TSKB ADVISORY SERVICES

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TSKB Economic Research

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

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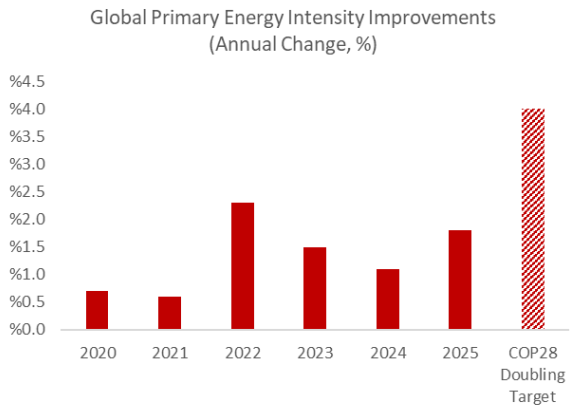
Global energy efficiency improved in 2025 but not by enough to meet the global target

According to the International Energy Agency's (IEA) "Energy Efficiency 2025" report, the improvement in global energy efficiency is expected to have gained pace in 2025, reaching 1.8%, compared to a 1% improvement in 2024. According to the report, although efficiency increased in 2025, the improvement in efficiency fell short of the target set at COP28 of doubling the improvements in energy efficiency by 2030.



Source: IEA, TSKB Economic Research

The IEA emphasized the role of the slow improvement in the energy efficiency of the industrial sector in falling short of the target. According to the report, while the growth in demand for energy from the industrial sector has accelerated since 2019, the average annual rate of improvement in the sector's energy intensity has fallen from 2% in the last decade to less than 0.5%. Accordingly, the trend of more intensive energy use in the industry has had a negatively impact on energy efficiency gains.

The report cites the lack of energy efficiency standards, the widespread use of air conditioning for cooling and the fact that demand for electricity that is increasing faster than supply as other reasons for the slow progress in energy efficiency.

The IEA emphasizes that while global energy efficiency investments are expected to have reached approximately USD 800 billion as of 2025, more comprehensive policy design is needed to accelerate progress in efficiency. In this vein, the report suggests that governments can act more rapidly to raise their policy targets and that policy gaps for energy efficiency should be identified and priority areas determined.

27.4 TWh	2,784.1 TL/MWh
November Gross Generation	Average MCP

1.0%

Daily average licensed electricity generation decreased by 1.0% MoM and decreased by 4.1% YoY in November.

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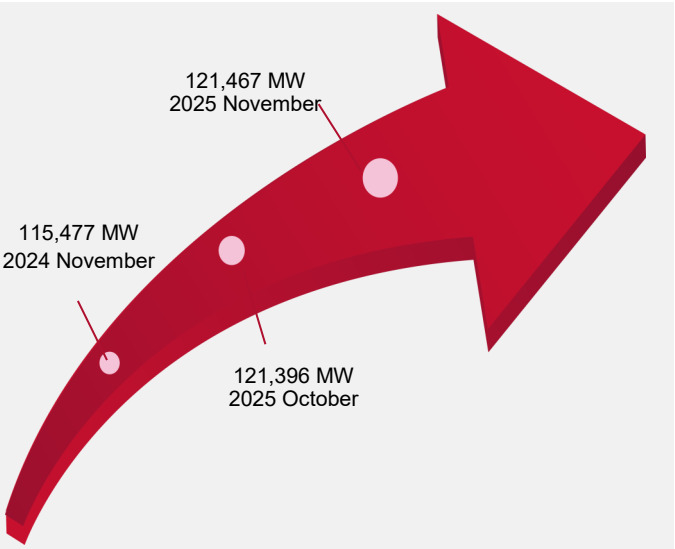
1.6%

Market Clearing Price (MCP) increaed by 1.6% MoM and by 13.0% YoY in November.

Click for details.

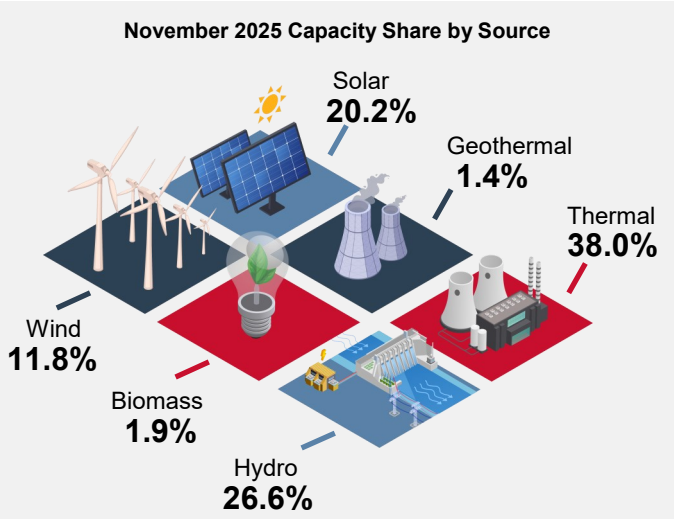
Installed Capacity Analysis

Türkiye's total installed generation capacity, which stood at 121,396 megawatts (MW) at the end of October 2025, increased to 121,467 MW in November 2025. A total net additional installed capacity of 70.8 MW was commissioned in November. Solar power plants with 72.4 MW of capacity were commissioned while the installed capacity of natural gas and multi-fuel power plants decreased by 1.6 MW. There was no change was observed in the installed capacity of other power plants.



Source: TEİAŞ, TSKB Economic Research

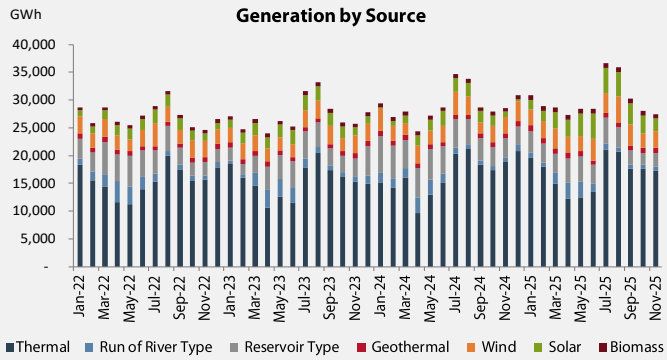
62% of the capacity in operation in November consisted of power plants generating electricity from renewable sources. Hydroelectric power plants accounted for 26.6% of Türkiye's total electricity installed capacity with wind and solar power plants having a 32% share of the total installed capacity.

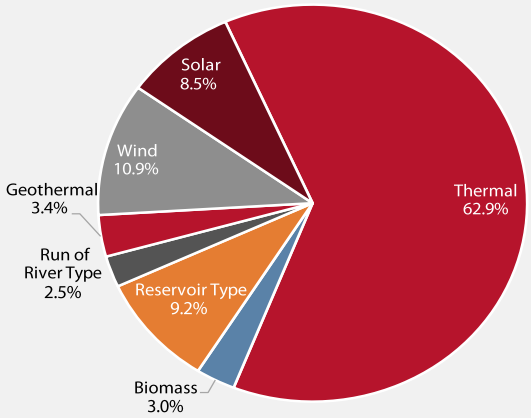


Source: TEİAŞ, TSKB Economic Research

Generation-Consumption Analysis

Total electricity generation edged down from approximately 28 terawatt-hours (TWh) in October 2025 to 27.4 TWh in November 2025, while the average daily electricity generation in November was up by 1% compared to the previous month but down by 4.1% compared to the same period of the previous year.

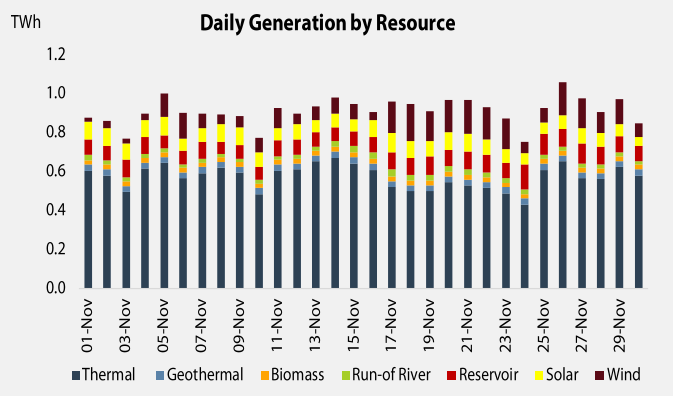




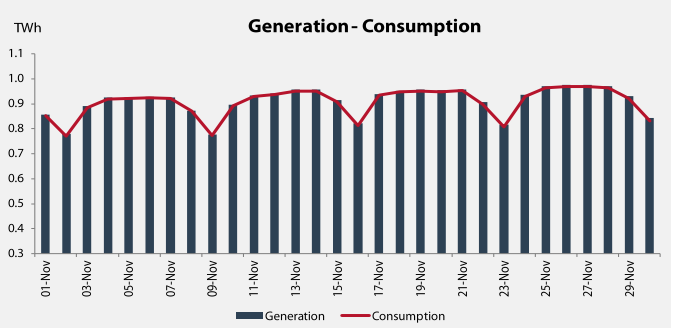
Source: TEİAŞ, YTBS Daily Reports, TSKB Economic Research

Thermal power plants, which provided 62.8% of the electricity generated in October, accounted for 62.9% of the total electricity generated in November. Based on a source-based breakdown of electricity generation by source, the share of hydroelectric power plants in total generation increased from 10.1% in October to 11.7% in November, while in the same period, the solar power plants accounted for 8.5% of total generation, with geothermal power plants accounting for a 3.4% share.

The share of renewable energy plants in electricity generation stood at 34.5% in November, up from 34% in October. Dam-type hydroelectric power plants contributed 9.2% to total generation during the month while wind farms were the single renewable source generating the most electricity with a 10.9% share of total generation. The proportion of electricity obtained from wind and solar power plants in total electricity generation stood at 19.4%.



Source: TEİAŞ, YTBS Daily Reports, TSKB Economic Research



Source: TEİAŞ, YTBS Daily Reports, TSKB Economic Research

An average of 0.91 terawatt-hours (TWh) of electricity was generated per day in November. The highest generation during the month was 0.97 TWh on Thursday, November 27 with the lowest being 0.84 TWh on Sunday, November 30.

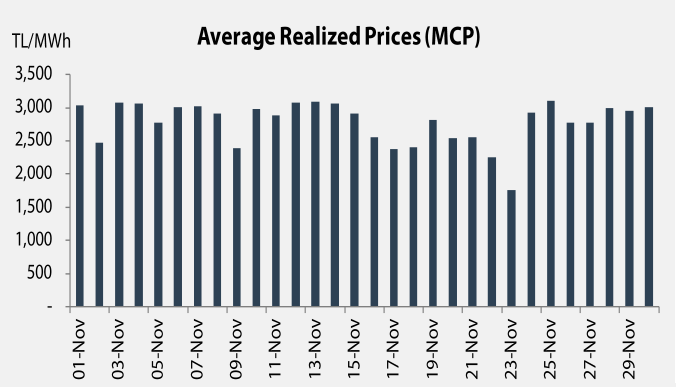
During November, daily electricity consumption averaged 0.90 TWh. The highest consumption in the month was 0.96 TWh on Thursday, November 27, while the lowest electricity consumption was 0.77 TWh, recorded on Sunday, November 2.

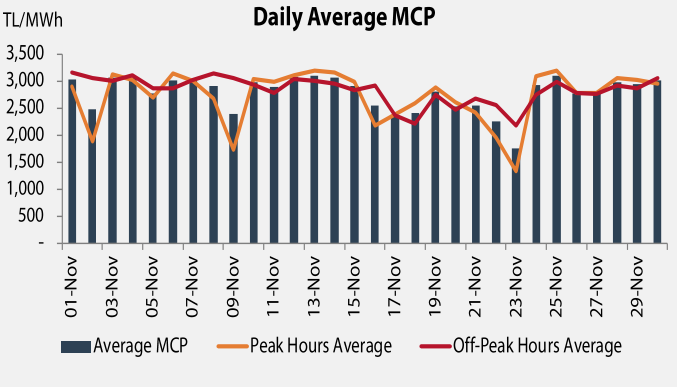
Electricity Price Analysis

The daily average market clearing price (MCP) varied between TL 1,759.8 /MWh and TL 3,097 /MWh in November, with the daily average MCP during the month being TL 2,784.1 /MWh. The highest daily average MCP was recorded on Tuesday, November 25 at TL 3,097 /MWh while the lowest was on Sunday, November 23 at TL 1,759.8 /MWh.

Looking at the hourly data, the MCP reached its maximum limit of TL 3,400 /MWh for a total of 179 hours in November, with the hourly minimum price of TL 35 /MWh being recorded for 1 hour in November.

Comparing peak with off-peak pricing, the price during peak hours (8AM to 8PM) was actually 1.9% lower than the all-hours average, to be recorded at TL 2,732.1 /MWh. The maximum limit price of TL 3,400 /MWh was recorded on 141 occasions during peak hours, with the lowest peak-hours price of TL 35 /MWh recorded for one hour during peak hours.

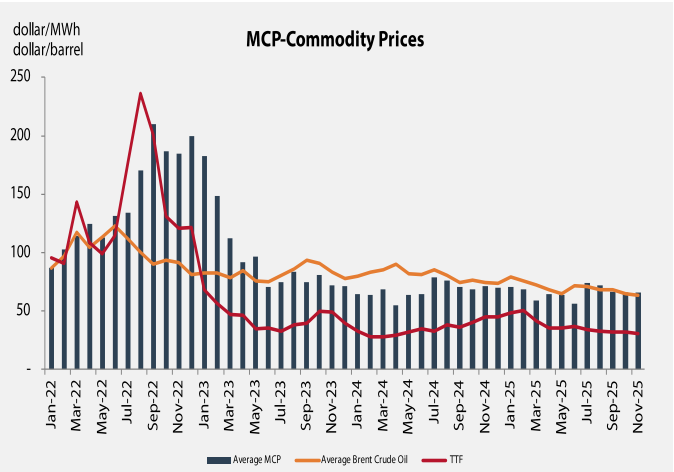




Source: EXIST, TSKB Economic Research

In the same period, the average rate during off-peak hours (8PM to 8AM) was TL 2,836.1 /MWh. The maximum limit price of 3,400 TL/MWh was reached for 38 hours during off-peak hours, while the lowest price of off-peak hours of 1,395 TL/MWh was recorded 1 time.

The average MCP, which was recorded as USD 65.60/ MWh in October, increased to an average of USD 65.90/ MWh in November. When compared to the same period of the previous year, the MCP was down by 7.9% in dollar terms.



Source: EPİAŞ, TCMB, EIA, TSKB Economic Research

Average Commodity Prices

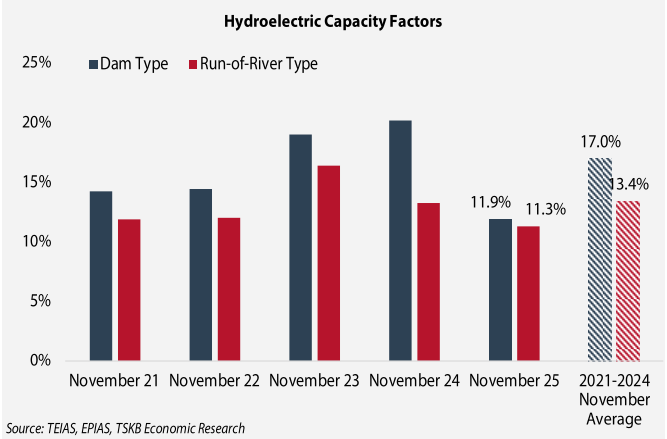
Brent crude oil prices decreased by 1.3% on a monthly basis from an average of USD 64.5/bbl in October to USD 63.7 /bbl in November, 14.4% lower than in the same period of the previous year.

The TTF natural gas contract price decreased by 4.4% on a monthly basis from an average of USD 32 /MWh in October to USD 30.6 /MWh in November, marking a fall of 31.5% 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 stood at 14.6% and 11.5% respectively in November 2025. This marked a decrease of 5.6 percentage points for dam-type power plants and a decrease of 1.7 percentage points for run-of-river type power plants in November 2025 compared to November 2024. Comparing the months of November over the last 5 years, dam-type power plants recorded their highest capacity factor in November 2024 at 20.2%, while the run-of-river type power plants recorded their highest capacity factor in November 2023, at 16.4%.

In November 2025, the capacity factor of dam type power plants fell by 2.4 percentage points below the November 2021-2024 average, while the capacity factor of run-of-river type power plants fell 1.9 percentage points below the average.



Source: TEIAS, EPIAS, TSKB Economic Research

Scenarios in the IEA Global Energy Outlook Report

Can Hakyemez hakyemezc@tskb.com.tr

IEA has published its World Energy Outlook report for 2025. The study, which is carried out every year and is based on three scenarios, offers a view on how the global energy mix may shape up in the coming period.

The 2025 World Energy Outlook report contains an overview of the results of the Declared Policies (STEPS), Existing Policies (CPS) and Net Zero Emissions (NZE) scenarios. While the STEPS and NZE scenarios have always been set out in the report, the CPS has been included in the report after five years. While STEPS is based on countries' national and international energy policies and announced plans, the NZE scenario recognizes that decisions have been taken to achieve the net zero emission target in the energy sector by 2050. Conversely, the CPS scenario models the impact of the energy and climate policies already in place.

The STEPS scenario predicts that total energy demand will increase by an average of 0.7% per year until 2050 compared to its 2024 level, with electricity set to meet this demand. Electricity is expected to meet 84% of the increase in energy demand by 2050. However, under the STEPS scenario, which assumes an increase in demand for natural gas, demand for oil and coal would be expected to decline.

Under the NZE scenario, demand for energy is projected to decline at an average annual rate of 0.9% in the 2024-2050 period, with demand for electricity projected to increase at an annual rate of 3.9%. Under this scenario, there would be a decrease in demand for oil, natural gas and coal.

The third scenario (CPS) differs from the others in that it is intended to show where we could go globally if there were no additions to current policies and regulations. Under this scenario, where demand for energy would increase by more than in the other two scenarios, the increase in energy demand would not only be met by electricity but also by fossil fuels.

Demand for oil and natural gas would grow, with demand for coal decreasing by just 0.2% per year in the 2024-2050 period.

Demand for electricity is expected to increase in the medium and long term in both the STEPS scenario, which can be considered as the main reference scenario, and the NZE scenario, in which all efforts are made to achieve the climate targets. The reasons for this increase include rising domestic use, heating and cooling, electrification in transportation and the growth in the number of data centers.

As the scenarios show, now we have entered the age of electricity, the increasing importance of electricity will continue to attract attention and be a topic of discussion.

Scenarios (exajul)	Energy Demand				Electricity Demand			
	2024	2035	2040	2050	2024	2035	2040	2050
STEPS	453	504	516	541	95	130	144	169
NZE	453	408	380	352	95	133	156	192
CPS	453	523	549	599	95	131	15	172

Source: IEA, TSKB Economic Research

2025 Renewable Energy Resource Area (YEKA) Competitions

Ezgi İPEK KOÇLU ipeke@tskb.com.tr

The Ministry of Energy and Natural Resources announced Türkiye's renewable energy roadmap for 2035 in October 2024. Under the roadmap, the government aims to reach total wind and solar installed capacity of 120 GW by 2035, while the Ministry of Energy and Natural Resources has announced that with the new model it has announced, a YEKA competition for 2,000 MW of total capacity will be held every year for wind farms and solar power plants.

Accordingly, in January 2025, as a result of the YEKA RES-2024 tenders (for wind power), a commitment was set out to pay a contribution of USD 119.6 billion for 1,200 MW in total capacity, and it was stated that USD 500 million in investment would be undertaken for 800 MW of solar power capacity under YEKA competitions in 2024. We see that YEKA tenders, which play an important role in Türkiye's renewable energy targets, are also planned for the end of 2025.

In the last week of November 2025, the YEKA GES-2025 tenders (for solar power) were also completed. As a result of the eight YEKA tenders, a total of 650 MW of connection capacity in Bolu, Erzurum, Eskişehir, Kahramanmaraş, Mardin, Van and Manisa was allocated to investors. Manisa, one of the provinces where capacity has been allocated, stands out as that is where a floating Solar Power Plant will be brought onstream for the first time. Following the competition, a 35 MW floating solar power plant is planned to be installed on the Demirköprü reservoir.

Province	Capacity (MW)
Kahramanmaraş	40
Mardin	40
Manisa	35
Erzurum	100
Van	40
Bolu	50
Erzurum	85
Eskişehir	260
TOTAL	***650***

Source: IEA, TSKB Economic Research

According to the results of the tender, the companies, which will pay a contribution of EUR 101 million, will be able to sell the electricity they generate in the free market for a period of 60 months. The electricity generated over the next 20 years will be given to the system at a rate of EUR 32.50 per megawatt-hour.

In his statements, the Minister for Energy and Natural Resources, Alparslan Bayraktar, emphasized that as a result of the investments to be undertaken following the tenders, Solar Power Plant projects will be implemented to meet the electricity needs of 500,000 households, adding that the projects would reduce carbon emissions by approximately 800,000 tons.

The Minister for Energy and Natural Resources, Alparslan Bayraktar, stated that approximately 6,743 MW of installed solar and wind capacity was commissioned in 2025, underlining that there was a need for approximately 8,000-9,000 MW of additional installed capacity every year to meet the 120 GW target set for 2035. He noted that the additional installed capacity would reach 8,000 MW by the end of 2025.

In this vein, the YEKA tenders will remain important, especially in achieving the targets for 2035. Given the number of applications received for the tenders and the statements from the Ministry of Energy and Natural Resources, the highly competitive tenders indicate that the YEKA will continue to attract the attention of stakeholders in the energy sector.

The YEKA RES-2025 tenders (for wind power) are planned to be held in December. As a result of the competitions, a total of 1,150 MW in capacity will be distributed in Balıkesir, Kütahya, Aydın, Denizli and Sivas.

Sector News

Local News

- Türkiye in talks with Canada-based AtkinsRealis for co-operation on nuclear power plants. According to a statement issued by the Minister of Energy and Natural Resources Alparslan Bayraktar on social media, work has started on the nuclear power plants planned to be established in Sinop and Thrace with AtkinsRealis.

- Electricity accounted for largest share of the final energy consumption in the service-trade sector in 2024 with a 57.2% share. According to the "Service-Trade Sector Final Energy Consumption Statistics" published by TurkStat, the total final energy consumption of the service-trade sector in 2024 was 501,105 terajoules. Electricity was followed by natural gas with a 33.8% share and oil with a 4.7% share. In terms of sub-sectors, the largest share in final energy consumption was "wholesale and retail trade; repair of motor vehicles and motorcycles" sector.

- EMRA publishes electricity and natural gas market sector reports for September. According to the "Natural Gas Market Sector Report", Türkiye's natural gas imports increased by approximately 6.8% in September compared to the previous year to reach 3.6 billion cubic meters (bcm). Russia accounted for the largest share in imports, supplying 40% of the imported natural gas, followed by Azerbaijan with a 26.6% share. In the first nine months of 2025, natural gas imports increased by 17.3% compared to the same period of the previous year to reach 41.2 bcm. According to the "Electricity Market Sector Report", Türkiye's electricity consumption increased by 5.5% in September compared to the same month of the previous year, reaching 30.1 terawatt-hours (TWh), while total electricity consumption reached 272 TWh In the first nine months.

- Capacity of Tuz Gölü Natural Gas Storage Facility increased from 1.2 billion cubic meters (bcm) to 1.7 bcm in 2025. According to a statement from the Minister of Energy and Natural Resources, Alparslan Bayraktar, the natural gas capacity of the facility is targeted to reach 6 bcm by 2032 with the investments undertaken in underground storage for natural gas supply security.

- Türkiye and World Bank to start working on a USD 6 billion financing package. According to a statement from the Minister of Energy and Natural Resources, Alparslan Bayraktar, on social media, the financing package will be used for high-voltage electricity transmission investments which are planned to be undertaken to achieve the solar and wind installed power targets for 2035. Mr Bayraktar stated that during his meeting with the World Bank, opportunities for cooperation on issues such as renewable energy, nuclear and natural gas had also been evaluated, while a memorandum of understanding on cooperation in nuclear energy was also signed between Türkiye and South Korea. Mr. Bayraktar announced that with the agreement, the government was aiming to carry out joint studies in many areas including the development of nuclear power plant projects, the sharing of know-how and technology, the evaluation of sites, project financing and development of human resources.

Foreign News

- Geopolitical tensions placing energy as an economic and national security concern. According to the "Global Energy Outlook 2025" report published by the IEA, tensions ranging from fuel to restrictions affecting the supply of critical minerals are bringing energy security to the forefront of attention. Accordingly, countries are prioritizing energy security and affordability. In this environment, new technologies are rapidly coming online while oil, natural gas and coal consumption continues to reach record levels. With the IEA emphasizing that this is the beginning of the electricity era, it underlines the need for new grids, storage technologies and system resilience. Stating that the use of renewable energy sources continues to grow, the report highlights that investments in nuclear energy have also been gaining pace.

- Google and TotalEnergies sign a solar energy supply agreement. According to the statement issued by TotalEnergies, Google has signed a 15-year energy supply agreement with TotalEnergies to meet the energy needs of its data centers in Ohio. According to the agreement, Google will supply a total of 1.5 TWh of certified renewable electricity from TotalEnergies.

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