

# Monthly Energy Bulletin

TSKB Economic Research

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## Energy Efficiency 2030 Strategy and Second National Energy Efficiency Action Plan published

The Ministry of Energy and Natural Resources (MENR) published the National Energy Efficiency 2030 Strategy and the 2<sup>nd</sup> National Energy Efficiency Action Plan. The strategy, covering the period between 2024 and 2030, aims to reduce energy intensity by 15% compared to its 2023 level. It projects 16% savings in primary energy with the USD 20.2 billion in investment in energy efficiency to be carried out within the plan, which includes a total of 61 actions in 7 sectors with USD 5 billion of the USD 20.2 billion to be provided by the government through taxation and incentives. The action plan, prepared with the participation of all stakeholders, plans to save USD 46 billion worth of energy by 2040.

At the launch of the strategy and action plan, the Minister of Energy and Natural Resources, Alparslan Bayraktar, stated that an average 2% improvement in the global energy intensity was achieved in 2022, while Türkiye's energy intensity decreased by 6.2% in the same year. Adding that the government had determined 10 goals and 23 targets within the scope of the new action, the Minister added that if the targets in the action plan were met, emissions would decrease by 100.7 million tons by 2030.

The plan sets out a total of USD 3.7 billion in investment to increase energy efficiency in the transportation sector, while establishing the energy and charging infrastructure to facilitate the use of more than 1 million electric vehicles on the roads by 2030.

29.43  
TWh

January Gross  
Generation

1,942.9  
TL/MWh

Average  
MCP

8.5%

Daily average licensed electricity generation increased by 6.0% MoM and 8.5% YoY in January.

[Click](#) for details.

-43.4%

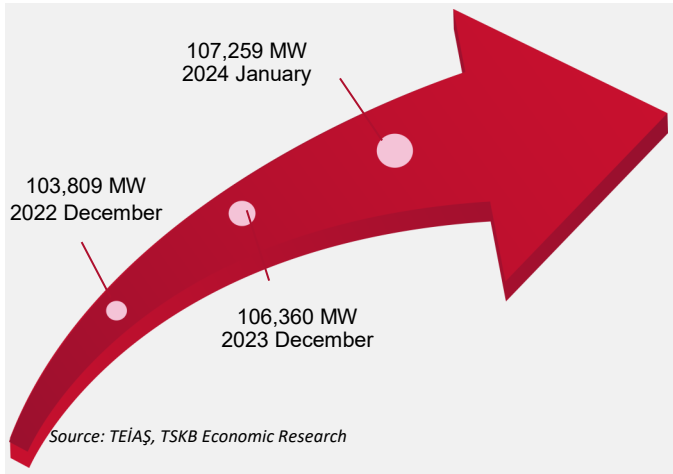
Market Clearing Price (MCP) decreased by 6.4% MoM and 43.4% YoY in January.

[Click](#) for details.

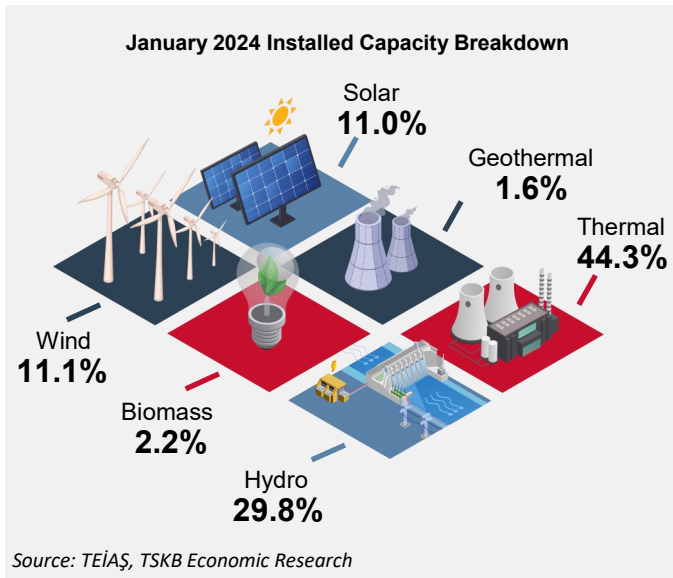


# Installed Capacity Analysis

Türkiye's total installed electricity generation capacity increased from 103,360 MW at the end of December 2023 to 107,259 MW in January 2024. The total net installed generation capacity commissioned in January tripled when compared to the amount commissioned in the previous month, reaching 899.3 MW. Of this amount, 191.3 MW was provided by hydroelectric power plants. Solar power plants, which stood out with 521 MW of new installed power, were followed by wind farms, with 188.6 MW of new capacity, while there was an increase of 43.3 MW in capacity from renewable waste energy power plants. The capacity of power plants generating electricity from natural gas and multi-fuels increased by 41.6 MW.

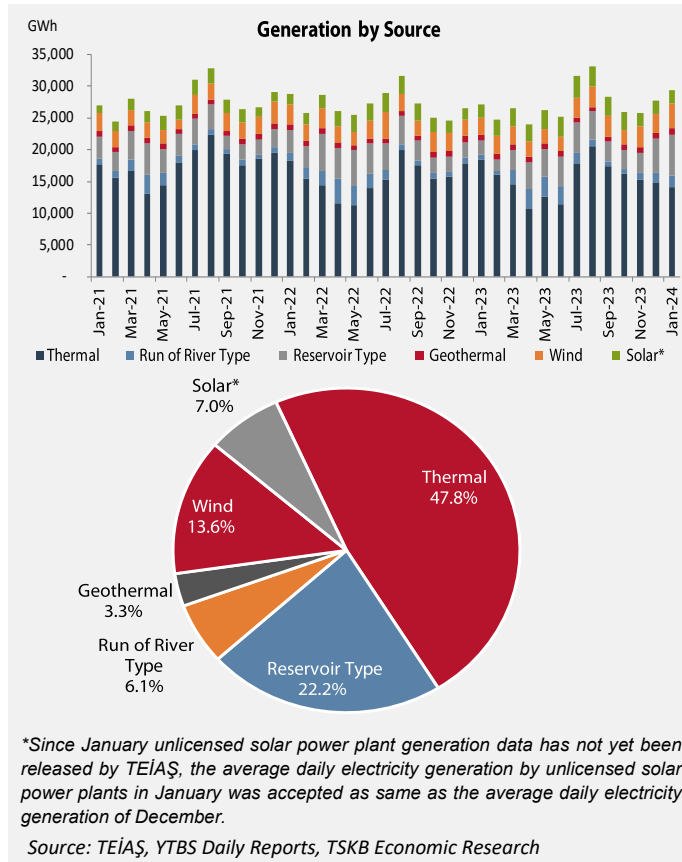


The share of power plants in operation in January reached 55.7%, exceeding the previous month's level of 55.4%. While hydroelectric power plants constituted 29.8% of Türkiye's total electricity installed power, the share of wind and solar power plants in the total installed capacity stood at 22.1%.



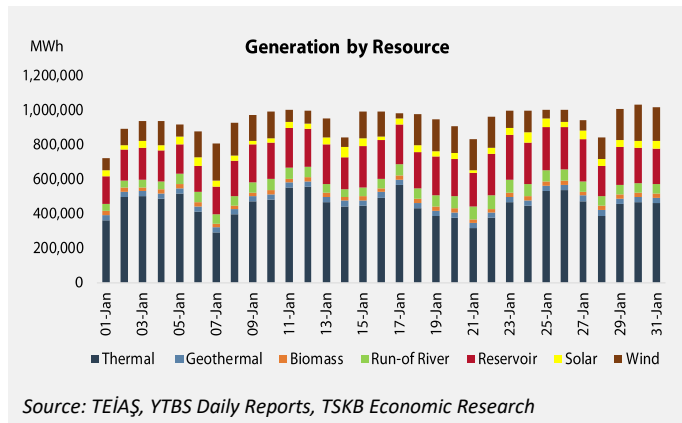
# Generation-Consumption Analysis

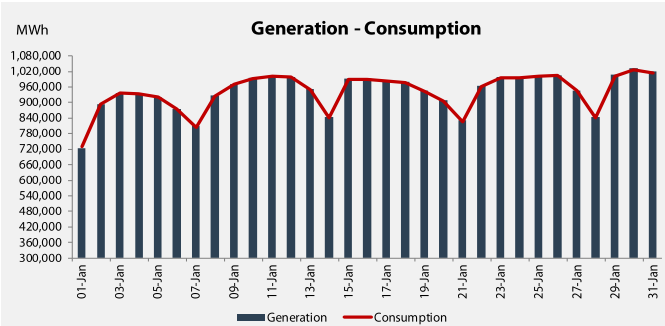
Total electricity generation increased from approximately 27.8 terawatt-hours (TWh) in December 2023 to 29.4 TWh in January, with average daily electricity generation in January increasing by 8.5% compared to the same period of the previous year and increased by 6% compared to the previous month.



Thermal power plants, which provided 53.5% of the electricity generated in December 2023, accounted for 47.8% of total electricity generation in January. Looking at the breakdown of power plants by source, the share of electricity generated by hydroelectric power plants, which was 24.4% in the previous month, rose to 28.3% in January. In the same period, the share of electricity generated by wind increased by 2.7 percentage points to 13.6%, in contrast with the decrease in the previous month. Geothermal power plants provided 3.3% of the total electricity generated. The share of renewable energy power plants in electricity production, which averaged 43.2% in 2023, stood at 52.2% in January 2024.

Dam-type hydroelectric power plants contributed 22.2% to the total generation, while run-of-river type hydroelectric power plants provided 6.1% of the total electricity. Wind and solar power plants provided 20.6% of the electricity generation. Among renewables, wind was the second largest source of electricity generation after dam hydroelectric power plants, with a share of 13.6% in total generation.





Source: TEİAŞ, YTBS Daily Reports, TSKB Economic Research

Licensed power plants generated an average of 943,140 MWh of electricity per day in January, with their highest generation recorded as 1,031,942 MWh on Wednesday, 31 January and their lowest on Sunday, January 7, at 809,168 MWh.

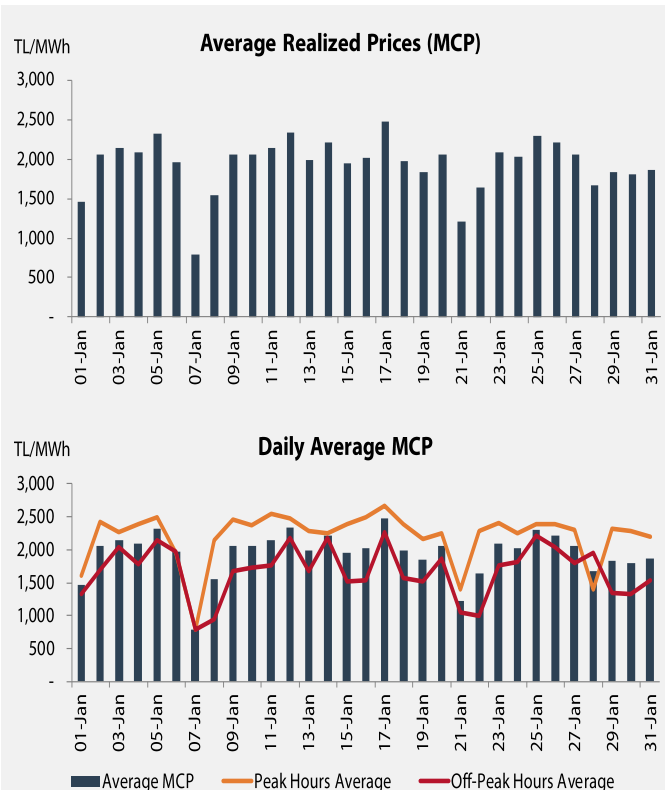
During the same period, daily electricity consumption averaged 940,420 MWh with the highest level of consumption in the month recorded on Tuesday, 30 January at 1,027,196 MWh and the lowest recorded on Sunday, 7 January, at 877.21 MWh.

## Electricity Price Analysis

The daily average market clearing price (MCP) varied between TL 787.20 and TL 2,470.20/MWh in January with an average daily MCP of TL 1,942.9 TL/MWh during the month. The highest daily average MCP was recorded on Wednesday, 17 January (TL 2,470.20/MWh) with the lowest (TL 787.20/MWh) recorded on Sunday, 7 January.

In terms of the hourly data the MCP was realized at its maximum price limit of TL 2,700/MWh for a total of 31 hours in January. The minimum hourly electricity price of TL 102.30/MWh was recorded on Sunday, 7 January, between 12-1PM.

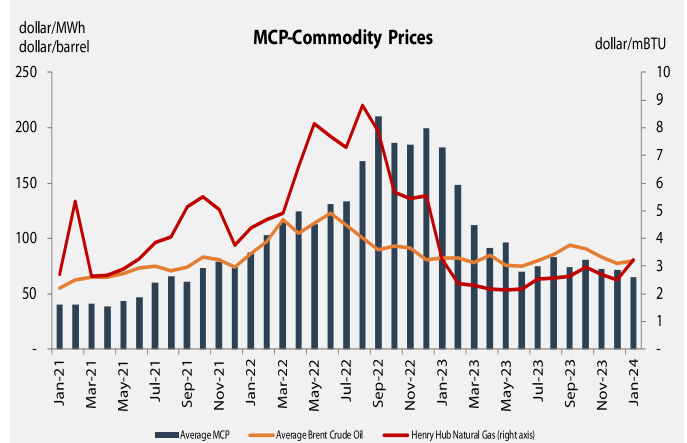
The peak hours average MCP (between 8AM-8PM) was 13.6% higher than the average for all hours, being recorded at TL 2,207.40 /MWh. The price was at its maximum limit of TL 2,700/MWh for 31 hours during peak hours, with the lowest price of TL 102.26 /MWh recorded for one hour during peak hours.



Source: EXIST, TSKB Economic Research

In the same period, the average off-peak (between 8AM-8PM) was TL 1,678.40/MWh. The maximum limit of TL 2,649/ MWh was never realized during off-peak hours, while the lowest price of TL 110.90 / MWh during off-peak hours was recorded between 3-4AM on Monday, 8 January.

The MCP averaged USD 71.4 /MWh in December with the average MCP decreasing to USD 65.6 /MWh in January. The MCP was down by 64.6% in dollar terms when compared to the same period of the previous year.



Source: EPIAŞ, TCMB, EIA, TSKB Economic Research

### Average Commodity Prices

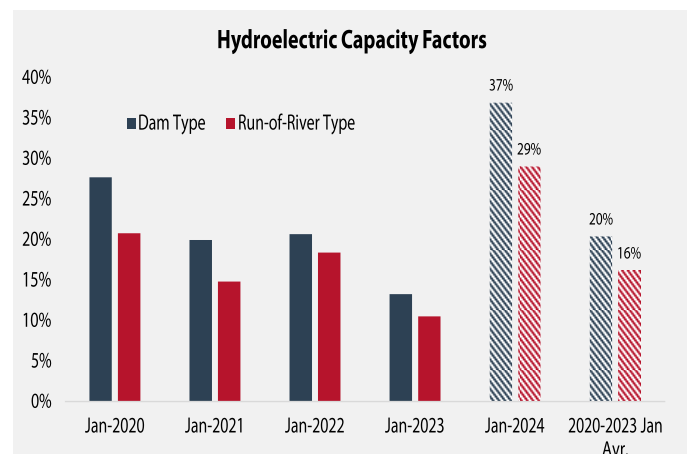
Brent crude oil prices, which averaged USD 77.50 /bbl in December, rose to USD 79.78/bbl in January, an increase of 2.8% on a monthly basis, while remaining 3.3% lower than in the same period of the previous year.

The Henry Hub natural gas contract price, which was USD 2.52 / mbtu on average in December, increased by 28.1% on a monthly basis to reach USD 3.23 /mbtu. A decrease of 1.4% was observed compared to the same period of the previous year.

### Hydroelectric Capacity Factors

Dam type hydroelectric power plants recorded a capacity factor rate of 37% in January 2024 while run-of-river type hydroelectric power plants recorded a rate of 29%. When compared to the capacity factor rates in January of the last 5 years, the rates were at the highest for both types of power plants in January 2024, and exceeded the average values of 20% and 16%, respectively, for January 2020-2023.

While it is seen that the capacity factor rate of dam hydroelectric power plants is higher than run-of-river type power plants for the same periods, the development to stand out was the increase of 25% in the capacity factor rate of run-of-river type power plants compared to previous years.



Source: TEİAŞ, EPIAŞ, TSKB Economic Research





## Sector News

### Local News

- **Studies to be carried out to export electricity from Azerbaijan to Türkiye.** In his statement, the Minister of Energy and Natural Resources, Alparslan Bayraktar, announced that there would be cooperation with Azerbaijan in the field of electricity and that work to export electricity from Azerbaijan to Türkiye have got underway. (29 January, 2024)

- **Energy Market Regulatory Authority (EMRA) announces its forecast for natural gas consumption for 2024 as 51 billion cubic meters (bcm).** At the beginning of 2023, EMRA estimated the natural gas consumption for 2023 as 56 bcm. (29 January, 2024),

- **MENR announces 7,500 megawatts of renewable energy capacity.** In his statement, the Minister for Energy and Natural Resources Alparslan Bayraktar stated that USD 5 billion would be invested in this capacity, targeted for industrialists' own consumption. Mr. Bayraktar added that Türkiye needed 20,000 megawatts in a nuclear energy capacity by 2050, citing that the government aimed to bring the SMR (small modular reactors) Law to the agenda of the Turkish Grand National Assembly this year for SMR, that would meet 5,000 megawatts of this capacity. (26 January, 2024)

- **Two new solar energy-based Renewable Energy Resource Areas (YEKA) determined.** According to the announcement published by the MENR, these will be on two areas with an area of 198,000 square meters, located in Aksaray. (16 January, 2024)

- **TL 75.7 billion allocated to the energy sector in the 2024 Investment Program.** In the 2024 Investment Program published in the Official Gazette, TL 75.7 billion has been allocated to the energy sector, an increase of 70% compared to the previous year, with TL 46 billion of this amount allocated to the Sakarya Natural Gas Field Development Project. (16 January, 2024)

- **Minister of Energy and Natural Resources Alparslan Bayraktar calls for international cooperation in the Rare Earth Elements (REE) reserve in Beylikova, Eskişehir.** Mr. Bayraktar, who attended the ministerial session of the Future Minerals Forum held in Riyadh, stated that Türkiye is ready to cooperate with all countries, especially in Africa, West and Central Asia, for a facility planned to be established to refine 570,000 tonnes of Rare Earth Elements annually. Referring to the establishment of the Rare Earth Minerals Institute in 2020, Mr. Bayraktar said that the reserve in Eskişehir was the second largest REE reserve in the world. (10 January, 2024)

- **Türkiye Electricity Transmission Inc. (TEİAŞ) announces which power plants will benefit from the capacity mechanism in 2024.** In 2024, a total of 43 power plants, including 25 coal and 18 natural gas-fired power plants, will benefit from the capacity mechanism. (January 8, 2024)

- **Capacity of Silivri Underground Natural Gas Storage Facility to increase.** The Minister for Energy and Natural Resources, Alparslan Bayraktar, pointed out that the Silivri Underground Natural Gas Storage Facility was now 100% full, adding that the current capacity of 4.6 billion cubic meters (bcm) was planned to be increased to 5.6 bcm in the coming period. Stating that the energy needs of the facility are met by renewable

energy, Mr. Bayraktar added that an additional wind turbine investment is under consideration. (2 January, 2024)

**- Unit cost of the Renewable Energy Resources Support Mechanism (YEKDEM) for 2024 predicted to be TL 272.53 per MWh on average.** According to YEKDEM unit costs for the January-December 2024 period published in the Official Gazette, the average YEKDEM unit cost in 2024 is predicted to be TL 272.53 /MWh, with a monthly YEKDEM unit cost predicted to fluctuate between TL 391.74/MWh in May and TL 179.51/MWh in December.

**- Hydroelectric power plants removed from capacity mechanism support.** With the regulation published in the Official Gazette, hydroelectric power plants have been removed from the capacity mechanism, while the level of support to be provided for the use of domestic coal and natural gas by the electricity generation plants included in the capacity mechanism has been increased. In addition, it was also announced that TL 323.8 million in support will be given to 44 production plants within the scope of the capacity mechanism for November 2023. (2 January, 2024)

**- Additional customs duty of 30% levied on lithium-ion batteries.** According to the Presidential Decree published in the Official Gazette, the classification codes of lithium-ion batteries were updated and additional customs duties were imposed on direct imports of these products from countries other than the European Union, South Korea and Singapore. (2 January, 2024)

**- Free consumer limit revised.** The free consumer lower limit of 1,000 kilowatt hours (kWh) determined for 2023 was updated to 950 kWh following the decision taken by the Energy Market Regulatory Authority published in the Official Gazette. (2 January, 2024)

## Foreign News

**- Saudi Arabia to reduce its crude oil production capacity by 1 million barrels per day.** Saudi Aramco stated that it would cut its maximum sustainable production capacity to 12 million barrels per day, in accordance with the instructions from the Ministry of Energy. The company announced that it had produced an average of 12.8 million barrels of oil equivalent per day in the 3rd quarter of 2023. (31 January , 2024)

**- USA halts approvals for Liquefied Natural Gas (LNG) exports.** According to the statement issued by the White House, the US Government has temporarily suspended LNG export decisions planned to be made to countries that do not have a Free Trade Agreement. Stating that the current economic and environmental analysis on which the Ministry of Energy bases its export permits was outdated and did not take into account the most current assessments of greenhouse gas emissions, the White House pointed out that this temporary stance would continue until the Department of Energy updates the basic analysis for the relevant approvals. In this process, evaluations will be carried out according to the energy costs of LNG exports in the country, the country's energy security and environmental impacts. However, the White House also stated that this decision would not affect the US's ability to continue supplying LNG to its allies in the short term. (29 January, 2024)

**- International Energy Agency (IEA) publishes Natural Gas Report for the first quarter of 2024.** The report states that natural gas markets, which entered a gradual balancing process in 2023 following the natural gas supply shock in 2022,

would return to growth in 2024 while predicting that global natural gas demand would increase by 2.5% in 2024. (29 January, 2024)

**- IEA warns that global grid infrastructure must double to meet climate commitments.** Pointing out that there was a need to add and renew more than 80 million km of grid infrastructure globally by 2040, the IEA added that renewable energy and electrification technologies, which are able to compete with fossil fuels on the basis of cost, had been left behind due to insufficient grid capacity and infrastructure. (26 January, 2024)

**- IEA publishes its 2024 Electricity report.** According to the report, global electricity supply will grow at a compounded average annual growth rate (CAAGR) of 3.2% from 2023 to 2026. The IEA expects a limited increase in the amount of electricity generation from natural gas by 2026, while electricity generated from coal and other non-renewable sources (oil, waste and other non-renewable resources) will decrease. The report predicts that the CAAGR of total emissions will be - 1.2%, driven by the increase in the amount of electricity being generated from renewable energy and nuclear power. Stating that Türkiye stands out with its investments in solar energy in 2023, the report points out that the share of electricity generated from renewable sources in the country will reach 53% in 2026, with the contribution of hydroelectricity and bioenergy. (25 January, 2024)

**- Renewable Energy Electricity Certificate (I-REC-E) data for 2023 announced.** According to the data announced by the International Tracking Standard Foundation, the number of certificates issued in 2023 increased by 42% compared to 2022 to reach 283 million. The countries with the most certificates were China, the United Arab Emirates, Brazil and Türkiye, with a total of 172 million I-REC-E certificates. Considering the rate of increase in 2023, the 34% increase in the number of certificates issued in Türkiye was the third largest increase rate after the United Arab Emirates and Brazil. (23 January, 2024)

**- IEA publishes its January Oil Report.** The report predicts that the growth in global oil demand, 2.3 million barrels per day in 2023, will slow to 1.2 million barrels per day in 2024 due to the impact of world macroeconomic developments, strict efficiency standards and expanding electric vehicle fleets. The report predicts that the increase in demand in the oil market will be led by China, which is expected to account for an increasing share of the petrochemical sector in 2024. (19 January, 2024)

**- IEA Executive Director Fatih Birol expects a calm oil mar-**



**ket in 2024.** Speaking in Davos, the IEA Executive Director said that he expected calm and moderate pricing in the oil market in 2024. In addition, the Organization of Petroleum Exporting Countries published its "Monthly Oil Market Report" for January, setting out an increase of 2.2 million barrels per day in crude oil consumption for 2024 compared to the previous year, reaching 104.36 million barrels per day, with a further rise of 1.85 million barrels per day for 2025 to 106.21 million barrels per day. (18 January, 2024)

**- European Investment Bank (EIB) to provide over USD 1 billion of financing to Northvolt battery factory.** With the financing, which is part of a USD 5 billion package planned for the expansion of the factory, the capacity of Europe's first circular battery production facility is aimed to increase to 60 gigawatt hours. (17 January, 2024)

**- 510 GW of renewable energy capacity added in 2023, an increase of 50%.** According to the "Renewable Energy 2023" report published by the IEA, this increase corresponds to the sharpest increase in the last 20 years, with China accounting for the largest share of the increase with the increase in renewable energy capacity there being as much as the increase in capacity for the entire world in 2022. However, record increases in renewable energy capacity were also seen in Europe, the USA and Brazil in 2023. The report states that the target of tripling renewable energy capacity by 2030 as set out at the COP 28 cannot be achieved under current conditions, stating that only a 2.5-fold increase can be achieved with current policies and market conditions. The report projects that total renewable energy capacity, which was 3,655 GW in 2023, will reach 7,339 GW in 2028. The report points out that solar and wind power will generate more electricity than hydroelectric power in 2024, with renewable energy sources surpassing coal electricity generation to become the largest source of electricity in 2025. The report also predicts that green hydrogen applications will not reach the desired levels until 2028 due to a lack of buyers and high production costs. (12 January, 2024)

**- French nuclear energy company EDF announces that it will invest in extending the life of the nuclear power plants it operates in the UK.** The investments expected to be approved by the government within security conditions are expected to reach EUR 1.5 billion euros. The UK plans to switch to clean electricity by 2035 with 25% of electricity generated from nuclear power plants by 2050. (11 January, 2024)

**- Qcells announces agreement with Microsoft to supply US-made solar panels.** Qcells will produce a total of 12 GW of solar panels for Microsoft by 2032, within the scope of the strategic cooperation that will continue for 8 years. Production under the agreement will be in QCells' Georgia factory. With this agreement, Microsoft plans to achieve its goal of having renewable energy cover 100% of its operations by 2025. (9 January, 2024)

**- Germany's carbon dioxide emissions fall to their lowest level for 70 years.** According to a study by Agora Energiewende, Germany's carbon dioxide emissions fell to 673 million tonnes in 2023, the lowest level since the 1950s, and 46% lower than the 1990 level. While the study states that increasing prices due to the energy crisis in 2022 will cause a decrease in production and therefore emissions in energy-intensive sectors, it points out that this decline is not sustainable unless climate policies change. Germany targets a 65% cut in greenhouse gas emissions compared to 1990 levels by 2030, to become climate neutral by 2045. (4 January, 2024)

**- Statkraft plans to strengthen hydroelectric power plants in Europe against extreme weather events.** The company decided to invest EUR 700 million in projects to strengthen dams against heavy rainfall. According to the statement, the company plans to strengthen 70 dams within the scope of resilience to climate change and energy security in the next 5-10 years. (3 January, 2024)





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