

Monthly Energy Bulletin

TSKB Economic Research

April 2021 #35

Can Hakyemez

hakyemez@tskb.com.tr

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Mini YEKA GES-3 contests get underway

Renewable Energy Resource Fields Based on Solar Energy and Contests For Allocation of Connection Capacities (mini YEKA GES-3) got underway on April 26. However, according to the announcement made by Ministry of Energy and Natural Resources (ETKB), the contests planned to be held between April 30 and May 17, 2021 have been postponed until a point beyond May 17, 2021 due to the lockdown decisions.

Due to the adjournment of the contests until after April 29, a capacity allocation of 350 megawatts (MW) will be established after May 17.

In this scope, after the first 4 days of the mini YEKA GES-3 contests, a total 260 MW in capacity allocation has been established for 19 different regions in 9 different cities.

Natürel Enerji's subsidiary, Margün Enerji, achieved the highest capacity access with 75 MW in 5 different regions. Margün Energy has capacity allocations in Ankara (2 regions), Aksaray, Antalya and Batman.

Erciyes Anadolu Holding's subsidiary, Gün Güneş Enerjisi, ranked 2nd with 40 MW capacity access in 2 different regions of Antalya.

The lowest bid in the contests has given by Margün Enerji for the Batman-2 region, at a rate of 185 TL/megawatthour (TL/MWh) for 15 MW in capacity access. The highest bid has given by FYS Elektrik for the Ağrı-1 region, at a rate of 289 TL/MWh for 15 MW in capacity access.

25.89
TWh

April Gross
Generation

312.15
TL/MWh

Average
MCP

27.29%

Daily average licensed electricity generation decreased by 4.44% MoM, while rising 27.29% YoY in April.

[Click](#) for details.

72.31%

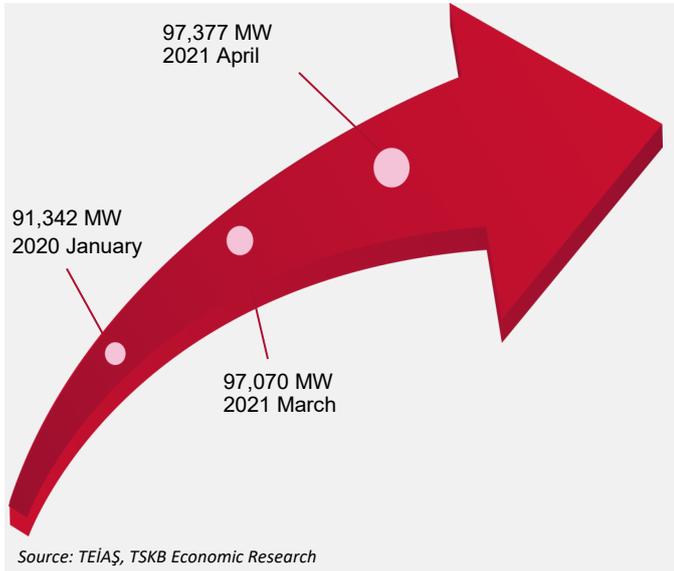
Market Clearing Price (MCP) increased by 72.31% YoY and by 0.24% MoM in April.

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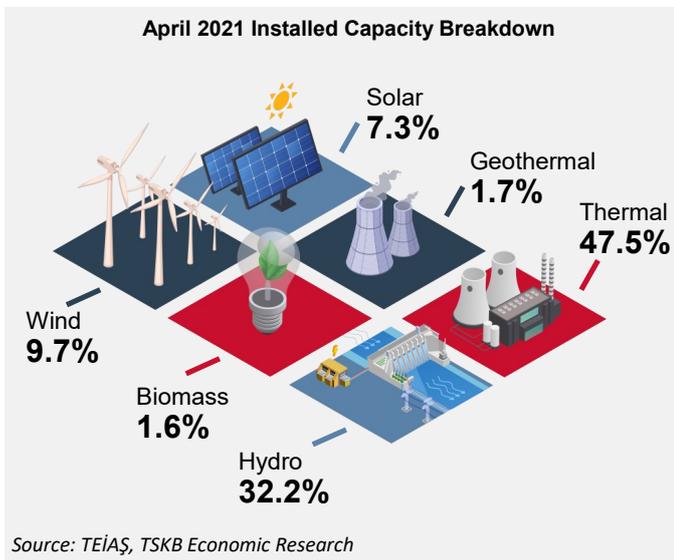


Installed Capacity Analysis

Turkey's total installed capacity, which reached 97,070 MW at the end of March, increased to 97,377 MW at the end of April. In April, wind power plants with a total net installed capacity of 124.3 MW was commissioned. In the same period, the total net installed capacity of solar power plants increased by 101.4 MW and the total net installed capacity of hydroelectric power plants increased by 18.3 MW.

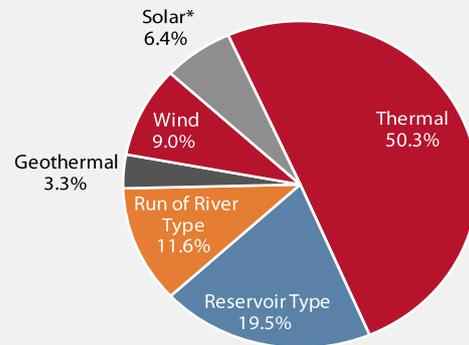
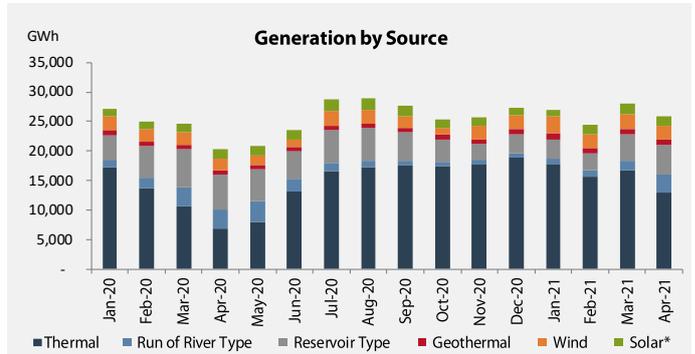


Of all the power plants in operation during April, 52.5% of the capacity consisted of power plants generating electricity from renewable resources. Thus, the share of renewable power plants in total installed capacity continued to stay above 52%. Hydroelectric power plants accounted for 32.2% of Turkey's total installed capacity in March, while the combined share of wind and solar power plants amounted to 17%.



Electricity Generation Analysis

Turkey's total electricity generation decreased from approximately 28 terawatt-hours (TWh) in March to 25.89 TWh in April. Average daily electricity generation in April decreased by 4.44% compared to March. On the other hand, average daily electricity generation inclined by 27.29% compared to the same month in the last year.

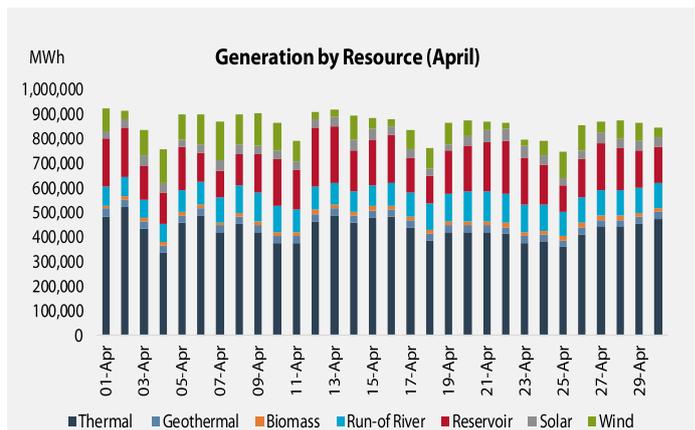


*Since April unlicensed solar power plant generation data has not yet been released by TEİAŞ, the average daily electricity generation by unlicensed solar power plants in April 2021 was accepted as same as the average daily electricity generation of March 2021.

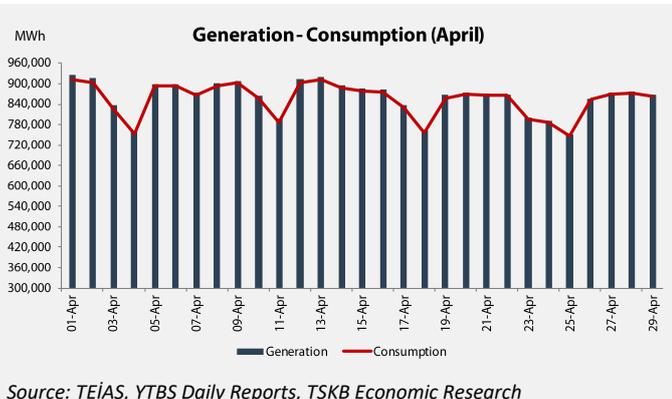
Source: TEİAŞ, YTBS Daily Reports, TSKB Economic Research

Thermal power plants, which had supplied 59.6% of the electricity generated in March, accounted for 50.3% of the total electricity generated in April. Hydroelectric power plants which had a share at the rate of 22.1% in March, provided 31% of the monthly based total electricity generation in April.

Renewable power plants, which comprised an average share of 42.5% in electricity generation throughout 2020, accounted for 49.7% of all electricity generated in April 2021. In the same period, electricity generation derived from dam-type hydroelectric plants provided a 19.5% contribution to total generation, with wind power plants accounting for 9% of total generation.



Source: TEİAŞ, YTBS Daily Reports, TSKB Economic Research



Source: TEİAŞ, YTBS Daily Reports, TSKB Economic Research

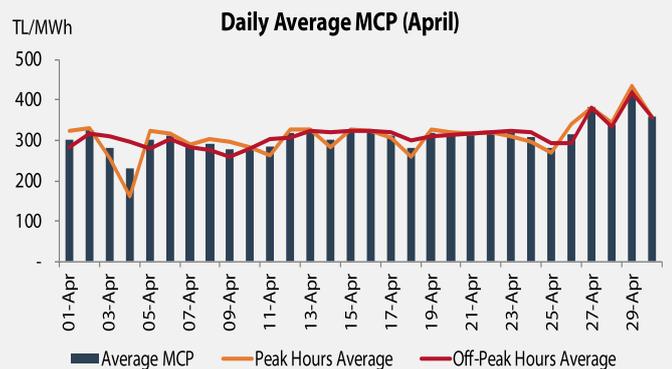
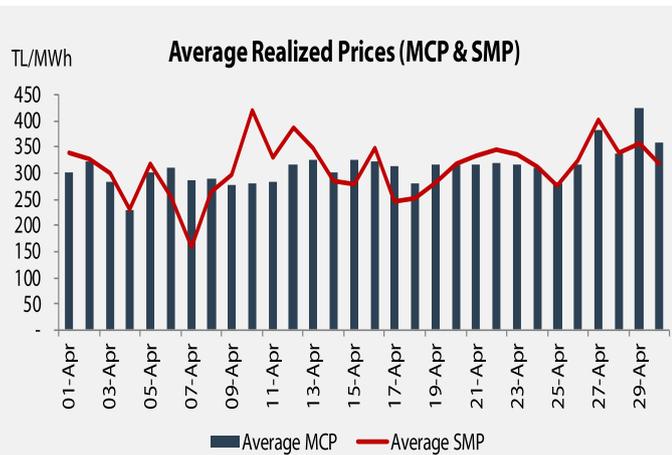
In April 2021, the average amount of electricity generated by licensed power plants was 861,026 MWh per day. The highest generation realized by licensed plants during March was 925,356 MWh, recorded on Thursday, April 1st. The lowest volume of generation by licensed plants during the same period was 750,597 MWh, which was realized on Sunday, April 25th.

Daily electricity consumption averaged 853,927 MWh in April. The highest amount of consumption during the month was recorded on Tuesday, April 13th (911,583 MWh), while the lowest level of consumption was recorded on Sunday, April 25th (746,758 MWh).

Electricity Price Analysis

In April, the average daily market clearing price (MCP) and system marginal price (SMP) stood in a range of TL 155 /MWh to TL 430 /MWh. The average MCP for April 2021 was TL 312.15 /MWh, while the average SMP was TL 311.43 /MWh in the same period. The lowest average MCP value was recorded on Sunday, March 28th, at TL 271.48 /MWh, while the lowest average SMP was TL 158.82 /MWh on Wednesday, April 7th.

Compared to the average MCP in March, the April average was recorded 0.24% higher.

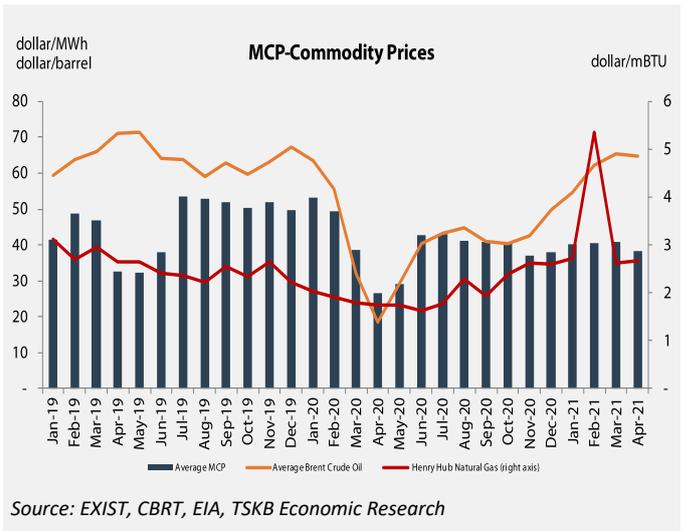


Source: EXIST, TSKB Economic Research

The daily average MCP for April stood at TL 311.12 /MWh for peak hours (from 8AM to 8PM), 0.3% lower than the daily average value. The highest peak-hour average recorded was TL 439.07 /MWh on Thursday, April 29th, while the lowest peak-hour average was TL 162.91 /MWh, recorded on Sunday, April 4th.

Average pricing in off-peak hours (from 8PM to 8AM) for the same period stood at TL 313.18 /MWh. The highest off-peak hour average was TL 416.68 /MWh, recorded on Thursday, April 29th, with the lowest off-peak-hour average, of TL 259.38 /MWh, recorded on Friday, April 9th.

While the average MCP in March 2021 was realized as USD 40.75 /MWh, the average MCP in April was recorded as USD 38.21 /MWh. MCP prices in dollar terms were 44.08% higher when compared to the same period of last year.



Source: EXIST, CBRT, EIA, TSKB Economic Research

Brent crude oil prices, which had averaged USD 41.76 /barrel in 2020 and USD 65.41 /barrel in March 2021, decreased to USD 64.81 /barrel in April reaching its pre-COVID-19 levels. In April, the price per barrel of Brent oil was 0.92% lower than in the previous month and 252.61% higher than in the same period of the previous year. We think the key factors behind this massive annual surge can be traced to the slump in prices in April 2020, which resulted from a decrease in demand associated with the COVID-19 pandemic and insufficient storage.

The average price of Henry Hub natural gas, which was USD 2.62/ mBTU in March, 2021, increased at the rate of 1.53% and went up to USD 2.66 /mBTU in April. When compared to the same period of the previous year, an increase of 52.87% was observed in April 2021.





Sector News

Local News

- **The field has been left open for electricity storage facilities.** Mustafa Yılmaz, the chairman of Energy Market Regulatory Authority (EMRA), declared that regulations which would leave the field open for integration of electricity storage facilities into the network and operate within the framework of market rules are approved. Yılmaz stressed that under the regulations, which have been published in the Official Gazette, market participants would be able to install electricity storage facilities for generation and consumption facilities, or a facility independent of these facilities. According to the regulations, supply licenses will be required for self-contained electricity storage facilities with capacities of at least 2 MW. (April 30, 2021)

- **EMRA published the sector market reports for February.** According to the "Electricity Market Sector Report", licensed electricity production declined by 2.97% in comparison with the same month of the previous year to 23.61 TWh. Natural gas fired power plants accounted for 28.1% of the licensed electricity generation, while coal power plants using imported and domestic coal provided 36% of the total and hydroelectric power plants accounted for 17% of total licenced electricity generation. The volume of billed electricity consumption rose by 0.48% to reach 19.09 TWh. According to the "Natural Gas Market Sector Report", Turkey's natural gas imports reached 6 billion cubic meters in February, an increase of 14% in comparison with the same period of the previous year. A total of 4.15 billion cubic meters of natural gas was imported through pipelines with 1.85 billion cubic meters imported through liquefied natural gas power plants. In February, natural gas consumption increased at the rate of 2.3% to 5.83 billion cubic meters. According to the "Oil Market Sector Report", Turkey's total imports of petroleum products decreased by 18.5% to 2.45 million tonnes. In the same period, purchases of crude oil, which con-

stitutes the lion's share of Turkey's total petroleum product imports, decreased by 32.6% to 1.57 million tonnes. (April 30, 2021)

- **Çolakoğlu Metalurji submitted the winning bid in the privatization of the Gebze Dilovası Natural Gas Combined Cycle Plant.** In the auction, held by the Privatization Administration on April 22, for the privatization of the property housing the Gebze Dilovası Natural Gas Combined Cycle Plant belonging to Elektrik Üretim A.Ş. (EÜAŞ), Çolakoğlu Metalurji A.Ş. submitted the highest bid, of TL 157 million. A total of four firms bid in the auction. (April 27, 2021)

- **Firms generating electricity will be able to export electricity.** According to the regulation published in the Official Gazette, firms holding production licenses will be able to export their electricity provided they do not exceed the total installed capacity of their production facilities. (April 26, 2021)

- **The mechanical installed power of the units based on supplementary resources shall not exceed 100 MW.** The decision taken by the EMRA on licenses of facility areas in the electricity market was published in the Official Gazette. Accordingly, the total mechanical power of the units based on supplementary resources which can be installed in the multi-resource electricity production facilities was determined. The mechanical power of the units based on the supplementary resources which will be established should be less than 100 MW in total. (April 19, 2021)

- **Government institutions to cover energy efficiency costs with the savings they have achieved.** The Minister of Energy and Natural Resources, Fatih Dönmez, provided evaluations on his written statement on the Notification Related to Application of Energy Performance Agreements in Government. Mr.

Dönmez stated that at current energy prices, the energy consumption in the buildings and campuses included within the scope of the notice corresponded to TL 5.8 billion, adding that if the aim of a 15% saving in energy costs was met by the end of 2023, the annual savings would amount to around TL 870 million. (April 16, 2021)

- **USD 500 million in credit to be provided to Akkuyu Nuclear Power Plant.** Akkuyu Nükleer A.Ş. and Otkritie Bank agreed on a non-renewable credit of USD 500 million with a 7-year maturity. The funds received for financing the Akkuyu NGS project come with special conditions which require the fulfilment of the project company's obligations in the field of sustainable development. (April 15, 2021)

- **TL 870 million in annual savings to be achieved from energy productivity.** The Minister of Energy and Natural Resources, Fatih Dönmez, declared that USD 158 million in savings had been provided in 2020 with the USD 635 million energy productivity investment in Turkey. Mr. Dönmez said that the government aimed to achieve up to TL 870 in savings from increasing energy efficiency in government buildings in 2023. (April 13, 2021)

- **Broadening scope of the Electricity market capacity mechanism.** According to the draft amendment which will be under review until April 21, even where there has been a build operate agreement which has expired, facilities which have joined an activity within the scope of these agreements will be able to apply to the capacity mechanism. In addition, facilities not using local resources and with a facility age not exceeding 13 years, as calculated starting from the temporary admission date of the unit placed on the license, existing and operating, and which has the oldest temporary admission date, will be eligible for inclusion in the mechanism's coverage. Facilities affected by these changes seeking to be included in the 2021 capacity mechanism may apply to benefit from the mechanism from July 1, 2021 (April 13, 2021).

- **Offshore Wind Power Association (DÜRED) established.** In an explanation issued by DÜRED, it was declared that the association was established on March 5, 2021 with the aim of activating and developing civil society activities related to offshore wind energy, supporting the individuals and institutions working in this area and raising awareness by actively working with government institutions and universities in the association's activities. (April 8, 2021)

- **Çamlıca 1 Hydroelectric Power Plant (HEPP) to be privatized.** The privatization of the Çamlıca 1 HEPP, owned by EÜAŞ and which has an installed generation capacity of 84 MW, will be realised by the Directorate of the Privatization Administration on June 9. (April 6, 2021)

- **Clean Energy Technology Center to open.** In the Clean Energy Technology Center, natural gas which The Union of Natural Gas Distributors Turkey (GAZBİR) has installed will be mixed with hydrogen by adding hydrogen to the natural gas, thus reducing the carbon density and Turkey's natural gas imports. The Chairman of GAZBİR, Yaşar Arslan, provided an explanation regarding the subject where he started that with the rollout of natural gas usage, households contributed to savings amounting to 100 million tonnes of emissions, in the last 3 years and after blending natural gas with hydrogen, emissions will decrease more rapidly. According to the results of tests conducted so far, without any need for making an important change in the existing natural gas installations and consumer appliances, gas containing 20% hydrogen will be in use. (April 2, 2021)

- **Water Law to be introduced.** The Minister of Agriculture and Forestry, Bekir Pakdemirli, declared, "We are aiming to introduce the Water Law in view of the results coming from the Water Council. Water allocation and water management will be determined by the law." Mr. Pakdemirli drew attention to the increasing pressure on water resources, adding, "We are not water poor, but we are a country which has water stress. Going forward, climate change may place us as a water-poor country. (April 1, 2021)

- **Change to natural gas tariffs in April.** According to sale tariff in April published by the Petroleum Pipeline Corporation (BOTAŞ), BOTAŞ has raised the sales price applied to natural gas distributors by 1%. Thus 1,000 cubic meters of natural gas will be priced at TL 1,303 for residential consumers, and TL 1,437 for businesses, industry and electricity production plants. (April 1, 2021)

News From Abroad

- **The Organization of Petroleum Exporting Countries and allies (OPEC+) will apply the decision to ease the supply cuts.** In a statement issued after the 16th inter-ministerial meeting, it was announced that the decision made in the 15th inter-ministerial meeting would enter force with a gradual increase in production in the upcoming 3-month period. In its 15th inter-ministerial meeting, OPEC+ decided to ease its supply cuts with member countries increasing total daily production by 350,000 barrels per day in May and June, and by 441,000 barrels per day in July. (April 29, 2021)

- **Installed wind capacity target of 318 GW for Europe by 2025.** According to the report published by WindEurope, 105 GW of wind capacity will be integrated into the system in Europe by 2025. In addition, European countries will have to increase their installed wind power capacity by 18 GW each year until 2025 if they are to meet their target of increasing their share of renewable energy to 32% by 2030 within the scope of the National Energy and Climate Plans. Of the planned increase in wind power capacity between now and 2025, 72% will be met by onshore wind farms with the rest provided by floating and off-shore power plants. (April 26, 2021)

- **Sun and wind able to meet global energy demand 100 times over.** According to Carbon Tracker's report entitled "The Sky's the Limit" titled, in relation with the decreasing costs, solar energy capacity has been growing at an average rate of 39% per year, with wind power capacity growing by an average of 17% per year over the last 10 years. According to report, which reflects that global energy consumption stood at



65,000 TWh in 2019, there is the potential to generate around 5.8 million TWh of solar power per year and 0.9 million TWh of wind power per year using existing technologies. The report claims that solar and wind energy could remove the need for fossil fuels by 2050, and entirely supply the world's demand for electricity. (April 26, 2021)

- Market in transition to clean energy set to reach USD 23 trillion. In a speech at the Climate Summit, Jennifer Granholm, the Secretary of Energy in the USA, said that the market of transition to clean energy could reach USD 23 trillion by 2030. Ms. Granholm stated that this would mean economies could be rebuilt and new companies could be established, providing employment for millions of people. (April 26, 2021)

- Share of renewable resources in global energy consumption expected to reach 30%. The Chairman of the International Energy Agency (IEA), Fatih Birol, offered evaluations in the webinar organized by Sabancı University's Istanbul International Center for Energy and Climate, stating that renewable energy would grow by leaps and bounds in the coming years as many countries provide additional important incentives and support to attain the climate change objectives. (April 22, 2021)

- The European Union (EU) pledges a minimum 55% cut in emissions by 2030 from 1990 levels. The EU agreed on a comprehensive climate law to accelerate the cuts in emissions, and set standards with the new law which spells out a 55% cut in emissions from their 1990 levels by 2030, with net zero emissions by 2050. The EU had cut its emissions by 24% in 2019 when compared to its 1990 levels, while the objective already in place is for a 40% cut in emissions by 2030. (April 22, 2021)

- Investments in global clean energy transformation exceed USD 500 billion. According to the "Supporting Effective Energy Transformation 2021" report published by the World Economic Forum, clean energy transformation investments, which had stood at USD 300 billion in 2011, exceeded USD 501 billion globally last year. According to the Energy Transformation Index which evaluates the energy performances and energy transformation situations in different countries, 92 out of 115 countries had improved their total score in the last 10 years. In the report, it was stated that Turkey, which has been included in the index since 2012, was ranked 67th with a score of 53 points in 2020, and was ranked 63rd with a score of 58 points in 2021. (April 22, 2021)

- Carbon emissions from energy sector expected to increase by 4.8% in 2021. According to the leading "Global Energy Evaluation 2021" report prepared by the IEA, carbon emissions caused by the energy sector declined by 5.8% in 2020 but are expected to increase to 33 gigatons by the end of 2021; on this projection, that would be 1.2% lower than the 33.4 gigatons of carbon emissions caused by the energy sector in 2019. (April 21, 2021)

- Global commodity prices set to increase. According to the April 2021 issue of the "Commodity Markets Outlook Report", the energy commodity price index, which constitutes oil, natural gas and coal, is expected to increase by 36.1% this year compared to the previous year. Other items in the index are agricultural products, metals and minerals, which are non-energy commodities, are expected to increase by 19%. The report foresees that crude oil prices will increase by 35.7% compared to last year, to reach USD 56 per barrel. On the

other hand, crude oil prices are set to reach USD 60 per barrel in 2022, an increase of 7.1%, as demand continues to increase. (April 21, 2021)

- Global oil demand expected to increase by 5.7 million barrels per day compared to 2020 levels to reach 96.7 million barrels per day in 2021. IEA's "Oil Market Report" for March sets out that global oil demand will increase by 6.3% in 2021 with the Asia-Pacific Region expected to take the lead with consumption of 35.9 million barrels per day in 2021, followed by the American continent with consumption of 30.3 million barrels per day, and Europe with 13.9 million barrels per day. In the IEA's February report, the projection for global oil demand was 96.5 million barrels per day for 2021. (April 15, 2021)

- Global oil demand set to reach 96.5 million barrels per day in 2021. According to March "Oil Market Report" prepared by the OPEC, average daily oil demand will reach 96.5 million barrels in 2021, an increase of 6.6% compared to 2020. OPEC thus increased its oil demand projection for 2021 by an average of 200,000 barrels per day in comparison with the previous year. According to report, global oil supply increased by 1.22 million barrels per day in March compared to the previous month, reaching approximately 93.23 million barrels per day. (April 14, 2021)

- Saudi Arabia planning to invest in solar energy. Within the scope of National Renewable Energy Plan, Saudi Arabia is aiming to create 10,000 MW of renewable energy capacity by 2023, and planning to invest USD 30-50 billion in the development of renewable energy sector. Accordingly, Saudi Arabia has increased the capacity of solar power projects where electricity purchasing guarantees are signed to 3,670 MW. (April 14, 2021)

- Michelin to focus on production of hydrogen fuel cell technology. As Michelin expects increased attention on cars using hydrogen fuel cell technology, the Company set out plans to expand its activities to the fields of hydrogen energy and medical devices, with an objective of achieving EUR 34 billion in turnover. Michelin expects to generate EUR 200 million in income from the production of hydrogen energy systems for cars in 2025, and is aiming to increase this income to EUR 1.5 billion by the end of 2030. (April 12, 2021)

- Shell to halve oil production by 2035. In a speech at the "Green Job: Sustainable Work Forum", the Chairman of Shell Turkey, Ahmet Erdem, said that Shell's main approach in the energy transformation are would be "more and cleaner energy". Erdem remarked that Shell had achieved great progress on clean energies, adding "in terms of emission rates, we will cut emissions by 20% in 2030, by 45% in 2035 and achieve



net zero emissions in 2050. Our work in electrification is well known, and we are concentrating on renewable energy and hydrogen in all stages of the chain. Shell's oil production will decline to half its current levels by 2035."

- **Global renewable energy capacity approaches 2.8 terawatt (TW).** According to the International Renewable Energy Agency (IRENA)'s "Renewable Energy Capacity Statistics of 2021" study, a total of 260GW of electricity generation capacity using renewable resources came onstream in 2020. Total capacity reached 2.8 TW. While renewable resources accounted for 80% of new capacity coming onstream in 2020, wind and solar investments constituted 91% of total renewable investments. (April 7, 2021)

- **Daily average oil production expected to reach 97.7 million barrels in 2021.** The US Energy Information Administration (EIA) published its "Short Term Energy Outlook" report for March. The EIA projected that production would be 97.7 million barrels per day, marking an increase of 5.5 million barrels per day during 2021 when compared to the 2020 level. In the February's report, the projection for 2021 was 97.5 million barrels per day. The EIA projects that consumption will increase by 3.7 million barrels per day in 2022 to 101.3 million barrels per day. In the published report, the EIA forecasts a spot price for Brent crude of approximately USD 65 per barrel in the first quarter, USD 61 per barrel in the second quarter and USD 60 per barrel for 2022. (April 7, 2021)





Economic Research

ekonomikarastirmalar@tskb.com.tr

MECLİSİ MEBUSAN CAD.

NO:81 FİNDIKLI İSTANBUL 34427, TÜRKİYE

T: +90 (212) 334 50 50 F: +90 (212) 334 52 34

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