

# Monthly Energy Bulletin

TSKB Economic Research

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Can Hakyemez

hakyemez@tskb.com.tr

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## Settlement price decisions for electricity published

According to the Energy Market Regulatory Authority's (EPDK) regulation on "Procedures and Principles For Determining Resource-based Supporting Cost", the decision was taken to determine a separate "maximum settlement price" for each resource type, by taking resource-based electricity generation costs into consideration. Within this scope, according to the "Procedures and Principles" published in the Official Gazette dated 30 March, the minimum price limit, which will be applied throughout the Day-ahead market, has been updated and resource-based maximum settlement prices (MSP) have been determined.

According to the regulation, this measure also applies to licensed electricity production facilities, which are not in the scope of Renewable Energy Resources Supporting Mechanism (YEKDEM) and out of Electricity Generation Company's (EÜAŞ) portfolio. While resources with a lower cost will subsidize the price gap between the MSP and the Market Clearing Price (MCP) or the reciprocal agreement price to the system operator, the paid amount will be gathered as a support cost. This support cost, collected every month, will primarily be reflected to those owning high-cost production facilities as a production support amount to prevent supplement problems where needed, and the rest of the support cost will be distributed to the assigned supply companies.

The MSP for April 2022 was determined as TL 2,500 per megawatthour (MWh) for power plants running on imported coal, natural gas, fuel oil, naphtha, liquified petroleum gas (LPG) and diesel, and 1,200 TL/MWh for power plants using other resources. In accordance with these prices, the maximum price limit to be applied in general for the Day-Ahead and Balancing Power Market has been raised to 2,500 TL/MWh. These determined maximum prices will be valid for a period of six months starting from April 1<sup>st</sup>. The monthly maximum settlement price will be determined in accordance with the Producer Price Index (PPI) rate, TL/USD exchange rate, fuel costs and transmission tariffs.

28.36  
TWh

March Gross  
Generation

1,670,85  
TL/MWh

Average  
MCP

**-0.01%**

Daily average licensed electricity generation decreased by 0.01% MoM and increased by 1.3% YoY in March.

[Click](#) for details.

**19%**

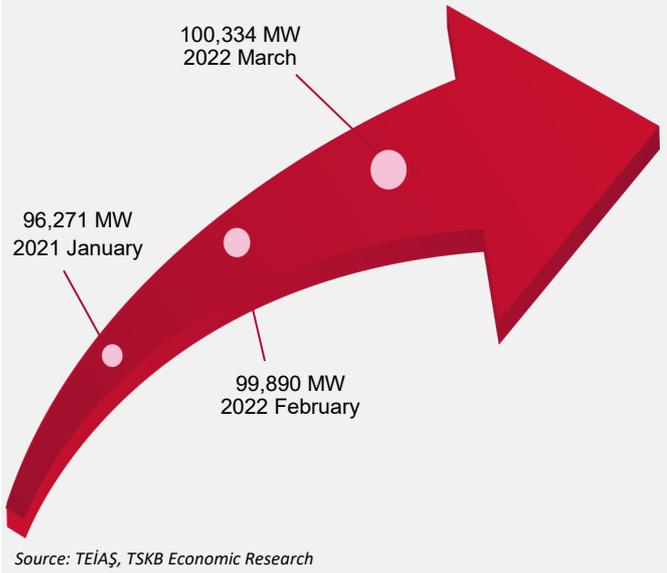
Market Clearing Price (MCP) increased by 436.5% YoY and 19% MoM in March.

[Click](#) for details.

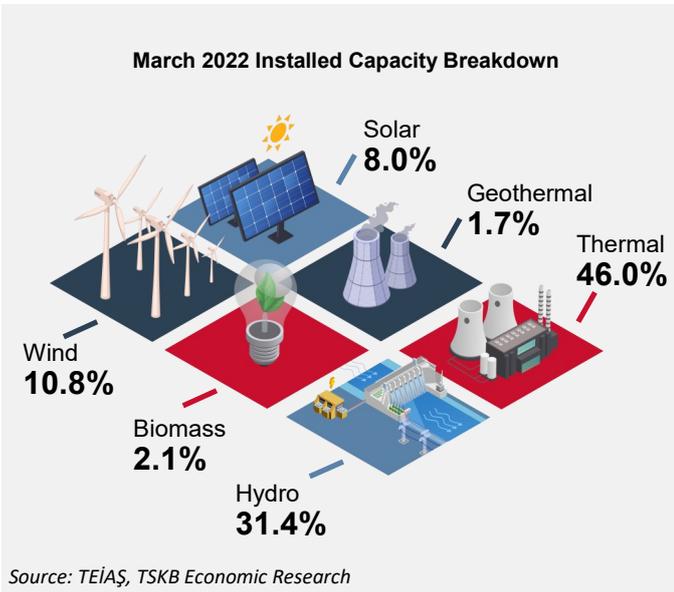


# Installed Capacity Analysis

Turkey's total installed generation capacity, which had reached 96,271 megawatts (MW) by the end of January 2021, reached 100,334 MW by the end of March 2022. In March, 101.8 MW in new total net installed capacity of natural gas and mixed fuel power plants came on stream, in comparison with the previous month. There was an increase of 75.6 MW in the total net installed power capacity of solar power plants and an increase of 150.5 MW in the total net installed power capacity of wind farms over the month in March.

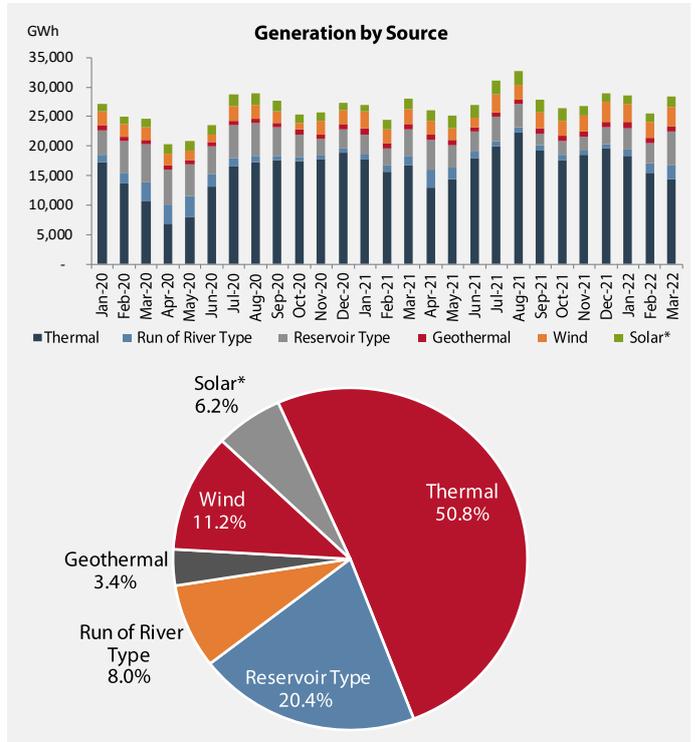


Power plants operating with renewable resources accounted for 54.0% of the capacity in operation in March. Hydroelectric power plants accounted for 31.4% of Turkey's total electricity installed capacity while the proportion of wind and solar power in Turkey's total installed power capacity was 18.8%.



# Electricity Generation Analysis

The total electricity generation, which stood at 25.62 terawatt-hours (TWh) in February, was realized at 28.36 TWh in March, a decline of 0.01% when compared with the daily average electricity generation in February. When compared with the same period of the previous year, daily average electricity generation increased by 1.3%.

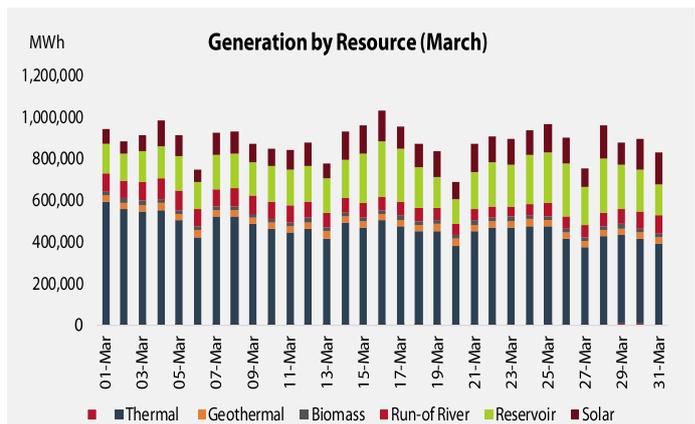


\*Since March unlicensed solar power plant generation data has not yet been released by TEİAŞ, the average daily electricity generation by unlicensed solar power plants in March 2022 was accepted as same as the average daily electricity generation of February 2022.

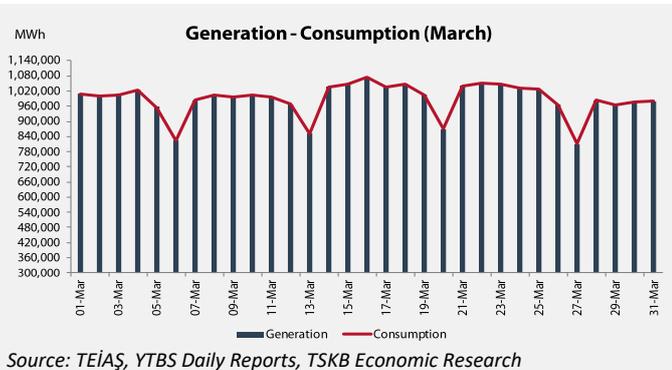
Source: TEİAŞ, YTBS Daily Reports, TSKB Economic Research

Thermal power plants, which had provided 60.5% of electricity generation in February, provided 50.8% of the total electricity. Hydroelectric power plants, which comprised a 19.6% share in previous months, accounted for 28.3% of total electricity generation in March. The share of electricity generated by wind in March increased by 0.9 percentage points when compared to the previous month, to reach 11.2%.

The share of the renewable energy power plants in electricity generation stood at 36.0% in 2021, reaching 49.2% in March. Meanwhile, dam-type hydroelectric power plants comprised 20.4% of total generation with solar power plants providing 6.2% of total generation.



Source: TEİAŞ, YTBS Daily Reports, TSKB Economic Research



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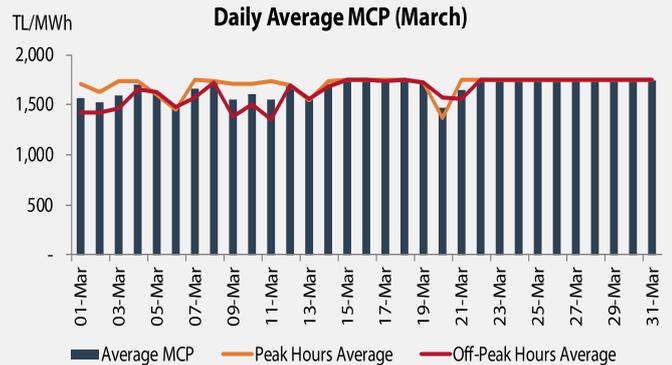
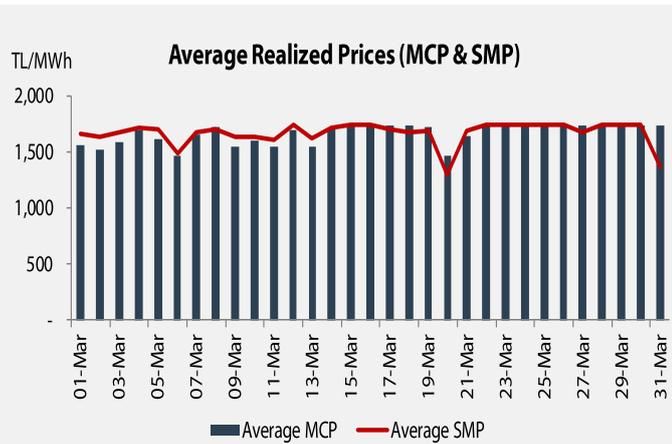
The daily average amount of electricity generated by licensed power plants in March stood at 988,649 megawatt-hours (MWh). The highest generation realized by licensed power plants in March, was recorded as 1,076,373 MWh on Wednesday, March 16<sup>th</sup>, while the lowest amount of generation from licensed power plants in the same period was 809,446 MWh, recorded on Sunday, March 27<sup>th</sup>.

The daily average electricity consumption during the month stood at 987,607 MWh. During the month, the maximum consumption was realized on Wednesday, March 16<sup>th</sup>, at 1,075,550 MWh; the lowest electricity consumption was realized on Sunday, March 27<sup>th</sup>, at 809,902 MWh.

## Electricity Price Analysis

The daily average market clearing price (MCP) and system marginal price (SMP) fluctuated between 1,295 TL/MWh and 1,745 TL/MWh in March. While the average MCP of March was 1,670.85 TL/MWh, the average SMP was 1,296.87 TL/MWh. The lowest average MCP was recorded on Sunday, March 6<sup>th</sup> at 1,466.32 TL/MWh with the lowest average SMP realized on Sunday, March 20<sup>th</sup>, at 909.47 TL/MWh.

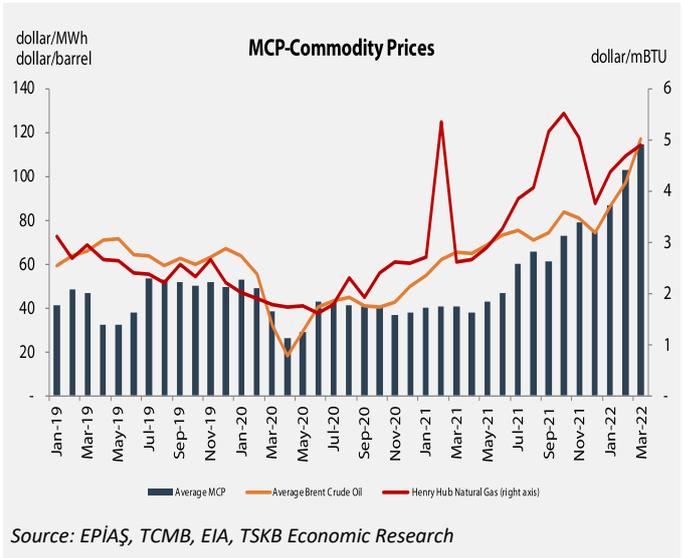
Looking at the hourly data, the MCP was realized as the ceiling price, of 1,745 TL/MWh, for a total of 481 hours, with the SMP at its ceiling price for 568 hours. The MCP traded at the ceiling price at all times between March 15-16 and March 22-31.



Source: EXIST, TSKB Economic Research

An analysis of the daily MCP in March finds the peak-hours average (between 8AM-8PM) was 1.8% higher than the daily average value, reaching 1,701.65 TL/MWh. The highest peak hours average, of 1,745.00 TL/MWh, was recorded for 15 days; the lowest peak hours average, of 1,396.17 TL/MWh, was realized on Sunday, March 20<sup>th</sup>.

The off-peak average (between 8PM-8AM) was 1,640.04 TL/MWh in the same period. The highest off-peak hours average was realized for 12 days at 1,745.00 TL/MWh; the lowest off-peak average was recorded on Friday, February 11<sup>th</sup>, at 1,361.08 TL/MWh.



Source: EPIAŞ, TCMB, EIA, TSKB Economic Research

The average MCP in February, which had stood at 102.93 USD/MWh, increased to 114.51 USD/MWh in March – an increase of 181% compared with the same period of the previous year.

### Average Commodity Prices

The price of a barrel of Brent crude averaged USD 97.13 in February, increasing to USD 117.25 with a monthly-based increase of 20.7% in March. This actualized average price was 79.3% higher than the same period of the previous year.

The contract price of Henry Hub natural was 4.69 USD/mBTU in February, an increase of 4.5% on a monthly basis, to reach 4.90 USD/mBTU on average in March and marking an 87% increase when compared with the same period of the previous year.





## Sector News

### Local News

- **Investment incentive certificates were prepared for 617 projects in February.** According to the February's list announced by the Ministry of Industry and Technology, the investment amount of the projects receiving a certificate stood at TL 17.74 billions. The incentive certificate with the highest amount was prepared for Yatağan Termik Enerji Üretim A.Ş.'s investment, for TL 2.1 billions, in February. (28 March 2022)

- **Change made in Electricity Connection and System Usage Regulations.** According to the amendment published in the Official Gazette, in case requested by the Ministry of Energy and Natural Resources for the security of supply for a period to be determined by the Board, and within the scope of the rules indicated in the related Board decision, production facilities will be able to provide electricity in excess of the agreed amount to the system. (22 March 2022)

- **Change made to public energy savings payment account.** According to the "The Notice for Making A Change in The Notice Related to The Application of The Public Energy Performance Agreements" published in the Official Gazette, the rate of inflation to be applied annually for unit energy prices in the specification will be determined on condition that it does not exceed the average rate of price increases realised in the Consumer Price Index for the last 15 years. In the event measures are directed to energy generation, both the unit energy price and/or inflation rate can be determined, and the price gap mechanism based on unit prices published by the EPDK can be determined arbitrarily. (21 March 2022)

- **EPDK brings International Energy Agency's "Emergency Action Plan" into practice.** In EMRA's announcement, within the scope of National Stock Commission's decision, the obligation for oil inventories, which refinery and fuel oil distributor

license holders are required to maintain, may change by up to 6% subject to market activities between April 1-12 and by 7% between March 14-31. In addition, starting from 13 April 2022, the obligations related to license holders maintaining the minimum obligatory oil stocks amount before this decision will remain in place. (15 March 2022)

- **Maximum installed power limit increased from 10 kilowatts (kW) to 25 kW for solar-power electricity generation facilities.** According to the decision taken by EPDK published in the Official Gazette, the title of "The Procedures and Principles for Solar Power Based Electricity Production Facilities generating up to 10 kW of electricity" has been changed to "The Procedures and Principles for Solar Power Based Electricity Production Facilities generating up to 25 kW of electricity" (14 March 2022)

- **Renewable Energy Resource Fields Solar Power Plants (YEKA GES-4) contests' ceiling price raised to 950 TL/MWh.** According to the announcement made by the Ministry of Energy and Natural Resources, the ceiling price, which had been determined at 400 TL/MWh in the YEKA GES-4 contests which will be carried out through the Dutch auction method, has been revised as 950 TL/MWh. In the amendment, the escalation formula weights, which will be applied once every 3 months on the unit electricity energy purchasing price, have been changed. Accordingly, the CPI and PPI weightings, which had each had a weighting of 26% before, have been decreased to 15% for the CPI and 25% for the PPI, which the weight of the USD and EUR exchange rates, which each had a 24% weighting before, now each have 30% weightings. In addition, applications which will be made to the Bor-1, Bor-2 and Bor-3 contests for the Bor YEKA located in Niğde Province's Bor District within the scope of YEKA GES-4 contests, will be accepted on 30 March 2022. (14 March 2022)

- **Boru Hatları ile Petrol Taşıma A.Ş.'s (BOTAŞ) transmission network investment amount approved.** According to EMRA's decision published in the Official Gazette, the total transmission network investment amount of BOTAŞ in 2022 has been approved as TL 2.59 billions. It is indicated that the transit of natural gas is included in the approved amount. (14 March 2022)

- **Tekirdağ Natural Gas Combined Cycle A and B power plants, which belong to EÜAŞ, included in the scope of privatization.** According to the Presidential Decisions published in the Official Gazette, both power plants and immovables belonging to the power plants will be privatized through the sale of assets method, and state-owned land and marine areas will be privatized through the method of transferring the operational rights. The privatization is aimed to be realized by 31 December 2025. The total installed power of Tekirdağ Natural Gas Combined Cycle A and B power plants are 480 MW and 478 MW respectively. (10 March 2022)

- **EÜAŞ to procure electricity from private companies.** EÜAŞ will procure electricity by local coal, exported coal, natural gas and renewable energy power plants with the reciprocal agreements between 1 April 2022 – 31 December 2025. According to the announcement made by EÜAŞ, it will be able to purchase up to 150 TWh of electricity from power plants fired by local coal, 44 TWh from power plants running on imported coal, 44 TWh from natural gas power plants, and 17.5 TWh from renewable energy power plants per year, with the base load distribution. The announcement also indicated that with the quarter period base load distribution, up to 26 TWh of electricity can be purchased from renewable power plants. (9 March 2022)

- **Power plants for industrial and agricultural purposes to be permitted to establish licensed power plants up to double the power set out in their agreements.** The bill related to the amendment made in the Electricity Market Law was accepted in the parliament. Under the new bill, the opportunity to establish an unlicensed renewable energy resources-based electricity production facility has been provided to municipalities and their subsidiary institutions, industrial facilities and for agricultural irrigation purposes, up to the double of level specified in the connection agreement. Under the bill, irrigation unions are encouraged to undertake the renewable energy investments directly within the scope of the unlicensed electricity production legislation. (07 March 2022)

- **EPDK assigns 2,787 MW of new capacity for wind and solar.** Speaking to the Anadolu Agency, the Chairman of EPDK, Mustafa Yılmaz stated that EPDK had completed the assignment process of 2,787 MW in new capacity, and will realize USD 5 billions worth of renewable energy investments within 2 years. Mr. Yılmaz added that this potential capacity had come to light after the revision of the connection capacities announced within the scope of Renewable Energy Resource Fields for wind and solar sources (YEKA RES-3 and YEKA GES-5). (07 March 2022)

- **Increase of 18.3% in proposed natural gas tariff for electricity generation.** According to the tariff table for March published by BOTAŞ, the sales price which it will apply to natural gas distribution companies for residential and industrial subscribers will remain unchanged in March at TL 1,860 per 1,000 cubic meters of natural gas for residential subscribers and TL 6,300 per 1,000 cubic meters for industrial customers. The tariff for natural gas power plants, on the other hand, has been raised to TL 7,450 per 1,000 cubic meters of natural gas, an

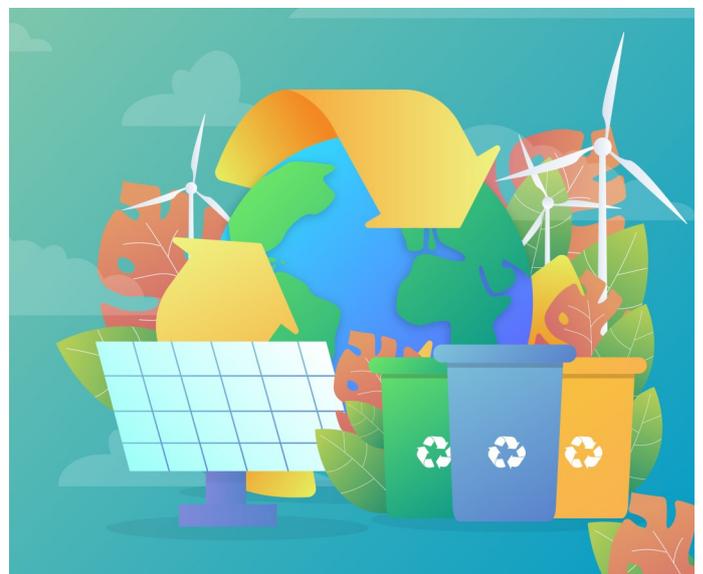
increase rate of 18.3%. (1 March 2022)

- **Low tariff limit raised to 8 kWh per day for dwellings.** In an announcement made after the cabinet meeting, President Recep Tayyip Erdoğan stated that the rate of VAT on electricity used in dwellings and agricultural irrigation had been decreased from 18% to 8%. He added that the low tariff limit in place had been increased to 8 kWh per day. While President Erdoğan stated that the gradual tariff would be applied for electricity subscribers with the commercial building status, he added that the first stage limit would be 30 kWh with a 25% discount applied for electricity consumption up to this amount. These prices and rates will apply from March 1<sup>st</sup>. (1 March 2022)

## News From Abroad

- **Clean energy resources accounted for 38% of all electricity generation in 2021.** According to the "Global Electricity Outlook" report published by Ember, 38% of global electricity generation was provided by renewable energy resources, and 36% by coal. In comparison with the previous year, solar energy production increased by 23% with wind energy generation increasing by 14%, with both forms of energy providing more than 10% of total electricity generation in 2021. According to the report, to keep global warming to within 1.5°C, wind and solar power will have to maintain their compound rate of growth, at a rate of 20% every year until 2030. (31 March 2022)

- **97% of the world's cities do not meet World Health Organization (WHO) criteria on air pollution.** According to the report published by IQAir, only 222 of the 6,475 cities, which were subject to the study, have the average air quality that meets the WHO's standard. While Scandinavian countries, Australia, Canada, Japan, and the United Kingdom have been placed among the countries with the best air quality, India, Pakistan, and Bangladesh were the countries with the worst air quality. However none of these countries have reached WHO's clean air quality standard. According to the country-based analysis, while it is seen that the air pollution increased in the USA in 2021 compared to 2020, it is also recorded that the air pollution decreased in China, in 2021, compared to the previous year. In this report, where average PM2,5 concentrations were compared, Turkey has shown a 7% increase in its average PM2,5 concentrations in 2021, and has been ranked 46th among 117 countries. (24 March 2022)



- **International Energy Agency (IEA) revises oil demand projection for 2022 downward.** In its February “Oil Market Report”, the IEA projects global oil demand of 99.7 million barrels per day for 2022, a decrease of 950,000 barrels compared to its previous estimate. In its January report, its projection for daily oil demand in 2022 had stood at approximately 100.6 million barrels. (17 March 2022)

- **OPEC (Organization of the Petroleum Exporting Countries) raises its daily oil demand projection for 2022 by 0.1 million barrels per day.** In its “Monthly Oil Market” report, OPEC set out its projection for daily oil demand in 2022, forecasting an increase in oil demand of 4.15 million barrels per day in comparison with 2021 to 100.9 million barrels per day. In its February’s report, it had projected oil demand of 100.8 million barrels per day in 2022. (16 March 2022)

- **The United Arab Emirates (UAE) announces that it adheres to the OPEC+ agreement and current monthly production setting mechanism.** According to the UAE’s Energy Minister, the UAE adheres to the OPEC+ group’s agreement which includes oil producers outside OPEC as well as in OPEC and Russia, and the current monthly production setting mechanism. (11 March 2022)

- **USA Energy Information Administration (EIA) increases its crude oil price projection.** The EIA’s “Short Term Energy Outlook Report” for March projected an average crude oil price of USD 105.92 for Brent crude in 2022 and USD 101.17 per barrel for WTI. In February’s report, these projections for 2022 average prices were USD 82.87 per barrel for Brent crude and USD 79.35 per barrel for WTI crude. According to the report, the average Brent crude oil price is expected to fall back to USD 88.98 with WTI crude falling back to USD 84.98. (10 March 2022)

- **European Union (EU) announces plan to reduce dependence on Russian natural gas.** According to the announced plan, EU member states will aim to meet 90% of their natural gas storage by October 1<sup>st</sup> while increasing their natural gas supply. For natural gas supplied by pipeline, countries other than Russia will be sought and shared natural gas purchasing operations will be organized. In addition, EU member states will invest in alternative energy resources such as hydrogen and bio-methane. To reduce the dependency to fossil fuels, and increase energy efficiency in the home, more solar panels and heat pumps will be used. In addition, permit processes for renewable energy and infrastructure investments will be shortened. (9 March 2022)

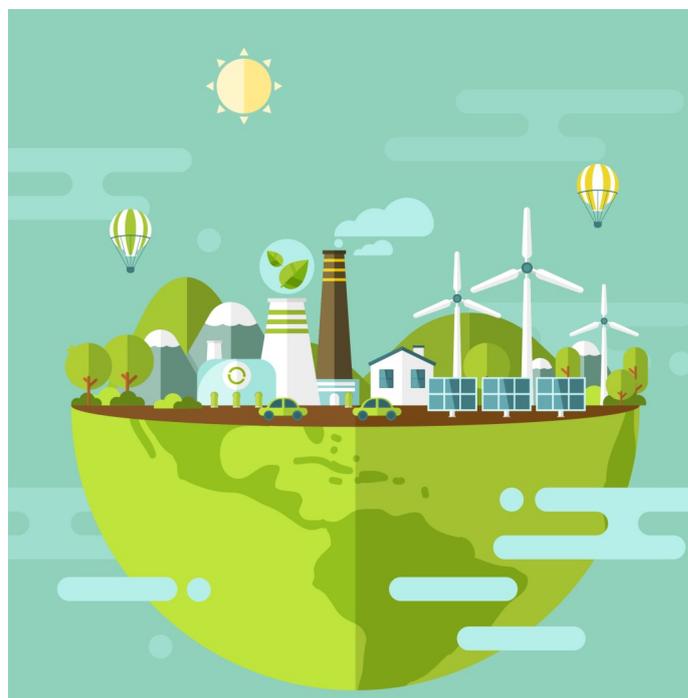
- **EU may reduce dependence on Russian natural gas in a year.** The “10 Point Plan for Reducing the EU’s Dependency to the Russian Gas” report published by the IEA sets out the key priorities of not signing any new natural gas agreements with Russia, increasing alternative suppliers which could secure 30 billion cubic meters (bcm) of natural gas in one year, and strengthening the natural gas storage system. According to the report, while natural gas consumption could be lowered by 6 bcm in a year by accelerating the installation of solar and wind energy projects, 13 bcm of natural gas usage can be prevented by increasing generation from bio-energy and nuclear power. The rollout of heat pumps and encouraging consumers to reduce their central heating by 1°C are among the points set out. (4 March 2022)

- **USA to bring its strategic oil reserves into use.** In an announcement made from the White House, it was stated that 60 million barrels of oil which is within the scope of the emergency reserves of the IEA’s member countries, had been allocated to

be brought into use. Within the framework of this agreement, authorization will be given to the Department of Energy to bring 30 million barrels of oil into use from strategic oil reserves. (02 March 2022)

- **Germany to prolong usage of its coal power plants to beyond 2030.** The Economy Minister in Germany, Robert Habeck, stated that he had reviewed the country’s energy plans and may extend the use of coal-fired power plants to beyond 2030 to reduce its energy dependence on Russia. Mr. Habeck said that prolonging the use of coal after 2030 may cause risks, and noted that there was no alternative other than renewable energy in the long-term when it comes to ensuring energy security. (01 March 2022)

- **Climate change intensifying the human crisis.** The report entitled “Climate Change 2022: Effects, Adaptation, and Fragility” published by The Intergovernmental Panel on Climate Change (IPCC) highlighted that short-term activity which aims to keep global warming limited to 1.5°C could significantly reduce climate change caused losses and damage to human life and ecosystems when compared to the higher levels of warming, but would not be able to entirely alleviate these effects. It is stated that current emission policies and guarantees were bringing the world on a course of between 2.3-2.7°C of heating. The report, which states that climate change caused by greenhouse gas emissions resulting from human activity were harming food production, destroying the environment and slowing economic growth, adding that approximately 3.3 billion people were currently vulnerable to climate change. (1 March 2022)





## **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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