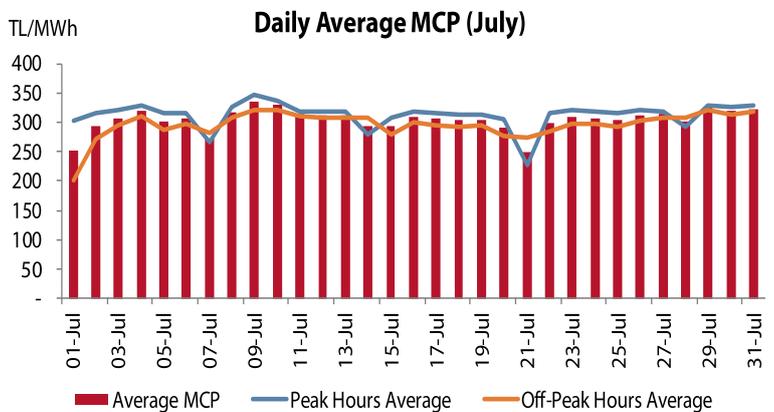
The MCP increased by 43.6% in dollar terms in July when compared to June, mainly as a result of the 40.2% increase in the TL denominated MCP.

Brent crude oil prices averaged USD 57.36 per barrel in December 2018, while in June 2019,

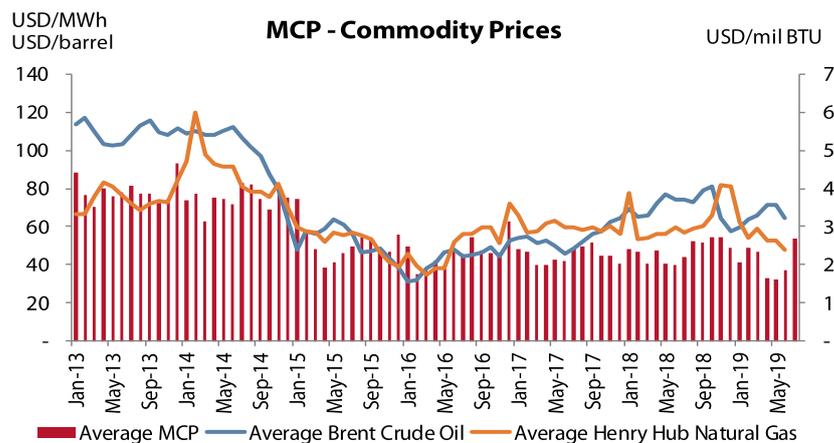
the price of Brent oil averaged USD 64.22 per barrel, a 10% decrease compared to the previous month. The Henry Hub natural gas price averaged USD 2.40 per mBTU in the period.



Source: EXIST, TSKB Economic Research



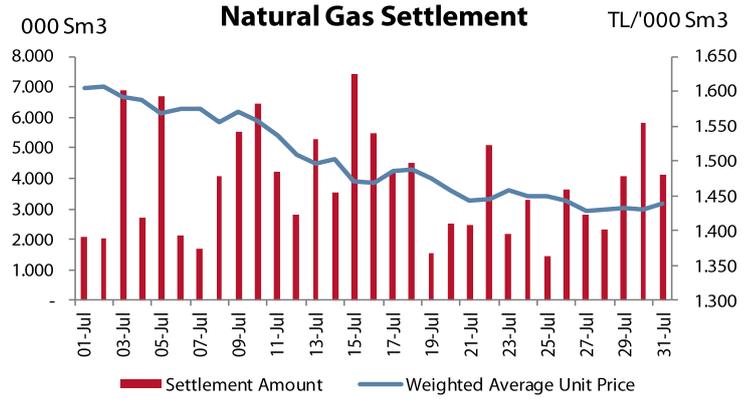
Source: EXIST, TSKB Economic Research



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

Natural Gas Settlements

According to natural gas coupling data published by the Organized Wholesale Natural Gas Market operated by EXIST, the daily average natural gas settlement was 119.15 million Sm³ in July. On Thursday, July 25th, settlements for a total of 1.46 million Sm³ of natural gas settlement were recorded, while on Sunday, July 15th settlements totaled 7.4 million Sm³. In July, the weighted average settlement unit price was calculated as TL 1,501 TL per 1,000 Sm³.



Source: EXIST Natural Gas Platform, TSKB Economic Research

Sector News

Local News

- Tapco Petroleum withdraws from Ünye-Kırıkkale-Yumurtalık oil pipeline Project.** The approval of Tapco Petroleum Pipeline Industry and Trade Inc.'s application to abandon the crude oil pipeline certificated regarding building a crude oil pipeline between Ünye-Kırıkkale and Yumurtalık to the General Directorate of Mining and Petroleum Affairs (MAPEG) was published in the Official Gazette. (July 31, 2019)
- Project of Yusufeli Dam and Hydro Power Plant (HPP) set to be commissioned in 2021.** Ekrem Pakdemirli, the Minister for Agriculture and Forestry, stated that the Yusufeli Dam and HPP project which is under construction on the Çoruh River would have a height of 270 meters when completed, and will start generating electricity in 2021. The Yusufeli Dam and HPP project, which will have an installed capacity of 558 megawatts, will be the Turkey's highest reservoir dam. (July 31, 2019)
- It was reported in the Habertürk Newspaper that the Harbin Electric International Company Limited, based in China, and the Kalyon-Kolin partnership had agreed to establish an 800 MW capacity coal power plant in Çayırhan, Ankara.** The document of reconciliation has reportedly been signed for the project, which is expected to exceed USD 1 billion. Moreover, the Kalyon-Kolin partnership will continue to seek financing from Chinese financiers. (July 30, 2019)
- 22 energy projects eligible for the investment incentive certificate in May 2019.** According to an announcement by the Ministry of Industry and Technology, a total of 501 projects in various sectors, with a total investment amount of TL 13.6 billion, were deemed eligible for the investment incentive certificate in May 2019, of which 22 were in the energy sector and 17 in the mining sector. In the same period, the Ministry also issued completion visas for 165 projects in the energy sector. (July 29, 2019)
- Naturel Energy's initial public offering given go-ahead.** The Capital Markets Board of Turkey (CMB) has announced that the initial public offering of Naturel Renewable Energy Trade Inc. has been approved. According to a statement in the CMB bulletin, the public offering price of the shares was set at TL 5.80 per share. The bulletin also

included disclosed that shares held by Yusuf Senel with a nominal value of TL 4 million would be offered to the public. With the initial public offering, the Company's capital will be raised by TL 8 million, from TL 25 million currently to TL 33 million. If all of the shares are sold, the size of the public offering will reach TL 69.6 million with 36.3% of the capital being traded on the stock exchange. Collection of demands for the public offering will be held on 1-2 August.

- **Number of companies exporting natural gas reach to 14.** According to Energy Market Regulatory Authority (EMRA), natural gas export licenses were granted to Aygaz and Shell companies. (July 25, 2019)
- **Regional capacity report for the next 5 and 10 years published by the Turkish Electricity Transmission Corporation (TEIAS).** Forecasts for installed power generating capacity for the years 2024 and 2029 were stated in the report as 111.7 GW and 127.7 GW, respectively. According to the report, 27.3 GW of regional capacity will be provided for 9 of the 15-distribution areas where 20.8 GW of capacity will be supplied by the end of 2024 and additional 6.5 GW capacity will be supplied by the end of the 2029. The first transmission region, which includes Istanbul, Tekirdag, Kirlareli and Edirne, will be allocated to the 10.1 GW of capacity. (July 25, 2019)
- **Engineering, procurement and construction (EPC) contract signed by Akkuyu Nuclear Inc. and Turkish-Russian joint venture.** The Minister of Energy and Natural Resources, Fatih Dönmez, and the Director General of Rosatom Atomic Energy Corporation, Alexey Likhachev, participated in the signing ceremony of the agreement. The project design, construction and equipment procurement agreement for the Akkuyu Nuclear Power Plant was signed between Akkuyu Nuclear Inc. and the Turkish-Russian joint venture, which is under the ownership of the Turkish IC Ictas Contruction Industry and Trade Inc. and Russian Konzern Titan-2 Inc. (July 24, 2019)
- **Details of YEKDEM applications for 2020 announced.** According to a statement issued by the Energy Market Regulatory Authority (EMRA), YEKDEM applications will be submitted in an electronic environment by 2020. Legal entities with electricity generation licenses seeking to benefit from YEKDEM in 2020 are required to apply to EMRA by 31 October 2019. The Ministry of Energy and Natural Resources requires that Legal entities seeking to benefit from the additional local content price in 2020 apply to the General Directorate of Energy Affairs (GDDM) by 1 August 2019.
- **Savings Deposit Insurance Fund of Turkey (TMSF) re-launches Adularya Energy.** According to the announcement published in the Official Gazette, Adularya Energy Generation Commercial and Economic Integrity is being resold for TL1.1 billion. The tender will be held on 21st August with offers to be submitted by 20th August. (July 22, 2019)
- **YEKDEM cost in June dips to less than the Energy Market Regulatory Authority (EMRA) reference price.** The YEKDEM settlement unit cost, determined through reconciliation notifications, was announced as TL111.72 per Megawatt unit energy by the Energy Exchange Istanbul (EXIST) – TL 1.30 lower than the projected reference price of TL 111.72 per Megawatt unit energy as updated by EMRA in May. (July 19, 2019)
- **87.3% of TurkStream's purchasing terminal in Kiyıköy completed.** Oleg Aksyutin, the Vice Chairman of Gazprom, stated that the receiving terminal on the TurkStream natural gas pipeline had reached an advanced stage of preparation in the current situation, with construction 87.3% complete, in line with the project schedule. Landfall facilities in Russia are 99% complete with the pipeline to be completed and in service by December. (July 17, 2019)
- **Commissioning period for YEKA projects extended by 36 months according to omnibus bill submitted to Turkish parliament.** It was also stated that the related contract, including the transfer of shares within the project company, could be transferred with the arrangement. With this development, the Kalyon-Hanhwa Q Cells partnership,

which won the 1,000 MW Renewable Energy Resource Zones for the Solar Power Plant (YEKA GES-1) tender in 2017, may be terminated with Kalyon to seek a new shareholder for the project. (July 16, 2019)

- **Zero Waste Regulation published in Official Gazette and now in force.** While determining which buildings and organizations have to be included in the system, the regulation also sets out criteria for the accumulation and separation of waste at source. According to the regulation, those institutions and organizations obliged to establish a zero waste system are required to obtain a zero waste certificate at the basic level. In addition, zero waste certificates with silver, gold or platinum levels may be issued. According to the regulation, public institutions and organizations are required to enter the system by June 1, 2020. (July 12, 2019)
- **Zero waste investment from Danone.** Danone Turkey Milk Products's new warehouse and production line, located at its Luleburgaz facility, was brought into service. Emre Kaşıkçı, the General Manager of Danone Turkey Milk Products, stated, "We aim to recapture 100% of our waste generated during the production process by 2020. At the same time, we will reduce the amount of water used in production by 60% with refining water and re-evaluating the water in the production stages." (July 11, 2019)
- **İller Bank obtains EUR 500 million from World Bank.** Within the scope of the Sustainable Cities Project-2 (SCP-2), İller Bank and the World Bank signed a EUR 500 million loan agreement with a maturity of 30 years with a 5-year principal grace period in order to provide additional financing. The World Bank's financial support will be used in projects in the delivery of drinking water to cities, wastewater, transportation, rainwater and energy. (July 11, 2019)
- **Legislative proposal submitted to Turkish parliament to support use of electric vehicles and renewable energy.** The proposal aims to support electric vehicles and domestic production of electric vehicles and increase their popularity with tax incentives. To support the use of renewable energy, it is recommended that the periods envisaged in the Renewable Energy Sources Support Mechanism (YEKDEM) for biomass power plants, which were included into YEKDEM by Law No. 6719, should start from the date which the power plant is included into the YEKDEM. (July 10, 2019)
- **Plans to raise energy sector's 88,551 MW of installed capacity at end of 2018 to 109,474 MW by 2023.** Within the scope of the 11th Development Plan, which covers the 2019-2023 period, Turkey's 303.3 terawatt-hour (TWh) of electricity demand in the last year is expected to reach 375.8 TWh in 2023. The share of natural gas in electricity generation, which was 29.85% in 2018, is expected to be reduced to 20.7% in 2023. According to the Plan, the share of renewable resources in electricity generation will be increased from 32.5% in 2018 to 38.8% in 2023. Electricity generation from domestic sources, which was 150 TWh in 2018, will be increased to 219.5 TWh by 2023 under the Plan. Renewable Energy Resource Zones (YEKA) models will enable renewable resources to be used more intensively in electricity generation in the 2019-2023 period. Energy storage systems, including pumped storage HEPPs, will be installed to eliminate the constraints created by increased renewable energy on the grid. (July 10, 2019)
- **Mining sector sees contraction of 9.2% in the first quarter of 2019.** After the meeting organized by the Aegean Mineral Exporters' Association in Izmir, it was stated that morale in the mining sector had decreased due to the high costs of forestry and the lengthy application process for forest permits. Exports in the sector declined to USD 4 billion, while the contraction reached 9.2% in the first quarter. (July 9, 2019)
- **Significant decrease in the use of plastic bags.** Since 1st January, 2019, the use of plastic bags has been reduced by 78.4% due to the charge levied on plastic bags at the point of sale. The use of plastic bags per person per month

declined from 35 to 10. (July 8, 2019)

- **Turkey's new floating storage and regasification unit (FSRU) to be anchored in Izmir.** Turkey's first FSRU terminal, which was commissioned in December 2016 under Etki Port Operations, will be updated to a new higher-capacity FSRU. The first FSRU system had a storage capacity of 139,000 cubic meters and could provide 14 million cubic meters of gas per day, while the new FSRU will have a storage capacity of 170,000 cubic meters and be able to provide 28 million cubic meters of gas per day. Since the FSRU was docked on 5th July, necessary tests and the connection to the national natural gas system have been being completed. (July 5, 2019)
- **Bereket Energy's hydro and wind power plants to go public.** According to a report in the Dünya newspaper, the CEO of the Bereket Energy Group, İdris Küpeli, stated, "There was a process of restructuring USD 4.6 billion in financial debts which began in 2017. We have completed this process by negotiating with nine banks. Accordingly, we have implemented the largest debt restructuring process ever undertaken in the energy sector." Küpeli added that the Group had reached a deal with the banks with which they had agreed on debt restructuring for the public offering of power plant in 2020 with a total capacity of 1,100 MW based on renewable resources. For the ADM and GDZ electricity distribution companies, they will bring the issue of public offering to their agenda for the 2021 period. (July 4, 2019)
- **Climate change risks increasing economic inequality.** According to the United Nation's International Labor Organization (ILO), the rise in temperature due to climate change will cost 80 million jobs by 2030 and therefore worsen the already prevalent economic inequality. The ILO's report stated that working hours would decline by 2.2% worldwide in the next ten years. The agriculture and construction sectors, which currently employ around 940 million people, would be most affected by this development, according to the ILO. (July 3, 2019)
- **Trans-Anatolian Gas Pipeline Project (TANAP) ready to supply natural gas to Europe.** As of 1st July, TANAP was ready to supply natural gas extracted from Azerbaijan's Shah Deniz-2 field to the Trans Adriatic Pipeline (TAP) on the border between Turkey and Greece. It was stated that the 1,850-kilometer long pipeline, which enters Turkey at the border between Ardahan and Posof, and connects Europe from Edirne-İpsala has been completed. (July 2, 2019)
- **Electricity Generation Inc. (EUAS) increases wholesale tariff.** According to the board decision taken by the Energy Market Regulatory Authority (EMRA), EUAS's active electricity energy wholesale tariff has been increased by 18.8%. EUAS's sales price to distribution companies and attendant supply companies was set at 20.5159 kurus per kilowatt-hour on 1st July, 2019. There was no change in the sales made to distribution companies within the scope of general lighting and it was determined as 25.4600 kurus per kilowatt-hour. (July 1, 2019)
- **Petroleum Pipeline Corporation (BOTAS) announces natural gas tariffs valid from 1st July, 2019.** According to the natural gas sales price tariff announced by BOTAS, the price of natural gas was raised by 6.5% in sales to electricity generation companies while there was no increase for residential and industrial consumers. The price of natural gas, which was previously TL1,550 per 1,000 cubic meters, was raised to TL1,650. Compressed natural gas (CNG) prices, which was TL 1.351527 per cubic meter, remained unchanged. (July 1, 2019)
- **Seven mobile power plants ready for use in emergencies.** The Electricity Generation Company has established mobile power plants, each of which has an installed capacity of 25 megawatts. Fatih Dönmez, the Minister of Energy and Natural Resources, officially opened the seven mobile power plants. As a first step, the mobile power plants will be connected at seven points including the European and Asian sides of Istanbul, and the Adana, Ankara, Antalya, Diyarbakır and İzmir substations. (July 1, 2019)

News From Abroad

- **European Investment Bank (EIB) changing its financing policy for energy projects.** According to the draft plan issued by the EIB, the climate targets under the Paris Agreement will form the basis of the bank's energy financing policy after 2020. According to the plan, the bank will focus on four main topics: energy efficiency, de-carbonization of energy supply, support for innovative technologies and new energy infrastructure, and will not finance new fossil fuel investments and infrastructure investments for natural gas after 2020. (July 30, 2019)
- **China's renewable energy capacity reaches 750 GW.** China's National Energy Administration (NEA) reported that China had added 11.4 GW of solar capacity, 1.82 GW of hydro-electric power capacity and 1.09 GW of wind power capacity in the first six months of 2019. NEA also announced that China had a total installed capacity of 354 GW in hydro-electric power, 193 GW in wind power and 186 GW in solar energy as of June 2019. (July 26, 2019)
- **Panama has banned the use of disposable plastic bags in shops throughout the country.** Following the regulation, the number of countries prohibiting the use of disposable plastic bags exceeds 60. (July 23, 2019)
- **The International Energy Agency (IEA) stated that developments in the Strait of Hormuz were being closely monitored.** The IEA stated that the free passage of shipping through the Strait of Hormuz was crucial for the global economic balances. Moreover, the IEA added that it was ready to act quickly and decisively to ensure that sufficient supplies remain. (July 23, 2019)
- **German Chancellor, Angela Merkel supports carbon pricing to tackle climate change.** The German Chancellor, Angela Merkel, announced her support to encourage the use of carbon pricing to meet the climate targets set for 2030. She stated, "A price for CO2 emissions stimulates innovation." She also announced a package will be announced by the government to achieve climate targets in September. (July 22, 2019)
- **North Stream-2 pipeline investment expected to be completed by the end of 2019.** Gazprom, a Russian natural gas company, aims to obtain approval for the application from Denmark in October as a part of the North Stream-2 pipeline, which will transport Russian natural gas from the Baltic Sea to Germany. Gazprom also aims to complete work on the pipeline by the end of the year. The pipeline is expected to transmit an additional 55 billion cubic meters of Russian natural gas to Europe per year. (July 19, 2019)
- **Organization of Petroleum Exporting Countries (OPEC) expecting excess supply of oil.** OPEC, which gathered in Vienna last week, decided to extend its oil production cut for another 9 months, while announcing its expectations for the oil sector in 2020. OPEC expects an oil surplus in 2020 with the support of shale oil production in the US, which continues to grow. Those predictions suggest that OPEC should further cut production and spread the cuts throughout the next year to avoid excess supply. (July 12, 2019)
- **Environment levy introduced on flights in France.** With the implementation of an "eco-tax", the tax on flight tickets will increase from 1.5 to 18 Euros as of 2020. While the tax applies to all airlines, international flights departing France will be charged. The tax will vary depending on the destination and the ticket classes of the flights. (July 10, 2019)
- **World Bank grants TL1 billion loan for energy efficiency in buildings.** The Ministry of Environment and Urbanization has obtained a loan of TL 1 billion from the World Bank to develop energy efficiency projects in public buildings. The Ministry aims to prevent high energy consumption in public buildings and save TL 230 million per year. (July 8, 2019)

- **China invests USD 3 billion in biomass facilities.** According to a statement issued by China's Ministry of Housing and Urban-Rural Development, all cities in China will establish waste separation and processing facilities by 2025 under a USD 3 billion investment. Construction work on pilot domestic waste processing plants in 46 cities is currently underway. (July 5, 2019)
- **World's largest fresh-water basin explored under the Atlantic Ocean.** According to measurements, the underground basin has a volume of 1.1 billion Olympic pools. The 2,800 cubic kilometer basin, located below the ocean floor in an area extending from the longitudes of New Jersey to Massachusetts, became the largest known freshwater basin in the world. It was stated that the giant basin, which was discovered during research studies, came into existence following the ice age and the water was trapped under the ocean. It is calculated that this basin, which is understood to be 200 meters below the ocean floor, extends 120 km offshore. (July 5, 2019)
- **OPEC+ countries reach agreement on extending oil supply cut for a further nine more months.** OPEC+ agreed to extend the oil supply cuts in order to stabilize the outlook and the oil markets. (July 2, 2019)



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