



August 2019

#15

Monthly Energy Bulletin

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TSKB Economic Research



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Draft regulation on transportation of regional capacity submitted for consideration

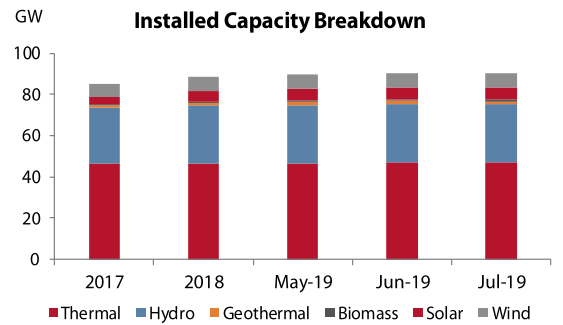
The Energy Market Regulatory Authority (EMRA) submitted a draft, entitled "Amendment to the Electricity Market Peripheral Services Regulation", prepared in order to ensure system reliability in electricity transmission, for consideration on the website. The draft will be open to public scrutiny and assessment until Monday, September 16. The regulation proposes the creation of a new peripheral service, "Regional Capacity Transportation", which will allow production facilities established in other regions to be moved to regions where there is a shortage of existing capacity.

Thus, in order to ensure the reliability of the electricity transmission system and to encourage the conversion of available capacity to energy, electricity generation facilities located in other regions can be moved to the regions deemed to require capacity. According to the draft, a unit capacity transportation fee will be paid on a per-megawatt basis to companies with generation licenses who are willing to move. The cost of transportation will be covered by a deduction from the transmission costs. In addition, the tender for the transportation will be carried out at the unit transportation fee with the condition that the generation capacities which have been moved are available for at least 10 years.

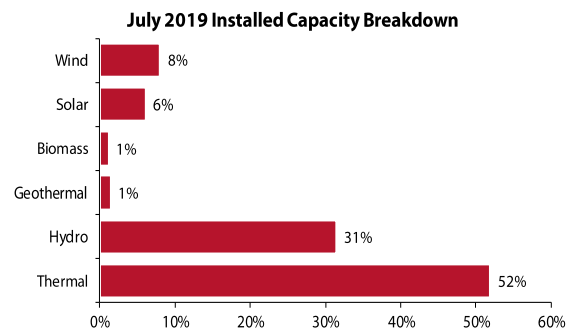
Installed Capacity Analysis

After reaching 88,551 megawatts (MW) at the end of 2018, Turkey's total installed capacity increased further to 90.449 MW by the end of July 2019. There was no significant increase in the installed capacity when compared to the previous month, with the total installed capacity of natural gas power plants decreasing by 61 MW, while there was no change in the installed capacity of coal power plants operating with imported coal and domestic coal. During this period, licensed and unlicensed solar power plants with a total installed capacity of 62 MW were commissioned. Wind power and hydropower plants recorded an increase of 12 MW and 11 MW in their installed capacity, respectively. The total installed capacity of renewable waste power plants increased by a mere 4 MW, while there was no recorded change in the total installed capacity of geothermal power plants.

Of all the power plants in operation during July, 48.1% were renewable electricity generating power plants, with hydro-electric power plants accounting for 31.4% of the total installed renewables capacity. Wind power and solar power plants, which had a 13.6% of total share in capacity at the end of 2018, raised their share to 14.1% by the end of July 2019.



Source: TEİAŞ, TSKB Economic Research



Source: TEİAŞ, TSKB Economic Research

Electricity Generation Analysis

Approximately 27.54 terawatt-hours (TWh) of electricity was generated in August 2019, while the total electricity generation in July reached 28.53 TWh. There was a decrease of 3.5% in average daily electricity generation in August 2019, when compared to July 2019, which is thought to have been a result of the National Holiday in August.

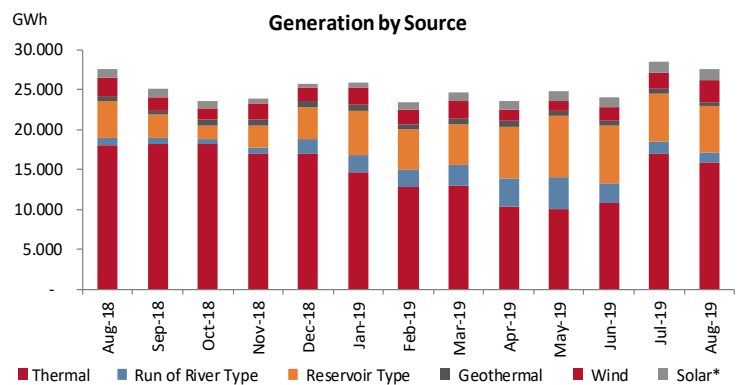
Thermal power plants, which had supplied 59.3% of all electricity in July, generated 57.9% of the total electricity generated in August 2019, with the 2.8-point increase in the electricity generation through wind power likely to have been the main reason for the 1.4-point decrease.

Accounting for 6.8% of electricity generated in July, wind provided 9.6% of the total electricity generated in August.

Another noteworthy development was the increase in the share of renewable power plants in electricity generation, from an average of 33.5% in the first eight months of 2018 to 48.6% for the same period in 2019, despite the decrease in July and August.

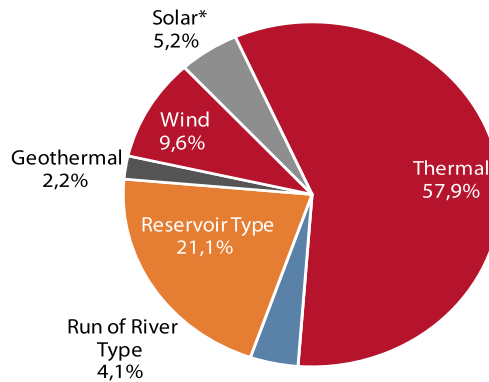
The average daily generation of licensed plants in August 2019 stood at 851,570 megawatt-hours (MWh). The highest electricity generation from licensed power plants was realized on Thursday, August 1, at 966,717 MWh – the highest daily figure since August 2018, as a matter of fact, while the lowest was realized on Sunday, August 11 at 634,540 MWh.

Daily consumption averaged 852,307 MWh in August 2019, peaking at 968,048 MWh on Thursday, August 1, while the lowest electricity consumption, of 632,688 MWh, was recorded on Sunday, August 11.



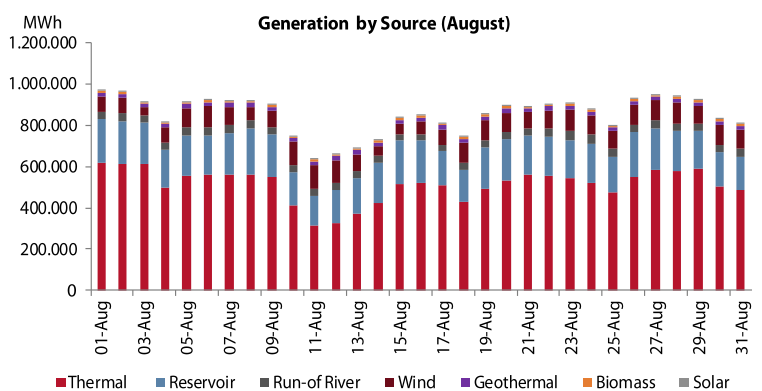
Source: TEİAŞ, YTBS Daily Reports, TSKB Economic Research

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

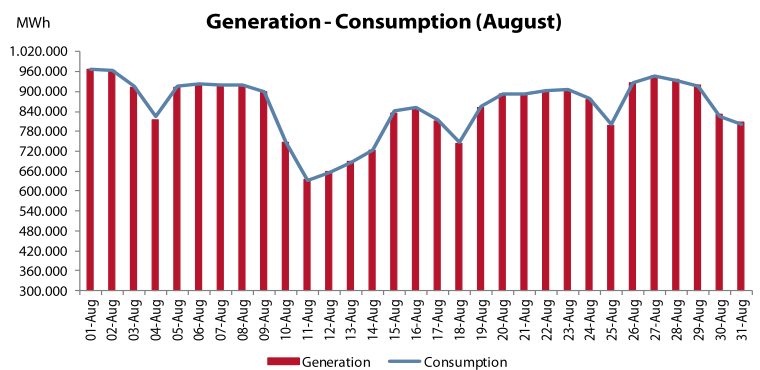


Source: TEİAŞ, YTBS Daily Reports, TSKB Economic Research

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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 150 /MWh and TL 341 /MWh in August 2019. In the same period, the average MCP stood at TL 298.30 /MWh, while the SMP averaged TL 290.77 /MWh. The lowest average MCP, of TL 153.43 /MWh, and the lowest average SMP, of TL 168.35 /MWh was recorded on Sunday, August 11.

Compared to the July 2019 average, the average MCP for August 2019 was 2.1% lower.

The daily average MCP for August stood at TL 296.20 /MWh for peak hours (from 8AM to 8PM), 0.7% lower than the daily average value. The highest peak-hour average recorded was TL 325.11 /MWh on Thursday, August 1, while the lowest peak-hour average was TL 61.14/MWh on Sunday, August 11.

The average pricing in off-peak hour (from 8PM to 8AM) for the same period was calculated as TL 300.40 /MWh. The highest off-peak hour average was TL 320.41 /MWh on Saturday, August 10, with the lowest off-peak-hour average of TL 240.43 /MWh

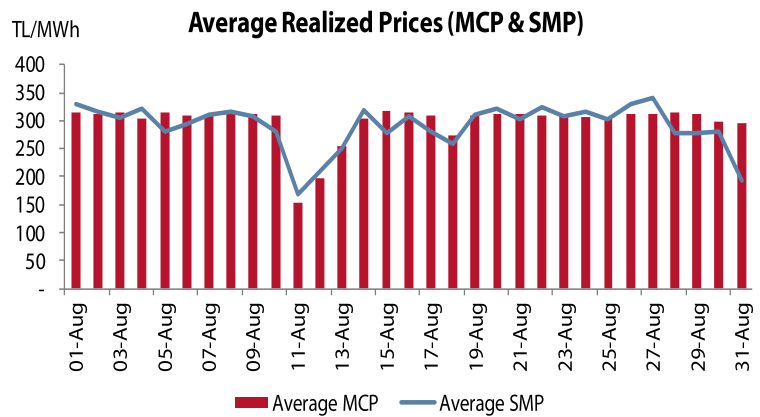
recorded on Monday, August 12. A noteworthy point was that daily average MCP exceeded TL 300 /MWh on 9 days in August. However, on Sunday, August 11, the hourly MCP was lower than TL 10 /MWh for 8 hours.

The annual average MCP in 2018 was USD 47.39 /MWh, while the average MCP in July stood at USD 53.69 /MWh, while in August 2019 it stood at USD 53.03 /MWh.

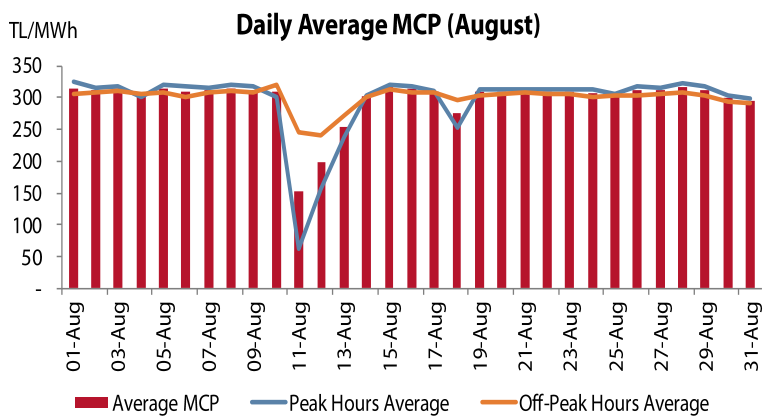
The MCP decreased by 1.2% in dollar terms in August when compared to July, mainly as a result of decrease in the TL denominated MCP by 2.1%.

Brent crude oil prices exceeded USD 57.36 per barrel in April and May 2019, while in July 2019, the price of Brent oil averaged USD 63.92 per barrel, a 0.5% decrease compared to the previous month.

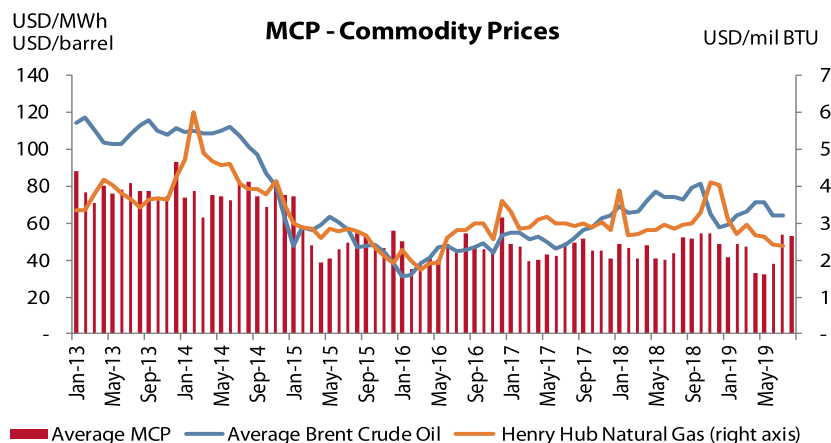
Brent oil averaged USD 65.74 per barrel in the first seven months of 2019. The average price of Henry Hub natural gas was USD 2.37 /mBTU in August, while averaging USD 2.69 /mBTU in the first seven months of 2019.



Source: EXIST, TSKB Economic Research



Source: EXIST, TSKB Economic Research

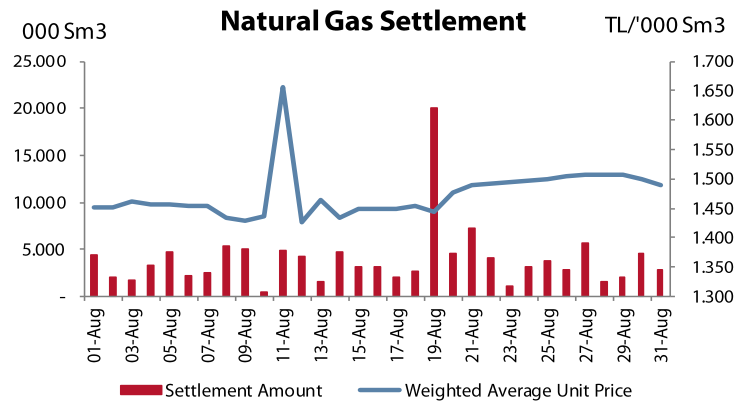


Source: EXIST, CBRT, International Energy Agency (IEA), TSKB Economic Research

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 121.30 million Sm³ in August. On Monday, August 19, settlements for a total of 20.02 million Sm³ of natural gas settlements were recorded, while on Saturday, August 10 settlements totaled 430,000 Sm³.

In August, the weighted average settlement unit price was calculated as TL 1,473 /000 Sm³.



Source: EXIST Natural Gas Platform, TSKB Economic Research

Sector News

Local News

- Construction of a new oil pipeline between Iraq and Turkey planned.** The Minister of Energy and Natural Resources, Fatih Dönmez, stated that he had the opportunity to discuss many new projects with Iraq's Oil Minister Samir al-Gadban, adding that "An Iraq-Turkey Oil pipeline is not only for the oil in the north of Iraq. The pipeline will be in a position to supply oil extracted in other parts of the country to new markets. We welcomed the proposals for new projects." Iraqi Oil Minister Gadban said, "At the meeting, we conveyed the intention of the Iraqi Ministry of Oil to Mr. Dönmez with the approval and confirmation of the Iraqi government. The intention is to carry crude oil from Kirkuk to the border between Iraq and Turkey with the construction of a new oil pipeline on the old route. Mr. Minister will discuss this issue with the Iraqi Minister of Electricity in detail." (August 29, 2019)
- Natural gas storage to reach 11 billion cubic meters.** Speaking at the World Energy Strategies Congress and Exhibition 2019, the Minister of Energy and Natural Resources, Fatih Dönmez, said, "We are bringing the latest opportunities of technology to our country for continuous supply of energy. We will be able to store 20% of our natural gas needs within 4 years. We will increase our natural gas storage capacity from 3.5 billion cubic meters to 11 billion cubic meters by 2023 with the contribution of our Liquefied Natural Gas (LNG) and Floating Storage and Regasification Unit (FSRU) facilities." (August 27, 2019)
- Real reasonable rate of return in the natural gas market determined as 12.85%.** According to a statement released by EMRA, the real reasonable rate of return to be used in the calculations of the second tariff period in the natural gas market was determined as 12.85%. (August 26, 2019)
- Investments based on hydroelectric resources will not be required to offer construction permits during the pre-license process.** Thus, the provision, "a building permit for the generation facility or a document to replace it" shall not be required for investments based on the generation of electricity from hydroelectric resources. With the amendment, the starting date for the license holder for the provision of charging no annual license fee for the production facilities based on domestic natural and renewable energy sources for the first eight years was re-determined as eight years after the first temporary acceptance of the generation facility. This date was previously stated as the first eight years following the completion of the facility, which was inserted into the licenses. (August 26, 2019)

- **Contribution share and entrance fee will also apply to capacity increases for both wind and solar energy.** Within the scope of the Regulation published by EMRA, the Regulation on the Amendment of the Competition Regulation on Pre-License Applications for the Establishment of Wind or Solar Energy Production Facilities entered force. According to the amendment, pursuant to the Electricity Market Law no. 6446, the contribution share and entrance fee to be paid will be valid for the capacity increases of the electricity generation facilities. (August 23, 2019)
- **As of February 28, 2019, legal entities whose installed power increase demands have been approved and license amendments have been realized will not be able to benefit from the YEKDEM mechanism for the increases in their installed capacity.** The Regulation on the Amendment of the Regulation on the Certification and Support of Renewable Energy Resources was published was brought into force by EMRA. The amended formulations of the coefficients to be determined for the facilities where a capacity increase is carried out and the calculated RER reserve to be paid were shared. (August 23, 2019)
- **USD 400 million loan for Akkuyu Nuclear Power Plant (NPP).** The Russian Sberbank will provide a USD 400 million loan to Akkuyu Nuclear Inc., a subsidiary of Rosatom, with a 7-year maturity in the scope of NPP construction. With the loan, Sberbank becomes the first creditor of the nuclear power plant. (August 22, 2019)
- **Bereket Energy acquires 24% stake in Karhes Electricity Generation, an affiliate of Karesi Energy.** Bereket Energy, which has received the required approvals from EMRA, will pay 41 million TL (USD 7.2 million) for a 24% share. Karesi Energy has two hydroelectric power plants in Giresun with a total installed capacity of 98.3 MW; the Çırakdamı HEPP (49.1 MW) and Dereli HEPP (49.2 MW). (August 20, 2019)
- **Akenerji takes over Ak-El Yalova.** According to a statement published on the Public Disclosure Platform (KAP), Akenerji Electricity Generation Inc. initiated the merger between Akenerji and Ak-El Yalova Electricity Generation Inc. According to the statement issued by the Company, the transactions will be carried out in accordance with the provisions of the merger in a simplified procedure in accordance with Capital Markets Board legislation. The merger will be performed on the basis of the companies' financial statements dated 30 June 2019. (August 20, 2019)
- **EMRA briefs foreign investors of Turkish energy market.** EMRA announced the launch of the "Invest in Turkish Energy" project in cooperation with the Energy Experts Association to explain the Turkish energy market to foreign investors. According to a written statement issued by EMRA, "Consumer's Energy Guide" videos were prepared in order to raise awareness among consumers of energy and to provide rapid and clear solutions. (August 19, 2019)
- **Presidential Circular on nuclear power plants.** A Presidential Circular was issued to ensure that nuclear power projects carried out under the coordination of the Ministry of Energy and Natural Resources can be completed quickly, effectively, safely and immediately. The Presidential Circular contains directives for the work and transactions carried out by the relevant public institutions and organizations in order to ensure the more effective use of nuclear technology for peaceful purposes. The Circular also includes instructions to ensure that all kinds of support, assistance and ease are provided to fulfill the duties and responsibilities undertaken in a timely manner. (August 16, 2019)
- **Target set for energy savings of at least 15% energy savings in public buildings by the end of 2023.** The Presidential Circular, numbered 2019/18, on Energy Savings in Public Buildings, was published in the Official Gazette. The circular, entitled "Savings Target and Implementation Guide in Public Buildings" will be published under the coordination of the Ministry of Energy and Natural Resources in order to in order to meet the savings target between 2020-2023, to determine the energy efficiency measures to be implemented and to follow the practices in public

institutions and organizations in this vein. The Ministry of Energy and Natural Resources will report the realization rates of energy saving targets in public buildings to the Presidency. (August 16, 2019)

- **Energy and Natural Resources Investments Monitoring and Coordination Board restructured.** The name of the Energy Investments Monitoring and Coordination Board was renamed as the Energy and Natural Resources Investments Monitoring and Coordination Board. As part of the restructuring process, the Prime Ministry Circular No. 2016/6 was abolished. The Board was re-established with the participation of senior representatives from various institutions and general directorates who were authorized to carry out decisions on behalf of the institution. The primary task of the Board will be to monitor, supervise and coordinate the permit processes for the investments undertaken or to be undertaken by the public and private sectors as before, and to coordinate the rapid and efficient realization of all energy and natural resource investments. (August 16, 2019)
- **Denizli Climate Change Action Plan published.** The Action Plan was prepared by REC Turkey and supported by European Union's Instrument for Pre-accession Assistance (IPA). The Action Plan, which was conducted by the Denizli Municipality, was prepared within the scope of "Grant Scheme for Building Capacity in the Field of Climate Change in Turkey". (August 15, 2019)
- **Trans Anatolian Natural Gas Pipeline (TANAP) given International Environment Award.** TANAP received the Green World Awards in the "Best Environmental Practices" category by The Green Organization, based in the UK. (August 15, 2019)
- **1,102 mining sites to go to tender again.** The General Directorate of Mining and Petroleum Affairs (MAPEG), under The Ministry of Energy and Natural Resources, brought 1,102 mining sites, which had been tendered previously, to tender for a second time under an auction method with closed bids. Those bidding for the tenders will be required to submit a bid bond equal to at least 20% of the bid price. The tender will be held on December 4, 2019 at the MAPEG Conference Hall. (August 8, 2019)
- **Turcas Petroleum structured project finance loan for Denizli Natural Gas Combined Cycle Power Plant (NGCC).** Turcas Petroleum obtained loans from the Banks Consortium regarding the financing of its share in the Denizli NGCC investment, which is owned and operated by RWE & Turcas Güney Electricity Generation Inc., a 30% subsidiary of Turcas Petroleum. According to the statement made to the Public Disclosure Platform, the current balances of the loans stand at USD 21 million and EUR 64 million. Turcas Petroleum signed a contract with the lending bank for the structuring of the current balance of approximately USD 21 million of this loan. Under the agreement, the final maturity of the loan was extended from 21 December, 2022 to 30 June, 2025. The repayment plan was updated, with the first principal repayment now scheduled for June 30, 2021 with the entire loan balance in dollar terms being converted to euro denominations. (August 8, 2019)
- **Organized Industrial Zones' (OIZ) Implementing Regulation amended.** With the regulation published in the Official Gazette, renewable energy investments which can be realized in OIZs will be limited to roof and facade installations. (August 6, 2019)
- **Renewable energy grants determined within the scope of Rural Development Supports.** The Communiqué on Supporting Agricultural-Based Investments within the 13th Stage of the Scope of Rural Development Support was published by the Ministry of Agriculture and Forestry in the Official Gazette, and entered force. According to the

Communiqué, renewable energy resources for agricultural activities to be carried out in facilities required by irrigation services to provide electricity to produce electricity from solar power plants and wind farms will be included within the scope of grant support. (August 6, 2019)

- **Additional capacity allocation for wind and solar power plants.** According to a statement made by the Turkey Electricity Transmission Company (TEİAŞ), an additional capacity of 2,870 MW is planned for wind and solar power plants in 12 different regions. The most new capacity has been allocated to the second region, which includes Kocaeli, Sakarya, Bilecik and Eskişehir (700 MW), followed by the first region, which includes İstanbul, Edirne, Kırklareli, Tekirdağ and Çanakkale (600 MW). (August 2, 2019)
- **“National Energy Efficiency Action Plan 2017-2018 Development Summary Report”, prepared by Energy Efficiency and Environment Department, published.** According to the report, USD 1.35 billion was invested in energy efficiency in 2017 and 2018 in Turkey, saving approximately 900,000 tonnes of oil equivalent (TOE) in energy. The National Energy Efficiency Action Plan includes the steps to be taken between 2017-2023 within the scope of 55 actions defined in 6 categories, including buildings and services, energy, transportation, industry and technology, agriculture and horizontal issues. The plan aims to reduce Turkey’s primary energy consumption by 14% by 2023. (August 2, 2019)
- **Capacity mechanism payment list for June period announced.** In 2019, TL 1.1 billion was paid to natural gas, coal and hydroelectric power plants in the first six months of the year. Approximately TL100 million of the TL 1.1 billion in support extended through the capacity mechanism was paid to the Soma B Thermal Power Plant owned by Konya Şeker. This was followed by the Yaterek Thermal Power Plant, owned by Bereket Energy, and the Kemerköy Thermal Power Plant, operated in partnership with IC-Limak, each of which received approximately TL 64 million. In the first six months of 2019, the Oymapınar Hydroelectric Power Plant, a part of Cengiz Enerji, received the highest payment among the hydroelectric power plants, with TL 24 million, followed by the Boyabat Hydroelectric Power Plant, a part of Boyabat Electricity, with TL 23 million. (August 2, 2019)
- **Aksu Energy (AKSUE)** - According to a statement made to Public Disclosure Platform, Aksu Energy signed a letter of intent regarding the sale of shares within the framework of the foreign joint negotiations it has carried out, in order to strengthen its financial structure and diversify its financial resources. (August 1, 2019)
- **Natural gas tariffs raised.** According to the natural gas sales price tariff announced by the Petroleum Pipeline Corporation (BOTAS), the final price of natural gas was raised by 14.97% for sales to residential and tier-1 consumers (with annual natural gas consumption of less than 300,000 Sm³). Meanwhile, the final natural gas price for tier-2 consumers (with an annual natural gas consumption exceeding 300,000 Sm³), organized industrial zones and for natural gas for condensed natural gas (CNG) production was raised by 13.73%. (August 1, 2019)

News From Abroad

- **Moldova seeking to buy gas through TurkStream natural gas pipeline.** According to a statement by Vadim Brinzan, the Minister of Economy and Infrastructure of the Republic of Moldova, Moldova is in talks with the Russian public gas company, Gazprom, to purchase gas from the TurkStream Natural Gas Pipeline project. Mr. Brinzan also stated that the contracts for gas transportation through Ukraine would expire at the end of 2019, and that they were therefore looking for alternative ways to buy Russian gas. (August 23, 2019)

- **Major oil find by Equinor and its partners, initially estimated at 20-65 million barrels, in the Barents Sea.** According to the statement, the Norwegian energy company Equinor and its partners, OMV and Petoro, have made an oil discovery in the Barents Sea, which is part of the Arctic Ocean between Norway and Russia. The Sputnik well, drilled in the PL855 license area, is located about 30 kilometers north east of Wisting assets. (August 21, 2019)
- **159% compliance with production cuts from OPEC+ countries.** According to a source from the OPEC+ technical committee to the Russian news agency TASS, the compliance rate of OPEC and non-OPEC producers with the agreement to cut global supply reached 159% in July. According to the source, the compliance rate of OPEC members with the agreement reached 156%, while among non-OPEC producers the compliance rate reached 166%. (August 21, 2019)
- **International Energy Agency (IEA) reduces global oil demand growth forecast for 2019 by 100,000 barrels per day.** In its monthly report released on August 9, the IEA stated that global oil demand had decreased by 160,000 barrels per day in May compared to the previous year, and that this decline was the second annual decline observed in 2019. The report also emphasized that global oil demand in the January-May period was its lowest level seen since 2008. IEA reduced its global oil demand forecast for 2019 reduce by 100,000 barrels per day, now predicting that demand would increase by 1.1 million barrels per day. The agency also reduced its demand growth forecast for 2020 by 50,000 barrels per day to 1.3 million barrels per day. The report cited weak demand in India and the US, despite positive demand in China, as the reasons behind the revisions. (August 15, 2019)
- **Germany aims to completely prohibit the use of plastic bags.** According to a statement made by the German Federal Minister for the Environment, Nature Conservation and Nuclear Safety, Svenja Schulze, work is taking place on a legal regulation aimed at completely prohibiting the use of plastic bags in the country, with an aim of reaching an agreement to reduce the consumption of plastic bags used for enterprises, fruits and vegetables. (August 15, 2019)
- **Glaciers in the world's second-largest glacier, located in Greenland, record a level of melting in the month of July exceeding the annual levels since 2002 in July.** Ruth Mottram of the Danish Meteorological Institute said from satellite imaging that the surface of the Greenland glacial layers melted last July at a rate of 197 gigatonnes, corresponding to 80 million Olympic swimming pools. Based on satellite images, experts stated that the increase in heat caused by human-handed climate change was melting solid ice layers throughout the year, leading to global destruction. (August 5, 2019)
- **United Nations (UN) calls on governments to address climate and air pollution crises together.** The UN Secretary General's Special Envoy for the Climate Action Summit, Luis Alfonso de Alba, who introduced the Clean Air Initiative (CAI) to the public, said the climate and air pollution crises stem from the same reasons and should be dealt with together. The Clean Air Initiative was established within the scope of Social and Political Action Areas developed under the leadership of the World Health Organization, the governments of Peru and Spain, the United Nations Economic and Social Council and the International Labor Organization. (August 5, 2019)



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