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TSKB Economic Research

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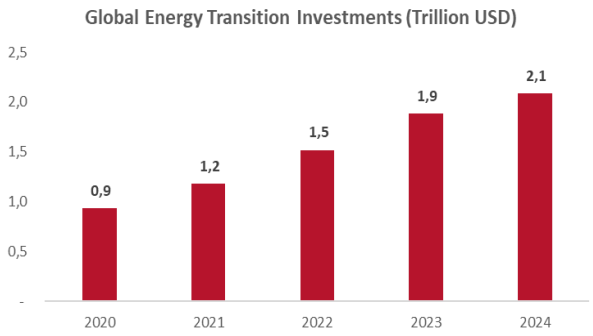
Global energy transition investments reach USD 2.1 trillion in 2024

According to the report entitled "Energy Transition Investment Trends 2025" published by BloombergNEF, energy transition investments, which exceeded USD 2 trillion for the first time, increased by 11% compared to 2023. The largest share of investments was undertaken in electric transportation (USD 757 billion), followed by renewable energy (USD 728 billion) and electricity grids (USD 390 billion).



Source: BloombergNEF, TSKB Economic Research

However, it was stated that investments in energy storage had reached USD 54 billion in 2024, up from USD 36 billion in 2023. Investments in the global clean energy supply chain amounted to USD 140 billion, while equity and debt issuances for climate and the energy transition remained over USD 1 trillion.

While the report states that China accounted for two thirds of global energy investments, it emphasized that US investments in the energy transition in 2024 remained similar to their 2023 level at USD 338 billion. However, the report underlined that investments in the European Union and the UK were slowing down.

In addition, investments in areas such as nuclear, carbon capture and storage, and electric heating, which accounted for 7.4% of energy transition investments in 2024, decreased by 23%. The BloombergNEF report emphasized that this decline in investment reflected the difficulties in scaling up clean energy technologies.

Although global energy transition investments doubled in 2024 when compared to 2020 to reach a record high, according to the report, the annual 11% growth in investment lagged behind the 24-29% increases in the 2021-2023 period. BloombergNEF emphasizes that energy transition investments in 2024 accounted for a mere 37% of the 2050 Net Zero target.

28.3 TWh	2,478,3 TL/MWh
February Gross Generation	Average MCP

8.1%

Daily average licensed electricity generation decreased by 8.1% MoM and increased by 5.4% YoY in February.

Click for details.

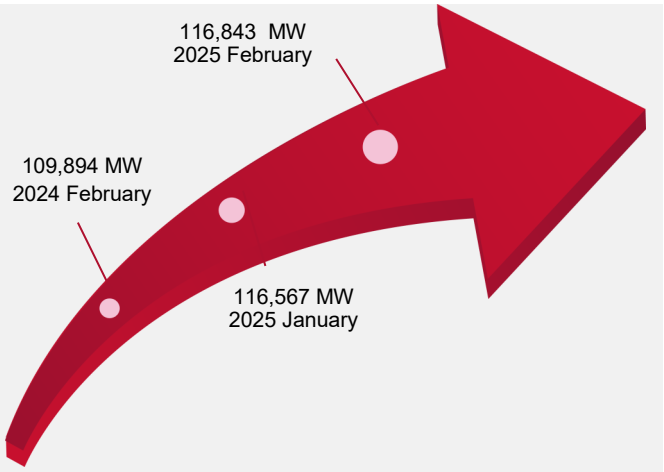
1.2%

Market Clearing Price (MCP) decreased by 1.2% MoM and increased by 26.6% YoY in February.

Click for details.

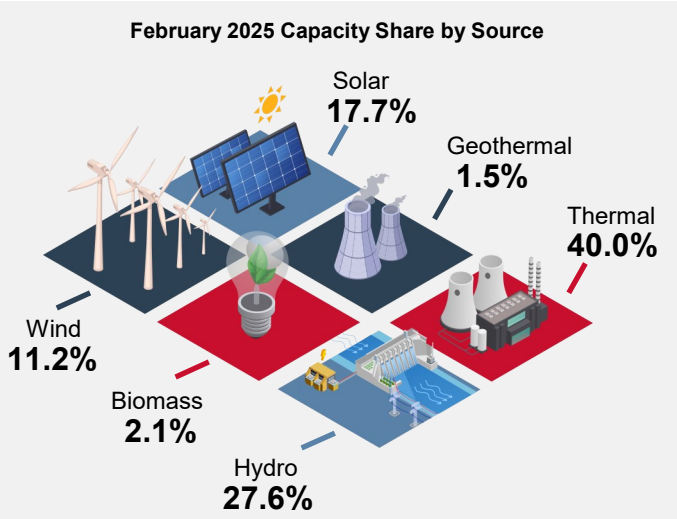
Installed Capacity Analysis

Türkiye's total installed capacity, which stood at 116,567 megawatts (MW) at the end of January 2025, reached 116,843 MW in February 2025 with a total of 276.4 MW of net installed capacity commissioned in February when compared to January, of which 261.8 MW was provided by solar power plants. The installed capacity of hydroelectric power plants increased by 17 MW with an increase of 3.5 MW increase in the installed capacity of domestic coal power plants, while the installed capacity of natural gas and multi-fuel power plants increased by 1.5 MW. The installed capacity of renewable waste power plants decreased by 4.6 MW and the installed capacity of wind farms decreased by 2.9 MW, while no change was observed in the installed capacity of other power plants.



Source: TEİAŞ, TSKB Economic Research

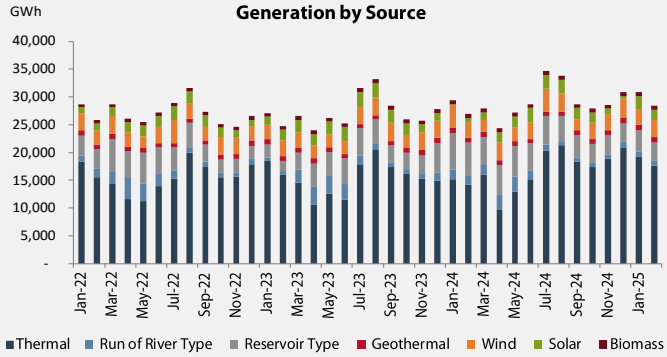
In February, renewable resources comprised 60% of the capacity in operation. Hydroelectric power plants accounted for 27.6% of Türkiye's total installed capacity, while the combined share of wind and solar power plants in total installed capacity exceeded that of hydroelectric power at 28.9%.

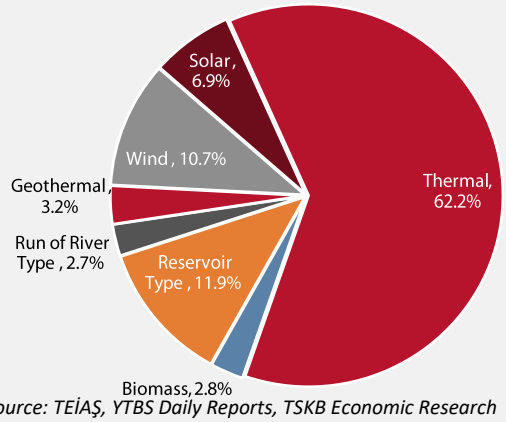


Source: TEİAŞ, TSKB Economic Research

Generation-Consumption Analysis

Electricity generation totaled 28.3 TWh in February 2025, compared to approximately 30.8 TWh in January 2025. The average daily electricity generation in February decreased by 8.1% compared to the previous month, but was 5.4% higher than in the same month of the previous year.

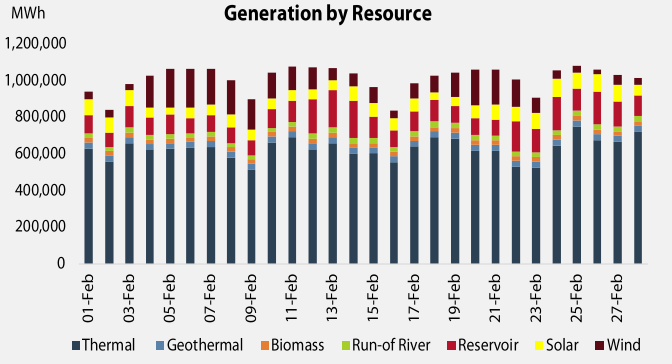




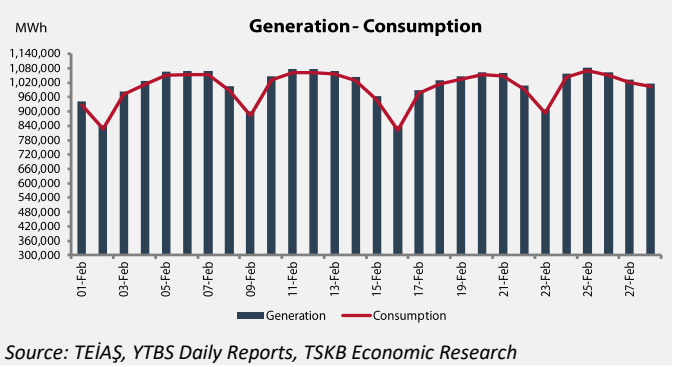
Source: TEİAŞ, YTBS Daily Reports, TSKB Economic Research

Thermal power plants, which provided 62.1% of the electricity generated in January, met 62.2% of the total electricity generated in February. A source-based breakdown of the electricity generated finds that hydroelectric power plants, which accounted for a 15.6% share of total generation in the previous month, generated 14.6% of the electricity in February. In the same period, the share of electricity generated from solar power plants stood at 6.9%, with geothermal power plants accounting for 3.2% of total electricity generation.

The share of renewable energy plants in electricity generation, which was 35.5% in January 2025, was 35.4% in February 2025. In the corresponding period, dam-type hydroelectric power plants contributed 11.9% of the total generation, while run-of-river type hydroelectric power plants provided 2.7% of the total electricity generation. Wind and solar power plants provided 17.6% of the total electricity generation. Wind energy was the second most important renewable source of energy after dam-type hydroelectric energy, with a share of 10.7% of total electricity generation.



Source: TEİAŞ, YTBS Daily Reports, TSKB Economic Research



Source: TEİAŞ, YTBS Daily Reports, TSKB Economic Research

Electricity generation averaged 1,013,843 megawatthours (MWh) per day in February with the highest level of generation during the month recorded on Tuesday, 25 February as 1,083,586 MWh, while the lowest generation during the month was recorded on Sunday, 16 February at 839,264 MWh.

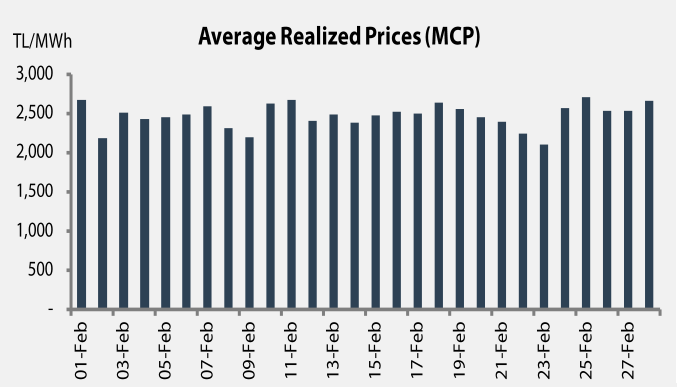
In the same period, daily electricity consumption averaged 999,418 MWh with the highest consumption during the month recorded on Tuesday, 11 February at 1,062,674 MWh and the lowest on Sunday, 16 February at 822,085 MWh.

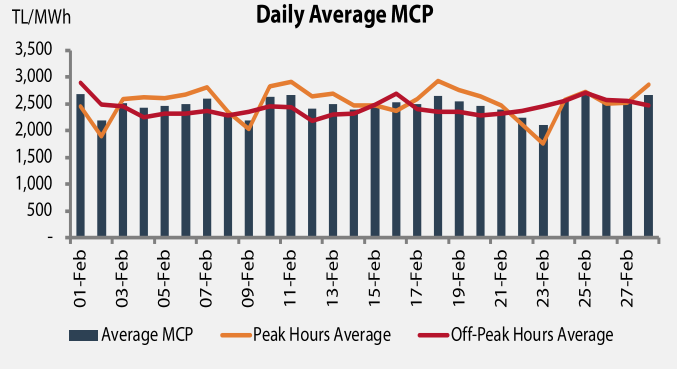
Electricity Price Analysis

In February, the average daily market clearing price (MCP) ranged between TL 2,108 and TL 2,711 per MWh with an average daily MCP of TL 2,478.3 /MWh. The highest daily average MCP was recorded on Tuesday, 25 February at TL 2,711 /MWh and the lowest daily average MCP, recorded on Sunday, 23 February, was TL 2,108 /MWh.

Looking at the hourly data, the MCP reached its maximum price limit of TL 3,000 /MWh for a total of 40 hours in February and fell to its minimum limit of TL 750 /MWh for one hour.

In February, the average peak hours MCP (8AM-8PM) was 2.1% higher than the average for all hours to be recorded at TL 2,529.8/MWh. The maximum limit price of TL 3,000 /MWh was recorded on 31 occasions during peak hours while the lowest price of TL 750 /MWh was realized for one hour during peak hours.

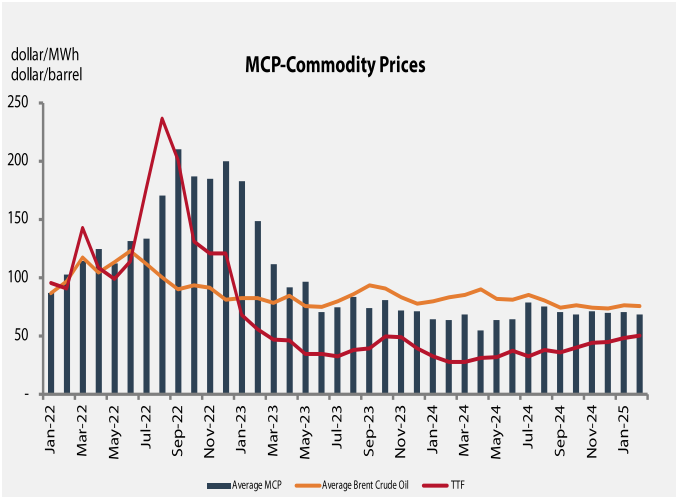




Source: EXIST, TSKB Economic Research

In the same period, the average for off-peak hours (8PM-8AM) was TL 2,426.8 /MWh. The maximum limit price of TL 3,000 /MWh was recorded for 9 hours during off-peak hours while the lowest off-peak hours price of TL 1,800 /MWh, was recorded between 6-7AM on Tuesday, 4 February.

The average MCP fell in dollar terms from USD 70.6 /MWh in January to USD 68.5 /MWh in February, though remaining 7.7% higher than in the same period of the previous year.



Source: EPİAŞ, TCMB, EIA, TSKB Economic Research

Average Commodity Prices

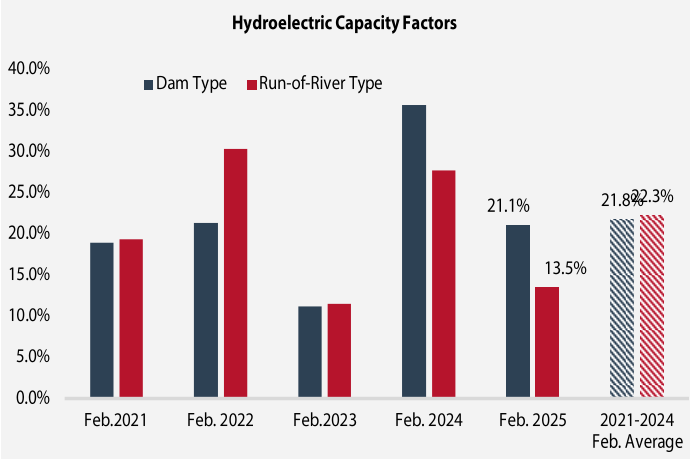
The price of Brent crude oil decreased by 0.8% compared to the USD 76.3 /bbl in January to USD 75.7 /bbl in February, which was 9.1% lower than the same period of the previous year.

The TTF natural gas contract price, which averaged USD 48.2 /MWh in January, increased by 4.3% month-on-month to USD 50.3 /MWh in February. The TTF increased by 81.5% compared to the same period of the previous year.

Hydroelectric Capacity Factors

The capacity factors of dam-type and run-of-river type hydroelectric power plants in February 2025 stood at 21.1% and 13.5%, respectively. Compared to February 2024, this marked a decrease of 14.6 percentage points for dam-type power plants and 14.3 percentage points for run-of-river type power plants. Comparing the months of February over the last 5 years, February 2024 saw the highest capacity factors for hydroelectric power plants with dams. For run-of-river type power plants, the highest capacity factor was seen in 2022.

The capacity factor for dam-type power plants were 0.7 percentage points below the average for February 2021-2024, while the capacity factor of run-of-river type power plants were 8.8 percentage points below the average.



Source: TEIAS, EPIAS, TSKB Economic Research

Global electricity consumption to continue to grow for the next three years

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The International Energy Agency (IEA) published its "Electricity 2025" report this month, which also sets out expectations for 2025-2027. The report predicts that global demand for electricity, which increased by 4.3% YoY in 2024, will continue to grow by around 4% per year until 2027. The report points out that electricity consumption is expected to increase by 3,500 TWh in this three-year period – equal to Japan's entire annual electricity consumption – adding that this growth until 2027 is expected to be supported by more intensive use of electricity in industrial production, the increased use of air conditioning, accelerating electrification and expansion in data centers and rising demand for electricity in China.

The rise in demand for electricity in China looks set to be the biggest driver of the global growth in demand for electricity in the coming years. The share of electricity in total energy consumption currently stands at 28% in China – higher than in both the US (22%) and the European Union (21%). The report notes that industry in China is becoming more electricity-intensive with one-third of the growth in demand for electricity derived from the production of photovoltaic solar modules, batteries and electric vehicles. In addition, demand for charging of electric vehicles, increasing use of air conditioning and data centers will play an key role in the increase of China's electricity consumption over the 2025-2027 period. Pointing out that data centers in China will consume more than 100 TWh of electricity in 2024, the IEA adds that the share of data centers in total electricity demand could rise to 6% over the next three years.

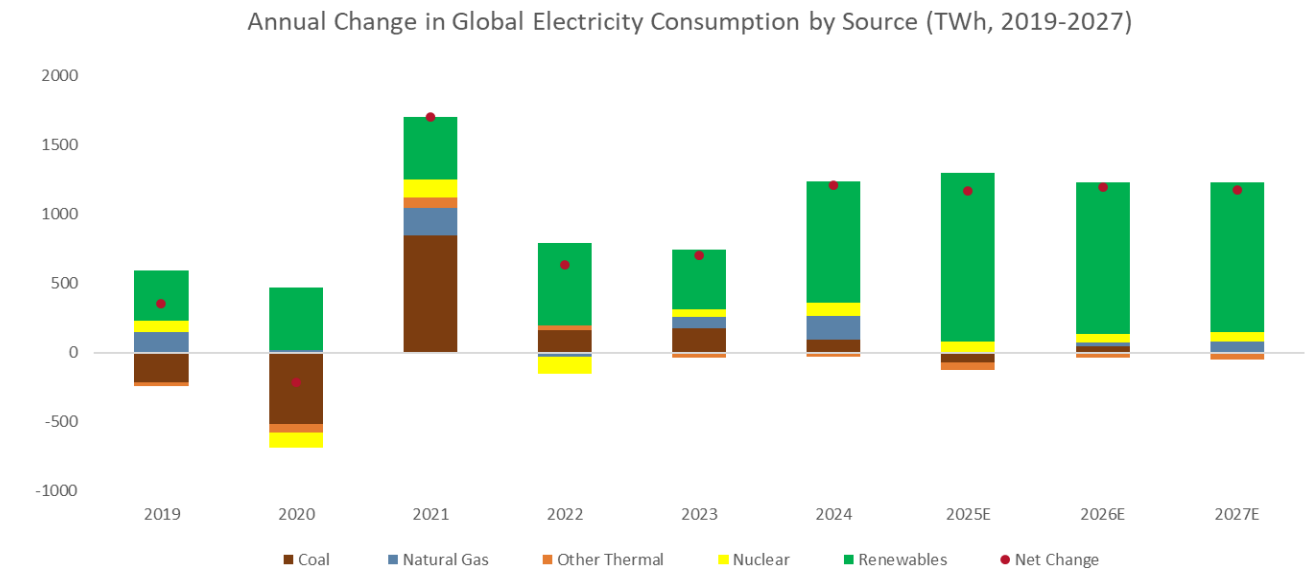
Citing the 2% YoY increase in electricity consumption in the USA, the world's largest consumer of electricity after China, the report indicates that the growth in consumption of electricity in the USA may exceed 2% over the 2025-2027 period, also driven by the rise in demand for data centers and electric vehicles.

What resources will meet this growth?

The IEA expects that renewable energy and nuclear will meet this additional increase in electricity generation in the coming period. While sources such as solar, wind and hydro-electric power are expected to meet 95% of growth in demand for electricity in the 2025-2027 period, renewable energy is expected to cover more than one-third of all electricity consumption in 2025.

The IEA also refers to the expected increase in the amount of electricity generated from solar energy in the next three years, stating that the electricity generated from photovoltaic solar energy, which accounted for 40% of the global electricity demand growth in 2024, will account for about 50% of electricity demand growth in 2027. The report states that photovoltaic solar plants will generate about 600 TWh of additional electricity each year over the next three years, equal to South Korea's annual electricity consumption. Looking at the regional breakdown, the report states that China, the USA and India will step into the forefront when it comes to photovoltaic solar energy.

In this context, as the world moves towards the "age of electricity", the role of renewable energy, especially photovoltaic solar energy, will continue to grow.



Source: IEA, TSKB Economic Research

Sector News

Local News

- Petroleum Pipeline Company (BOTAŞ) leaves natural gas wholesale tariff unchanged in February, according to its statement.

- Renewable Energy Source Zone (YEKA) Solar Power competition for 2024 concluded. The winners of the competition for six YEKAs with a capacity of 800 MW in Kütahya, Antalya, Van, Malatya, Karaman and Konya were Çumra Güneş Enerjisi Üretim A.Ş, Erdem Soft Tekstil A.Ş., Chen Solar Energy Ltd., Özerka Elektrik Üretim A.Ş., Temmuz Güneş Enerji Üretim A.Ş. and Kalyon YEKA GES 5 Elektrik Üretim A.Ş.

- The Minister of Energy and Natural Resources, Alparslan Bayraktar, stated that the competition would unleash USD 500 million of investment, leading the generation of 1.5 TWh of electricity each year, bringing power to 600,000 homes.

- Energy Exchange İstanbul (EPİAŞ) launching a digital platform called the "Eligible Consumer Supplier Selection Platform". The platform, which is prepared to offer consumers a more transparent, reliable and rapid supplier selection process in the electricity market, is planned to serve the residential subscriber group in the first stage. The platform is aimed at providing eligible consumers with a source where they can compare and choose the offers provided by suppliers.

- Use of renewable hydrogen in high value-added sectors and applications "needs to be prioritized". The report entitled "Renewable Hydrogen in Türkiye's Decarbonization Process: Priority Application Areas and Policy Recommendations" published by the SHURA Energy Transition Center predicts that renewable hydrogen technology will be used to a limited extent in the short-medium term, emphasizing that the use of green hydrogen should be planned efficiently. In this vein, the use of renewable hydrogen in the green ammonia (fertilizer), iron and steel, chemical and petrochemical sectors should come to the forefront in the short and medium term in the Turkish industry. According to the report, the use of renewable hydrogen in these sectors, which are relatively difficult to decarbonize, could pave the eway for USD 130 billion in benefits by 2053 while reducing dependence on imported fuels. The use of renewable hydrogen could also reduce carbon dioxide emissions by 1,03 billion tonnes. SHURA also emphasized tax incentives, infrastructure developments, financial support and administrative processes and support mechanisms should be regulated in order to create a hydrogen ecosystem.

- Agreement reached between Türkiye and Turkmenistan on the supply of Turkmen natural gas to Türkiye. According to the agreement signed between BOTAŞ and Turkmengaz, deliveries are planned to start from 1 March 2025, with 1.3 billion cubic meters (bcm) of natural gas to be supplied from Turkmenistan by the end of the year. According to the statements issued by the Minister of Energy and Natural Resources, Alparslan Bayraktar, 1.3 bcm of natural gas is planned to be delivered from the Iran-Türkiye connection point. Mr. Bayraktar also emphasized that the ultimate goal was to build a pipeline through the Caspian Sea, adding that it would be possible to supply natural gas to Europe when this goal was met.

- Number of people with access to natural gas reaches 72.3 million in 2024 - 85% of the population. According to the statement issued by the Ministry of Energy and Natural Resources, the number of settlements with access to natural gas reached 907 by the end of 2024 with natural gas planned to be brought to 44 more settlements by the end of 2026. The Minister of Energy and Natural Resources Alparslan Bayraktar emphasized that the natural gas produced in the Sakarya Gas Field was now reaching 3 million of the 19.5 million homes using natural gas, adding that Black Sea natural gas was planned to be brought to more homes by increasing production to over 9 million cubic meters in the first quarter of 2025.

Foreign News

- Germany and Saudi Arabia signed agreement to export green hydrogen to Europe. According to the agreement, the hydrogen bridge to be established between Saudi Arabia and Germany aims to supply 200,000 tonnes of green hydrogen per year by 2030.

- Organization of the Petroleum Exporting Countries and its Allies (OPEC+) stick to their policy of gradually increasing oil production from April. However, OPEC+ has removed the U.S. government's Energy Information Administration (EIA) from the resources used to monitor compliance with production and supply agreements.

- IEA Executive Director Fatih Birol states that European countries should consider sourcing Liquefied Natural Gas (LNG) from different countries, especially Qatar, from 2027 onwards

- IEA publishes its report, "Building the Transmission Grid of the Future". The report emphasizes the importance of strengthening and modernizing transmission infrastructure for the convergence of new generation sources with expanding demand centers and their cost-effective distribution. However, according to the report, the rising costs of transmission lines and the doubling of waiting times for cables and power transformers are causing bottlenecks in the supply chain. While projects have been delayed as a result, the IEA claims there are 1,650 gigawatts of solar and wind projects under development pending grid connectivity in 2024. In addition, the IEA emphasized that the supply chain bottlenecks could be overcome with strategies such as increasing dialogue in the sector, encouraging network investments facilitating permits and providing a qualified workforce.

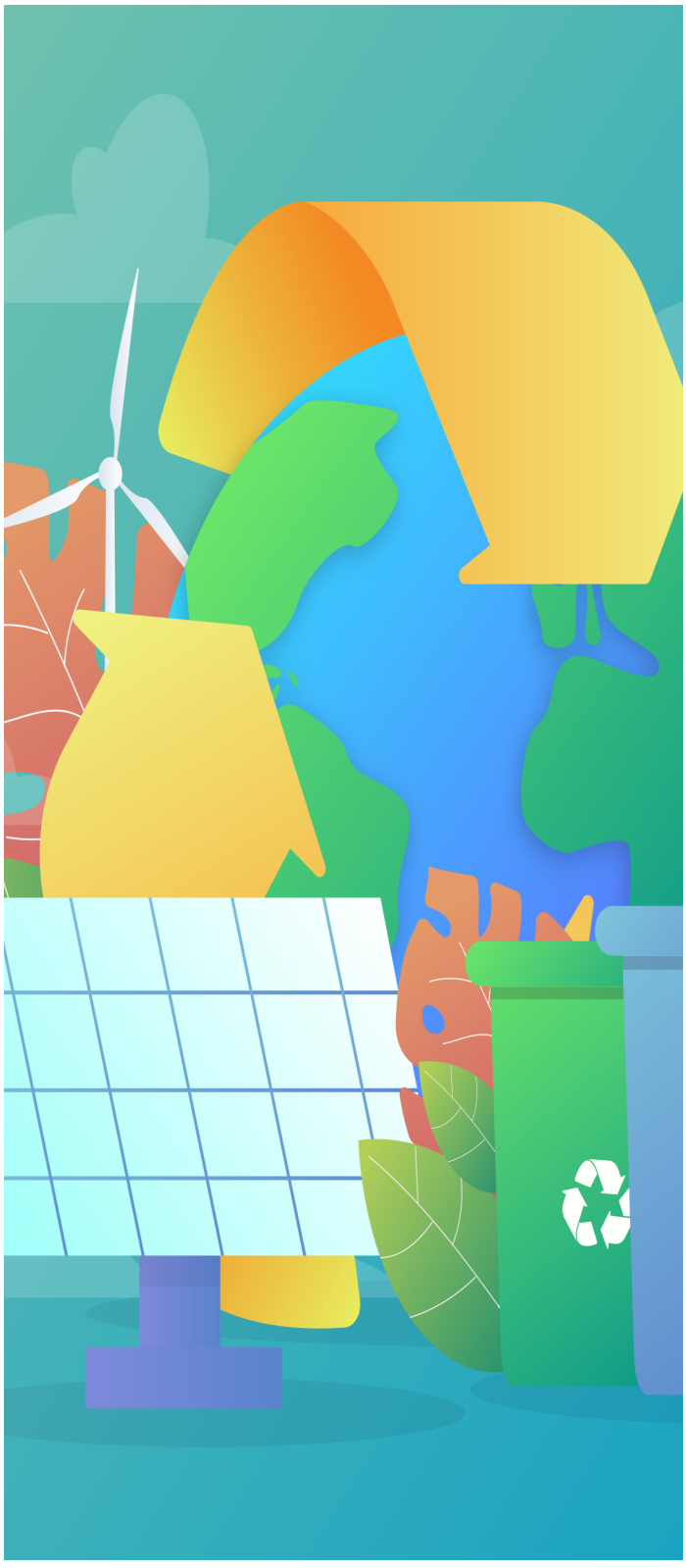
- Increasing geopolitical risks highlighting the importance of security in critical minerals supply chains. According to a study carried out by IEA, the expansion of trade restrictions affecting critical minerals threatens the security of existing critical minerals markets, while the high market concentration of critical mineral production is increasing supply risk. The study emphasized that possible disruption in the supply of critical minerals could have fallout on technology prices, inflation, production and competitiveness. While the IEA warns that critical minerals supply chains could be vulnerable to shocks from extreme weather events, trade disruptions or geopolitical risks, it underlines the importance of strengthening supply security.

- Organization of Petroleum Exporting Countries (OPEC) leaves its global oil demand growth forecast for 2025 and 2026 unchanged. OPEC's Monthly Oil Market Report for February left its demand growth forecast unchanged, at 1.4 million barrels per day for 2025 and 1.4 million barrels per day for 2026. OPEC expects the growth in demand in 2025 to be driven by the transport sector, as well as industry, construction and agriculture in non-Organization for Economic Cooperation and Development (OECD) countries.

- IEA publishes its February Oil Market Report. According to the report, the growth in global oil demand, which was 870,000 barrels per day in 2024, is expected to gain momentum and reach 1.1 million barrels per day in 2025. While the IEA emphasizes that China will be the biggest driver of this increase in demand, it predicts that India and other emerging Asian economies will also increase their share.

- BloombergNEF forecasts continued decline in global cost of renewable energy in 2025. According to a BloombergNEF study, the costs of clean energy technologies such as wind, solar and battery technologies are expected to fall by 2-11% per year in 2025. The cost of electricity generated from these sources is projected to fall by 22-49% by 2035, when compared to their current levels. While the study notes that China's abundance of cleantech manufacturing capacity will drive this trend, it also emphasizes that there is room for greater technological and economic efficiency.

- European Union (EU) aims to save EUR 260 billion annually by 2040 with its new energy action plan. The "Affordable Energy Action Plan" aims to reduce energy costs across the EU, while setting out concrete short-term measures to prepare for possible energy crises. The plan aims to address energy supply costs, grid fees and charges, while also supporting wider adoption of energy efficiency solutions. Accordingly, the plan is predicted to bring EUR 45 billion in savings in 2025.



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