



February 2019

#9

## Monthly Energy Bulletin

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TSKB Economic Research



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## The amendment to the Mining Law was published in the Official Gazette

The amendment to the regulation allows companies which the General Directorate of Mineral Research and Exploration will establish abroad to engage in management activities as well as exploration and research activities.

With the amendment, Elektrik Üretim A.Ş. will be able to buy coal from companies designated to build electricity generation facilities as well as the management of these plants and trade of electricity.

“Mining Rights” were defined as permits for mines to search and find reserves, to improve the visibility of mining reserves and their management, as well as to provide monetary support for parties assisting in the exploration of mining fields. The licensing costs of mines and the state’s right rates were revised.

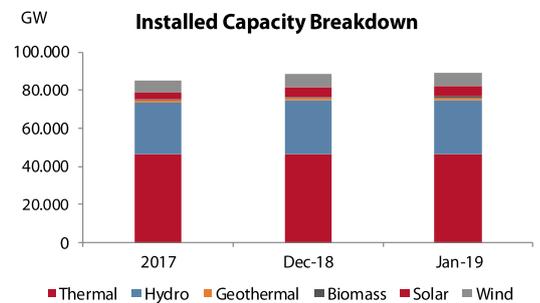
With the amendment, the license fee and the legal status of the state rights were re-arranged while the license fee and state-rights rates to be taken from the mines were revised.

Preparations and activities for production will be called "mining operations".

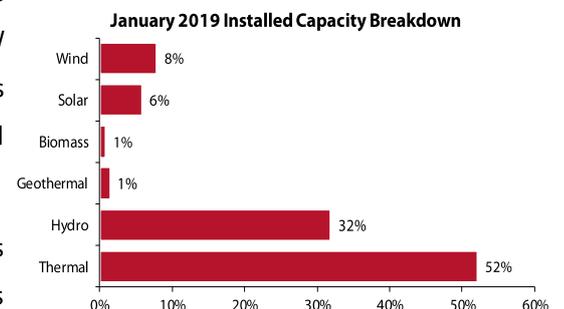
## Installed Capacity Analysis

After reaching 88,551 megawatts (MW) at the end of 2018, Turkey’s total installed capacity edged up by 0.4% to 88,894 MW by the end of January 2019. Coal power plants and renewable power plants accounted for the entire increase. During this period, licensed and unlicensed solar power plants with a total installed capacity of 117 MW were commissioned, along with hydroelectric power plants with a total capacity of 200 MWs. A total reduction of 85 MW was recorded in total installed capacity of natural gas power plants, whereas coal power plants recorded an increase of 200 MW in their total installed capacity. Total installed capacity of wind farms increased by just 5 MW, whereas total installed capacity of geothermal power plants increased by 20 MW.

Of the power plants in operation in January, 48% were power plants generating renewable electricity, with hydroelectric power plants accounting for 32% of the total installed renewables capacity. The total share of licensed and unlicensed solar power plants increased to 13.7% in January, from 13.5% at the end of 2018.



Source: Electricity Transmission Company (TEİAŞ), TSKB Economic Research



Source: TEİAŞ, TSKB Economic Research

## Electricity Generation Analysis

Approximately 23.14 terawatt-hours (TWh) was generated in February 2019, while the total generation in January reached 25.84 TWh.

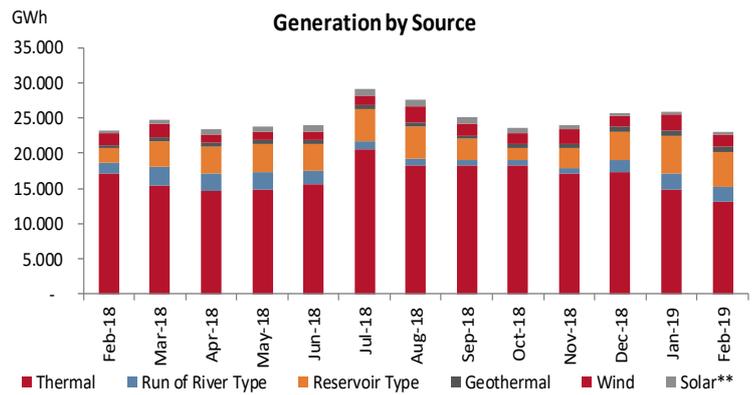
There was a 10.5% decrease in electricity generation in February 2019, compared to January. Electricity generation in February 2019 declined by 0.5% compared to the same month last year.

Thermal power plants, which had supplied 57.7% of the total electricity in January, generated 50.6% of the total electricity generated in the second month of 2019, with the decrease in electricity generation through hydro-electric power likely to have been the main reason for the 7.2 point decline. Accounting for 8.5% of electricity generation in January, wind provided 7.2% of the total electricity generated in February. Another noteworthy point was that run-of-river type power plants, which had a 29.6% share in January, underwent a decrease in their share to 27.7% in the second month of 2019.

The average daily generation of licensed power plants in February 2019 stood at 813,374 megawatt-hours (MWh), marking a 1% decline compared to January.

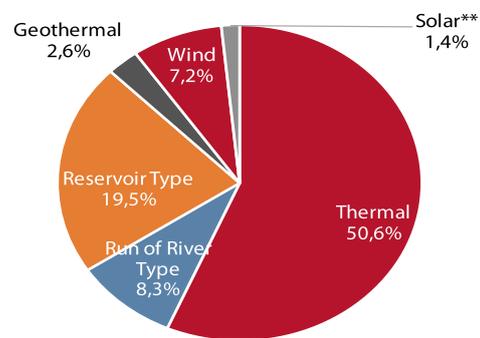
The highest electricity generation from licensed power plants was realized on Thursday, February 14 with 871,275 MWh and the lowest was realized on Sunday, February 3, at 681,372 MWh.

Daily consumption averaged 808,165 MWh in February 2019, peaking at 862,914 MWh on Friday, February 15, while the lowest electricity consumption, of 678,638 MWh, was recorded on Sunday, February 3.



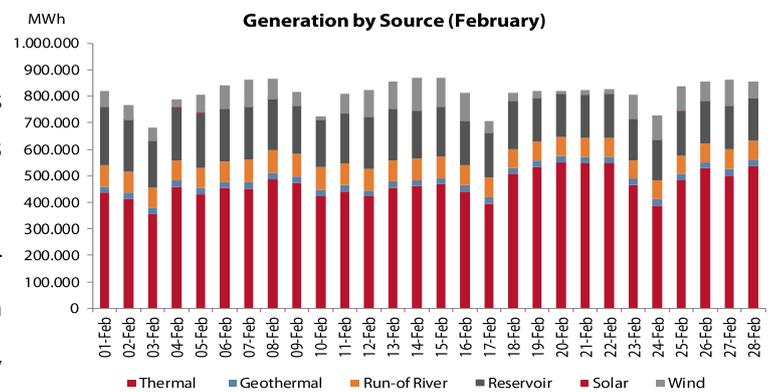
Source: TEİAŞ, YTBS Daily Reports, TSKB Economic Research

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

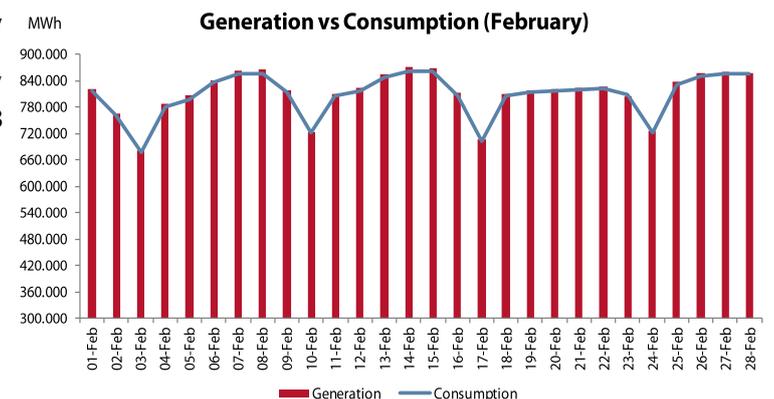


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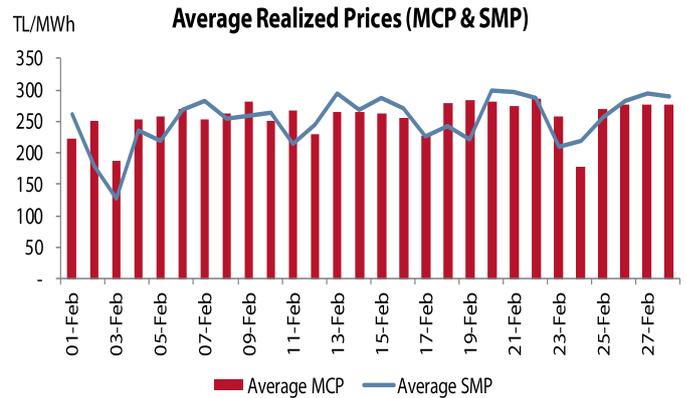
## Electricity Price Analysis

The average market clearing price (MCP) and system marginal price (SMP) fluctuated between TL 125/MWh and TL 300/MWh in February 2019. In February 2019, the average MCP stood at TL 257.05/MWh, while the SMP averaged TL 251.87/MWh. The lowest average MCP, of TL 178.73/MWh, was recorded on Sunday, February 24, and the lowest average SMP, of TL 126.99/MWh, was recorded on Sunday, February 3.

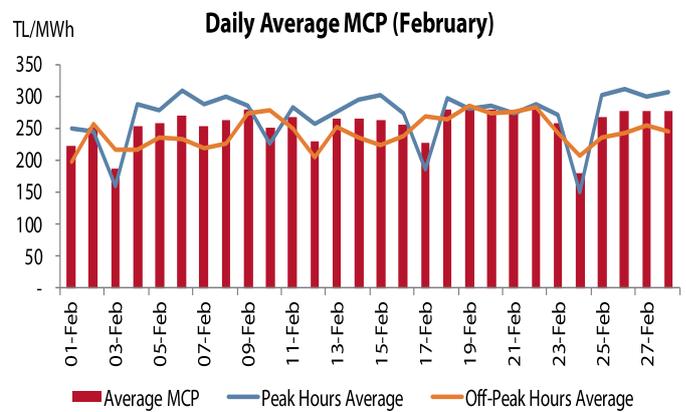
Compared to the January average, the average February MCP was 15.2% higher.

An analysis of January's daily average MCP reveals an average tariff of TL 270.1/MWh for peak hours (from 8AM to 8 PM), 5.1% higher than the daily average value. The highest peak-hour average recorded was TL 311.25/MWh on Tuesday, February 26, with the lowest peak-hour average calculated at TL 149.52/MWh on Sunday, February 24.

The average pricing in off-peak hours (from 8PM to 8AM) for the same period was calculated as TL 244/MWh. The highest off-peak hour average was TL 284.23/MWh on Tuesday, February 19, with the lowest off-peak-hour average, of TL 198.33/MWh, recorded on Friday, February 1. A noteworthy point to mention regarding the hourly SMP's was that on Sunday, February 3, the price was not determined for 8 hours.



Source: EXIST, TSKB Economic Research

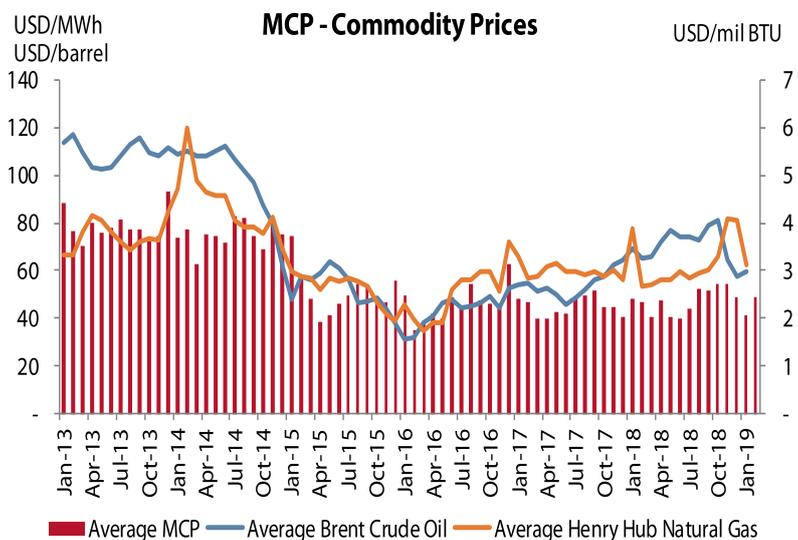


Source: EXIST, TSKB Economic Research

The annual average market clearing price (MCP) in 2018 stood at USD 47.39/MWh, with an average MCP of USD 41.54/MWh in January and USD 48.85/MWh and February 2019.

Compared to January, February's MCP rose by 17.6% in dollar terms; this was mainly due to the 15.2% increase of MCP in Turkish lira terms.

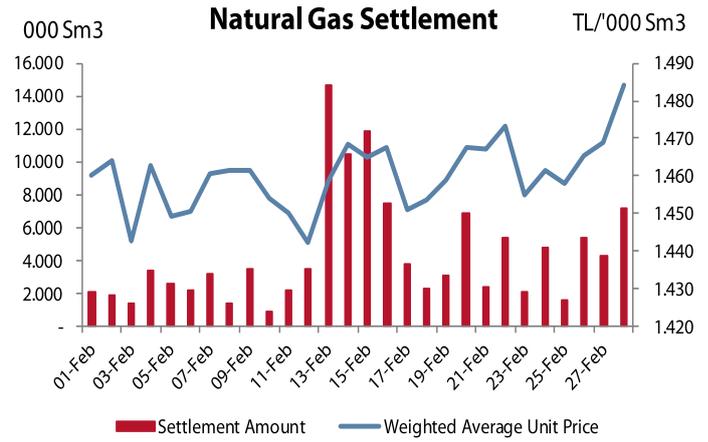
The average price of a barrel of Brent crude was USD 57.36 in December. In January, Brent crude oil prices averaged USD 59.41 per barrel, while in the same period, the average price of Henry Hub natural gas stood at USD 3.11/mBTU.



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

## Natural Gas Settlements

According to natural gas coupling data released by the Organized Wholesale Natural Gas Market operated by EXIST, the daily average natural gas settlement was 122.19 million Sm<sup>3</sup> in February. On Sunday, February 10th settlements for a total of 914,000 Sm<sup>3</sup> of natural gas were recorded while on Wednesday, February 13<sup>th</sup> settlements totaled 14.659 million Sm<sup>3</sup>. In January, weighted average of the settlement unit price was calculated as TL 1,463.22 per 1,000 Sm<sup>3</sup>.



Source: EXIST Natural Gas Platform, TSKB Economic Research

## Sector News

### Local News

- The amendment to the regulation allows companies which the General Directorate of Mineral Research and Exploration will establish abroad to engage in management activities as well as exploration and research activities.** With the amendment, Elektrik Üretim A.Ş. will be able to buy coal from companies designated to build electricity generation facilities as well as the management of these plants and trade of electricity. "Mining Rights" were defined as permits for mines to search and find reserves, to improve the visibility of mining reserves and their management, as well as to provide monetary support for parties assisting in the exploration of mining fields. The licensing costs of mines and the state's right rates were revised. (February 28, 2019)
- Electricity payment support scheme implemented.** The Minister for Families, Labor and Social Services Zehra Zümrüt Selçuk, announced that the electricity payments support scheme, which will benefit approximately 2 million households, would be implemented with effect from March 1. The amount of support will vary between 40.31 and 80.63 Turkish liras depending to the number of people in each household. Ms. Selçuk said that support would be allocated to specified people through the Turkish Post. Households with 1-2 residents will receive 75 kWh of electricity support per month, households with 3 residents will receive 100 kWh, those with 4 residents will receive 125 kWh while households with 5 or more people living in the home will receive 150 kWh of monthly electricity support (February 28, 2019)
- More competition in natural gas market.** The Deputy Minister of Energy and Natural Resources, Alparslan Bayraktar, said that more flexible contract conditions, terms and pricing would be required due to increasing levels of liquefied natural gas (LNG). Reiterating that contracts with a total capacity of 16 billion cubic meters would terminate by 2021, Bayraktar warned pipeline natural gas suppliers to adapt themselves to the changing state of the world. Bayraktar stated that Turkey aimed for a gas storage capacity of 11 billion cubic meters, adding that Turkish Petroleum was continuing its expeditions in the Mediterranean and would embark on new exploration in the Black Sea region. Bayraktar also said that LNG imports from the U.S.A. could increase in the future, pointing to the important share of LNG in natural gas imports, which had increased to 50 billion cubic meters per year. (February 27, 2019)

- **Energy and Natural Resources Summit held in Turkey.** The Minister of Energy and Natural Resources, Fatih Dönmez, spoke at the summit, saying that the government could adjust the limit on solar power plants built by industrial companies to supply energy for their own production, which currently stands at 1 MWs. Dönmez said the Ministry had received 7,000 applications for unlicensed energy generation, adding that the Ministry worked on monthly nettings for citizens seeking to install their own solar power plants on the roof of their properties. Dönmez also said that the Renewable Energy Resource Zones (YEKA) tenders and Renewable Energy Resources Support Mechanism (YEKDEM) would continue. (February 26, 2019)
- **Merger between Turkish Petroleum and Turkuaz Petroleum.** The General Manager of Turkish Petroleum, Çağdaş Demirağ, announced that the two companies had completed their merger under the name of Turkish Petroleum Inc. with effect from 19 February 2019 and that they had reached a market share of 5.2% with a total of 700 petrol stations after the merger. (February 25, 2019)
- **Turkey meeting 59% of global demand for boron.** A technology transfer agreement has been signed by Eti Maden and a supplier of boron carbide from China according to the Minister of Energy and Natural Resources, Fatih Dönmez, who added that boron carbide, boron nitride and ferroboration would be produced and that the efficiency in boric acid production had tripled and increased by 150 times in boron carbide production under this strategic transformation. Global boron reserves currently stand at 4.5 billion tonnes, with 3.3 billion tonnes of these reserves located in Turkey. Other regions with boron reserves are the U.S.A., China, Russia, Kazakhstan and South America. (February 22, 2019)
- **Trans Anatolian Natural Gas Pipeline Project (TANAP) “a beneficial project for all parties” according to Minister of Energy and Natural Resources, Fatih Dönmez.** Dönmez participated in the fifth Ministerial Meeting of South Gas Corridor Advisory Council and announced that the infrastructure for the sections extending up to the Greek border would be completed in the coming months. The Azerbaijan President İlhami Aliyev added that more than 1 billion cubic meters of natural gas had been supplied to Turkey through TANAP. (February 21, 2019)
- **OECD’s Environmental Performance Review of Turkey calls on Turkey to increase investment in renewable energy plants in order to reduce emissions.** According to the review, Turkey remains dependent on coal, oil and gas. The OECD’s Director for the Environment, Rodolfo Lacy, commented that Turkey had got off to a good start in transitioning towards cleaner energy, but that it needed to focus its efforts further into geothermal, solar and wind power investments, prioritizing energy efficiency among future goals. (February 21, 2019)
- **Work to increase gas drilling in 2019.** The Minister of Energy and Natural Resources, Fatih Dönmez, commented that energy dependence was a critical issue for Turkey. However, Dönmez said that oil and natural gas reserves were both unsatisfactory, only meeting 8% and 2% of total energy demand respectively. He added that Turkish Petroleum had completed about 70 drillings in 2018 and would double this number both at sea and on land in 2019. “As you all know, we brought the Fatih drilling ship to our fleet. We started operations in October and are currently drilling 4,200-4,300 meters below sea level. Our goal is to drill approximately 5,000-5,500 meters deep. With additional expeditions, it becomes clearer that Eastern Mediterranean holds big potential”, he added. (February 20, 2019)

- **USD 7.7 billion to be invested in energy sector in 2019.** 104 energy and 49 mining projects were included in the Presidential Order on Approval and Implementation of Investment Programs in 2019, which was released in the Official Gazette. A total of 2.9 billion liras worth of external financing will be acquired for energy projects in 2019 with 2.1 billion liras to be allocated to the mining sector in 2019, of which 428.6 million liras will consist of external financing. State-owned enterprises' projects are expected to take up 6.5 billion liras. BOTAŞ accounts for the highest proportion of the investment, at 3.7 billion liras. TEİAŞ aims to invest 1.9 billion liras, whereas EÜAŞ and TEDAŞ aim to invest 680 million and 72.5 million liras respectively. (February 19, 2019)
- **Amendments to pre-license transfer conditions for Renewable Energy Resource Zones (YEKA) announced in Official Gazette.** According to the amendment, legal entities with pre-licences will be permitted to change their partnership structure directly or indirectly. (February 18, 2019)
- **Omnibus energy bill passed by Grand National Assembly of Turkey.** The article, which extended requirements for environmental investments (such as fuel gas filters) into power plants by 31 December 2021, was removed from the legislative proposal. According to new law, those plants which have been leased before 11 April 2023, can be leased again. (February 14, 2019)
- **USD 650 million invested into Turkey's wind energy in 2018.** According to "Wind Statistics Report" for 2018 released by Turkish Wind Energy Association (TÜREB), the total installed capacity in the wind sector reached 7,369 MW, increasing by 7.2% compared to the previous year. Polat Energy ranks top in terms of distribution of operating wind power plants by investors, with 566 MW of capacity. Akfen Energy has the biggest share, of 243 MW, among 18 ongoing wind power projects with a total installed capacity of 606 MW (February 13, 2019).
- **Three natural gas wells flared in Istanbul.** Three out of five natural gas wells were connected to the network, and will bring enough gas to meet the demand from 300,000 homes located in Silivri, Istanbul for 10 years. The Batı Çeltik and Batı Değirmenköy fields are reported to have 3 billion cubic meters of reserves, and there is a target to produce 300 million cubic meters of natural gas from these reserves per year. The Minister of Energy and Natural Resources, Fatih Dönmez, said that a natural gas storage facility with a capacity of 1 billion cubic meters would be built in Trakya, adding that natural gas would contribute US\$5 billion to reducing the nation's current account deficit (February 12, 2019).
- **Prohibition of share transfers on pre-licensed companies which won tender of Renewable Energy Resource Zones (YEKA).** The previous regulations had prohibited the parties that won the tender from having new partners. According to a report in the Habertürk newspaper, the regulation, which is to be announced in the Official Gazette, will allow pre-licensed companies to change their shareholder structure and transfer their shares (February 11, 2019).
- **Çerkezköy Power Plant project cancelled.** The TEMA Foundation announced that the Environmental Impact Assessment process for the Çerkezköy Power Plant project had been cancelled by the Ministry of Environment and Urbanisation as of 4 February 2019. The power plant was to be located in the Çerkezköy and Kapaklı provinces of Tekirdağ with an installed capacity of 990 MWs. The area the plant was to be built included an oak forest of 500 hectares, surrounded by large plains (February 11, 2019).

- **Electricity support to start on 15 February.** Starting from 15 February, electricity support payments of 80 liras will be given to 2.5 million households on the social aid program. The Ministry of Families, Labor and Social Services will deposit the support payments in the Turkish Post (PTT) and those citizens receiving social support will only pay the remaining balance in their electricity bill after the support has been deducted. (February 8, 2019)
- **Deadline for submission of bids in privatization of Alpu Coal Reserve Area.** The deadline for pre-qualification and the final bids in the privatization of the Alpu Coal Reserve Area was extended for the 6th time to 27 June. According to the Privatization Administration's announcement in the Official Gazette, competitors may submit bids until 27 June. (February 7, 2019)
- **Sales agreement of Çan-2 Power Plant for 2019 was signed.** The Çan-2 Power Plant is to sell 1.244 tWh of electricity to Elektrik Üretim A.Ş. in 2019, according to a statement released on the Public Disclosure Platform. The total revenue to be generated from 2019 sales is projected to be between US\$64 million and US\$70.4 million. The duration of the sales agreement, which is indexed to dollar terms, is 7 years. (February 5, 2019)
- **Industry responsible for energy efficiency.** Murat Kalsın, the chairman of the Energy Efficiency Association, said that the projects aiming to raise awareness of energy efficiency among individuals have only had a 5% effect but that the public contribution would become more significant in the long term. Also the General Manager of TSKB, Suat İnce, stated that banks should determine efficiency criteria and direct investors towards energy efficiency (February 4, 2019).
- **SOCAR Turkey Energy Inc. (STEAŞ) and Gübre Fabrikaları T.A.Ş. (Gübretaş) to jointly establish a company.** According to a statement on the Public Disclosure Platform, Gübretaş and the SOCAR group signed a letter of intent to engage in a partnership with 50% share each, with the company to import and sell carbamide from SOCAR's petrochemical plants and other producers. (February 1, 2019)

## News From Abroad

- **Saudi Arabia plans to cut oil production in March.** The Saudi Minister of Energy, Khalid Al-Falih, said that U.S. oil stocks were full to the brim with additional supply and that it was Saudi Arabia's prominent goal to stabilize the market by decreasing excess supplies. (February 28, 2019)
- **New sanctions on PDVSA, the Venezuelan state oil company.** The U.S. Treasury announced that it had decided to impose new sanctions on PDVSA. According to the statement, all assets of the PDVSA in the U.S.A. have been frozen and all U.S. citizens and companies have been prohibited from any business involvement in the PDVSA. (February 26, 2019)
- **Spain to spend EUR 47 billion on tackling climate change.** Spain will invest EUR 47 billion over the next 10 years as part of its plans to tackle climate change. The Spanish government pledged that 74% of energy demand would be met from renewable resources by 2030 and that dependence on imported energy would be reduced from 74% to 59%. (February 22, 2019)
- **Shell purchases German energy storage company, Sonnen.** Shell had invested USD 70 million into Sonnen last year. Founded in 2011, Sonnen will compete with Tesla, Samsung and LG in the rooftop solar power systems market. The Company produces lithium-iron-phosphate batteries. (February 22, 2019)
- **EU reduces emissions limits for new trucks and buses.** According to a statement from the EU Commission, 28 member countries agreed to decrease emissions of trucks and buses by 30% by 2030. (February 20, 2019)

- **Azerbaijan's oil exports through Baku-Tbilisi-Ceyhan (BTC) Pipeline decrease by 2.9% YoY in January.** The State Statistical Committee of the Republic of Azerbaijan announced that oil exports through the BTC Pipeline amounted to 2.81 million tonnes in January. (February 19, 2019)
- **British Petroleum (BP) releases 2019 Energy Outlook.** The report projects a 33% increase in global energy demand by 2040, driven largely by improvements in standards of living in China and India. The report also states that energy production will constitute 75% of the total increase in global energy and with 85% of total increase in energy supply met by renewable forms of energy and natural gas. Three quarters of total global energy consumed will be used in industry and buildings, whereas the share of energy used in transportation in total energy is expected to decrease significantly as a result of improving efficiency. The report also stated that investments in new oil fields were expected to continue, in order to cover energy demand until 2040. The report also states that carbon emissions are expected to continue and that inclusive policies would be necessary in order to decrease these emissions. Reviewing the report, BP's Chief Executive Bob Dudley reviewed the report and said "The report focuses on how fast energy systems are changing and points to the dichotomy of more energy and less carbon emissions in the near future. Many forms of energy will play a roles in meeting energy needs." (February 14, 2019)
- **11 European Union members have reached their 2020 renewable energy goals.** According data released by Eurostat, 11 European Union members out of the EU-28 had achieved the goals set out for 2020 of meeting 20% of their energy demand from renewable energy resources. These countries are Sweden, Finland, Latvia, Denmark, Austria, Estonia, Portugal, Croatia, Lithuania, Romania and Slovenia (February 14, 2019).
- **Decline in oil production in Organization of Petroleum Exporting Countries (OPEC) in January.** According to OPEC's February report, OPEC's production declined by 797,000 barrels per day compared to the previous month. Production in Saudi Arabia, a leading OPEC member, declined by 350,000 barrels per day while production in the United Arab Emirates also declined by 146,000 barrels per day with Kuwait recording a fall of 90 ,000 barrels per day. On the other hand, oil production in Nigeria increased by 52,000 barrels per day. OPEC revised its global oil demand projections down to 1.24 million per day, projecting that daily demand for oil would reach 100 million barrels in 2019. (February 13, 2019)
- **Russia's oil exports up by 38.2%.** Russia's income from oil exports increased by 38.2% with revenues from natural gas exports rising by 28.8% compared to the previous year, reaching US\$178.1 billion. (February 8, 2019)
- **Plans by Organization of the Petroleum Exporting Countries (OPEC) to develop a partnership with Russia.** According to a report in the Wall Street Journal based on statements from OPEC representatives, OPEC members and a group of countries under the leadership of Russia will discuss the partnership in Vienna on 18 February. A final decision will be taken in April's ministerial meeting. (February 1, 2019)
- **Organization of the Petroleum Exporting Countries (OPEC) reports lowest production level in last two years in January.** In the first month of 2019, OPEC produced 31.02 million barrels of oil, the lowest production level of the last two years (February 5, 2019).
- **Norway becomes best prepared producer for electrical vehicles, with the Netherlands leading in public charging plugs.** According to LeasePlan's Electrical Vehicle Readiness Index, Norway, the Netherlands, Sweden and Austria are the best prepared countries for the electrical vehicle revolution. Countries with the highest number of public charging plugs are the Netherlands, Germany and France (February 5, 2019).



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