

Monthly Energy Bulletin

TSKB Economic Research

December 2019 #19

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10th IICEC Conference Organized by Istanbul International Energy and Climate Center (IICEC)

In his speech at the opening of the 10th IICEC Conference, Fatih Dönmez, the Minister of Energy and Natural Resources, remarked that increases in greenhouse gas emissions in the world could only be prevented by R&D and innovation. Stating that the ministry had started work on an R&D strategy on this issue, Dönmez emphasized that the consumption of coal was increasing in the world and more R&D studies needed to be done on clean coal technologies. Dönmez stated that electricity markets were in need of a transformation and added, "We have to build an ecosystem in Turkey that produces and exports, not one that takes and uses technology. We have started work on a new tariff model for our consumers who want to use their electricity entirely from renewable energy resources. This tariff will allow people to only consume renewable energy, if they wish."

The Head of the International Energy Agency (IEA), Dr. Fatih Birol, presented the World Energy Outlook 2019 Report. Birol said coal was still a significant source of energy in the world and that coal consumption had increased by 65% in the last 19 years. Birol also pointed out that there had been a period of abundance in energy, including oil, natural gas, coal and other resources. He suggested that the future trend in the energy sector was one towards electrification and energy efficiency, which was why the world's big oil and gas companies were now adding electricity to their portfolios. Birol said that despite the research studies and decisions taken to combat climate change, emissions were gradually increasing, adding that carbon dioxide emissions were at historically high levels and that the increase in energy efficiency in 2018 was the worst period of the last 10 years.

26.06
TWh

December Gross
Generation

291.32
TL/MWh

Average MCP

140 TWh

Wind power plants set a new record with a share of over 19% of total production.

[Click](#) for details.

Coal Power Plants

The amendment to the law, which postponed the obligation to install flue gas filters in the privatized coal power plants, was vetoed.

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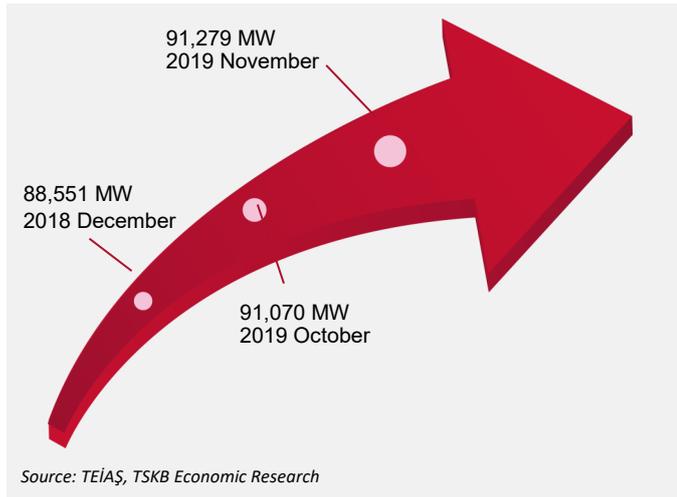
YEKDEM

EMRA issued YEKDEM cost figures for 2020.

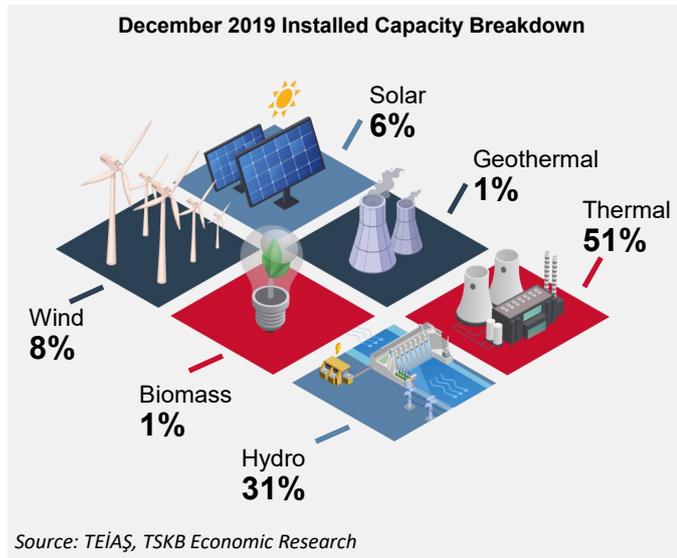
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Installed Capacity Analysis

After reaching 88,551 megawatts (MW) at the end of 2018, Turkey's total installed capacity reached 91,270 MW at the end of November 2019. There was an increase in installed capacity when compared to the previous month. During this period, licensed and unlicensed solar power plants with a total installed capacity of 295 MW were commissioned. Wind farms with a total installed capacity of 48 MW were commissioned in December. There was an increase of 9 MW in the installed capacity of renewable waste power plants. There was no change in the installed capacity of hydro-electric power, geothermal and coal power plants operating with domestic coal. The total installed capacity of natural gas power plants and coal power plants operating with imported coal decreased by 101 MW and 12MW, respectively.

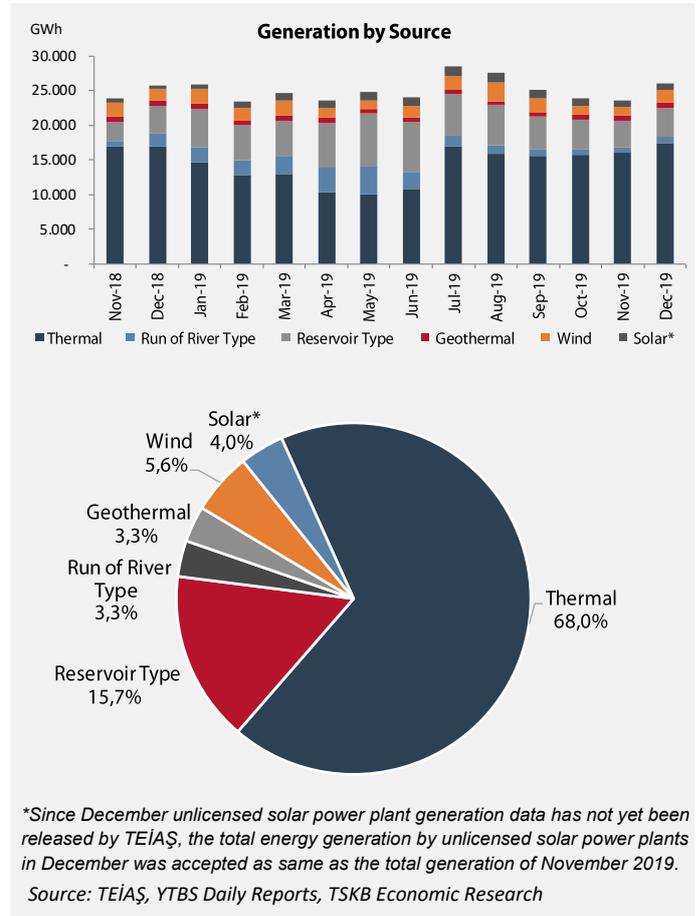


Of all the power plants in operation during November, 48.9% were renewable electricity generating power plants, with hydroelectric power plants accounting for 31.3% of the total installed renewables capacity. Wind power and solar power plants, which had a 13.6% of total share in capacity at the end of 2018, saw their share increase to 14.2% by the end of November 2019.



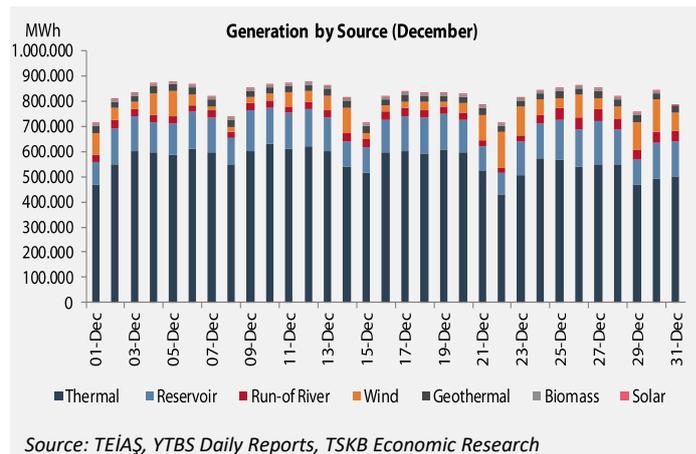
Electricity Generation Analysis

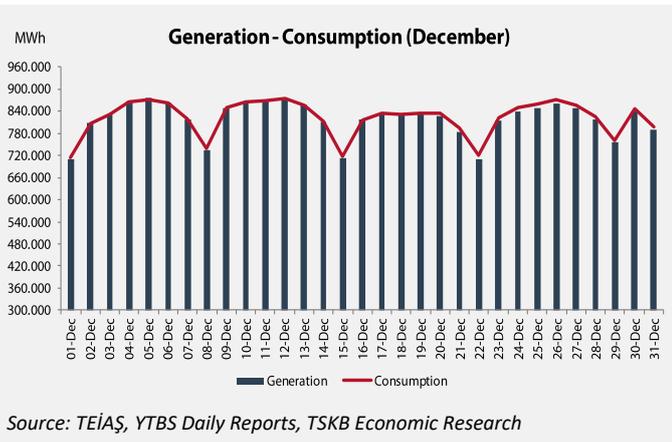
Approximately 23.63 terawatt-hours (TWh) of electricity was generated in November 2019, while total gross electricity generation in December reached 26.06 TWh. There was a decrease of 6.7% in average daily electricity generation in December 2019 when compared to November 2019.



Thermal power plants, which had supplied 68% of all of the electricity generated in November, were responsible for 66.6% of the total electricity generated in December 2019, with the increase in the electricity generation from run-of-river type hydroelectric and wind power plants likely to have been the main reason for the 1.4-point decrease.

After accounting for 5.6% of electricity generated in November, wind farms provided 7.1% of the total electricity generated in December, breaking a daily electricity generation record, generating more than 140 TWh on Sunday, December 22, 2019. Another noteworthy development was the increase in the share of renewable power plants in electricity generation, from an average of 31.8% in the 2018 to 43.9% for the same period in 2019, despite the decrease in the July-November period.





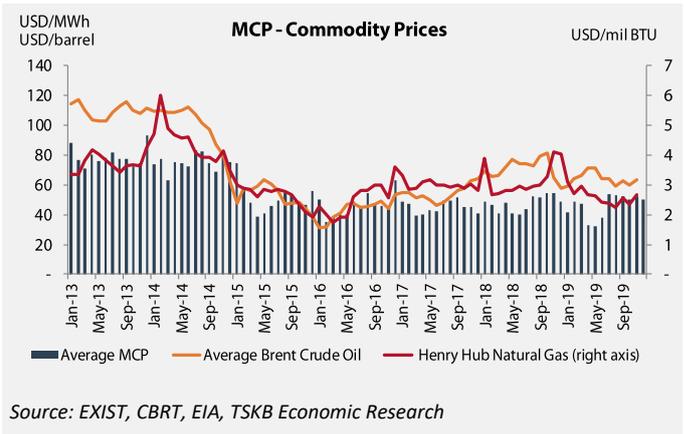
The average daily generation of licensed plants in December 2019 stood at 840,671 megawatt-hours (MWh). The highest electricity generation from licensed power plants was realized on Thursday, December 5, 2019, at 875,563 MWh, with the lowest being on Sunday, December 1, at 710,862 MWh.

Daily consumption averaged 823,112 MWh in December 2019, peaking at 875,563 MWh on Thursday, December 5, while the lowest electricity consumption, of 710,862 MWh, was recorded on Sunday, December 1, 2019.

When compared to the November 2019 average, the average MCP for December 2019 was 2.2% lower.

The daily average MCP for December stood at TL 314.49 /MWh for peak hours (from 8AM to 8PM), 8% higher than the daily average value. The highest peak-hour average recorded was TL 332.42 /MWh on Thursday, December 12, while the lowest peak-hour average was TL 209.77 /MWh on Sunday, December 22.

The average pricing in off-peak hours (from 8PM to 8AM) for the same period stood at TL 268.15 /MWh. The highest off-peak hour average was TL 310.13 /MWh, recorded on Tuesday, December 10, with the lowest off-peak-hour average of TL 176.75 /MWh recorded on Monday, December 30.



The annual average MCP in 2018 was USD 47.39 /MWh while the annual average MCP was USD 46 /MWh. The average MCP in December stood at USD 49.90 /MWh, while in November 2019 it was USD 51.97 /MWh.

The MCP decreased by 4.1% in dollar terms in December when compared to November, mainly as a result of the decrease in the TL-denominated MCP, a movement driven by the depreciation of the TL against the dollar.

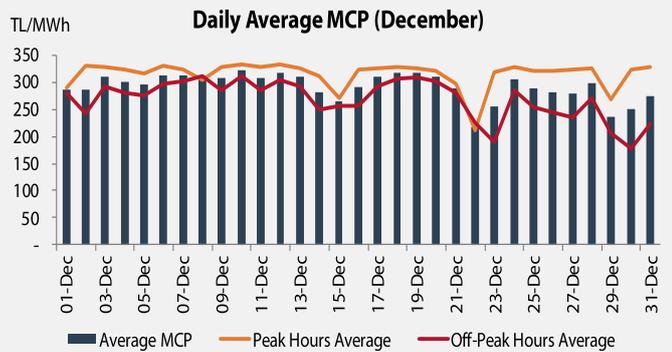
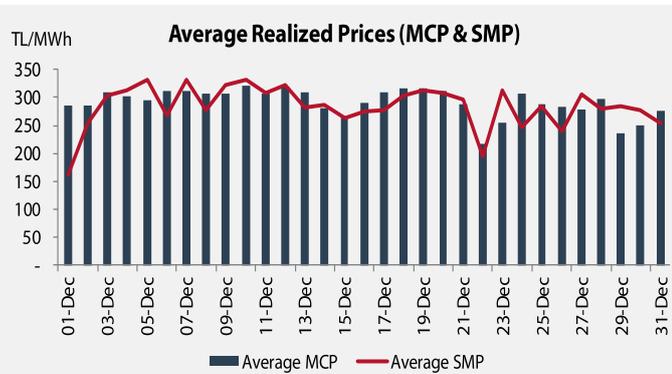
Brent crude oil prices, which had exceeded USD 70 per barrel in April and May 2019, averaged USD 63.21 per barrel in November 2019. As a result, the price of a barrel of Brent crude oil averaged USD 64.09 in the first eleven months of 2019, while in November the price of Brent oil increased by 5.9% compared to the previous month, to an average of USD 63.21 per barrel.

The average price of Henry Hub natural gas was USD 2.65 /mBTU in November, while averaging USD 2.60 /mBTU in the first eleven months of 2019.



Electricity Price Analysis

The average market-clearing prices (MCP) and system marginal price (SMP) fluctuated between TL 161 /MWh and TL 333 /MWh in December. In the same period, the average MCP stood at TL 291.32 /MWh, while the SMP averaged TL 284.18 /MWh. The lowest average MCP, of TL 217.40 /MWh was recorded on Sunday December 22, and the lowest average SMP, of TL 161.60 /MWh was recorded on Sunday, December 1.



Source: EXIST, TSKB Economic Research

Domestic Coal Power Plants

President Recep Tayyip Erdogan vetoed a legal amendment that would have delayed the requirement to install flue gas filters in 13 privatized domestic coal plants in various provinces of Turkey for another 2.5 years. The 50th article of the proposed law adopted by the Parliamentary Planning and Budget Commission on November 1, 2019 included extending the period coal-fired thermal power plants had to comply with environmental legislation, adopted in 2014, from 31 December 2019 to 30 June 2022.

After the veto decision, plants which do not comply with current environmental legislation will be able to continue generating electricity until 31 December 2019, but as of January 1, 2020, such plants will be required to halt production or pay fines. According to a statement issued by the Minister for the Environment and Urban Planning, Murat Kurum, on December 20, all plants which do not comply with the environmental legislation, including 13 thermal power plants, which are required to have filters installed in their chimneys, will not be operated in 2020. The recent increase in installed capacity and the availability of renewable resources is thought to have reduced the possibility of a supply shortage. In addition, due to the investments undertaken in some of the plants subject to the veto, it is thought that not all of the plants will halt production, limiting any potential supply shortage. Natural gas power plants, where production volumes declined in 2019, are considered to be able to offer sufficient capacity to meet any sudden peaks in demand from renewable resources or supply side.

| Power Plant Name | Firm | Location | Installed Capacity (MW) | Generation in 2019 (TWh) | 2019 Capacity Usage Ratio (%) |
|------------------|---------------------------|---------------|-------------------------|--------------------------|-------------------------------|
| Afşin Elbistan B | EÜAŞ | Kahramanmaraş | 1,440 | 2,773 | 22% |
| Afşin Elbistan A | Çelikler Enerji | Kahramanmaraş | 1,355 | 1,899 | 16% |
| Soma | Konya Şeker | Manisa | 990 | 5,059 | 58% |
| Kemerköy | Yeniköy Kemerköy Elektrik | Muğla | 630 | 4,128 | 75% |
| Yatağan | Bereket Enerji | Muğla | 630 | 3,764 | 68% |
| Çayırhan | Park Termik Elektrik | Ankara | 620 | 4,312 | 79% |
| Seyitömer | Çelikler Enerji | Kütahya | 600 | 3,968 | 75% |
| Kangal | Konya Şeker | Sivas | 457 | 2,588 | 65% |
| Yeniköy | Yeniköy Kemerköy Elektrik | Muğla | 420 | 2,997 | 81% |
| Tunçbilek | Çelikler Enerji | Kütahya | 365 | 1,051 | 33% |
| 18 Mart Çan | EÜAŞ | Çanakkale | 320 | 2,134 | 76% |
| Çatalağzı | Bereket Enerji | Zonguldak | 300 | 1,494 | 57% |
| Orhaneli | Çelikler Enerji | Bursa | 210 | 1,570 | 85% |
| Toplam | | | 8,337 | 35,149 | |

Source: EMRA, EXIST, TSKB Economic Research

2020 YEKDEM Unit Cost

The Energy Market Regulatory Authority (EMRA) published the projected total cost figures for 2020. EMRA announced the projected average cost of the Renewable Energy Resources Support Mechanism (YEKDEM) for 2020 as TL 89.50 per megawatt-hour (MWh). In 2019, the average unit cost as of the end of October was calculated as TL 86.45 /MWh. The YEKDEM unit cost is known to be directly proportional to the share of electricity generation from renewable energy.

| YEKDEM Additional Unit Cost (Reference Price) (TL/MWh) | 2019 Expectation* | 2019 Expectation** | 2019 Realization | 2020 Expectation |
|--|-------------------|--------------------|------------------|------------------|
| January | 45.74 | | 76.19 | 67.78 |
| February | 51.99 | | 66.18 | 78.56 |
| March | 67.46 | | 84.29 | 96.83 |
| April | 74.30 | | 137.35 | 110.66 |
| May | 69.28 | | 156.29 | 109.99 |
| June | 73.05 | 111.72 | 106.37 | 98.41 |
| July | 66.66 | 72.74 | 59.13 | 93.96 |
| August | 71.75 | 88.61 | 63.74 | 94.96 |
| September | 52.60 | 73.77 | 58.43 | 81.93 |
| October | 62.26 | 72.82 | 56.51 | 87.89 |
| November | 52.91 | 75.52 | | 79.27 |
| December | 47.89 | 76.34 | | 73.75 |
| Average | 61.32 | - | 86.45 | 89.50 |

*EMRA decision of 6 December 2018

**Updated by EMRA decision of 16 May 2019.

Source: EMRA, TSKB Economic Research



Sector News

Local News

- **The decision taken by the Energy Market Regulatory Authority (EMRA) on the eligible consumer limit on electricity was published in the Official Gazette effective from January 1, 2020.** In order to become an eligible consumer in electricity, the consumption limit was reduced from 1,600 kilowatt-hours (kWh) to 1,400 kWh. (December 31, 2019).

- **Fatih Birol, the president of the International Energy Agency (IEA), said the incentive to continue investments in renewable energy should not be completely removed, and everything should be predictable.** In his assessment, Birol stated his view that investments in both solar power and in other renewables should still be supported because they provide significant contributions to the country's economy and security of supply. (December 31, 2019)

- **Deadline for starting production plant construction with preliminary project approval extended by one year with amendment to Electricity Market License regulation.** With the regulation published in the Official Gazette, the phrase "31/12/2019" in provisional Article 26 of the Electricity Market License regulation entitled Preliminary project approval was changed to "31/12/2020". In order to start the construction of the production facilities, the relevant article provided that preliminary project approval could be sufficient instead of project approval by 31/12/2019. (December 31, 2019)

- **First lease certificate (sukuk) in natural gas distribution sector issued by the Industrial Development Bank of Turkey (TSKB), providing TL 150 million of long-term funding to Palmet Gas Group.** According to the statement issued by

TSKB, the financing will be used to fund natural gas infrastructure investments. It was staged that these investments would contribute significantly to reducing the use of coal and reducing carbon emissions in the regions where the investments take place. The transaction was the first in the natural gas sector and the second in the energy sector. (December 31, 2019)

- **Energy Market Regulatory Authority (EMRA) decision on natural gas connection charges published in the Official Gazette.** Accordingly, the subscriber connection fee to be levied by distribution companies in 2020 has been set at TL 656.70. The Turkey Electricity Transmission Company's use of the system revenue cap was determined as 13.45 billion in 2020, with the system's operating income standing at the TL 1.56 billion ceiling in this period. (December 30, 2019)

- **EMRA announces fees to be requested by electricity distribution companies for project approval and acceptance of solar energy-based production plants with roof and facade applications of 10 kilowatts or less in 2020.** With the decision, TL 126.9 was determined as the fee for project approval and TL 168.1 for acceptance procedures. (December 30, 2019)

- **EMRA announces application fee for unlicensed electricity generation plants by network operators, to be applied in 2020.** According to the decision taken by the board and published in the Official Gazette, no fee will be charged for investments of under 250 kilowatts, while the fee to be collected for facilities with a capacity of over 250 kilowatts will be TL 830.90. The fee had stood at TL 751.55 in 2019. (December 30, 2019)

- **EMRA determines annual system operating charge to be levied on supply companies in 2020.** According to the decision taken by the Authority, the amount to be applied in 2020 has been set as TL1.661.90 for plants with capacities of over 250 kilowatts. This fee will not be charged for power plants or with a capacity of 250 kilowatts or less. (December 30, 2019)

- **EMRA announces decision on average wholesale price of electricity in Turkey for 2020.** According to the decision published in the Official Gazette by the Authority, the price to be applied in 2020 under the law on the use of renewable energy sources for electricity generation has been set as TL 0.2663 per kilowatthour (kWh). The stated price had been set at TL 0.2048 per kWh in 2019. (December 30, 2019)

- **Decision taken by EMRA on wholesale tariff of active electricity energy to be applied by the Electricity Generation Corporation (EÜAŞ).** It was decided that the active electricity price to be applied by EÜAŞ to supply companies had been reduced from TL 0.348654 to TL 0.275683 per kilowatthour (kWh). The stated price will also apply on sales to distribution companies under general lighting. (December 30, 2019)

- **No increase in electricity tariffs in first quarter of 2020, according to Chairman of EMRA, Mustafa Yılmaz.** Yılmaz said that the electricity tariffs for the January-March period of 2020 had been determined in the board meeting. (December 27, 2019)

- **Amendment to Regulation on Regular Storage of Wastes published in Official Gazette.** According to the amendment, municipal wastes will be disposed in a second-class landfill facility. (December 26, 2019)

- **Energy and Natural Resources Minister Fatih Dönmez speaks in energy consumer summit.** The Minister of Energy and Natural Resources, Fatih Dönmez expressed the government's wish to be more active in the energy sector adding that this was crucial for the egalitarian distribution of income, adding "For this reason, we have offered a number of measures aimed at easing and facilitating solar production on roofs and facades. Since May 10, when the regulation was put into practice, we received 775 applications for 610 megawatts of production from industrial facilities and 1,188 applications for a total of 12 megawatts of production for residential subscribers, in what has been the first wave of applications". Dönmez reiterated that from January 1, 2020, no purchase, sale or rental cannot be performed for buildings which do not hold Energy Identity Certificates. He stated that buildings not holding the lowest energy class C certificates have not been licensed since January 1, 2011. (December 26, 2019)

- **TurkStream Natural Gas Pipeline ready for commercial gas sales to Turkey and Europe.** TurkStream's Turkey reception terminal coastal crossing has been completed and the land and sea pipelines have now been connected and are ready for commercial operation. Both pipelines have been filled with natural gas at the line's intake thermals. The project will be inaugurated in an official ceremony on January 8, 2020. (December 26, 2019)

- **Oil Transportation by Pipelines Inc. (BOTAŞ) leaves tariff for natural sold to power plants unchanged.** According to an announcement from BOTAŞ, the decision was taken that the wholesale price of natural gas for the purpose of electricity production and for uses other than electricity production would remain at TL 1.6 / Sm³ (TL 0.15037594 / kilowatthour) in the first quarter of 2020. (December 26, 2019)

- **Murat Kurum, Minister of Environment and Urbanization gives information on activities carried out at the launch of "National Smart Cities Strategy and Action Plan".** According to the statement made by the Minister, Murat Kurum, various meetings and workshops have been organized in the last year and a half and pilot studies have been carried out. The plan prepared as a result of these studies includes a total of 40 actions, 26 of which are primary actions and 14 of which are secondary actions. Mr. Kurum stated that Turkey's current share in the smart cities market, which is projected to reach a size of USD 826 billion in 2024, remains very low, while adding that with the right production and investments, Turkey could command a share of at least USD 25-30 billion in this market annually. Kurum added that all environmental investments in 2020 and beyond would be realized with the Ministry supporting the projects to be carried out by municipalities in their efforts to tackle climate change.

- **Ratio of electricity generation that can be sold in the market determined.** According to a decision taken by the EMRA Board on December 19, 2019, the annual electricity generation amount registered to the license of a licensee within a calendar year has been set as 40% for the year 2020. (December 24, 2019)

- **Two wind farm projects sold by Zorlu Energy to Akfen Holding.** According to the announcement made by the Company to the Public Disclosure Platform (KAP), all of the company's shares will be transferred to İmbat Energy, a wholly-owned subsidiary of Akfen Renewable Energy. Zorlu Wind Energy Electricity Generation Inc. has two wind farms with a total installed capacity of 80.3 megawatts (MW). The Sarıtepe wind farm, located in Osmaniye, has a capacity of 57 MW and the Demirciler Wind Farm has a capacity of 23.3 MW. (December 24, 2019)

- **"2020-2023 National Smart Cities Strategy and Action Plan" being prepared.** According to the Presidential Memorandum, published in the Official Gazette, the "Smart City Strategy and Action Plan" - the first of its kind in Turkey and fourth in the world - will work with public institutions and organizations, local governments and in coordination with all the elements of the city, with the aim of ensuring the integrity of services to citizens. (December 24, 2019)

- **Addendum to Electricity Sales Agreements (ESA) issued by Electricity Generation Inc. (EÜAŞ).** Within the scope of the agreements signed to promote domestic coal, EUAS will



purchase a total of 28.26 billion kilowatthours (kWh) of electricity in 2020. Of the stated amount, 27.15 billion kWh will be purchased solely from private companies operating domestic coal-fired power generation plants, while 1.11 billion kWh will be purchased from private companies operating domestic coal- and imported coal-fired power plants. EÜAŞ also issued a statement concerning the price of each unit of electricity, and will receive electricity at a rate of USD 5-5.5 /kWh. (December 24, 2019)

- SHURA Energy Transformation Center announces details of "Transport Sector Transformation: Integrating Electric Vehicles into Turkey's Distribution" report. According to the report, 154 in every 1,000 people currently have vehicles in Turkey. Turkey's population is projected to exceed 90 million people by 2030, by which time it is expected that 300 of every 1,000 people will own a vehicle. Worldwide, it is estimated that the number of electric vehicles could reach 250 million by 2030. Turkey currently has about 1,500 electric vehicles on the road and over 1,000 charging stations. By 2030, the number of electric vehicles in the country is expected to reach 2.5 million, with the number of charging stations rising to 1 million. Provided the projected investments are realized, the electricity distribution network is expected to reach a capacity sufficient to charge electric vehicles without any problems. (December 24, 2019)

- Mild weather to have limited natural gas consumption. Turkey Natural Gas Distributors' Association (GAZBIR) Chairman Yaşar Arslan stated that the Association expected domestic natural gas consumption to have totaled 44-44.5 billion cubic meters (m³) this year as a result of milder temperatures and the decrease in the amount of electricity generated from natural gas. This projection indicates a decline of 10-11% in Turkey's domestic gas consumption from the 49.3 billion m³ in 2018. Natural gas consumed in the generation of electricity, traditionally the largest natural gas consumption group, is expected to decline by around 40% in 2019 compared to the previous year, according to Arslan. Electricity producers consumed 18.2 billion m³ of natural gas last year. (December 24, 2019)

- Development and Investment Bank of Turkey (TKYB) and German Development Bank (KfW) agree on 40-year term loan. Ibrahim Öztop, the General Manager of the Development and Investment Bank of Turkey, stated that the 40-year loan would be allocated to renewable energy and solar energy production projects. Öztop stated that it was signed under the advice of the Republic of Turkey Ministry of Treasury and Finance. (December 24, 2019)



- Garanti BBVA Executive Vice President Ebru Dildar Edin speaks in 10th IICEC Conference. Ebru Edin noted that although the company had financed investments such as natural gas and coal in the past, they could not now finance them, even if they wanted to. Edin argued that the YEKDEM Regulation, which will expire at the end of 2020, should continue in Euro terms, citing that the machinery and equipment to be used in investments would come from Europe, where interest rates would remain low. She added that Turkish banks could not provide loans for more than 10 years because of a lack of resources, but could make use of much longer-term loans today, arguing that the duration of the YEKDEM regulation should be at least 15 years, even though the support amounts provided are lower. (December 23, 2019)

- A total of 45 coal, natural gas and hydroelectric plants to benefit from the capacity mechanism in electricity by 2020. Turkey Electricity Transmission Inc. (TEİAŞ) updated the list of power plants that will benefit from the electricity capacity mechanism in 2020. Accordingly, the Lüleburgaz Natural Gas Combined Cycle Power Plant and Kadıncık-1 and Kadıncık-2 hydroelectric power plants were added to the list. (December 23, 2019)

- Turkey begins exporting liquefied natural gas (LNG). Aygaz, which sells natural gas through the pipeline network and delivers and sells LNG to users who are not yet connected to the pipeline, was the first company to export LNG from Turkey. Aygaz Natural Gas, which has expanded its operations due to heavy LNG demand from neighboring countries, carried out its first exports by road to Bulgaria. (December 23, 2019)

- European Bank for Reconstruction and Development (EBRD) to provide USD 100 million of Turkish Lira financing to EnerjiSA. According to the statement, the financing to be provided to EnerjiSA will be the bank's first loan under the TL Daily Reference Exchange Rate (TLREF) mechanism. EnerjiSA will use the loan for the improvement of the network infrastructure, sustainable and uninterrupted energy supply and technology investments in the region where it provides electricity distribution services. (December 20, 2019)

- State Supply Office (DMO) opens tender to meet the need for fuel oil by public institutions through "one-stop and bulk procurement." According to the invitation letter sent by the DMO to fuel companies, bids in the tender to be carried out in accordance with the new system will be received on Friday, December 20. Distribution companies with "vehicle recognition system" in 225 districts in 60 provinces will be able to participate in the tender. The annual fuel requirement of public institutions is in the order of TL 10 billion. (December 20, 2019)

- Report examining potential of Turkey's rooftop solar energy market published by US-based Institute for Energy Economics and Financial Analysis (IEEFA). According to the modeling study set out in the report entitled "New Incentives Illuminate Turkey's Rooftop Solar Energy Sector", suitable policies similar to successful examples from different countries around the world could reduce the repayment period of a residential solar energy investment in Turkey from the 11 years currently to 7 years by 2020 and just 2 years in 2030. Even if the existing regulations are left unchanged and no new supports are implemented, these periods could be reduced to 7 years by 2025 and 4.5 years by 2030 solely through declines in system prices. However, if some support applications are introduced, the repayment period could be reduced to 6.6 years in the current state and to just 2 years by 2030. (December 19, 2019)

- **Turkey's unique R&D model built on three pillars of institutionalization, culture and participation, according to Energy and Natural Resources Minister Fatih Dönmez.** Speaking at the 4th R&D Workshop in Energy, organized by the Association of Electricity Distribution Services Association (ELDER) and the Turkey Natural Gas Distributors' Association (GAZBIR) under the Coordination of EMRA, Dönmez stated that member states of the The Organisation for Economic Co-operation and Development (OECD) had examined the R&D models in various energy sectors, adding "We have reached the end of our studies on a model specific to Turkey in R&D. Hopefully we'll share it with you soon." Dönmez stated that none of the components in R&D processes were independent of each other. In his speech within the scope of the same workshop, the President of the Grand National Assembly of the Turkey Energy Commission, Mustafa Elitaş, said that R&D support had brought a very important contribution in reducing dependence on foreign energy. (December 19, 2019)

- **Meeting held to promote report entitled "Incentives, Support and Subsidies for the Transition to a Low Carbon Energy in Turkey" prepared by SHURA.** According to the report, the largest share of the USD 8 billion in support given to the energy sector in 2018 was allocated to electricity generation, amounting to USD 3.8 billion. Of this amount, USD 3.2 billion was allocated to electricity generation from renewable energy sources and USD 620 million was allocated to electricity generation from fossil fuels. During the same period, the amount of support for end users was calculated as USD 2.2 billion. Support for the oil, natural gas, coal exploration and production sectors stood at USD 1 billion, while private energy taxes paid to the state amounted to approximately USD 1 billion. (December 19, 2019)

- **Target set for USD 2 billion of investment in natural gas distribution.** The Chairman of the Turkey Natural Gas Distributors' Association (GAZBIR), Yaşar Arslan, said that the Association would invest approximately USD 2 billion in 3 years to provide more natural gas supply to 100 settlements. Arslan stated that the natural gas distribution sector would maintain its investments in expansion, adding: "We have brought natural gas supply to 6.5 million citizens in 220 new settlements with the investments undertaken in 2017-2019. As of this year, 66 million of our citizens are able to use natural gas. Between 2020 and 2022, we plan to bring natural gas to another 100 settlements. In this context, with an investment of approximately TL 2 billion, 2.3 million citizens will gain the opportunity to use natural gas." (December 18, 2019)

- **Konya Selçuklu Municipality to build 3.6-megawatt solar power plant (SPP).** The facility, which will be established within the scope of the TL 6.5 million project, will convert solar energy into electricity with a photovoltaic system. The facility is projected to have an operation period of 25 years. (December 18, 2019)

- **Çan-2 Thermal Power Plant granted Environmental Permit and License Certificate.** The Çan-2 Thermal Power Plant, a subsidiary of Odaş Electricity Generation, underwent all tests during the temporary operation period and received the Environmental Permit and License Certificate, which will be valid for 5 years effective from 6 December 2019. (December 17, 2019)

- **EMRA grants 15 licenses for operation in electricity market. The announcement by EMRA on the subject was published in the Official Gazette.** Accordingly, production licenses were granted for 12 plants to operate in the electricity market, and supply licenses were granted to 3 companies. In the

same market, the production licenses and supply licenses for two companies were terminated. Mineral oil licenses were also granted to three companies to operate in the oil market. (December 16, 2019)

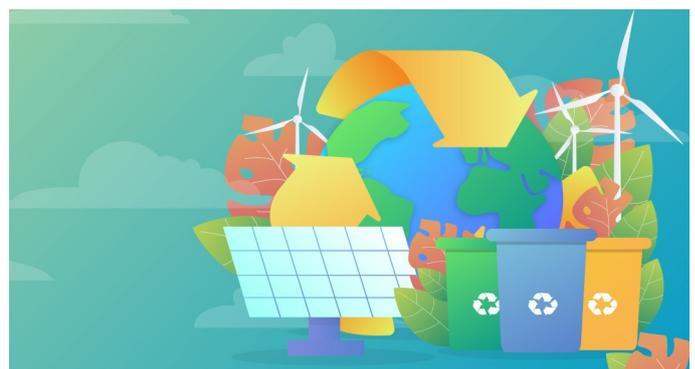
- **Asian Infrastructure Investment Bank (AIIB) issues USD 300 million loan to Istanbul Metropolitan Municipality.** The AIIB announced that it had issued a USD 300 million guaranteed loan to the Istanbul Metropolitan Municipality within the scope of Seismic Risk Mitigation and Emergency Preparedness Project. (December 16, 2019)

- **EMRA carries out amendments to the Principles of BOTAŞ Transmission Network Operation Regulations (NOR) regarding import of spot piped gas.** (December 16, 2019)

- **Use of plastic bags plunges by 77.27% in the first 11 months following the imposition of charges on plastic bags by the Ministry of Environment and Urbanization on January 1.** The Anadolu Agency reported that the charge on plastic bags has already saved approximately 150,000 tonnes of plastic. The number of bags per person, which was about 35 per month, has decreased to 10. (December 16, 2019)

- **Regulation on Cycle Tracks prepared by the Ministry of Environment and Urbanization enters force after being published in the Official Gazette.** According to the regulation, cycle tracks will be planned as a holistic network integrated with other transportation modes that connect residential areas, transportation points, sports facilities and intensively used public and private service areas in order to meet transportation needs safely. New zoning plans for unplanned areas will be required to include reserved bicycle lanes and bicycle parking stations. Where there is no zoning plan, rural bicycle lanes and cycle tracks as specified in this regulation will be laid out. In locations with zoning plans, with the exception of shared bike lanes, bicycle lanes and cycle tracks, the cycle tracks will not be established without changing the implementation zoning plan. Separated bicycle paths, bicycle highways, bicycle bridges and tunnels will have to be reserved in the development plan. The zoning plan revisions will include dedicated bicycle lanes and bicycle parking stations in accordance with the provisions of the regulation. (December 13, 2019)

- **İzmir Metropolitan Municipality included in the Green Cities Program of the European Bank for Reconstruction and Development (EBRD).** According to the statements issued by the EBRD and the İzmir Metropolitan Municipality, a grant agreement of EUR 300,000 was signed between the two parties in Izmir for the preparation of an Action Plan for the Green Cities Program with a loan of EUR 80 million for the Buca Metro. However, the EBRD statement cited that according to the study carried out by the AECOM, environmental priorities of Izmir were reported as reducing emissions from public



transport, improving the quality of air, water and soil protection and expansion of access to green areas. Climate and disaster risks such as increased temperature, water shortages, rising sea levels, coastal erosion and earthquakes are among the issues which need to be addressed by the city administration. (December 12, 2019)

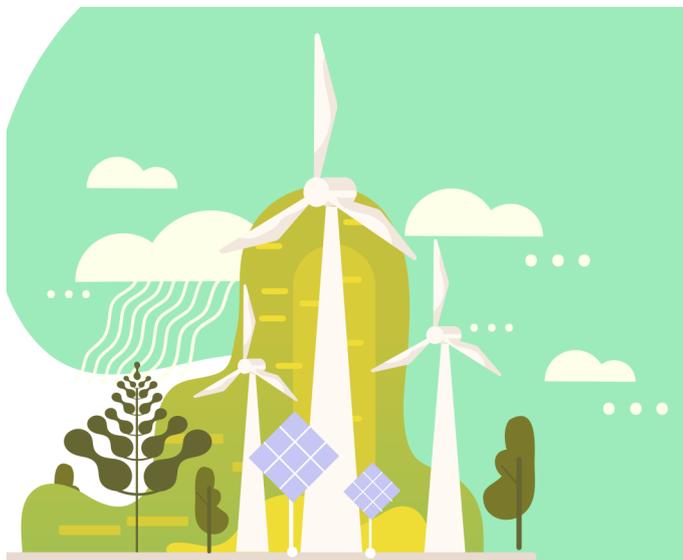
- **Development and Investment Bank of Turkey (TKYB) secures USD 200 million in funding from the Asian Infrastructure Investment Bank (AIIB) with a 15-year term.** According to information published on the AIIB website, the funding - which will be guaranteed by the Ministry of Treasury and Finance - will be provided to investors who develop energy efficiency and renewable energy projects in line with Turkish environmental legislation. (December 12, 2019)

- **Akenerji's USD 854 million loan at Yapı ve Kredi Bankası restructured.** In September 2015, Akenerji signed a loan agreement with Yapı ve Kredi Bankası amounting to USD 1.1 billion with a 12-year term, the first year being the grace period. Following a number of meetings, a new loan agreement was signed between Yapı Kredi and Akenerji for the restructuring of a total loan of USD 854 million with a maturity of 5 years and 13 years in terms of TL and USD, with a grace period of one and a half years. (December 11, 2019)

- **Hamax Europe, established in partnership with Japanese Hamax and Ateş Çelik, to produce wind energy equipment in İzmir.** Hamax Europe will produce nuts and bolts for wind turbines in İzmir with an investment of approximately USD 1 million. The company will enter operation next month and production will start in April. (December 11, 2019)

- **Akkuyu Nuclear Inc. and TEİAŞ signed electrical connection agreement.** According to the statement issued by Akkuyu Nuclear Inc., construction and maintenance of all lines required for the connection of the Akkuyu Nuclear Power Plant will be carried out by TEİAŞ. (December 10, 2019)

- **Regulation on Water Allocation published in the Official Gazette and now in force.** With the regulation published by the General Directorate of State Hydraulic Works (DSİ), the procedures and principles for obtaining the views of the DSİ in the procedures such as allocation, leasing and licensing of water resources by other public institutions and organizations and the procedures and principles regarding the water allocations to be carried out by the DSİ have been determined. (December 10, 2019)



- **Energy Efficiency Action Plan Monitoring and Steering Board published in the Official Gazette.** According to the circular, the Deputy Minister of Energy and Natural Resources will chair the board, which will convene at least once a year. The purpose of establishing the Board is to carry out the energy efficiency studies that require the public sector, private sector and non-governmental organizations to act in a participatory and collaborative manner effectively in all responsible and related institutions and organizations throughout the country, to determine the energy efficiency strategies at national level, to determine the action plan and programs, to monitor realization levels, including the National Energy Efficiency Action Plan, to ensure coordination for effective implementation, to monitoring the results, and effect changes and updating as necessary. (December 9, 2019)

- **24 municipalities in Turkey have pledged to focus on renewable energy and ecological farming practices.** During the Climate Summit held in Madrid, Spain, the municipalities announced that they will undertake efforts to follow the Paris Climate Accord with a 1.5-degree limit of global warming. (December 9, 2019)

- **Plans for TL 2.4 billion in energy savings in public buildings.** Speaking at the "Consultation Meeting" held by the Energy Efficiency Association, the Minister for Energy and Natural Resources, Fatih Dönmez stated that the public sector would serve as an example to the community on the subject of energy efficiency. Dönmez said that "The public's annual energy expense is about TL 6 billion. Our studies have identified potential energy savings of up to 40%, amounting to TL 2.4 billion. To realize this potential, we will roll out Energy Performance Contracts, which will cover the costs of public administrations and the savings they provide." (December 9, 2019)

- **Legal entities to take over unlicensed production facilities given opportunity to borrow in foreign currencies.** With the amendment made within the scope of the Central Bank Circular of Capital Movements, in the event of unlicensed generation facilities being taken over it will be possible to provide foreign currency loans to persons taking over the shares following the transfer transactions, provided that they take over the production facilities and credit balances. (December 6, 2019)

- **637 projects awarded investment incentive certificates in various sectors in October 2019, according to the Ministry of Industry and Technology.** Eight energy projects received investment incentive certificates, while 67 energy projects were given a visa. Twelve projects in the mining sector received investment incentive certificates. In October 2019, the total investment amount of the projects receiving investment incentive certificates was TL 10.4 billion. In the energy sector, the project with the highest investment amount (TL 320 million) among the projects granted investment incentive certificate was Akmercan Muğla Natural Gas Distribution Industry and Trade Inc. This project is expected to create 50 new jobs. (December 5, 2019)

- **Cancellation of investment incentive certificate of Kalyon's solar panel project.** The investment incentive certificate issued for the photovoltaic solar panel production project with an annual capacity of 500 MW, which was planned by Kalyon Güneş Teknolojileri Üretim A.Ş. in Ankara, was cancelled. The cancellation was realized due to the acquisition of all of the Hanwha shares held by Kalyon A.Ş. (December 5, 2019).

- **Turkey halts exit demand from Annex-1 list.** Turkey has announced that it has withdrawn its request for exit from the Annex-1 list, which was in the opening agenda of the United Nations Framework Convention on Climate Change 25th Conference of the Parties (COP25). The description was made by the International Climate Negotiations and Policy Branch Deputy Director Aysin Turpanci, who spoke on behalf of Turkey in the opening meeting of COP25. Turpanci announced that Turkey would renew its demand in the COP26. (December 4, 2019)

- **Turkey Statistical Institute (TurkStat) announced "Statistics of Waste Disposal and Recycling Facilities" for 2018.** According to the figures, 56 million tonnes of landfill waste was disposed of in 2018, while 48 million tonnes of waste were recycled in recycling plants throughout Turkey. In 2018, a total of 2,223 facilities, 166 of which were disposed of waste and 2,057 were recovered, were in operation. At the 159 landfill facilities, which have a total capacity is 799 million cubic meters, 56 million tonnes of waste, including 17 million tonnes of hazardous waste, were disposed of. (December 3, 2019)

- **Energy distribution company established by Zorlu Energy.** "Zorlu Trade Elektrik Toptan Satış Anonim Şirketi", which was established with a capital of TL 500,000, will be engaged in the trade, wholesale, retail, import and export of electricity. (December 3, 2019)

News From Abroad

- **United Nations Conference on Climate Change (COP25) ends with partial agreement.** The summit emphasized the need to close the large gap between the current climate actions and the emission reduction necessary to achieve the objectives of the Paris Agreement. Few countries participated in the meeting with updated plans to achieve the objectives of the Paris Agreement, while the European Union eventually reached an agreement for a zero-carbon target by the end of 2050. The issue that came up in this year's talks was the global carbon markets. The parties did not reach a decision, even though the deadline for reaching an agreement on this issue has already passed. (December 17, 2019)

- **International Energy Agency (IEA) predicts that global coal demand will reach 5.62 billion tonnes by 2024.** In its report presented in the COP25, the IEA set out its prediction that global coal demand will continue to increase steadily until 2024. The IEA predicted that increasing coal demand in Asia would compensate for the reduction in demand in the US and Europe. Pointing out that coal continues to be the most consumed fuel in global energy markets, the IEA reported that coal consumption is now 65% higher than in 2000. The IEA also predicted that India's demand would increase by 4.2% year-on-year and reach 748 million tonnes in 2024. (December 17, 2019)

- **Germany agrees to increase carbon price to be implemented from 2021.** The initial carbon price to be applied in this context was increased from EUR 10 to EUR 25 from 2021. In the meantime, prices will rise to EUR 30 in 2022, EUR 35 in 2023, EUR 45 in 2024 and EUR 55 in 2025. Revenue from the mechanism will be used to support green energy investments, reduce consumers' contribution to electricity bills and to cover the deficit in funds resulting from the support for renewable energy investments. (December 17, 2019)

- **Goldman Sachs announces target of providing USD 750 billion in financing and services for climate and development over a 10-year period.** The company will not finance new coal-fired power plant investments in developed countries, but will seek carbon capture or emission reduction technologies in other countries. Goldman Sachs also stated that new coal mine investments will not be supported, and the emission reduction and investment diversification efforts will be the main factor in the future financing needs of the existing mines. (December 17, 2019)

- **European Union (EU) announces 100 billion euro climate package.** EU Commission President Ursula von der Leyen unveiled the package to combat climate change, which is called the "Green European Agreement". Von der Leyen plans to allocate 100 billion euros in the EU to reduce carbon emissions as much as possible by 2050. Von der Leyen noted that the EU Commission would allocate EUR 100 billion for investments aimed at reducing the use of fossil fuels and said the package was Europe's new growth strategy. The agreement aims to make the EU as climate-friendly as possible with programs to be implemented in areas such as energy supply, industry, transport and agriculture by 2050. The goal is to make Europe a climate neutral continent by 2050. (December 13, 2019)

- **US Energy Information Administration (EIA) revises its oil price forecast for the next year upwards.** According to the EIA's "Short-Term Energy Outlook Report - December 2019", the average price of a barrel of Brent crude oil in 2020 is estimated to be USD 60.50, with an average cost of West Texas (WTI) crude oil to be USD 55 per barrel. In the November report, the average barrel price of Brent crude oil for the next year was projected to be USD 60 per barrel and the average barrel price of WTI crude oil was projected to be USD 54.50 per barrel. In EIA's current report, a reduction in crude oil production of 500,000 barrels per day is expected to help support an increase in prices next year. The crude oil production forecast for the next year was reduced by 100,000 barrels per day. (December 12, 2019)

- **The President of the European Commission announced the European Green Deal Programme.** The 50-item action plan aims to reduce the European Union's (EU) greenhouse gas emissions to 50-55% below their 1990 levels by 2030, and the carbon neutralization of the EU by 2050, as well as contributing to the increase in employment and development of the continent. The first of the action plans is to propose the European Climate Act in March 2020, which binds the goal of carbon neutrality for 2050. (December 12, 2019)



- **According to Reuters, the Saudi Arabian government said it would voluntarily reduce crude oil production by another 400,000 barrels per day.** During the meeting held in Vienna, 14 members of the Organization of Petroleum Exporting Countries (OPEC) led by Saudi Arabia and 10 non-OPEC oil-producing countries led by Russia decided to reduce their total crude oil production by 500,000 barrels per day. Saudi Arabia's government said it would support the decision by reducing oil production by 167,000 barrels per day with the Russian government pledging cuts of 70,000 barrels per day. After the Saudi Arabian government announced a cut of 400,000 barrels, the total cut is expected to reach 2.1 million barrels per day. (December 10, 2019)

- **The Organization of Petroleum Exporting Countries (OPEC) and some non-OPEC oil producing countries pledge to cut daily oil production by 500,000 barrels.** The group of oil producing countries, referred to as OPEC+, held the 7th Ministerial Meeting in Vienna, and agreed to increase the production cut from 500,000 barrels per day to 1.2 million barrels per day. OPEC members will meet two thirds of the additional production cut of 500,000 barrels per day and the production cut will be implemented by the end of March 2020. (December 9, 2020)

- **European Union (EU) agrees on a tax reform that envisages increasing taxes on energy products which cause more air pollution.** At a meeting in Brussels, EU finance ministers supported the reform of the energy taxation system, a step that could end tax exemptions for air and maritime transport. The agreement reached by the finance ministers of 28 EU countries was an attempt to update the EU's energy tax system to achieve ambitious climate change targets. The reform, which envisages increasing taxes on energy products that cause more air pollution, will contribute to efforts to tackle climate change in a more effective manner. (December 9, 2019)

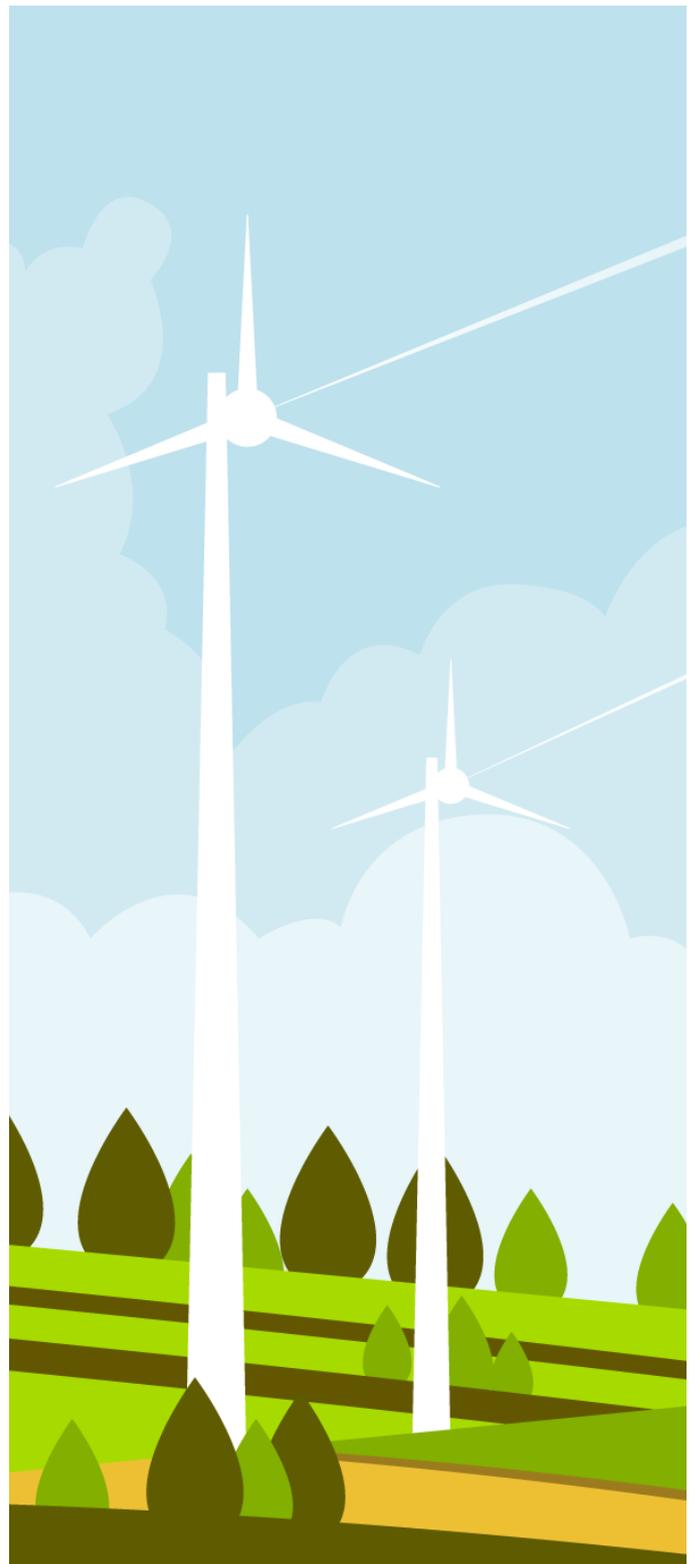
- **Saudi Aramco's public offering realized.** According to a written statement issued by Saudi Aramco, 1.5% of the company's total 3 billion shares have been issued. It was also stated that 32 Saudi rials (USD 8.53), which was the highest amount per share, were received from investors, raising a total of USD 25.59 billion. Saudi Aramco became the world's most valuable company with a market value of USD 1.7 trillion. (December 6, 2019)

- **No decision reached on first day of 177th Meeting of the Organization of Petroleum Exporting Countries (OPEC).** After the meeting, Saudi Arabia's Energy Minister, Prince Abdulaziz bin Selman, told reporters that "We cannot conclude that there is an agreement before meeting our colleagues outside OPEC." According to the New York Times, the majority of OPEC member countries and Russia agreed to cut oil production by 500,000 barrels per day by March 2020. (December 6, 2019)

- **IEA Renewable Energy 2019 Report "Turkey launch" meeting performed.** IEA Senior Analyst Heymi Bahar, who carried out evaluations at the meeting, stated that distributed solar energy applications would increase their share in electricity generation in the next five years and leave its mark on the period. He also added that "In 5 years, renewable energy capacity of 1,200 gigawatts, equal to the total installed capacity of the USA, will be added to the world electricity capacity. Solar energy applications alone will account for 60% of this capacity." (December 5, 2019)

- **China's "artificial sun" to begin generating electricity in 2020.** The fusion project, named the "artificial sun", developed by China, has been completed. The fusion device, named "HL-2M" will begin to generate electricity next year. (December 3, 2019)

- **European connection of the Trans-Anatolian Natural Gas Pipeline (TANAP) realized.** The first natural gas test was delivered to the Trans Adriatic Pipeline (TAP), which was connected to TANAP. With the TAP project successfully connected to TANAP, the natural gas extracted from the Caspian Sea will be transmitted to Italy via Greece, Albania and the Adriatic Sea. (December 2, 2019)





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