



October 2019

#17

Monthly Energy Bulletin

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Energy and Natural Resources Minister, Fatih Dönmez, spoke at the Turkish Energy Summit

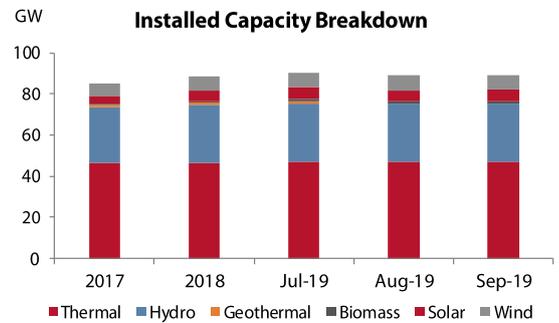
Fatih Dönmez, who made a speech to mark the 10th Turkish Energy Summit under the theme of "Building the Future", highlighted the following subjects:

- The Mini Renewable Energy Resource Area (YEKA) projects will be announced in the coming weeks and tenders will be held in the first quarter of 2020.
- Regulatory work and studies on the mechanism for supporting renewable energy resources (YEKDEM) are ongoing.
- Negotiations with banks regarding business and financing models of roof type solar power plants are ongoing.
- The capacity of the Lake Tuz Natural Gas Storage facility will increase to 5.5 billion cubic meters.
- The tender for capacity increase of the 2.8 billion cubic meters underground storage facility in Silivri will be realized and the capacity of the plant will increase to 4.6 billion cubic meters.
- BOTAŞ will increase its underground storage capacity to 10 billion cubic meters in the next 4-5 years.
- Construction of the fifth liquefied natural gas (LNG) terminal is under way.

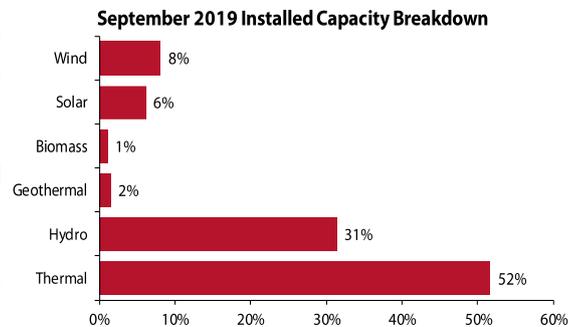
Installed Capacity Analysis

After reaching 88,551 megawatts (MW) at the end of 2018, Turkey's total installed capacity had reached 90,720 MWs by the end of September 2019. There was an increase in installed capacity when compared to the previous month. During this period, licensed and unlicensed wind farms with a total installed capacity of 124 MW were commissioned. Both solar power and geothermal power plants each recorded an increase of 66 MW in their installed capacity, while the installed capacity of hydroelectric power and renewable waste power plants increased by 20 MW and 10 MW, respectively. The total installed capacity of natural gas power plants decreased by a mere 9 MW, while there was no change in the installed capacity of coal power plants operating with domestic coal. The total Installed capacity of coal power plants operating with imported coal increased by 40 MW.

Of all the power plants in operation during September, 48.4% were renewable electricity generating power plants, with hydro-electric power plants accounting for 31.4% of the total installed renewables capacity. The share of wind power and solar power plants, which had stood at 13.6% of total capacity at the end of 2018, increased to 14.3% by the end of September 2019.



Source: TEİAŞ, TSKB Economic Research



Source: TEİAŞ, TSKB Economic Research

Electricity Generation Analysis

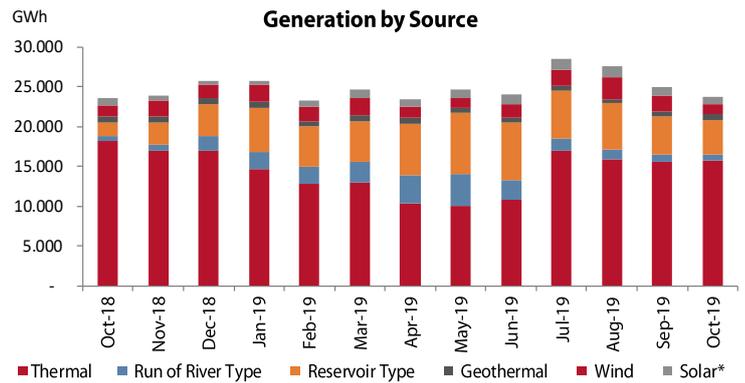
Approximately 23.77 terawatt-hours (TWh) of electricity was generated in October 2019, while total electricity generation in September reached 24.91 TWh. There was a decrease of 7.6% in average daily electricity generation in October 2019 when compared to September 2019, with the effect of the seasonal base effect on demand and October 29, Republic Day of Turkey in October thought to have been behind this.

Thermal power plants, which had supplied 62.6% of all electricity in September, generated 65.9% of the total electricity generated in October 2019, with the decrease in the electricity generation through hydroelectric and wind power plants likely to have been the main reason for the 3.3-point increase.

Accounting for 7.6% of electricity generated in September, wind provided 5.3% of the total electricity generated in October. Another noteworthy development was the increase in the share of renewable power plants in electricity generation, from an average of 31.8% in the first ten months of 2018 to 45.9% for the same period in 2019, despite the decrease in the July-October period.

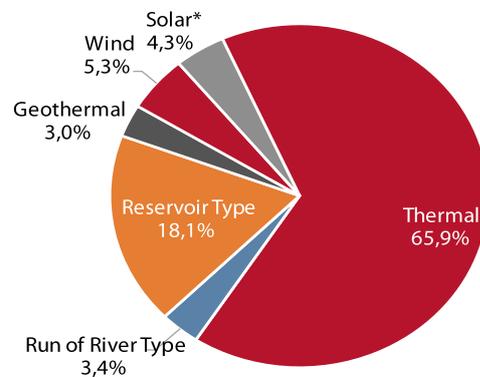
The average daily generation of licensed plants in October 2019 stood at 742,594 megawatt-hours (MWh). The highest electricity generation from licensed power plants was realized on Thursday, October 3, at 791,394 MWh, with the lowest being on Sunday, October 20, at 644,319 MWh.

Daily consumption averaged 738,297 MWh in October 2019, peaking at 785,728 MWh on Thursday, October 3, while the lowest electricity consumption, of 641,374 MWh, was recorded on Sunday, October 20.



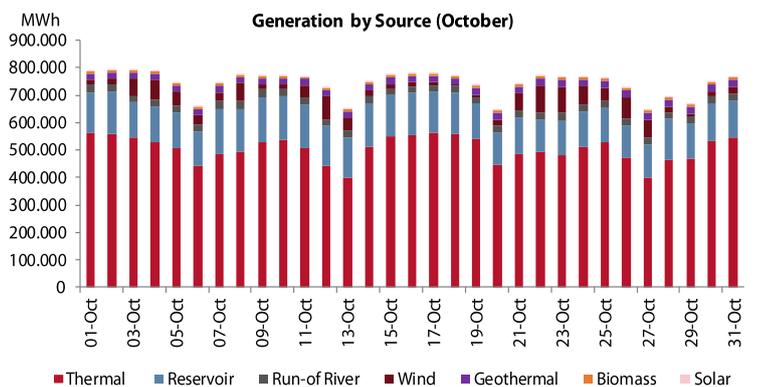
Source: TEİAŞ, YTBS Daily Reports, TSKB Economic Research

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

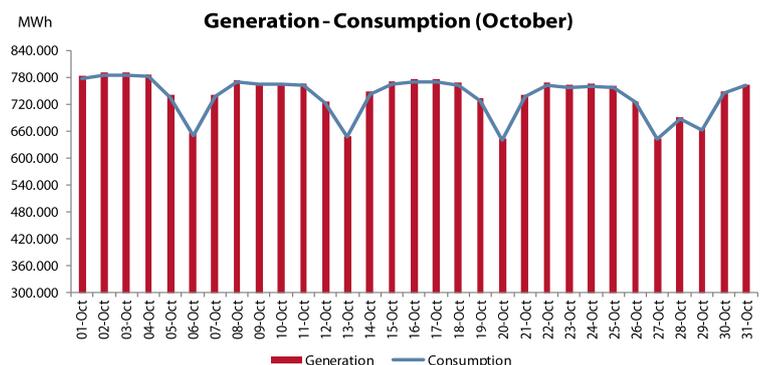


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Electricity Price Analysis

The average market clearing prices (MCP) and system marginal price (SMP) fluctuated between TL 182 /MWh and TL 326 /MWh in October 2019. In the same period, the average MCP stood at TL 291.61 /MWh, while the SMP averaged TL 284.28 /MWh. The lowest average MCP, of TL 182.65 /MWh, and the lowest average SMP, of TL 188.51 /MWh was recorded on Sunday, October 13.

When compared to the September 2019 average, the average MCP in October 2019 was 2.1% lower.

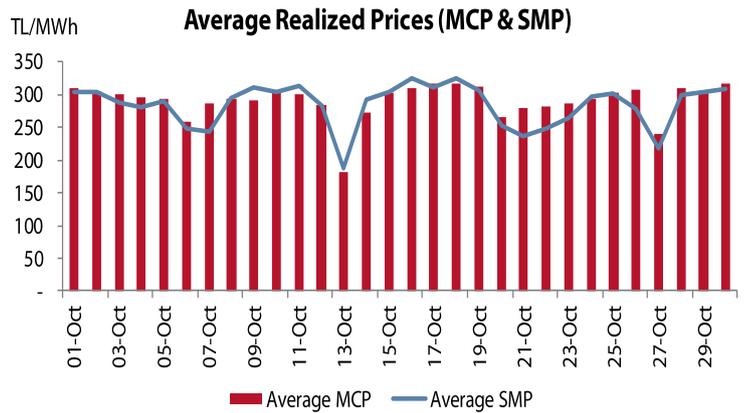
The daily average MCP for October stood at TL 300.76 per MWh for peak hours (from 8AM to 8PM), 3.1% higher than the daily average value. The highest peak-hour average recorded was TL 329.42 /MWh on Wednesday, October 30, while the lowest peak-hour average was TL 159.01 /MWh on Sunday, October 13.

The average pricing in off-peak hours (from 8PM to 8AM) for the same period was calculated as TL 282.46 /MWh. The highest off-peak hour average was TL 307.82 /MWh on Sunday, October 20, with the lowest off-peak-hour average of TL 206.30 /MWh recorded on Sunday, October 13.

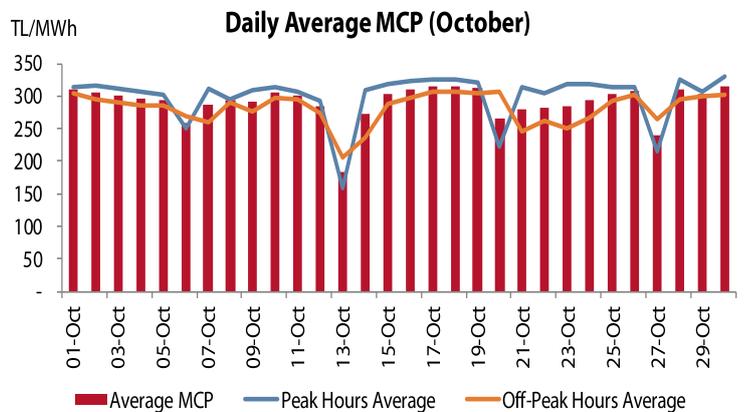
The annual average MCP in 2018 was USD 47.39 /MWh, while the average MCP in September stood at USD 52.26 /MWh, while in October 2019 it stood at USD 50.41 /MWh.

The MCP decreased by 3.3% in dollar terms in October when compared to September, mainly as a result of the decline in the TL-denominated electricity price and the depreciation in the lira against the dollar.

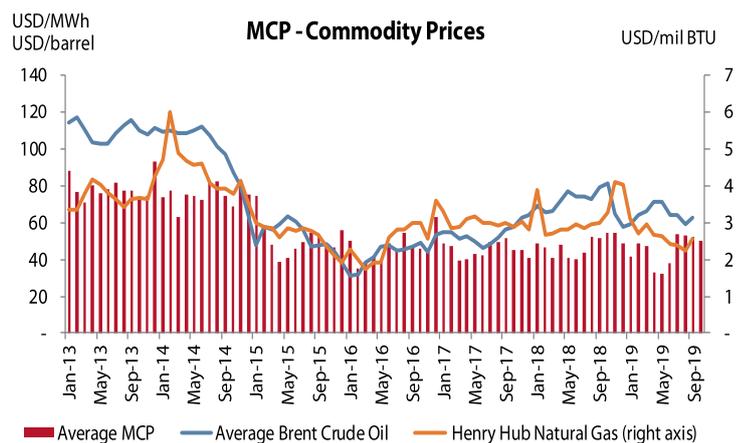
Brent crude oil prices exceeded USD 70 per barrel in April and May 2019, while in September 2019, the price of Brent oil declined to an average of USD 52.83 per barrel. The price of a barrel of Brent crude oil averaged USD 64.67 in the first nine months of 2019, while in September the price of Brent oil increased by 6.4% compared to the previous month, to an average of USD 64.67 per barrel. The average price of Henry Hub natural gas was USD 2.56 /mBTU in September, while averaging USD 2.62 /mBTU in the first nine months of 2019.



Source: EXIST, TSKB Economic Research



Source: EXIST, TSKB Economic Research

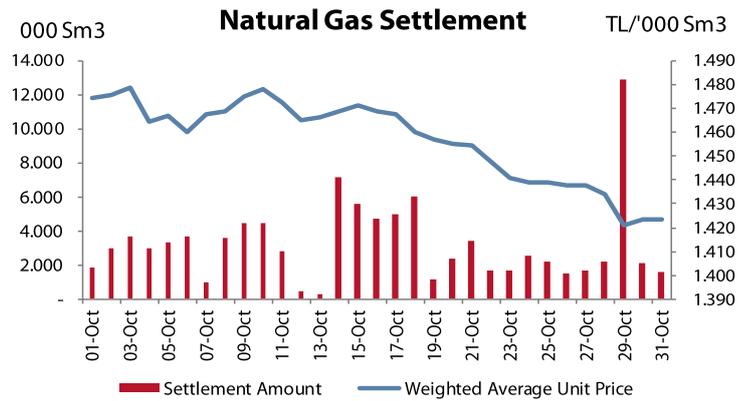


Source: EXIST, CBRT, International Energy Agency (IEA), TSKB Economic Research

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 100.95 million Sm³ in October. On Tuesday, October 29, settlements for a total of 12.85 million Sm³ of natural gas settlement were recorded, while on Sunday, October 13 settlements totaled 242,000 Sm³.

In October, the weighted average settlement unit price was calculated as TL 1,456.72 per 1,000 Sm³.



Source: EXIST Natural Gas Platform, TSKB Economic Research

Sector News

Local News

- Natural gas purchase costs to fall in 2020.** According to a report in the Habertürk Newspaper, the price of natural gas, which is currently USD 272 per 1,000 cubic meters, will be reduced to USD 247 on 1 January, USD 219 on 1 April and USD 203 on 1 July. (October 30, 2019)
- Trans Anatolian Natural Gas Pipeline (TANAP) to start purchase of 6 billion cubic meters of natural gas by 2020.** Minister of Energy and Natural Resources Fatih Dönmez said, "As of the end of this year, our capacity stands at 4 billion cubic meters. Our gas withdrawal will reach 6 billion cubic meters at the beginning of 2020. A ceremony will be held at TANAP at the end of November and we will supply the first gas to Europe in July". (October 28, 2019)
- Sinan Ak, chairman of Zorlu Holding Energy Group, unveils plans to invest USD 3 billion in electric vehicle charging infrastructure in Turkey, including USD 2 billion in electricity distribution network.** Mr. Ak also added that the global electric vehicle battery production capacity has increased from just 30,000 megawatts (MW) five years ago to 300,000 MW today. Expressing that this increase will also support the production and sales of electric vehicles, he added that 2020 may be a record-breaking year for the electric vehicles market in the world. (October 28, 2019)
- Energy Efficiency Portal expected to enter operation by the end of the year.** Cihan Karamık, President of Energy Efficiency and Management Association (EYODER), stated that the Association wanted to bring stakeholders together in the energy efficiency sector. "We aim to complete the Energy Efficiency Portal (EVP) by the end of the year as a component of the EU project with a budget of EUR 60,000," Karamık said. Indicating that that the Association wanted to unveil the potential of efficiency in energy Karamık said this potential was as much as 20-30% in industry and 40-50% in buildings. With energy efficiency being such a multi-stakeholder issue, involving consulting companies, academics, non-governmental organizations, the insurance sector and the financial sector, Karamık explained that they had started the EVP project at the beginning of this year to facilitate communication between stakeholders. (October 28, 2019)
- Production of Turkey's first domestic solar panel to begin in 2020.** Kalyon Energy signed a cooperation agreement with the China Electronics Technology Group (CETC) for the integrated solar panel factory to be established in Ankara within the scope of Karapınar Solar Energy Project. The factory, which will be implemented with a total investment of USD 400 million, will be the first integrated plant in Turkey able to manufacture "ingot, wafer, cell and module" products

under a single roof when commissioned. Kalyon Energy will commission the plant together with the CETC. The Chinese company will establish the technological work of the plant and will work together with Kalyon Energy in R&D projects with the operation of the plant for 2 years. In addition to CETC, EDRI (a design company) and Jingsheng (manufacturer of silicone ingot machines) have collaborated in building the plant. The annual production capacity of the factory will be 500 megawatts. The plant will develop "mono perc" cell technology with 22% efficiency. (October 28, 2019)

- **Minister of Energy and Natural Resources, Fatih Dönmez, announces increase in R&D funds from Energy Market Regulatory Authority (EMRA) for the 2016-2020 period to TL 235 million, adding that these funds have started to bear fruit as successful projects.** Speaking at the 4th R&D and Innovation Summit of the Architects and Engineers Group (MMG), Fatih Dönmez said that the energy sector now had all the instruments to forge a success story as seen in the rise of domestic technology in defense, R&D and innovation, such as qualified human resources, an advanced market and stable growth. (October 25, 2019)
- **SOCAR aims to drill 40 wells for the creation of gas storage areas as part of The Lake Tuz Natural Gas Underground Storage Expansion Project.** The General Manager of SOCAR AQS, Ramin İsayev, said the Group had won the tender for the project with IC İçtaş and the Chinese Engineering Company, CAMC Engineering. The first part of the two-part project, the Lake Tuz Natural Gas Underground Storage Facility, contains 12 underground gas storage caverns (artificial caves). The plant, which currently has a capacity of 680 million cubic meters, is expected to store 1.2 billion cubic meters of gas at its full capacity. (October 24, 2019)
- **Work ongoing to expand Zero Waste Education Project to 81 provinces in 2019-2020 academic year in the second phase of the project.** Speaking at the presentation of the Zero Waste Education Project, the Minister for National Education, Ziya Selçuk introduced the "Zero Waste Digital Education Portal". Selçuk stated that the Zero Waste Education Project was one of the biggest environmental movements and that its expansion was critical. The project aims to raise awareness of the need to protect natural assets, eco-friendly consumption habits and waste management among 280,000 children over a period of 3 years. (October 21, 2019)
- **Russian state-owned natural gas company Gazprom starts pumping gas into first branch of TurkStream, which is planned to be commissioned by the end of 2019.** The first of the two sea lines forming the TurkStream Natural Gas Pipeline, which will deliver Russian gas to Turkey and Europe, has started to be filled with natural gas in the final step in preparation for the pipeline's operation. (October 21, 2019)
- **Hydroelectric power plant (HEPP) projects will not require 10% appropriation.** In the 2020 Central Government Budget Law proposal, the pumped storage HEPP projects to be realized by the Electricity Generation Company (EÜAŞ) and the General Directorate of State Hydraulic Works (DSİ) in 2020 with installed capacities of 300 megawatts (MW) or more have been excluded from the 10% appropriation requirement. (October 21, 2019)
- **Significant developments on the trade side of Turkey's natural gas market, according to Energy Market Regulatory Authority (EMRA) President Mustafa Yılmaz.** In his speech at the 8th International Natural Gas Congress and Fair, Mustafa Yılmaz stated that Turkey was now one step closer towards being a natural gas trading center with the organized wholesale natural gas sales market (OTSP). Yılmaz also added that since September 2018, when the OTSP started trading, 33 market participants had actively traded about 1.4 billion cubic meters of natural gas in the market with the annual transaction volume reaching TL 2 billion. Yılmaz stated that their new product development studies would continue in the short- and medium-term in order to increase depth in the OTSP, and that EMRA planned to open the futures products of up to 7 days forward dated in the OTSP in the first phase. He said EMRA later aimed to integrate

advanced physical delivery products in the natural gas market in coordination with the electricity market. (October 21, 2019)

- 28 of the projects in the incentive list for August 2019 published by Ministry of industry and Technology in the energy sector and 7 in the mining sector.** Among the projects granted an incentive certificate in the energy sector, the highest investment amount - of TL 458.2 million - was for the wind farm project to be undertaken by Karayel Electricity Generation in Kırklareli, with a 75 MW installed capacity. In the mining sector, the largest investment as for the lignite production project being undertaken by Defaş Mining, at TL 1.24 billion. This is also a regional priority investment in Manisa. In addition, 85 projects in the energy sector were granted completion visas in August. (October 18, 2019)
- STAR Refinery reached full capacity.** General Manager Mesut İlter stated that "We can convert 91.5-92.0% of every 100 units of oil we process into white products. This is a very high rate". All of Petkim's raw material needs are met by STAR Refinery. According to Mesut İlter, STAR Refinery's target for 2020 is to fully reach its capacity of 10 million tonnes. (October 17, 2019)
- Electricity Generators Association (EÜD) expecting a decrease in total YEKDEM prices in the coming years according to Association Chairman Cem Aşık.** In his assessment of the issues on the agenda in the electricity market, he noted that unless investments were taken in renewable generation - which are seen as a cost - new conventional power plants would have to be built and spot and wholesale electricity prices would then be higher than their current levels. Aşık stated that the support mechanism for many renewable facilities would expire after 2021 and that these facilities would return to the market. He added that the incentive prices to be implemented for the renewable power plants which will enter operation after 2020 will be much lower than today's prices, which would lead to a decrease in the total YEKDEM price in the coming years. (October 16, 2019)
- Zorlu Energy selling gas turbines, which were commissioned nearly 20 years ago in Turkey but now becoming inefficient, to the United States.** The turbines are being used as backup power plants to compensate for sudden disruptions in the United States. Sinan Ak, the Chief Executive Officer of Zorlu Energy, stated that approximately 370 megawatts of inefficient gas turbines in Bursa, Kayseri, Ankara, Yalova and Lüleburgaz had been sold to buyers in the United States. Ak added, "we will sell some of the turbines in the coming months. These are our inefficient plants. Buyers in the United States purchase the turbines and use them as backup plants in renewable energy plants." (October 14, 2019)
- Turkey rated as a "safe" country thanks to its capacity in natural gas tanks, liquefied natural gas (LNG) terminals and access to more than three source countries, according to a report prepared by ICIS, a global petrochemical market research firm.** Turkey, which consumes about 50 billion cubic meters of natural gas annually, imports natural gas through pipelines from Russia, Azerbaijan and Iran. Last year, Turkey imported 23.6 billion cubic meters of natural gas from Russia, bought 7.9 billion cubic meters of gas from Iran and 7.5 billion cubic meters from Azerbaijan. About 11 billion cubic meters of the remaining imports were supplied as LNG. Currently, there are two LNG terminals in Turkey, the Marmara Ereğlisi LNG terminal with a capacity of 5.9 million tons and the Egegaz LNG terminal with a capacity of 4.4 million tons. In addition, one floating LNG storage and regasification unit (FSRU) is being used actively in Izmir Aliağa and Hatay Dörtyol. Studies is also underway for the third FSRU, which is scheduled to open in the Gulf of Saros. (October 14, 2019)

- **Restructuring of USD 7.5-billion portion of USD 13-billion non-performing loan balance of electricity generation and distribution companies in the energy sector.** According to the report in the Anadolu Agency, a pre-agreement has been reached for a USD 2.5 billion loan between the banks and companies by the end of the year. Thus, USD 10 billion of non-performing loans in the energy sector will be restructured. The remaining amount, of approximately USD 3 billion of non-performing loans, is stated to belong entirely to natural gas power plants with approximately 3,500 megawatts of installed capacity. The restructuring process of the remaining non-performing loans is expected to be completed in 2020. (October 14, 2019)
- **Providing incentives to energy sector brings gains to Turkey, according to Energy Market Regulatory Authority (EMRA) President, Mustafa Yılmaz.** President Yılmaz stated that incentives were extremely important, especially for power plants based on renewable resources, and added the incentives, whether in foreign currency or lira terms, provided benefits to Turkey. Mustafa Yılmaz also touched on the discussions over whether the foreign exchange price and purchase guarantees given to electricity generation investments under YEKDEM could be applied on a TL basis in the future, saying, "There are a number of talks on this issue. After all, there is about 15 months until the current implementation expires, but we will not leave the new arrangement until then. There's a study. There's probably going to be legislation on that and the matter will then be resolved." (October 11, 2019)
- **Minister of Energy and Natural Resources Fatih Dönmez spoke at the 10th Istanbul Finance Summit.** Fatih Dönmez stated that USD 16.3 billion had been invested in 16,653 megawatts of renewable installed power in the last 5 years. He added that USD 4.8 billion had been invested in solar energy, USD 4.3 billion in wind energy, USD 6 billion in run-of-river and dam hydro-electric power plants, USD 1 billion in geothermal energy and USD 430 million in biomass energy. Dönmez stated that a total of USD 837 million had been invested in energy efficiency in 2017 and USD 518 million in 2018. He added that the government expected to invest around USD 11 billion over the next 10 years as it seeks to uncover Turkey's potential in energy efficiency. Fatih Dönmez stated that about 6,000 MW of capacity was already available in unlicensed electricity generation, adding, "We have received 1,142 applications from the residential customer group since May, when the new regulation came into force. Applications for industrial plants solar power plants reached 200 MW within 4 months". (October 10, 2019)
- **Kalyon Group to commission solar panel factory in mid-2020.** The Vice President of Kalyon Energy Investments, İbrahim Erden, made a speech at the Turkey Energy Summit. Erden stated that the Group would sign the contract for the integrated solar panel factory to be established within the scope of the YEKA Solar-1 project by the end of this month and that the Group would commission the factory in June 2020. (October 10, 2019)
- **Deputy Minister of Energy and Natural Resources of Turkey, Abdullah Tancan, gave a speech at the 10th Energy Summit.** In order to meet the needs of the market participants, in line with developments in the sector and the market, the government will open the Electricity Futures Market, which is also known as Future-Dated Physically-Delivered Electricity Market, to serve participants of the electricity market. Tancan stated that the relevant legislation had been opened to seek the views of market participants and that it was planned to be published in the Official Gazette in the near future. "Our goal is to make this service available to the market and our participants towards the end of 2020," Tancan added. (October 9, 2019)

- **South Korea based GS to acquire 49% of the shares belonging to Rönesans Holding and become a 25% partner in the Ceyhan Petrochemical Project, to be realized with a USD 1.4 billion investment.** The South Korean GS Engineering & Construction is currently working as a technical licensor in the project. Following the one-year option, the South Korea based GS will also become partners with a 25% share, as well as Algerian Sonatrach and Rönesans Holding. The price of the deal will be determined with the unveiling of the project plans. Construction will begin at the end of 2020 and is expected to be completed in 2023. (October 9, 2019)
- **EMBA Electricity Generation's facilities, located in the Yumurtalık District of Adana, were declared as Special Industrial Zone.** (October 7, 2019)
- **"Financing of Energy Conversion in Turkey Report", prepared by SHURA Energy Transition Center, published.** Within the scope of the report, it was stated that USD 75 billion of the USD 110 billion investment undertaken in the energy sector to meet the increasing demand consisted of electricity generation projects. In this period, the annual average amount of investment undertaken for energy conversion alone was estimated as USD 3.5 billion and its financing is calculated as USD 2 billion per year. In addition, the report stated that USD 10 billion had been invested in energy efficiency in the period mentioned. The report stated that an average of USD 5.3-7 billion of annual investment would be needed in Turkey until 2030, in order to fulfill the transformation in the energy sector. The study identified five areas of action for Turkey's effective energy transformation. (October 4, 2019)
- **Unit - Ansaldo partnership Yeni Electricity Generation Inc. declared a concordatum.** According to a report in Habertürk, Yeni Electricity, in partnership with the Italian Ansaldo and Unit announced a concordatum after the debt restructuring negotiations with banks failed. The company has an 850 MW power plant in Gebze District. (October 4, 2019)
- **Muğla Metropolitan Municipality to generate electricity from biomass.** The Muğla Metropolitan Municipality will convert 90 tonnes of biodegradable waste into electricity with its Biomethanization Plant in Bodrum District. The Integrated Solid Waste Disposal Facility is projected to be worth approximately TL 28 million. (October 3, 2019)
- **Acceptance of Electricity Generation and Storage Regulation opened to public viewing.** The General Directorate of Energy Affairs (EİGM) published the Draft Regulation on the Acceptance of Electricity Generation and Storage Facilities and called on sector stakeholders to submit their opinions and suggestions on the draft. The draft will be available until 14 October. (October 3, 2019)
- **More than TL 10 billion in duties waived on fuel according to Head of the Energy Oil Gas Supply Stations' Employers Union (EPGIS), Fesih Aktaş.** Speaking on the subject of the EŞEL mobile application, in which fuel price increases are covered by tax, Aktaş said that more than TL 10 billion duties had been waived by the state on fuel since May 2018, when the application began. Last year, the amount covered by the tax was TL 8.545 billion. (October 3, 2019)
- **Municipal waste statistics for 2018 published by Turkish Statistical Institute (TurkStat).** According to figures released by TurkStat, waste services are provided in 1,395 of the 1,399 municipalities in Turkey. In 2018, 32,209,000 tons of waste were collected by these municipalities, while only 12.3% of this waste was sent to recovery facilities. The proportion of waste sent to landfills was 67.2%, with 20.2% of the waste collected in municipal landfills. (October 2, 2019)
- **Investment statistics of the General Directorate of Incentive Implementation and Foreign Investment published by the Ministry of Industry and Technology.** According to published statistics, incentive certificates were provided for

475 investment projects in the recycling sector for the period between 2012 and the first half of 2019. The planned investment amount for these projects was TL 5,262 billion. The planned investment amount for the sector for the first half of 2019 was determined as TL 1,621 billion. (October 2, 2019)

- **The European Bank for Reconstruction and Development (EBRD) working on a new financing model for energy security and efficiency.** The Vice President of EBRD Turkey, Şule Kılıç, stated that the EBRD would continue to support renewable energy and energy efficiency investments in the 2019-2024 period, and that they supported Turkey's development and implementation of action plans in these areas. Kılıç stated that the EBRD provided technical assistance to the Ministry of Energy and Natural Resources on how the renewable energy support mechanism should look after 2020. Kılıç also stated that, "we have proposed to continue with a tender-based model, but as far as we know, the Ministry is using this proposal to conduct separate meetings with all stakeholders, investors and banks." (October 2, 2019)
- **Electricity tariffs raised with effect from October 1, 2019 as reported by the Energy Market Regulatory Authority (EMRA).** According to the EMRA, electricity tariffs consumed by residential, industrial and commercial consumers, who purchased electricity from the supply companies, increased by 14.9%, including taxes and funds. The wholesale unit electricity price sold by Electricity Generation Company (EÜAŞ) to electricity distribution and retail companies under bilateral agreements was raised by 70% to TL 0.348654 per kWh. The increase was made in response to increases in the cost components that determine the electricity market tariffs. (October 1, 2019)
- **Energy Market Regulatory Authority (EMRA) sets out transmission surcharges to be implemented in 2020.** With the adjudgment, which was published in the Official Gazette, the transmission surcharge to be applied in 2020 was determined to be 0.5% of the transmission tariff of the Turkish Electricity Transmission Corporation (TEİAŞ). (October 1, 2019)
- **Energy Market Regulatory Authority (EMRA) revises consumption limits contained in the communiqué on the Regulation of the Tariff for End-Source Supply.** The consumption limit of the residential subscriber group, which did not have a limit in 2019, was determined as 50 million kilowatthours for the year 2020, while the consumption limit for the non-residential consumer groups with a consumption limit of 10 million kilowatthours was reduced to 7 million kilowatthours. (October 1, 2019)

News From Abroad

- **Saudi Aramco's IPO scheduled for November 3.** According to an article in the Dünya Newspaper, the public offering will not reach the targeted amount due to falling oil prices and Saudi Arabia's policies aimed at reducing the Kingdom's dependence on fossil fuels. Some banks find a figure of USD 1.2-1.5 trillion for IPO revenue to be more realistic. According to the Saudi TV channel Al-Arabiya, investor applications will start on 4 December. (October 30, 2019)
- **Europe's largest floating solar power plant starts to generate electricity.** The largest floating solar power plant in Europe, founded by Akuo Energy, was commissioned in Piolenc, France. The 17 MW O'MEGA-1 Power Plant will supply electricity to approximately 10,000 people. The plant is also expected to help reduce CO₂ emissions by 1,093 tonnes per year. (October 24, 2019)
- **International Energy Agency (IEA) publishes its Renewable Energy Report for 2019, which examines investment trends in the global renewable energy sector that could take place between 2019-2024.** The report predicts that

Turkey's renewable energy installed capacity will increase by about 50% to 63 gigawatts (GW) in 2024, compared to the current level of about 44 GW. With this increase, Turkey will be rank in the top five in terms of renewable energy capacity in Europe. According to the report, the global renewable energy capacity, which was 2,501 GW in 2018, will reach 3,721 GW with an increase of 50% between 2019-2024. In the same period, electricity generation from renewable energy is expected to exceed 9,000 terawatt-hours (TWh). Solar and wind will account for 70% of global electricity capacity growth over the next five years. Solar power accounted for almost 60% of the expected growth with 699 GW, with half of the increase in solar power derived from distributed solar panels. Installed solar power capacity is set to reach 1,195 GW in 2024. On-shore wind energy represents 25% of the increase, with off-shore wind capacity to double in 2024 to make up 4% of the total increase. Wind power will rise to 917 GW with an increase of 352 GW in 2024. China will have the largest share in renewable energy installed capacity with 1,219 GW, according to the report. China will be followed by the US with 411 GW and India with 235 GW. (October 22, 2019)

- **Initial Public Offering of Saudi Aramco postponed.** Saudi Aramco, a state-owned oil company in Saudi Arabia, decided to postpone the public offering which had been expected to take place in October until after the third quarter financial results have been announced. Aramco expects its third quarter financial results to boost investor confidence and increase participation in the public offering. (October 21, 2019)
- **United States extends Iraq's exemption from Iranian embargo for a further 3 months.** Iraq will then continue to purchase natural gas from Iran for electricity production. (October 18, 2019)
- **International Conference on Climate Change and the Role of Nuclear Energy held on 7-11 October 2019 in Vienna.** The conference was organized by the International Atomic Energy Agency (IAEA) in cooperation with the Organization for Economic Cooperation and Development (OECD) Nuclear Energy Agency (NEA). The conference stressed that at a time when the devastating effects of climate change are becoming more intense each day, any energy option that could reduce greenhouse gas emissions should be considered. The IAEA Director General Cornel Feruta stated in his opening remarks that "It is difficult to see how the goal of reducing greenhouse gas emissions in the coming years can be reached without a significant increase in the use of nuclear energy." (October 15, 2019)
- **Finding of 540 billion cubic meters of natural gas in Iran.** A new natural gas reserve has been located in the south of Persian Province, according to Reza Dahkan, Deputy Director General of Iran's National Oil Company, in a statement on the Oil Ministry website. Dahkan stated the region had 540 billion cubic meters of natural gas reserves at a depth of 4,632 meters as a result of exploration and dredging efforts that began last year, and that 370 billion cubic meters could be extracted. Salih Hindi, Iran's National Oil Company Exploration Director, said on October 9th that the reserves were around 1 trillion cubic meters. (October 14, 2019)
- **Amsterdam aims to reduce its emissions from transport.** The 27-point plan, scheduled to be discussed by the Amsterdam City Council in early 2020, includes measures aimed at expanding public transport and cycling. These measures include the removal of parking space for 10,000 cars in different parts of the city, free use of public transportation vehicles for children up to 12 years of age, and an increase in the number of rental bikes in metro stations with the metro to operate at night. The total cost of the plan is projected to be between EUR 500-700 million and will be implemented by 2025. (October 11, 2019)
- **China discovers 115 billion cubic meters of natural gas.** The Xinhua Agency reported that natural gas identified by the PetroChina Company with reserves of 115.3 billion cubic meters was found in exploration work in the agriculture basin in the south of Xinjiang Uyghur Autonomous Region. (October 7, 2019)



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