

Monthly Energy Bulletin

TSKB Economic Research

December 2025 #91

Ezgi İpek Koçlu ipeke@tskb.com.tr
Can Hakyemez hakyemez@tskb.com.tr

28 January 2026

Slowdown in photovoltaic solar installations expected in 2026

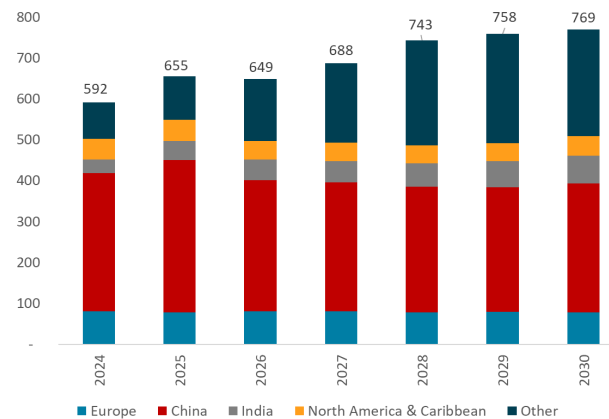
BloombergNEF (BNEF) predicts that 2026 will be the first year in which photovoltaic solar installations will slow down, highlighting the role of countries such as Spain and Brazil, along with China and the United States, in this slowdown.

The shift in BNEF's forecast for photovoltaic solar installations, particularly in China, is noteworthy. Accordingly, installations in China in 2026 are projected to total 655 gigawatts (GW), a 6% decrease compared to the projections in the third quarter of 2025. BNEF emphasizes that the impact of the policies pursued by the USA has become more pronounced, while the decrease in electricity prices in Spain and Brazil as capacity has approached saturation in recent years has created an environment which negatively affects investment appetite.

Accordingly, BNEF has revised down its global solar installation forecast for 2025 by 6% quarter-on-quarter to 655 gigawatts (GW) and predicts capacity growth of 649 GW in 2026. However, it expects the increase in solar energy installations to resume 2027 as China and the USA adapt to new market conditions and new markets are formed.

BNEF emphasizes the need for storage activities which are able to support the supply side for increased electricity generation from solar energy in 2026. It also notes that prices in the photovoltaic solar value chain will remain low in 2026, driven by weaker demand forecasts than in 2025 and high generation capacity.

New Photovoltaic Solar Installations and Projections (GW)



Source: BNEF, TSKB Economic Research

30.9
TWh

December Gross
Generation

2,973.0
TL/MWh

Average
MCP

0.2%

Daily average licensed electricity generation increased by 0.2% MoM and by 7.0% YoY in December.

[Click for details.](#)

6.8%

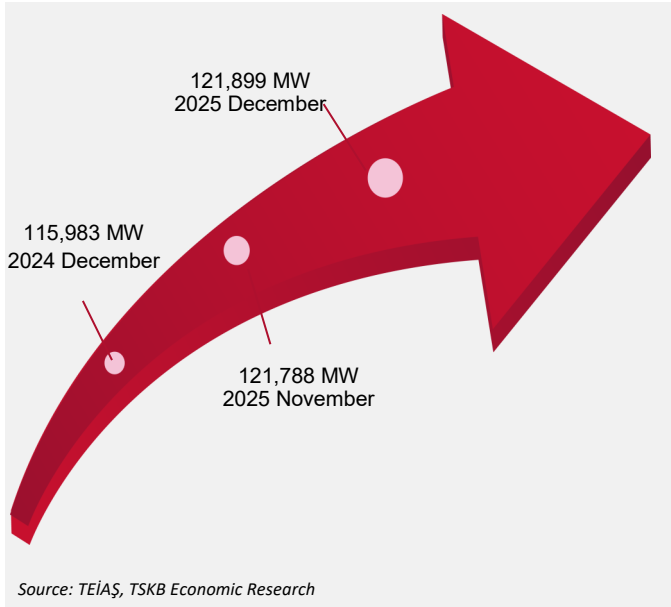
Market Clearing Price (MCP) increased by 6.8% MoM and by 21.5% YoY in December.

[Click for details.](#)

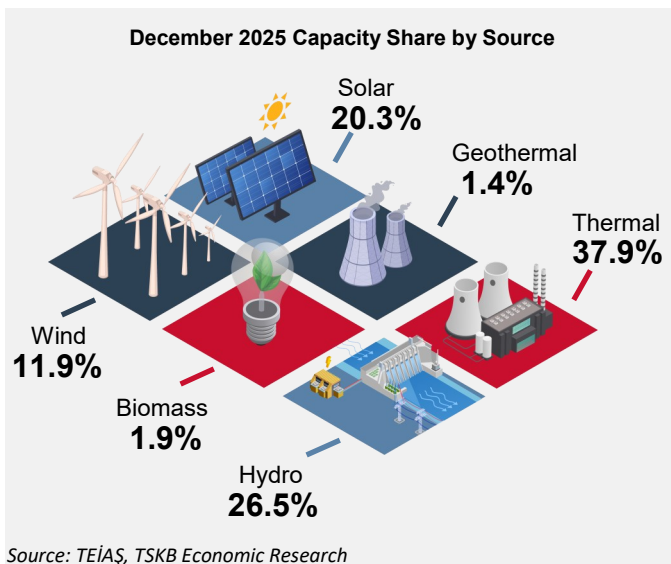


Installed Capacity Analysis

Türkiye's total installed capacity increased from 121,788 megawatts (MW) at the end of November 2025 to 121,899 MW in December 2025. In December, a total net additional installed capacity of 111.6 MW was commissioned compared to November. Solar power plants accounted for 113.7 MW of the new capacity commissioned, with 2.2 MW from power plants producing with renewable waste. There was no change in the installed capacity of other power plants.

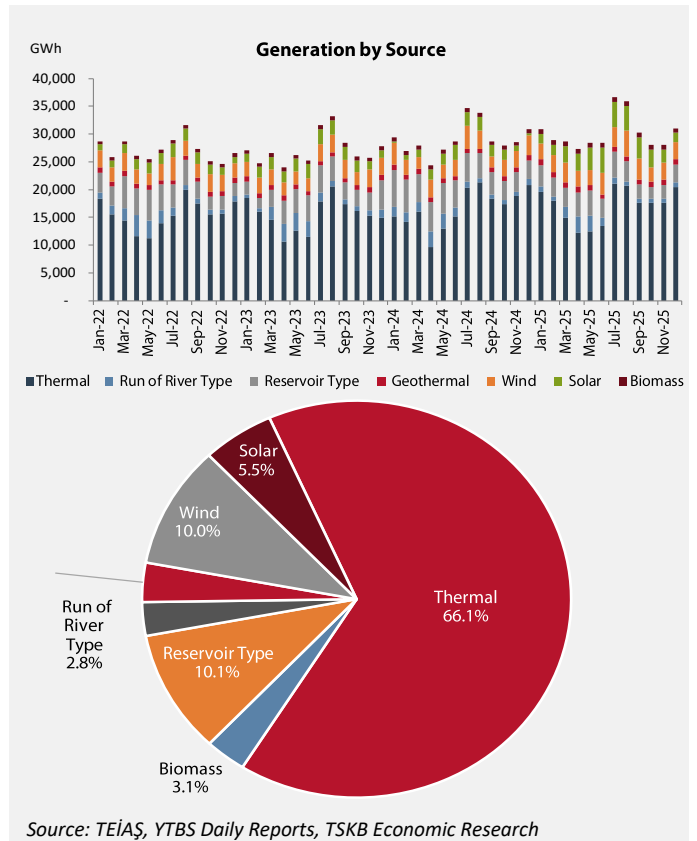


In December, 62.1% of the installed capacity in operation consisted of power plants generating electricity from renewable sources. Hydroelectric power plants accounted for 26.5% of Türkiye's total installed electricity generation capacity, with the combined share of wind and solar power plants in total installed capacity continuing to be higher than the share of hydroelectric power plants, at 32.3%.



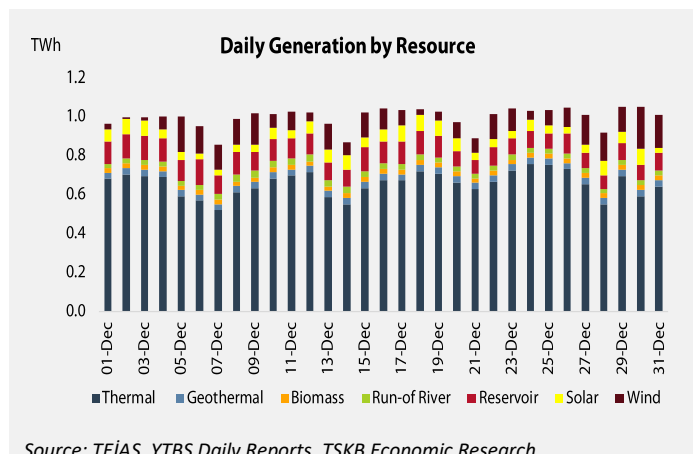
Generation-Consumption Analysis

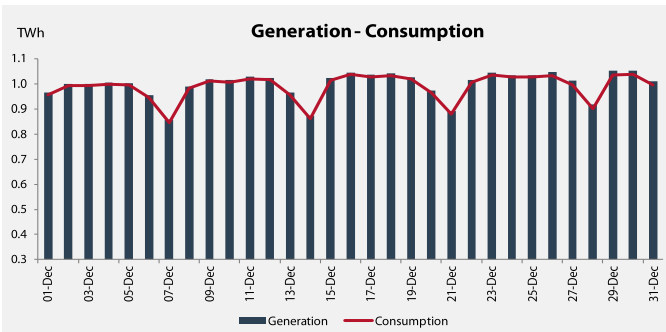
Total electricity generation increased from approximately 28 terawatt-hours (TWh) in November 2025 to 30.9 TWh in December 2025. The average daily electricity generation for December increased by 0.2% compared to the previous month and by 7% compared to the same period of the previous year.



Thermal power plants, which provided 62.8% of electricity generation in November, met 66.1% of the total electricity generation in December. Looking at the source-based breakdown of electricity generation, hydroelectric power plants increased their share in the mix from 11.5% in the previous month to 12.8% of total electricity generation in December. In the same period, the share of electricity generated from solar power plants was 5.5%, with geothermal power plants providing 3.2% of the total electricity.

The share of renewable energy plants in electricity generation decreased from 34% in November 2025 to 31.5% in December 2025. During the month, wind contributed 10% of total generation, while dam-type hydroelectric power plants were recorded as the renewable source generating the most electricity, meeting 10.1% of the total electricity generated. The proportion of electricity obtained from wind and solar power plants in total electricity generation stood at 15.5%.





Source: TEİAŞ, YTBS Daily Reports, TSKB Economic Research

An average of 0.99 TWh was generated each day in November with the highest generation in the month being 1.05 TWh, which was recorded on Tuesday, December 30, while the lowest generation was 0.86 TWh on Sunday, December 7.

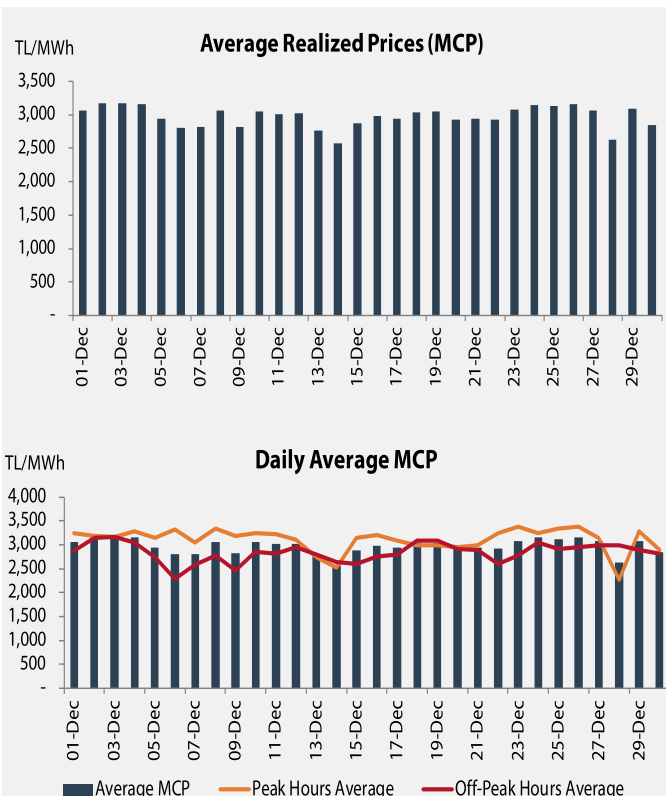
In the same period, the daily electricity consumption averaged 0.98 TWh. The highest consumption in December was recorded on Tuesday, December 30 at 1.03 TWh, with the lowest electricity consumption recorded on Sunday, December 7 at 0.84 TWh.

Electricity Price Analysis

The daily average market clearing price (MCP) fluctuated between TL 2,574.6 and TL 3,168.4 per MWh with a daily average MCP of TL 2,973 /MWh. The highest daily average MCP was recorded on Tuesday, December 2 at TL 3,168.4 /MWh and the lowest on Sunday, December 14 at TL 2,574.6 /MWh.

Looking at hourly data, the MCP was realized at its maximum limit of TL 3,400 /MWh for a total of 189 hours in December. The hourly minimum price realized in December was TL 1,263.6 /MWh, recorded for one hour.

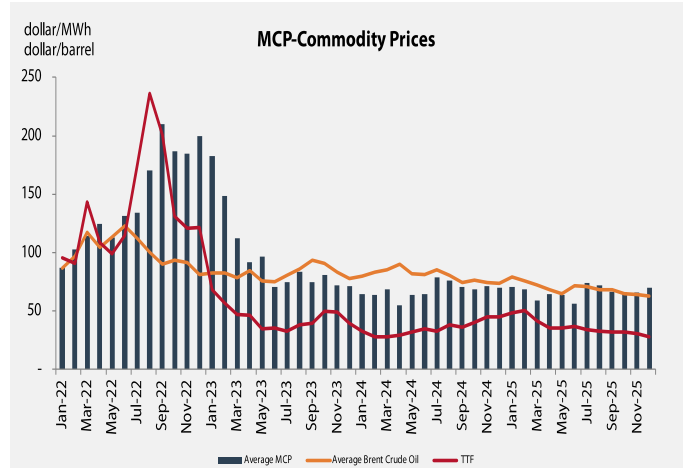
Analyzing the daily MCP data, the peak hours average (8AM to 8PM) was 4.9% lower the average value of all hours, being recorded at TL 3,117.3 /MWh. The maximum limit price of TL 3,400 /MWh was recorded 155 times during peak hours, while the lowest price of TL 1,264 /MWh was recorded one hour during peak hours.



Source: EXIST, TSKB Economic Research

In the same period, the average off-peak rate (between 8PM and 8AM) was TL 2,828.8 /MWh. The maximum limit price of TL 3,400 /MWh was recorded for 34 hours during off-peak hours, while the lowest price during off-peak hours of TL 1,720 /MWh was recorded once.

The average MCP, which was recorded as USD 65.9 /MWh in November, increased to an average of USD 69.7 /MWh in December. When compared with the same period of the previous year, the MCP was down 0.4% in dollar terms.



Source: EPİAŞ, TCMB, EIA, TSKB Economic Research

Average Commodity Prices

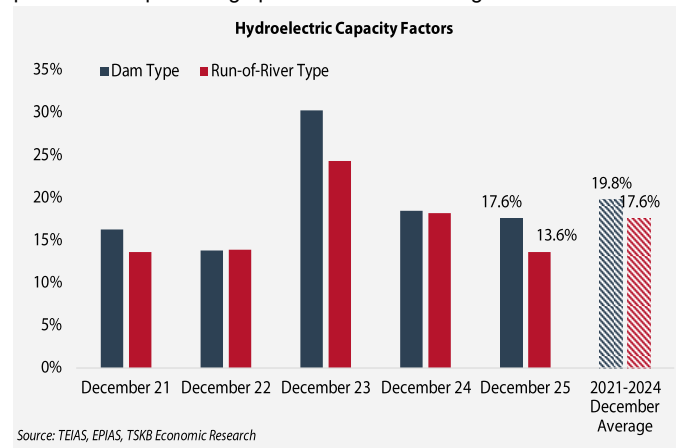
Brent crude oil prices decreased by 1.8% on a monthly basis from an average of USD 63.8 per barrel in November to USD 62.6 per barrel in November, some 15.1% lower than the same period of the previous year.

The TTF natural gas contract price, which had averaged USD 30.6 /MWh in November, decreased by 9.5% on a monthly basis to USD 27.7 /MWh in December. This was 38.2% lower than in 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 December 2025 were 17.6% and 13.6%, respectively. When compared to December 2024, there was a decrease of one percentage point in the capacity factors of dam-type power plants and a fall of 4.6 percentage points for run-of-river type power plants in December 2025. Comparing the month of December over the last 5 years, the highest capacity factor for dammed power plants was recorded in December 2023 at 30.3%, with a rate of 24.4% for the run-of-river type power plants.

In December 2025, the capacity factor of power plants with dams fell by 2.2 percentage points below the average for December 2021-2024, while the capacity factors for run-of-river type power plants fell 4.0 percentage points below the average.



Source: TEİAŞ, EPİAŞ, TSKB Economic Research



Global Energy Employment Outlook for 2025

Ezgi İpek Koçlu ipeke@tskb.com.tr



The International Energy Agency (IEA) has published its report titled "World Energy Employment 2025". According to the report, employment in the energy sector increased by 2.2% in 2024, reaching 76 millions, driven by investments in energy infrastructure.

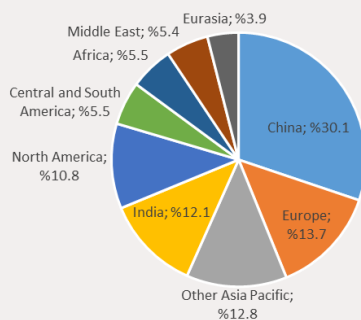
IEA states that employment in the energy sector has increased by 5.4 millions since 2019, highlighting that this increase accounted for approximately 2.4% of all new jobs globally. One sector stands out in this increase in employment: electricity.

According to the report, 3.9 million new jobs have been created in the electricity sector in the last five years, including in generation, transmission, distribution and storage. Details show that photovoltaic solar energy plays an important role in creating demand for jobs. In addition, the widespread use of electric vehicles is one of the remarkable points regarding employment in the energy sector. For example, IEA notes that 40% of the employment related to vehicle production in China is linked to electric vehicles.

However, electricity is not the only player in the increase in energy employment. As global energy demand continues to increase, employment in the areas of coal, oil and natural gas will remain significant, along with electricity.

When global employment is analyzed regionally, China stands out with a share of 30.1%, followed by Europe at 13.7%. IEA emphasizes that annual employment growth is led by developing economies, notably India (5.8% increase) and Indonesia (4.8% increase). Employment grew by just 0.2% in advanced economies.

Regional Distribution of Global Energy Employment in 2024

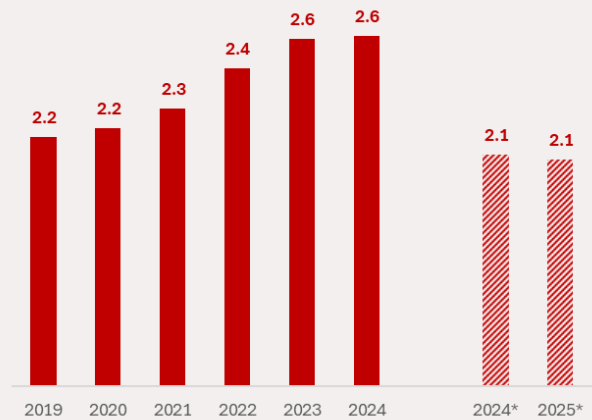


Source: IEA, TSKB Economic Research

IEA notes that employment will continue to grow in the energy sector in 2025, with the increase of around 1.3%. It adds that although there is a slowdown in the pace of the growth due to the uncertainties in the sector, employment is on course to maintain its growth. According to the 2050 net zero scenario, employment in the energy sector is set to reach approximately 15 million in 2035.

For Türkiye, seasonally adjusted data published by TURKSTAT provides information regarding the number of paid employees in the sector, with figures suggesting an increase of 16.5% in the number of paid employees in the energy sector compared to 2019. In the first 10 months of 2025, the number of employees in the sector drawing a regular wage was around 2.1 million, similar to the same period of the previous year.

Seasonally Adjusted Paid Employees in the Energy Sector (million people)



Source: TURKSTAT, TSKB Economic Research

*Includes data for the first 10 months.

Energy is also one of the priority areas in the Twelfth Development Plan¹ covering the years 2024-2028, and it is emphasized that policies will be implemented to increase the share of the workforce compatible with the green transformation. It is also stated that just transition mechanisms will be established to ensure that employees are not adversely affected by the green transformation process. We would note that the emphasis on these processes, in which the energy sector is an important stakeholder, will positively affect employment in the sector.

In addition, the increase in demand for critical minerals, which remains squarely on the agenda both globally and in Türkiye, is one of the factors affecting employment in the mining sector. In this vein, the production facility planned to be industrially implemented in Eskişehir Beylikova for Türkiye during 2026 will be a driver of employment in the mining sector.

In the light of these discussions, it is seen that clean energy technologies will remain on the agenda despite regional differences in global energy sector employment. While employment of the sector is expected to grow in parallel with this agenda, it is also important to provide a qualified workforce and prevent skill shortages. Providing the employment needed by the energy sector will continue to be important for energy security in an environment of uncertainty created by geopolitical risks.

¹https://www.sbb.gov.tr/wp-content/uploads/2023/12/On-ikinci-Kalkinma-Plani_2024-2028_11122023.pdf



Sector News

Local News

- **Türkiye and Pakistan sign an agreement for crude oil and natural gas exploration and production.** According to the agreement, Türkiye Petrolleri will conduct exploration and production at sea and on land with its Pakistani partners. The Minister of Energy and Natural Resources, Alparslan Bayraktar, stated that the government seeks to carry the existing cooperation to the field of mining, adding that projects for joint purchase options for petroleum products and liquefied natural gas (LNG) between the two countries are also on the agenda.

- **Turkish Electricity Transmission Corporation (TEİAŞ) announces capacity mechanism payment list for October.** Accordingly, TEİAŞ will issue a total capacity payment of TL 1.4 million to 32 electricity generation plants for October. The Soma Kolin Thermal Power Plant will receive the highest payment within the scope of the capacity mechanism, at TL 144.1 million for October.

- **Petroleum Pipeline Company (BOTAŞ) signs LNG agreements with German SEFE and Italian ENI companies.** According to the agreement, which covers the shipment of a total of 11 bcm of LNG, 6 billion cubic meters (bcm) with SEFE and 5 bcm with ENI, will start in 2028 and will continue for ten years. Shipments will be carried out during the winter periods when natural gas consumption peaks.

- **According to statements from the Minister of Energy and Natural Resources, Alparslan Bayraktar, the foundation of the industrial facility for rare earth elements will be laid in 2026 and the facility will be implemented within 2 years.** Stating that this facility will be operated by the state, Mr. Bayraktar added that the pilot plant in Beylikova in Eskişehir would operate with an annual capacity of 1,200 tonnes.

- **Renewable Energy Resource Area (YEKA) – 2025 tenders for wind power plants completed.** As a result of the tenders, a total of 1,150 megawatts of connection capacity was allocated in Balıkesir, Aydın, Denizli, Kütahya and Sivas. The electricity generated will be sold to the transmission system for 20 years at a price of EUR 35 per megawatt-hour. The Minister of Energy and Natural Resources, Alparslan Bayraktar, stated

that the winners of the tender would pay a contribution of EUR 208 million.

- **Energy Market Regulatory Authority (EPDK) publishes "Electricity Market Sector Report" and "Natural Gas Market Sector Report" for October.** Accordingly, electricity consumption increased by 2.1% in October compared to the same month of the previous year to reach 27.3 TWh, although down on the 30 TWh in September. Billed electricity consumption in October increased by 3.7% YoY to 22.9 TWh. According to the "Natural Gas Market Sector Report", total natural gas consumption increased by 11.6% in October compared to the same month of the previous year to reach 3.5 billion cubic meters (bcm), while 36.3% of the natural gas consumed was used by the conversion/cycle sector. Natural gas imports increased by 3.9% compared to October 2024 to reach 4.1 bcm.

- **Industrial Development Bank of Türkiye (TSKB) provides EUR 8 million loan to support capacity increases in Ağaoglu Group's wind energy projects.**

- **EMRA reduces eligible consumer limit in electricity from 750 kilowatthours (kWh) to 500 kWh.** Accordingly, subscribers with an annual electricity consumption of 500 kWh or more will have the right to freely choose their electricity supplier from 2026.

- **SOCAR Türkiye acquires GAMA Energy's Central Anatolia Natural Gas Combined Cycle Power Plant.** The cycle power plant in Kırıkkale has a capacity of 870 MW.

- **Storage resource area (DEKA) model may be implemented in 2026, according to the statements from the Minister of Energy and Natural Resources, Alparslan Bayraktar.** Emphasizing that the DEKA model can contribute to the storage needs of Türkiye, Mr. Bayraktar stated that the gradual natural gas support system would also change from 2026, when a carbon trading center is planned to be implemented within Energy Exchange İstanbul (EİAŞ). He added that a trilateral cooperation structure between Türkiye, South Korea and the USA is being set out for the nuclear energy project planned in Sinop.

- **Electricity storage facilities may be established in unlicensed electricity generation facilities, following EMRA regulatory amendment.** Where electricity is supplied to the grid from the electricity storage facilities to be established with the amendment to the regulation, no payment will be made for the surplus energy remaining after offsetting, and will be taken into account as a free contribution to the Renewable Energy Support Mechanism (YEKDEM).

Foreign News

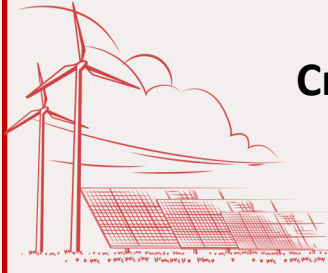
- **Global demand for coal expected to start declining from 2030.** According to the IEA's "Coal 2025" report, global demand for coal stood at 8,845 million tonnes in 2025, with a limited YoY increase of 0.5%. In this period, demand for coal increased due to policies in the USA and low hydroelectric and wind power capacity utilization rates in the European Union, while demand for coal remained similar to the previous year's levels in China and India. The IEA estimates that coal demand will have fallen by 3% by 2030 when compared to 2025 levels, while the vigorous increase in electricity demand could support demand for coal. Emphasizing that China's coal consumption is 30% higher than the rest of the world, the report also underlines that the sector is shaped by developments in the country.

- **European Parliament approves European Union's plan to gradually ban the import of Russian natural gas.** Within the scope of the regulation, which must also be approved by European Union (EU) countries, Russian LNG imports from the spot market will be banned throughout the EU in 2026. Natural gas imports from Russia via the natural gas pipeline will be phased out by September 30, 2027. Representatives of the European Council and Parliament reached a consensus on December 3 in the negotiations on the ban on Russian natural gas.

- **Organization of the Petroleum Exporting Countries (OPEC) leaves oil demand growth forecast for 2026 unchanged.** According to OPEC's Monthly Oil Market Report for December, global oil demand is projected to increase by 1.4 million barrels per day in 2026. In addition, the International Energy Agency (IEA) published the December Oil Market Report. According to the report, global oil demand is estimated to increase by 830,000 barrels per day in 2025 and by 860,000 barrels per day in 2026.

- **Newly determined Nationally Determined Contributions (NDCs) show limited reflection on goal of tripling global renewable energy capacity by 2030.** Between COP28 and COP30, only two-thirds of countries were in the NDC update, with less than half of them explicitly referring to the target of tripling renewable capacity, according to the IEA's study. According to its previous analysis, the IEA states that renewable energy capacity targets in countries' policies and plans are 6% higher than the previous year. However, it also emphasizes the regional differences in capacity increases. Accordingly, China, which increased its renewable energy capacity target by 600 GW, stands out as the country to achieve the largest increase globally.





Critical Energy Minerals Should Be on Türkiye's Agenda

Can Hakyemez hakyemezcc@tskb.com.tr



In an interview in 2024, IEA Executive Director Dr. Fatih Birol stated that the world was moving towards an "age of electricity" with the growth of global electricity demand and clean energy technologies¹. The fact that electricity demand is higher than energy demand is causing electricity to play a much larger role in global final energy consumption. This increase in the role of electricity has also reduced the fossil fuel intensity of the energy system and increased the intensity of renewable energy.

Considering the net zero targets, the increase is not only in renewable energy technologies. In addition to renewable energy technologies, electric vehicles continue their upward trend with storage technologies that increase the flexibility and efficiency of these technologies. These factors lead to the acceptance of critical minerals as an important input of energy conversion.

In its "Global Critical Minerals Outlook 2025" report prepared in 2025, the IEA points out that the demand for lithium, one of the critical minerals, will have increased by 2.2 times its 2024 level by 2030 and by 4.5 times its 2024 level by 2040². The IEA also projects that demand for Rare Earth Elements (REE) will reach 1.4 times its 2024 level by 2030 and 1.6 times its 2024 level by 2040.

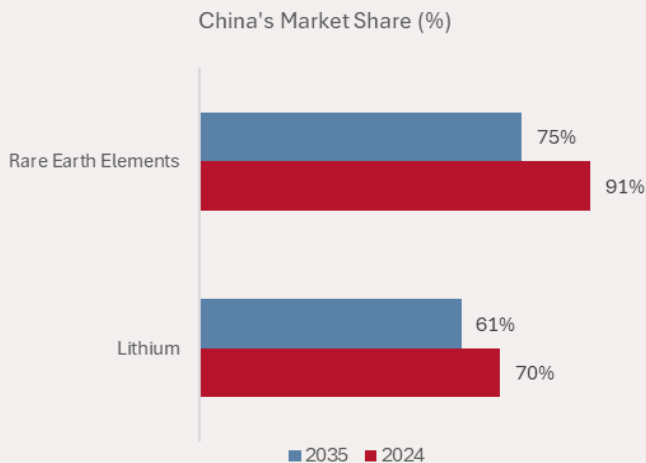
When examined globally, a single country stands out in critical minerals - China. In its "Global Critical Minerals Outlook 2025" report, the IEA also draws attention to China's share of development in critical material production. According to the data in the report, China, which commanded a 70% market share in lithium production in 2024, is expected to see its share decrease by 9 percentage points to 61% in 2035. The IEA estimates that China's share in REE will decrease from 91% in 2024 to 75% in 2035. From this perspective, it seems likely that the geographical density of critical minerals will continue.

In this vein, we note that the Sabancı University Istanbul International Center for Energy and Climate (IICEC) published its "Türkiye Critical Energy Minerals Outlook 2025" report in December, once again referring to the importance of critical minerals.

According to the report, Türkiye's demand for critical minerals could increase by between 3 and 11 times by 2053 with the spread of electrification. Pointing out that the demand for lithium and REE, which are among the critical minerals, is expected to grow rapidly due to the increase in electric vehicles and energy storage systems, the report states that foreign dependency may increase as a result of insufficient processing and refining capacities of these minerals.

The report published by the IICEC highlights this risk of supply concentration and states that Türkiye is in a position to strengthen its position in supply chains with the international partnerships which it can establish in different regions rich in critical minerals.

It could be claimed that these expectations regarding critical energy minerals for Türkiye will also be shaped by the discoveries made in Eskişehir Beylikova area and the planned production facility. In this vein, critical minerals will play a more prominent role on Türkiye's agenda from 2026.



Source: IEA, TSKB Economic Research



¹<https://www.aa.com.tr/tr/ekonomi/dunya-hizla-elektrik-cagina-ilerliyor/3363416>

²<https://www.iea.org/reports/global-critical-minerals-outlook-2025>



Economic Research

ekonomikarastirmalar@tskb.com.tr

MECLİSİ MEBUSAN CAD.

NO:81 FINDIKLI İSTANBUL 34427, TÜRKİYE

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

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