



June 2019

#13

Monthly Energy Bulletin

Can Hakyemez | hakyemez@tskb.com.tr

Emre Yanık | yanikem@tskb.com.tr

TSKB Economic Research



Monthly Energy Bulletin

June 2019

#13

Can Hakyemez | hakyemez@tskb.com.tr

Emre Yanık | yanikem@tskb.com.tr

TSKB Economic Research

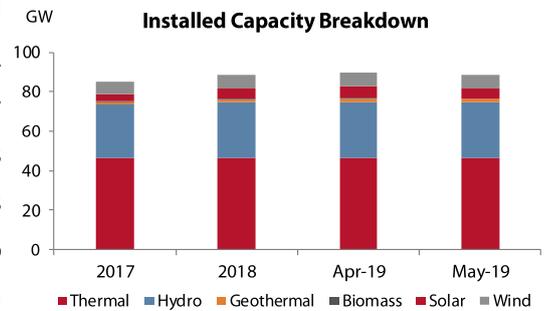
During the first ten years of operation, no distribution fee will be requested from unlicensed electricity generators.

On June 21, 2019, The Energy Market Regulatory Board (EMRA) reached a decision regarding system usage fees to be applied to unlicensed electricity generators. Under the Electricity Market Unlicensed Electricity Generation Regulation published in the Official Gazette No. 30813 on June 26, unlicensed electricity generators will not pay a distribution fee for the electricity they generate and supply to the grid. Moreover, for unlicensed electricity producers with electricity consumption equal to or less than the electricity generated, a 50% discount will be applied on the distribution tariff for demand. For excess production, the distribution tariff for subscriber group will be applied. This provision will be applied to those facilities entitled to a letter of invitation to the connection agreement as of June 21, 2019 and which are at the same measuring point as the consumption facility. Power generation facilities with roof and facade applications working on renewable energy resources of up to an including 10 kW which are limited by the contract of the installed capacity connection agreement, are also included.

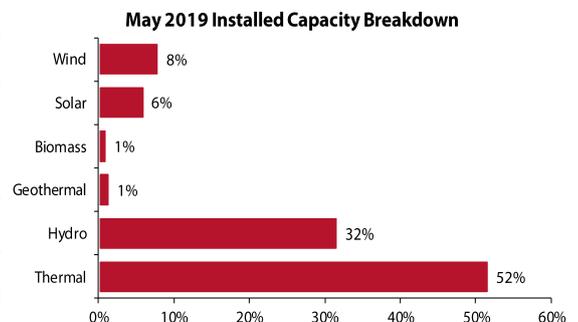
Installed Capacity Analysis

After reaching 88,551 megawatts (MW) at the end of 2018, Turkey's total installed capacity increased further to 89,737 MW by the end of May 2019. A small 0.1% increase was realized in the fifth month, with wind and solar plants accounting for most of the increase. During this period, wind farms with a total installed capacity of 70 MW and unlicensed solar power plants with a total capacity of 61 MW were commissioned. There was no recorded change in the total installed capacity of coal power plants, which remained similar to their April 2019 level. Natural gas plants recorded a decrease of 120 MW in their installed capacity. The total Installed capacity of geothermal power plants increased by 33 MW, while installed capacity of hydro and biomass power plants edged up slightly by 6 MW.

Of all the power plants in operation during May, 48.3% were renewable electricity generating power plants, with hydropower power plants accounting for 31.7% 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% by the end of May 2019.



Source: TEİAŞ, TSKB Economic Research



Source: TEİAŞ, TSKB Economic Research

Electricity Generation Analysis

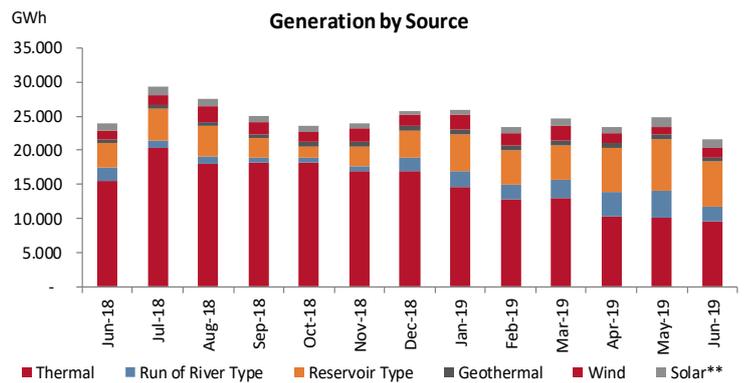
Approximately 20.61 terawatt-hours (TWh) was generated in the first 27 days of June 2019, while the total electricity generation in May reached 23.79 TWh. There was an increase of approximately 0.7% in average daily electricity generation in the first 27 days of June 2019, when compared to the first 27 days of May 2019. The main reason for this was the unseasonably warm weather which was a feature of the month.

Thermal power plants, which had supplied 40.6% of all electricity in May, generated 44.1% of the total electricity generated in the first 27 days of June 2019, with the decrease in the electricity generation through run-of-river hydropower likely to have been the main reason for the 3.5 point increase.

Accounting for 4.7% of electricity generation in May, wind power plants provided 6.4% of the total electricity generated in the first 27 days of June. Another noteworthy development was the increase in the share of hydropower power plants in electricity generation, from the average of 26% in the April, May and June period of 2018 to 43.4% for the same period in 2019.

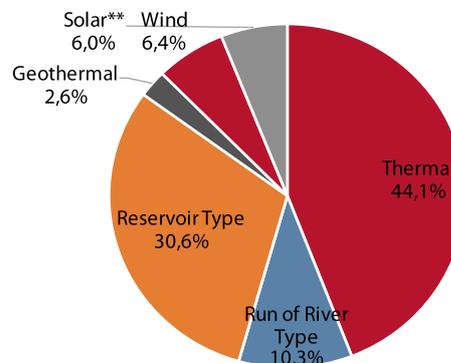
The average daily generation of licensed plants in the first 27 days of June 2019 stood at 761,047 megawatt-hours (MWh). The highest electricity generation from licensed power plants was realized on Thursday, June 27, at 919,075 MWh – the highest figure in 2019, as a matter of fact, while the lowest was realized on Tuesday, June 4 at 537,816 MWh.

Daily consumption averaged 760,545 MWh in the first 27 days of June 2019, peaking at 922,296 MWh on Thursday, June 27, while the lowest electricity consumption, of 529,732 MWh, was recorded on Tuesday, June 4.



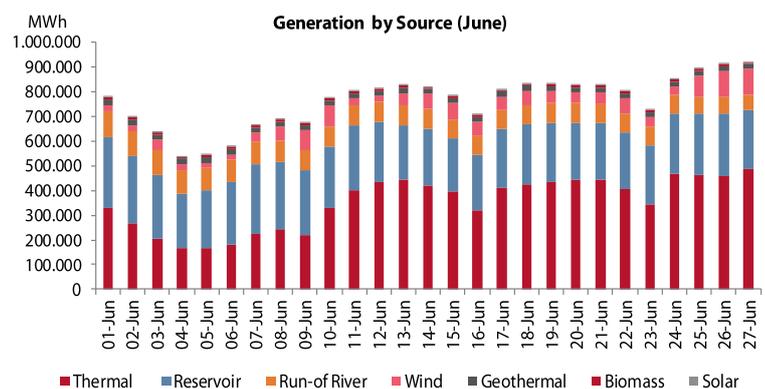
Source: TEİAŞ, YTBS Daily Reports, TSKB Economic Research

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

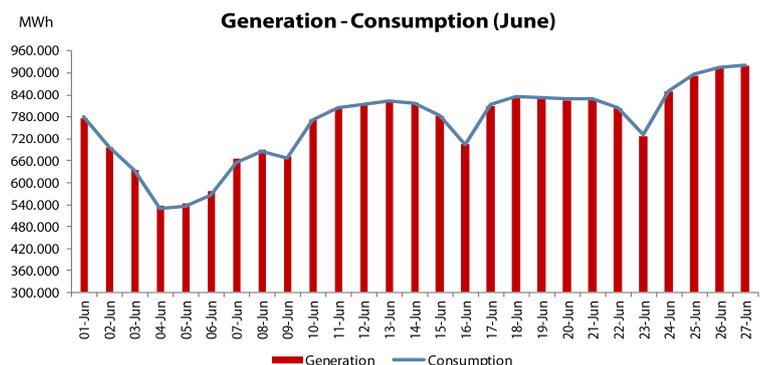


Source: TEİAŞ, YTBS Daily Reports, TSKB Economic Research

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



Source: TEİAŞ, YTBS Daily Reports, TSKB Economic Research



Source: TEİAŞ, YTBS Daily Reports, TSKB Economic Research

Electricity Price Analysis

The average market-clearing prices (MCP) and system marginal price (SMP) fluctuated between TL 43 /MWh and TL 346 /MWh in the first 27 days of June 2019. In the same period, the average MCP stood at TL 217.28 /MWh, while the SMP averaged TL 213.76 /MWh. The lowest average MCP, of TL 53.14 /MWh was recorded on Wednesday, June 5, and the lowest average SMP, of TL 43.58 /MWh was recorded on Wednesday, June 5.

Compared to the May 2019 average, the average MCP for the first 27 days of June 2019 was 4.4% higher.

The daily average MCP for the first 27 days of June stood at TL 218.24 /MWh for peak hours (from 8AM to 8PM), 0.4% higher than the daily average value.

The highest peak-hour average recorded was TL 367.27 /MWh on Thursday, June 27, while the lowest peak-hour average was TL 0.42 /MWh on Sunday, June 4.

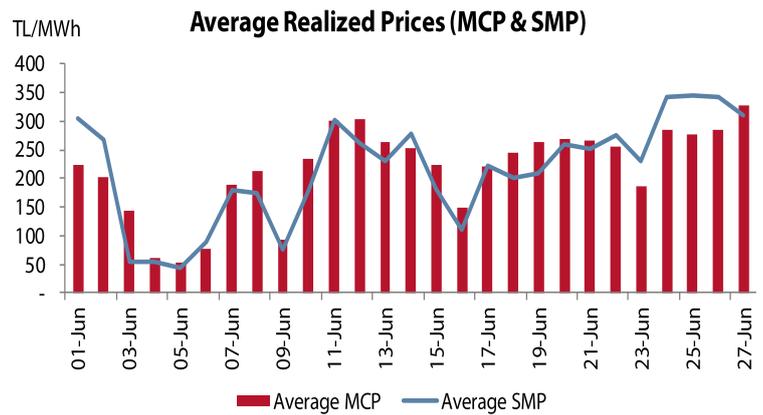
The average pricing in off-peak hour (from 8PM to 8AM) for the same period was calculated as TL 216.31 /MWh. The highest off-peak hour average was

TL 288.49 /MWh on Thursday, June 27, with the lowest off-peak-hour average of TL 84.85 /MWh recorded on Wednesday, June 5. A noteworthy point was that on 1-6 June period, due to Eid holiday, the daily average MCP for peak-hour prices was lower than for off-peak hour prices, while peak-hour price was TL 0.43 /MWh on Tuesday, June 4.

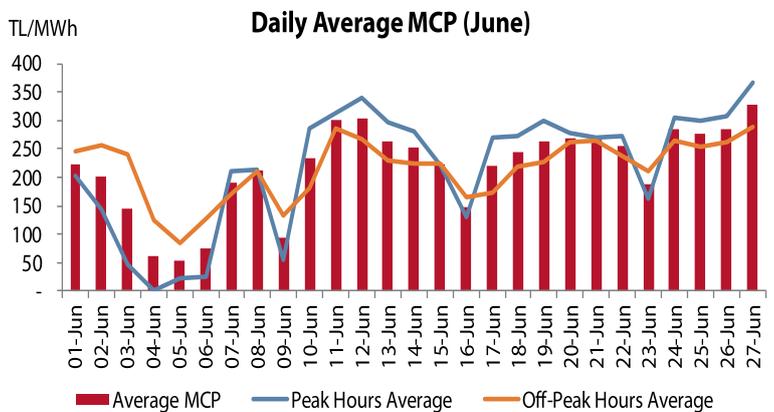
The annual average MCP in 2018 was USD 47.39 /MWh, while the average MCP in May stood at USD 32.43 /MWh, while for the first 27 days of June 2019 it stood at USD 37.38 /MWh.

The MCP increased by 15.3% in dollar terms in June when compared to May, mainly as a result of increase in the TL denominated MCP supported by the appreciation of the Turkish against the dollar.

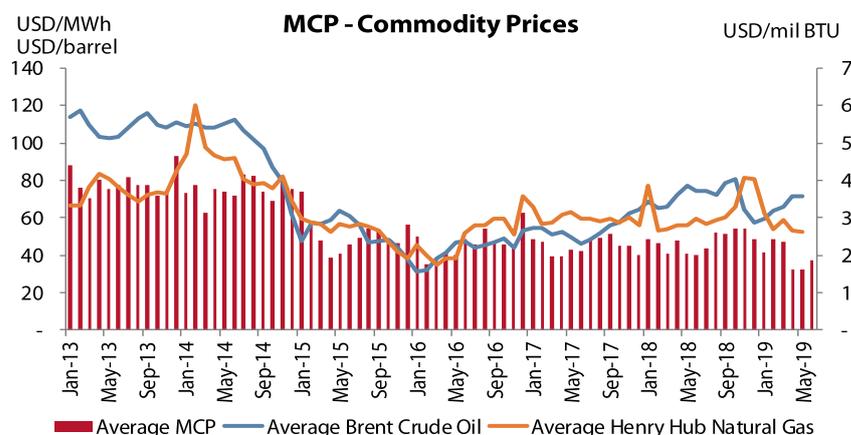
Brent crude oil prices averaged USD 57.36 per barrel in December 2018, while in May 2019, the price of Brent oil averaged USD 71.32 per barrel, a slight increase compared to the previous month. The Henry Hub natural gas price averaged USD 2.64 per mBTU in the period.



Source: EXIST, TSKB Economic Research



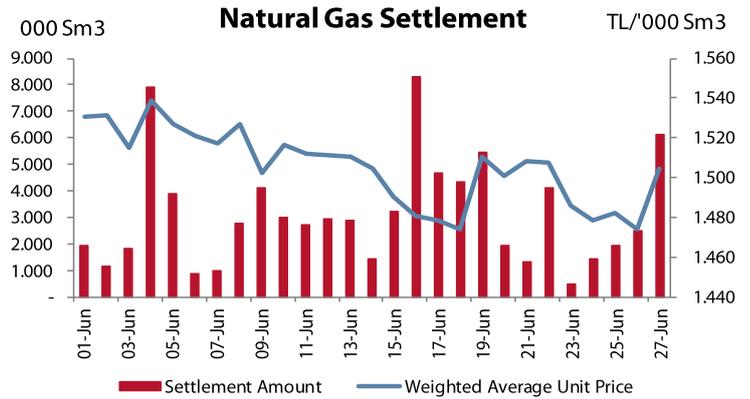
Source: EXIST, TSKB Economic Research



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 84.31 million Sm³ in the first 27 days of June. On Sunday, June 23th, settlements for a total of 458,000 Sm³ of natural gas settlement were recorded, while on Sunday, June 16th settlements totaled 8.3 million Sm³. In June, the weighted average settlement unit price was calculated as TL 1,505 per '000 Sm³.



Source: EXIST Natural Gas Platform, TSKB Economic Research

Sector News

Local News

- President Recep Tayyip Erdoğan made a statement to the Japanese financial publication, Nikkei, concerning the Sinop Nuclear Power Plant.** President Erdoğan emphasized that work on the Sinop Nuclear Power Plant project had been halted due to costs and the calendar mismatch. Erdogan stated that Turkey and Japan could work together on issues such as clean coal, renewable energy and R&D rather than nuclear energy. (June 28, 2019)
- Turkey Electricity Transmission Company (TEİAŞ) plans to establish a transmission line for transportation of electricity to be generated by the Akkuyu Nuclear Power Plant.** Within the scope of the TL80 million project, 91 km of the transmission lines will be located in Mersin and 120.5 km in Antalya. This electricity transmission line aims to meet the energy needs of the region, especially for the Mersin and Antalya provinces. (June 25, 2019)
- Soda Sanayii signs manufacturing partnership with Imperial Natura Resources Trona Mining Inc, a subsidiary of the Ciner Group.** According to the statement published on Public Disclosure Platform (KAP), the natural soda investment will be implemented in Green River region in Wyoming. The investment is expected to be completed within 5 years and be operational by 2024. It is aimed that the shareholders will split the total investment amount equally, and approximately 80% of the amount will be covered by credit and the remaining 20% by equity. (June 24, 2019)
- European Bank for Reconstruction and Development (EBRD) planning EUR 250 million investment in the Turkish Energy sector in 2019.** The Managing Director of the EBRD Sustainable Infrastructure Group, Nandita Parshad, stated that; "We are currently working on various projects for new investments. We have focused on the renewable energy sector and we will continue to expand it in different ways. We anticipate that our investments in the Turkish energy sector will continue, both in the form of financing and capital investments. We plan to maintain our investment volume at a level of EUR 250 million as in previous years." Parshad added that the EBRD discussed their views about the new support mechanism with the government and that they expected the new support mechanism for the post-2020 period to stimulate investments. (June 20, 2019)

- **Zorlu Energy given “Best Green Loan” award with loan from Garanti BBVA.** The USD 10 million green loan used by Zorlu Energy for its operational capital needs was deemed worthy of “The Best Green Loan” award in the EMEA Finance Awards. Within the scope of the green loan process, Zorlu Energy's performance in the field of environmental, social and corporate governance (ESG) will be regularly evaluated by the international sustainability assessment agency Vigeo-Eiris. Zorlu Energy's loan interest will be re-evaluated every year depending on the rating. (June 19, 2019)
- **Twenty energy projects eligible for investment incentive certificate in April 2019.** According to an announcement by the Ministry of Industry and Technology of the Republic of Turkey, a total of 451 projects in various sectors, with a total investment amount of TL 11.9 billion, were deemed eligible for the investment incentive certificate in April 2019. Twenty of these projects were in the energy sector and fifteen in the mining sector. In the same period, the investment incentive certificates for six projects in the energy sector and one project in the mining sector were canceled. (June 19, 2019)
- **SOCAR Turkey completed acquisition of subsidiaries under EWE Turkey Holding (ETH).** As of June 17, Bursagaz, Kayserigaz, Enervis, Ewe Energy and Millenicom, which operate under ETH, will continue operating under SOCAR Turkey. (June 18, 2019)
- **Feed-in Tariff Mechanism (YEKDEM) cost exceeds forecasts in May.** The settlement unit cost of YEKDEM in May was determined with reconciliation notifications finalized on June 17. Accordingly, YEKDEM's unit cost was realized at TL 155.30 /MW in May, which was 86.02 TL higher than the reference unit cost of TL 69.28 /MW announced previously by EMRA. (June 18, 2019)
- **Minimum contribution of hydroelectric resource bidding set at TL 10,000 /MW.** The Regulation on the Procedures and Principles Regarding the Use of Water Usage Agreement for the Generation of Electricity in the Electricity Market was published by the Ministry of Agriculture and Forestry, and entered statute. Article 11 of the New Regulation, entitled “submitting and updating the hydroelectric resource contribution proposal”, states that bids submitted must be at least TL10,000 per megawatt. In the work announced after the publication of the Regulation, in the event of an increase in the installed capacity as a result of work to be carried out by the company within the scope of the project, the increase in the installed capacity will be considered as the total installed capacity based for payment. However, in case of a reduction in the installed capacity, the installed capacity announced on the State Hydraulic Works' (DSİ) website will be considered. In addition, the definition of K1 in the Water Use Rights Agreements signed before February 21, 2015 will be applied as the annual arithmetical average market-clearing price realized in the production year for which the payment is based. (June 17, 2019)
- **Around 11 million people employed worldwide in the renewable energy sector.** According to the "Renewable Energy and Employment 2019 Report" compiled by the International Renewable Energy Agency (IRENA), employment in the renewable energy sector increased as unemployment grew worldwide. The increase in employment opportunities in clean energy has been driven by the decrease in technology costs in the energy sector as well as the increase in demand and increase in environmental awareness. According to the report, which is based on clean energy sectors such as solar, biomass, hydroelectricity and wind, employment in the renewable energy sector increased by 6.6% to reach 10,983,000 last year. (June 14, 2019)
- **İzmir Metropolitan Municipality plans to generate electricity from waste.** The İzmir Metropolitan Municipality has drawn up an action plan to transform the Harmandalı Landfill into a power plant and greenfield site. The project,

whose Environmental Impact Assessment (EIA) Certificate was completed on 15 May, involves the construction of a biogas plant with a minimum installed capacity of 15 MW. Tunç Soyer, the Mayor of the İzmir Metropolitan Municipality, stated that the project was expected to generate at least TL 20 million of revenue with the electricity generation of 160,000 megawatt-hours from the power plant, to start in 100 days. Within the scope of the first stage of the rehabilitation process, plantation and afforestation work of a 25,000 square meter area has been completed. (June 12, 2019)

- **Canadian government announces plan to ban disposable plastics such as straws and plates.** At a press conference in Montreal, the Prime Minister Justin Trudeau said that Canada would ban single-use plastics by as early as 2021. Trudeau also set out new measures that would give recycling responsibility to companies producing or selling plastic products. This pressure on plastics was the result of an effort supported by governments in the European Union, India and California, which showed images of rubbish-filled oceans and plastic bags in the digestive systems of dead sea animals. (June 11, 2019)
- **Panel factory for the First Renewable Energy Resource Zones for the Solar Power Plant (YEKA GES-1) expected to be commissioned in 2020.** İbrahim Erden, the Vice President of Kalyon Energy Investments, stated that construction work on YEKA GES-1 was underway. The facility will have a capacity of 1,000 megawatts. Construction work on the power plant will be completed in a period of 2-2.5 years, starting with the activation of the facility next year. Erden also stated that 95% of the work on the facility building and 25% of the work on the other buildings had been completed, while construction work for the remaining sections would begin in July. He finally added that a tender has been planned for power transmission lines, the switchyard and transformers within the scope of the plant. (June 7, 2019)
- **Ireland-based Eaton Industries takes over 90.15% of Ulusoy Electricity shares for USD 235 million.** According to an announcement by the company, as of 14 May 2019, Eaton Industries had completed the acquisition of 82.28% of Ulusoy Electric's unpaid capital and 80.15% of the total voting rights. Other shareholders of the remaining 9.85% stake have the right to sell their shares to Eaton Industries between 11 June and 8 July. (June 7, 2019)
- **World Wildlife Fund (WWF) suggests that air pollution can be prevented with renewable energy.** Aslı Pasinli, the General Manager of WWF Turkey, stated in her speech to mark June 5th World Environment Day that "we need to prevent further use of fossil fuels, prioritize renewable energy policies and improve the incentive mechanism in order to tackle air pollution." Pasinli said in her statement that fossil fuels were the main reason for man-made air pollution, and expressed the importance of cooperation between public and non-governmental organizations in tackling air pollution. According to Pasinli's statement based on the Right to Clean Air Platform's "Air Pollution and Health Effects: Land" Report, İstanbul, Bursa and Ankara are among the provinces most at danger from air pollution. (June 7, 2019)
- **STAR Refinery to import oil from Iraq.** The CEO of SOCAR Turkey said that the Company planned to refine 8 million tonnes of crude oil by the end of the year, and that it would start importing oil from Basra from the next month, adding that the STAR refinery had refined 1.5 million tonnes of crude oil. In response to a question of the well-known problems in the fuel oil sector in Iran, and whether the STAR Refinery would export to Iran, Gahramanov said the following: "We do not want to counteract US sanctions. Iran's problem is rather a global one. China also broke its relations with Iran. We, as Azerbaijan and Turkey, do not have any problems with Iran; however it would not be possible to pursue an economic relationship with Iran at the moment." (June 3, 2019)

- **Storage liability rate for corporate entities with natural gas distribution license and import license was set as 1%.** According to decision by Energy Regulatory Market Authority (EMRA) total fuel oil delivery amount to distributors by permit holders cannot exceed total oil imported by permit holders. On the other hand, reference percentage for total deviation of realized income from projected income was lowered from 10% to 7%. (June 3, 2019)

News From Abroad

- **Water crisis in India.** Chennai, the capital of Tamil Nadu state, has experienced its worst water crisis in the last 30 years. Approximately 4.6 million people have been affected by drought in Chennai where at least four reservoirs dried due to drought and heat waves. According to a report prepared by a think tank affiliated to the Indian government, 21 cities including New Delhi, Bengaluru, Chennai and Haydarabad will run out of ground water by 2030. According to the same report, 40% of the Indian population will not have access to water after 2030. (June 26, 2019)
- **USD 5 billion of investment in the “blue economy”.** According to the “A Sustainable Blue Economy” report prepared by World Wildlife Fund (WWF), the oceans - dubbed as the “7th largest economy” - offer USD 24 trillion worth of assets. The report states that many governments and institutions both in advanced and emerging economies have started to acknowledge the necessity of a more consistent, integrated, fair and scientific-based approach towards the economic management of the seas and oceans. Professor Gunter Pauli, writer of the Blue Economy book pointed to the rise in global awareness of the issue, highlighting that more than 200 projects had been carried out so far in the food, chemicals, paper and technology sectors with USD 5 billion worth of investment.(June 20, 2019)
- **Donald Trump considers sanctions on Nord Stream 2 Natural Gas Pipeline.** President Trump said that sanctions on participants of the Nord Stream 2 project were under consideration. Trump has also demanded that European countries buy Liquefied Natural Gas from the USA, instead of buying their natural gas and oil from Russia. (June 14, 2019)
- **Global energy consumption amounted to 13.8 billion tonnes of oil equivalent in 2018, marking an increase of 2.9%.** According to the Global Energy Statistics Outlook Report prepared by British Petroleum (BP), global energy consumption recorded its strongest annual increase since 2010. China’s energy consumption reached 3.2 billion tonnes of oil equivalent last year, up by 4.3% compared to the previous year. Energy consumption in the USA reached 2.3 billion tonnes of oil equivalent, while India’s energy consumption increased to 809 million tonnes of oil equivalent. (June 13, 2019)
- **Subaru plans to decrease its carbon emissions.** According to the statement released by the company, a new solar power plant to be built in Gunma Oizumi Production Plant and “Aqua Premium” Hydropower Plant to be used in Tokyo offices are expected to lower carbon dioxide emissions by 3%. The project is slated for completion in March 2021. Subaru aims to achieve a 30% reduction in its carbon dioxide emissions by 2030. (June 10, 2019)



**Advisory Services
Economic Research**

ekonomikarastirmalar@tskb.com.tr

MECLİSİ MEBUSAN CAD. NO 81
FINDIKLI İSTANBUL 34427, TÜRKİYE
P: +90 (212) 334 50 50 F: +90 (212) 334 52 34

In order to access TSKB Economic Research products please use the QR code below:



This document was produced by Türkiye Sınai Kalkınma Bankası A.Ş. ("Industrial Development Bank of Turkey") ("TSKB") solely for information purposes and for the use of registered broker or dealer, whether the registered broker or dealer is acting as principal for its own account or as agent for others, or a bank acting in a broker or dealer capacity as permitted by U.S.A. law. This document shall not be reproduced under any circumstances and is not to be copied or made available to any person other than the recipient. It is produced and distributed in the Republic of Turkey. This document does not constitute an offer of, or an invitation by or on behalf of TSKB or any other company to any person, to buy or sell any security. The information contained herein has been obtained from published information and other sources which TSKB considers to be reliable. No liability or responsibility whatsoever is accepted by TSKB for the accuracy or completeness of any such information. All estimates, expressions of opinion and other subjective judgments contained herein are made as of the date of this document. TSKB may, from time to time, have a long or short position in any of the securities mentioned herein and may buy or sell those securities or options thereon either on their own account or on behalf of their clients. TSKB may, to the extent permitted by law, act upon or use the above material or the conclusions stated above or the research or analysis on which they are based before the material is published to recipients and from time to time provide investment banking, investment management or other services for or solicit to seek to obtain investment banking, or other securities business from, any entity referred to in this document.

Any customer wishing to effect transactions in any securities referred to herein or options thereon should do so only by contacting a representative of TSKB.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior consent of Türkiye Sınai Kalkınma Bankası A.Ş.

This document does not constitute an offer to sell, or an invitation to subscribe for or purchase, any of the offer shares in any jurisdiction to any person to whom it is unlawful to make such an offer or solicitation in such jurisdiction. The distribution of this document in certain jurisdictions may be restricted by law. Persons into whose possession this document comes are required by TSKB and the managers to inform themselves about and to observe any such restrictions. No person has been authorized to give any information or to make any representation except as contained in this publication.

In making an investment decision investors must rely on their own examination of the Company and the terms of the offering including the merits and risk involved.