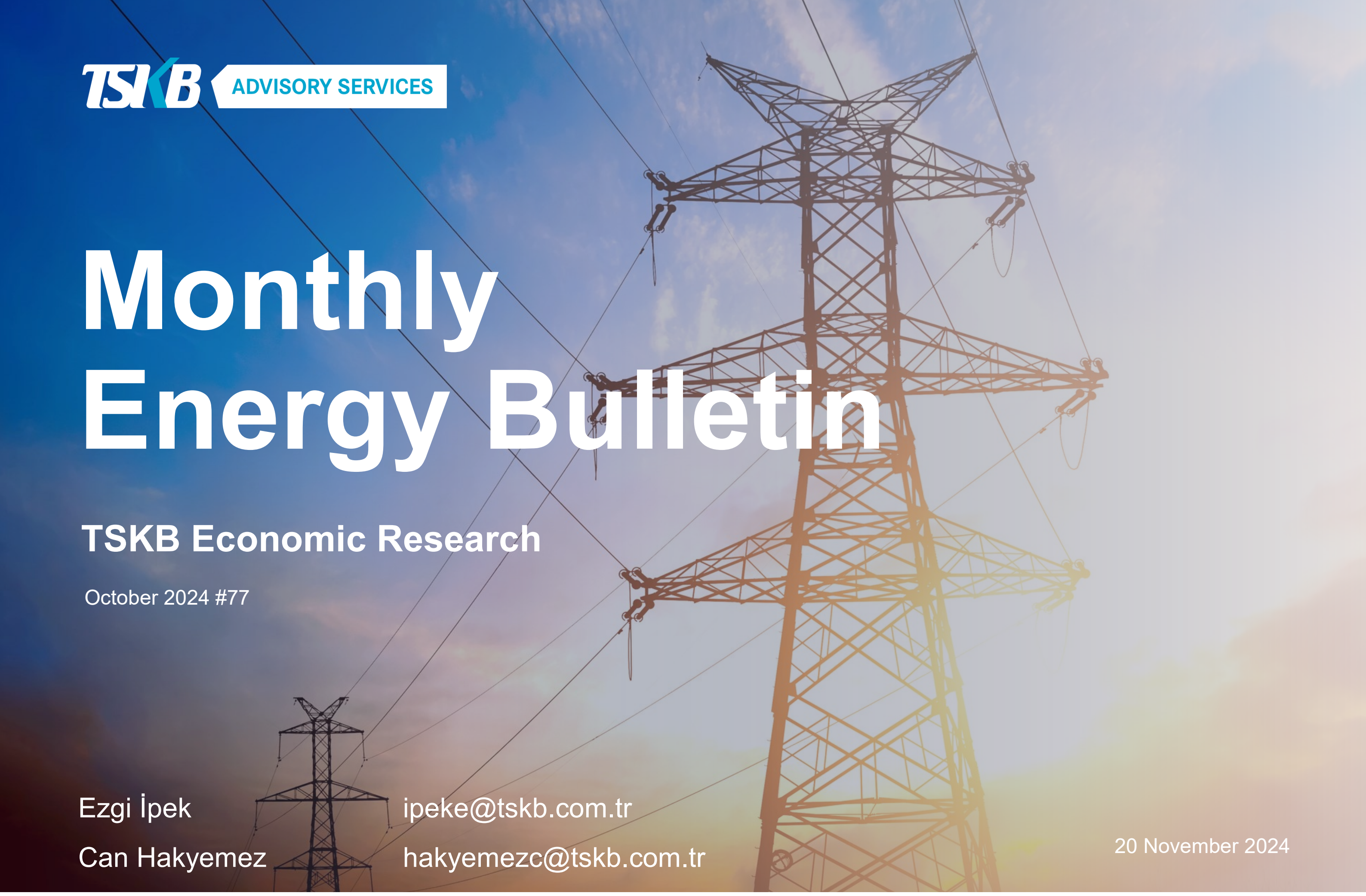

TSKB ADVISORY SERVICES

Monthly Energy Bulletin

TSKB Economic Research

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20 November 2024

Türkiye announces its renewable energy roadmap for 2035

According to the presentation carried out by the Minister of Energy and Natural Resources, Alparslan Bayraktar, at the "Energy Transformation-Renewable Energy 2035" launch meeting, the policy priorities in the roadmap were determined as energy independence, security of supply and the 2053 Net Zero target. According to the roadmap, the installed capacity of wind and solar energy, currently around 30 gigawatts (GW), is expected to reach 120 GW in 2035. In the Turkish National Energy Plan announced in 2022, the target for total installed wind and solar capacity for 2035 was announced as 80 GW.

Mr. Bayraktar stated that 7,500-8,000 megawatts (MW) of installed capacity would need to be commissioned each year in order to achieve the new target, and announced that 2,000 MW of wind and solar power tenders would be issued every year under the new competition model. From the date of signing the new model, it will be possible to sell electricity generated the first 5 years for solar power plants and first 6 years for wind farms to the market at the market clearing price, while a floor price has been introduced for sales at the tender price to be applied for the next 20 years. In this context, the Ministry of Energy and Natural Resources (MENR) has published a Competition Announcement for the Allocation of Renewable Energy Resource Areas (YEKA) and Connection Capacities Based on Wind Energy. The announcement states that five YEKA wind farm competitions with a total capacity of 1,200 MW will be held in Edirne, Kırklareli and Sivas. Mr. Bayraktar added that the government would announce six solar energy -based YEKA tenders of 800 MW at the beginning of November, adding that the competitions would be completed in the first month of 2025. Emphasizing that the government aims to reduce the length of the permit process from 48 months to 2 years or less, Mr. Bayraktar also underlined the need for modern networks and infrastructure, adding that a new investment and reform process of USD 108 billion had been initiated. In October, the YEKA regulation was amended. According to the amendment published in the Official Gazette, preliminary assessments will be based on public and treasury immovables and privately owned immovables using existing maps, energy potential atlases, measurement data, existing and planned network infrastructure and scientific studies for YEKAs. Inquiries will be conducted by the institutions and organizations to be determined by the MENR for candidate YEKAs, or an Environmental Impact Assessment process will be initiated for candidate YEKAs deemed appropriate. If the candidate YEKA is not found to be suitable, or if it is not declared as a YEKA within 2 years, its qualification will be cancelled. After the YEKA competition, in the event that no associate license application has been lodged within the deadline, the YEKA contract will be terminated and all rights, including connection capacity. If the promised domestic goods are not used, a warning will be issued, and if the necessary conditions are not completed within the warning period, the contract will be terminated and the production license will be canceled.

27.3 TWh	2,335.7 TL/MWh
October Gross Generation	Average MCP

5.0%

Daily average licensed electricity generation decreased by 5.0% MoM and increased by 5.3% YoY in October.

Click for details.

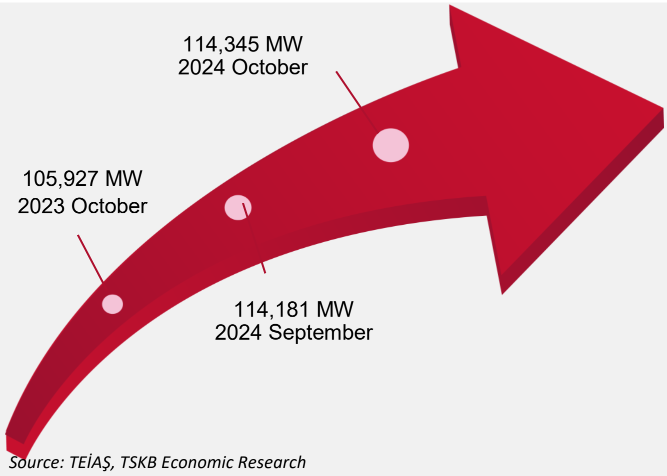
2.5%

Market Clearing Price (MCP) decreased by 2.5% MoM and increased by 3.8% YoY in October.

Click for details.

Installed Capacity Analysis

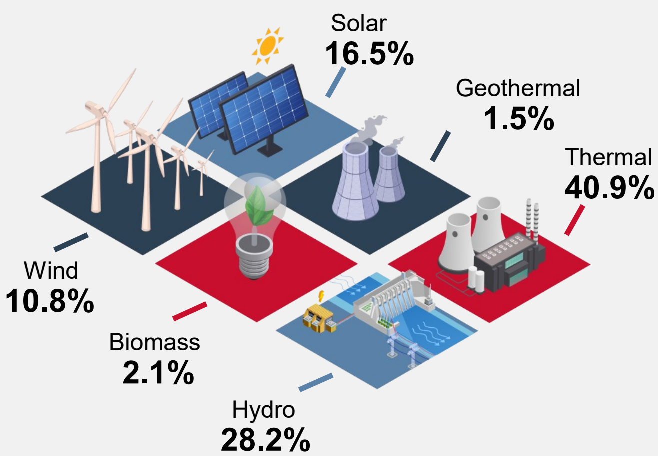
Türkiye's total installed capacity, which stood at 114,181 MW at the end of September 2024, reached 114,345 MW in October. A total of 164.4 MW of net installed capacity was commissioned in October compared to September, with solar power plants accounting for 115.2 MW of this installed capacity. The installed capacity of domestic coal power plants increased by 22.6 MW, the installed capacity of wind power plants increased by 26.9 MW and the installed capacity of hydroelectric power plants increased by 0.9 MW. When compared to the previous month, the installed capacity of natural gas and multi-fuel power plants decreased by 1.2 MW, while there was no change in the installed capacity of other sources.



Source: TEİAŞ, TSKB Economic Research

59.1% of the capacity in operation in October consisted of power plants generating electricity from renewable sources. Thus, the proportion of renewable resources continued to increase, approaching 60%. Hydroelectric power plants accounted for 28.2% of Türkiye's total installed electricity capacity, while the share of wind and solar power plants in total installed capacity stood at 27.3%.

October 2024 Installed Capacity Breakdown

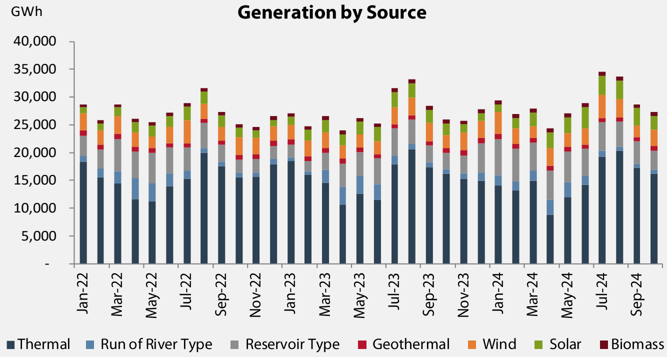


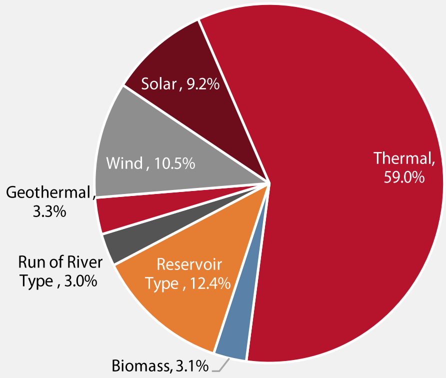
Source: TEİAŞ, TSKB Economic Research

Generation-Consumption Analysis

Total electricity generation stood at 27.3 TWh in October, up from approximately 28.7 TWh in September 2024. However, average daily electricity generation decreased by 5% in October when compared to the previous month, while increasing 5.3% compared to the same period of the previous year.

Generation by Source



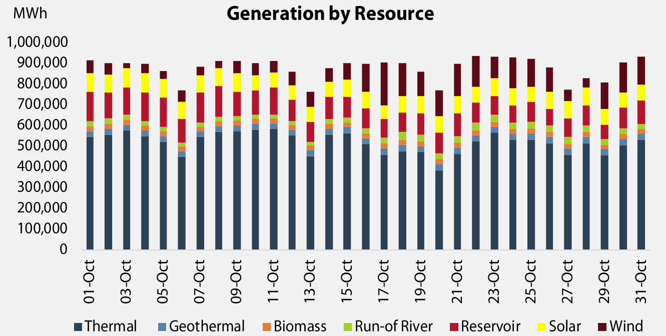


Source: TEİAŞ, YTBS Daily Reports, TSKB Economic Research

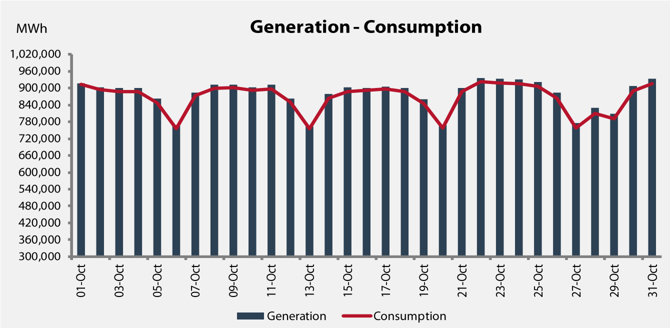
Thermal power plants, which provided 60% of the electricity generated in September, met 59% of the total electricity generated during the month of October. The source-based breakdown of electricity generated from power plants demonstrated that hydroelectric power plants, which accounted for a share of 16.5% of the electricity generated in the previous month, produced 15.3% of total electricity in October. In the same period, the proportion of electricity generated from solar power plants stood at 9.2%, while geothermal power plants provided 3.3% of the total electricity produced.

The share of renewable energy power plants in electricity generation, which was 37.7% in September 2024, edged up to 38.3% in October 2024. In the corresponding period, dam-type hydroelectric power plants contributed 12.4% of the total generation, while river-type hydroelectric power plants met 3.0% of the total generation. In addition, the ratio of electricity obtained from wind and solar power plants in total electricity generation stood at 19.7%. In October, wind was the second largest renewable source of electricity after dam-type hydroelectric power plants, which had a 10.5% of electricity generation.

Generation by Resource



Source: TEİAŞ, YTBS Daily Reports, TSKB Economic Research



Source: TEİAŞ, YTBS Daily Reports, TSKB Economic Research

In October, average daily electricity generation stood at 880,196 megawatthours (MWh). The highest amount of electricity generated in any one day during the month was 937,080 MWh, recorded on Tuesday, October 22, while the lowest level in the same period was 763,398 MWh on Sunday, October 13.

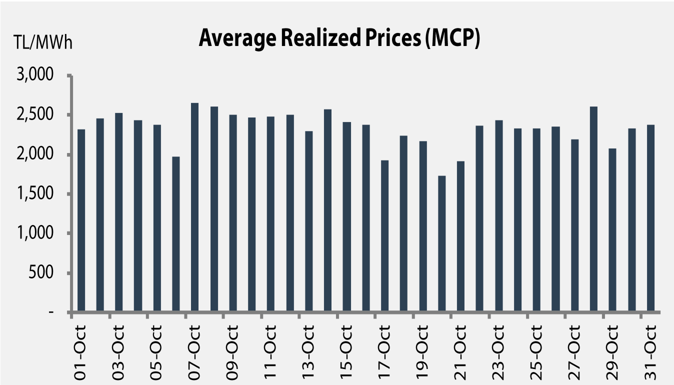
In the same period, the average daily electricity consumption was 867,021 MWh. In October, the highest consumption was recorded on Tuesday, October 22, at 922,567 MWh, with the lowest electricity consumption recorded on Sunday, October 6 at 755,422 MWh.

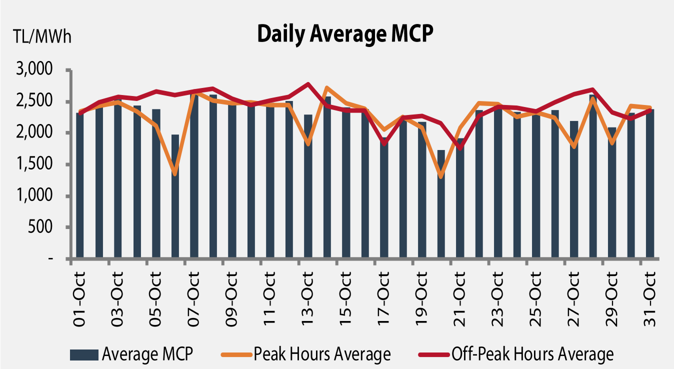
Electricity Price Analysis

The daily average market clearing price (MCP) ranged between TL 1,729.70 /MWh and TL 2,659.30 /MWh. The daily MCP average for October was TL 2,335.70 /MWh. The highest daily average MCP was recorded on Monday, 7 October at TL 2,659.30 /MWh, with the lowest daily average MCP on Sunday, October 20 at TL 1,729.70 /MWh.

Looking at the hourly data, the MCP reached its maximum level of TL 3,000 /MWh for a total of 92 hours in October. The hourly minimum electricity price of TL 99 /MWh was recorded between 11.00-12.00 on Sunday, October 20.

When we analyse the daily MCP for October, the average for peak hours (8AM-8PM) was 3.4% lower than the average value of all hours and was recorded as TL 2,257.2 /MWh. While the maximum limit price of TL 3,000 /MWh was recorded on 68 occasions during peak hours, the lowest price of TL 99 /MWh was only realized for one hour during peak hours.

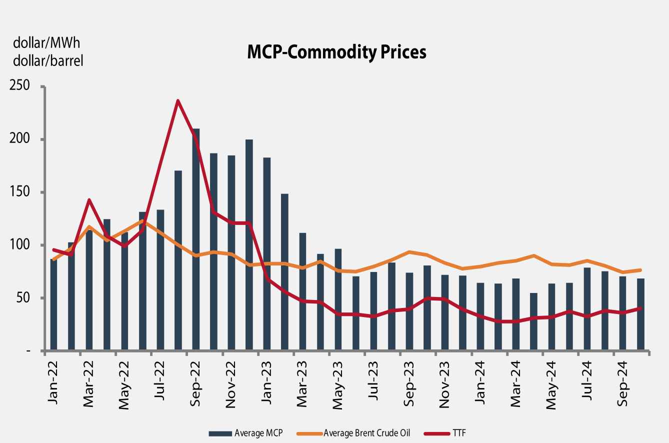




Source: EXIST, TSKB Economic Research

In the same period, the average off-peak hours (8PM-8AM range) rate was TL 2,414.20 /MWh. The maximum limit price of TL 3,000 / MWh was realized over a total of 24 hours during off-peak hours, while the lowest price of TL 1050 /MWh was recorded between 3-4AM on Monday, October 21.

The average MCP decreased from an average of USD 70.40 /MWh in September to an average of USD 68.20 /MWh in October, marking a decline of 15.6% compared to the same period of the previous year in dollar terms.



Source: EPİAŞ, TCMB, EIA, TSKB Economic Research

Average Commodity Prices

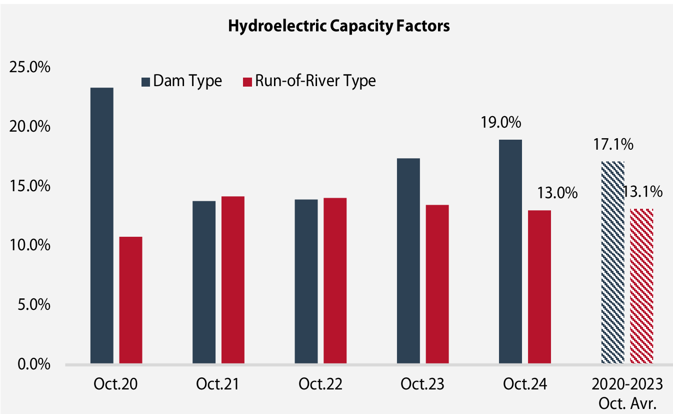
The price of Brent oil decreased by 2.6% on a monthly basis from an average of USD 74.10/ bbl in September to USD 76.10/ bbl in October, which was 16.0% lower than in the same period of the previous year.

The TTF natural gas contract price, which averaged USD 36.20/ MWh in September, increased by 11.2% month-on-month to USD 40.30 /MWh in October, although remaining 18.6% lower than in the same period of the previous year.

Hydroelectric Capacity Factors

The capacity factors stood at 19% for dam-type hydroelectric power plants and 13% for run-of-river type hydroelectric power plants in October 2024. When compared to October 2023, capacity factors in October 2024 were up by 1.6 percentage points for dam-type power plants and down by 0.4 percentage points for run-of-river type power plants. Comparing the months of October over the last 5 years, the capacity factor of run-of-river type power plants decreased by 4.4 percentage points compared to October 2020 (which saw the highest levels) while capacity factor for run-of-river type power plants were down from their October 2021 levels.

The capacity factor of dam-type power plants in October 2024 were 1.9 percentage points higher than the September 2020-2023 average, with the capacity factor for run-of-river type power plants 0.1 percentage points below the average.



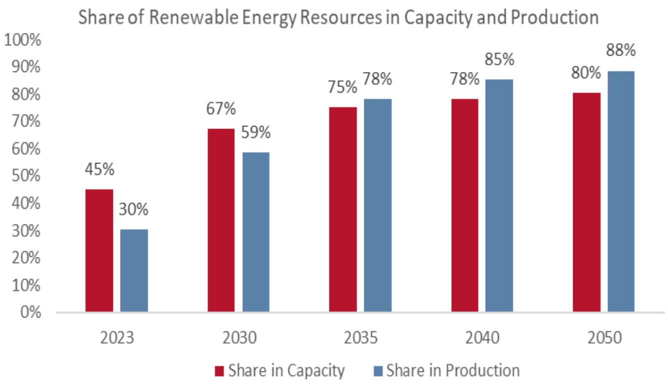
Source: TEIAS, EPIAS, TSKB Economic Research

Are we heading towards the Age of Electricity?

Can Hakyemez **hakyemezc@tskb.com.tr**

Speaking at the launch of the "World Energy Outlook 2024" report published by the International Energy Agency (IEA) on October 16, IEA Executive Director Dr. Fatih Birol stated that the age of electricity is rapidly advancing. Stating that the age of electricity will define the global energy system and will be based on clean energy technologies, the Executive Director stated that China was influential in the essence of this story.

The "World Energy Outlook 2024" report, which is keenly awaited all year round, indicates that global geopolitical developments closely impact the energy sector, with a potential supply risk for fossil fuels such as oil and natural gas, which are imported by many countries, where geopolitical risks are high. According to the report, which deems energy efficiency and increasing the use of clean energy sources as two of the most important ways to reduce vulnerability, the share of electricity in total energy consumption is 20% in 2023. On the other hand, the "Net Zero Emissions in 2050" scenario, which is one of the three scenarios studied within the scope of the report, predicts that this rate will increase to 28% in 2030 and 55% in 2050.



Source: IEA, TSKB Economic Research

According to the same scenario, the proportion of renewable resources in total capacity is expected to increase from 45% in 2023 to 67% in 2030 and 80% in 2050. Looking at the breakdown in electricity supply, solar and wind are expected to assume a higher share of renewable energy resources in electricity generation. In this context, photovoltaic solar energy, which commanded a 38% share in renewable energy capacity in 2023, is expected to increase its share to 58.3% in 2030 and 65.2% in 2050.

Taking into account the share of wind energy, which stood at approximately 24% in the 2023-2050 period, it is estimated that the share of solar and wind energy in total renewable energy capacity will increase from 61.8% in 2023 to 89% in 2050.

While the IEA reflects on the rapid increase in demand for energy systems, led by developing and emerging economies, it emphasizes that with the progress in the energy transition, the global economy can continue to grow without additional oil, natural gas or coal by the end of the decade. The report also emphasizes energy supply security and resilience in ensuring the sustainability of new energy systems, while pointing out that a comprehensive approach to energy supply security should be addressed in a way that covers the transformation of the electricity sector and the resilience of clean energy supply chains.

The "Energy Technology Perspectives 2024" report, also published by the IEA in October, emphasizes that the production of clean energy technologies, including photovoltaic, solar and wind energy technologies, remains a priority for both countries and industrialists. According to the report, the market for the six main clean energy technologies, including photovoltaic solar energy, wind energy, electric vehicles, batteries, electrolyzers and heat pumps, which reached a size of USD 700 billion in 2023, is expected to exceed USD 2 trillion by 2035 with current policies. Pointing out that global investments in clean energy technology production had increased by 50% in 2023 and reached USD 235 billion, the report estimates that total investments will reach USD 200 billion in 2024, despite the recently postponed photovoltaic solar and battery production projects.

Sector News

Local News

- Energy Market Regulatory Authority (EMRA) raises cost forecast for Renewable Energy Resources Support Mechanism (YEKDEM) determined for May-December 2024. Accordingly, the average cost under the YEKDEM for the period of May-December 2024 was raised by 59.9% compared to the forecast published in January 2024, to reach TL 433.30 /MWh.

- SHURA Energy Transformation Center publishes its report, "Net Zero 2023: Socioeconomic Impacts of the Transition to Carbon-Free Energy in Türkiye". According to the report, Türkiye's net-zero roadmap requires transformation in the industry and transportation sectors as well as the energy system. While emphasizing the importance of access to finance for the energy transition, SHURA states that the use of medium-long term revolving financing for energy transition investments will have a positive impact on GDP and employment by ensuring that investments in other sectors are not excluded. The report estimates that the average annual cost of the energy transition between 2021 and 2055 will be USD 26 billion with the benefits amounting to USD 51.4 billion, while emphasizing that more than 55% of the total benefit will come from social welfare impacts (cleaner air, reduced carbon emissions, improved health, effects on the environment and climate change).

- Minister of Energy and Natural Resources Alparslan Bayraktar announces that Türkiye will enter a new era of reform and investment in energy and with improvements made in the permit processes. Stating that a capacity of 80,000 MW had been allocated for investors, Mr. Bayraktar added that the energy bill, which was USD 96.5 billion in 2022, declined to USD 70 billion in 2023 with a similar figure expected for 2024. It was also announced that the 2035 strategy, in which the renewable energy plan for 2035 will be discussed in more detail, will be published in October.

- No plans to raise electricity and natural gas prices in 2024. Minister of Energy and Natural Resources, Alparslan Bayraktar, said in a statement that electricity and natural gas prices would not be raised before the end of the year. Pointing out that a study had been carried out to ensure that groups consuming a high level of electricity benefit less from support mechanisms, Mr. Bayraktar expressed his opinion that the a province-based and climate-based evaluation is needed in natural gas.

- Primary energy consumption decreases by 14% thanks to energy efficiency action plan implemented between 2017 and 2023. In his speech at the Atlantic Council Regional Clean and Safe Energy Conference, the Minister for Energy and Natural Resources, Alparslan Bayraktar, announced that the government planned to reduce energy consumption by 16% and carbon emissions by 100 million tons through USD 20 billion of investment to be carried out until 2030 within the scope of the Second Energy Efficiency Action Plan, including investments in nuclear energy, natural gas and mines. However, Mr. Bayraktar added that Energy Markets Management Inc. (EPİAŞ) would expand its activities in the coming years, and that its public offering may be considered after the expansion of the activities.

- Türkiye gains advantages of flexibility, competitiveness and applicability by generating energy from natural gas. Speaking at the International Gas Forum, the Minister of Energy and Natural Resources Alparslan Bayraktar pointed out that it was necessary to switch from coal to natural gas in order to reduce global warming, adding that generating energy from natural gas provides advantages such as flexibility, competitiveness and applicability for Türkiye. Stating that Türkiye has an input capacity of 80-85 bcm, Minister Bayraktar stated that the country's system could receive approximately 63 bcm of natural gas through pipelines.

- Türkiye signs memorandum of understanding with China on natural resources and mining. According to the statement issued by the Minister of Energy and Natural Resources, Alparslan Bayraktar and the Minister of Natural Resources of China signed the "Memorandum of Understanding on Cooperation in the Fields of Natural Resources and Mining". In a statement within the scope of the International Mining Conference, Mr. Bayraktar stated that the government aimed to establish an industrial facility that will purify 570,000 tons of rare elements annually, and expressed their readiness to cooperate with all countries in Africa, the West and Central Asia regions.

- MENR publishes Draft Regulation on the Amendment of the Regulation on the Acceptance of Electricity Generation and Electricity Storage Facilities. While the draft includes amendments on the inclusion of electricity storage systems in the scope of the existing regulation, it also includes new definitions such as battery management system, electricity storage unit and energy management system. The Draft, which includes proposals for storage units as well as electricity storage facilities, will be open for feedback until October 31, 2024, according to the announcement.

- TSKB and Toroslar EDAŞ sign USD 100 million loan agreement to strengthen energy infrastructure in the earthquake-affected regions. The funds provided to Toroslar EDAŞ, an Enerjisa Enerji distribution company, are intended to be used for the development and modernization of the electricity distribution network in the earthquake zone.

- Enerjisa Üretim to receive loan of over USD 1 billion for YEKA-2 project. In the loan agreement signed for the financing of the 750 MW part of the project, loan providers include institutions such as the US International Development Finance Corporation, JP Morgan, HSBC, Deutsche Investitions and Akbank. The loan is scheduled to be completed by the end of 2034 at six-month intervals after a grace period of 1 ½ years.

- EMRA publishes "Electricity Market Sector Report" and "Natural Gas Market Sector Report" for August. Accordingly, electricity consumption in August decreased to 33.5 TWh, a fall of 0.5% compared to August 2023. Electricity consumption was 34.4 TWh in July. Billed electricity consumption increased by 4.1% year-on-year to 27.6 TWh. In addition, natural gas consumption decreased to 3.3 billion cubic meters (bcm), a fall of 3.6% when compared to the same month of the previous year, while 50.3% of the natural gas consumed was used by the conversion/cycle sector. Natural gas imports, on the other hand, increased by 5.8% compared to August 2023 to reach 3.8 bcm.

- MENR determines 12 YEKAs in three provinces according to announcement published in the Official Gazette. Three of the new YEKA areas are located in the Gazipaşa district of Antalya, while three are in the Bulanik, Merkez and Korkut districts of Muş, with three in the Özalp district of Van and three in the Başkale district of Van.

- Citizens whose consumption is more than double the national average to start to pay the real cost of electricity from February 2025, according to latest EMRA regulation. According to statements from the Minister for Energy and Natural Resources, Alparslan Bayraktar, households in Türkiye which consume more than double the average monthly electricity consumption of 200 kilowatthours (kWh) will not be able to benefit from the state support applied to electricity. Stating that this application is aimed at providing state support to those in real need, Minister Bayraktar emphasized that 1.2 million subscribers may be affected by this situation

Foreign News

- Global hydrogen demand reaches 97 million tons in 2023. According to the "Global Hydrogen Outlook 2024" report published by IEA, global hydrogen demand reached 97 million tons, an increase of 2.5% compared to 2022. Stating that the demand is concentrated in the refining and chemical sectors, the report states that almost all of the hydrogen produced to meet the demand is provided from fossil sources. Pointing out that the electrolyser projects announced all over the world have reached 520 gigawatts, the report adds that low-emission hydrogen production could reach 49 million tons per year by 2030 if these projects are taken into account.

- International Renewable Energy Agency (IRENA) publishes its "Renewable Energy and Employment 2024 Report". According to the report, the number of people employed in the global renewable energy sector increased from 13.7 million in 2022 to 16.2 million in 2023, with China accounting for 46% of the employment. China was followed by the European Union with 1.8 million jobs in the sector and Brazil (1.6 million). In 2023, 44% of global renewable energy employment was related to photovoltaic solar energy. IRENA emphasizes the importance of the talent of the workforce required for the energy transition, while underlining the need to create job opportunities for women, young people, minorities and disadvantaged groups.

- IEA publishes report on "Innovation Policies in Clean Energy in Emerging Markets and Developing Economies (EMDEs)". The report notes that EMDEs' energy and climate policy includes increasingly ambitious targets, highlighting that these countries face challenges related to tight public budgets, social needs, competition, research and infrastructure. Presenting 11 different case studies on EMDEs' policies and experiences supporting energy innovation, the report states that the energy transition will succeed when it aligns with national visions for economic and social development. The IEA emphasizes that EMDEs can have a dynamic impact on competition, enterprise and innovation, while emphasizing international participation and development finance to build local innovation ecosystems more quickly.

- IEA published the "Renewable Energy 2024" report. According to current policies, 5,500 GW of new renewable energy capacity is expected to be commissioned by 2030, the report said, pointing out that this capacity falls short of the target of tripling renewable energy capacity by 2030. The report predicts that China will account for 60% of global capacity expansion by 2030, while the European Union and the United States will double the growth rate of renewable capacity between 2024 and 2030. The IEA says that by 2030, new solar capacity will account for 80% of the growth in global renewables, wind power capacity will double and hydro-electric capacity will remain stable, while the role of other renewables such as bioenergy, concentrated solar power and wave energy will be reduced due to a lack of policy support. According to the accelerated scenario in the report, global renewable energy capacity will reach 11,000 GW in 2030, with China, Europe, India and the USA accounting for 80% of this capacity. However, the use of renewable electricity in the transport, industry and building sectors is expected to account for more than three-quarters of the increase in global energy demand. The IEA highlights the need for grid infrastructure and system integration of renewable energy, as well as policy support for renewable fuels such as bioenergy and hydrogen.

- Countries have significant opportunities to turn methane commitments into action. According to the IEA's study, if the Nationally Determined Contributions (NDCs) are updated in February 2025 and successfully implemented by 2030, greenhouse gas emissions could fall by an additional 1.2 gigatonnes (Gt) of CO_2e. This is equivalent to eliminating all emissions from international aviation and shipping. In its study, the IEA emphasized that methane emissions would decrease by approximately 50% between 2023 and 2030 with the full and timely implementation of countries' existing methane commitments, while the reduction in emissions will be approximately 20% in the current situation. The IEA recommends that countries increase the measurement, monitoring and reporting of methane emissions, introduce tried-and-tested policies, and establish sectoral mitigation measures to achieve reductions.

- IEA publishes "Global Natural Gas Security Review 2024" report, which includes the Natural Gas Market Report for the fourth quarter of 2024. The report notes that after the supply shocks in 2022 and 2023, natural gas markets are returning to significant growth in 2024. While it expects global natural gas demand to reach all-time highs in 2024 and 2025, it also emphasizes that the global natural gas balance remains fragile due to price volatility caused by geopolitical risks. While the IEA stated that natural gas consumption increased by 2.8% year-on-year in the first three quarters of 2024, it expects global demand for natural gas for the 2024 full year to increase by more than 2.5% to reach 4,200 bcm, with 45% of this demand coming from the Asia Pacific region.

- IEA publishes its "World Energy Outlook 2024" report. The report states that with 560 GW of new capacity in 2023, renewable energy resources are integrating into the energy system more rapidly. However, pointing out that there are regional differences in the pace of the energy transition, the report expects photovoltaic solar production in China to exceed the total electricity demand of the United States in 2023 by the early 2030s. While the IEA states that the demand for energy systems is increasing rapidly, led by developing and emerging economies, it emphasizes that with the progress in the energy transition, the global economy could continue to grow without additional oil, natural gas or coal by the end of the decade. The report underlines that emphasis needs to be placed on energy supply, security, resilience and flexibility for the new energy systems to be sustainable, and that the economic benefits of the transformation should be shared. The report highlights that a comprehensive approach to energy supply security should be addressed to include the transformation of the electricity sector and the resilience of clean energy supply chains. In this vein, although the energy transition has gained momentum with policies and strategies, the IEA states that the elections to be held by countries representing half of the global energy demand in 2024 create uncertainty for the energy transition.

- IRENA publishes its report on "Just and Inclusive Energy Transition in EMDEs". The report focuses on the energy planning and financing of EMDEs, sustainable fuels and their social dimension. According to the report, while accelerating the energy transformation of EMDEs, which are responsible for two-thirds of global energy-related carbon emissions, is important within the framework of the 1.5 ℃ target, renewable energy investments need to be stepped up to achieve the energy transformation. However, the vast majority of global energy investments, which exceeded USD 2 trillion for the first time in 2023, were directed to major EMDEs such as China, India, and Brazil, while the rest of the world received only 10% of the investments. IRENA emphasizes the need for risk mitigation tools and the strong use of public resources to increase energy investments in EMDEs and ensure a fair and inclusive energy transition process.

- Renewable energy capacity added in 2023 not in line with the target of tripling this capacity by 2030. According to a newly released report from IRENA, an additional 473 GW of renewable capacity was added in 2023. Of this capacity, 346.9 GW came from photovoltaic solar power, while renewable energy capacity additions, excluding photovoltaic solar, were below the level required to meet the COP28 target of tripling renewable energy capacity by 2030. IRENA states that current national plans and targets will provide only half of the required growth in renewable energy by 2030, and that three times more onshore wind capacity, six times more offshore wind and bioenergy capacity, and 35 times more geothermal power capacity will be needed globally compared to current capacities in 2023. However, IRENA states that policies and regulations are critical to achieving the goal, emphasizing the importance of a skilled workforce, financing, international cooperation and infrastructure.

- Organization of the Petroleum Exporting Countries (OPEC) slightly reduces its growth forecast for oil demand in 2024. According to OPEC’s Monthly Oil Market Report, the oil demand forecast for 2024 has been revised down from 104.24 million barrels per day in the previous month’s report to 104.14 million barrels per day in the October report. OPEC also updated its 2025 demand forecast from 106.0 million barrels per day to 105.8 million barrels per day.

- Nuclear power plants generated around 2,600 TWh of electricity worldwide in 2023. According to the "World Nuclear Performance Report 2024" published by the World Nuclear Organization, nuclear power plants generated 2,600 TWh of electricity, meeting 9% of global electricity needs in 2023, increasing their generation by 58 TWh when compared to the previous year. Describing the performance of nuclear power plants as "excellent", the report pointed out that the number of nuclear reactors has increased by 80% in the last 20 years to reach 437 in 2023. In the report, which also includes studies in this field in Türkiye, it was stated that Akkuyu Nuclear Power Plant will be able to generate electricity in the 2025-2028 period.

- Google reaches agreement with Kairos Power for the purchase of electricity generated from nuclear power. According to the statement issued by Google, Google and Kairos Power have reached an agreement on the purchase of electricity generated from small modular reactors (SMR), the first of which is planned to be commissioned by Kairos Power in 2030. The agreement, which also plans to add additional reactors in 2035, aims to feed the US power grid with carbon-free electricity with a total capacity of 500 megawatts.

- European Union (EU) countries support use of nuclear energy. According to a media report, EU member states have agreed that they should call for acceleration in "low-emission technologies", including nuclear power. According to the same report, within the scope of the meetings, the governments of the Netherlands and France signed an agreement to increase cooperation in nuclear energy.

- Amazon signs three new agreements to support the development of nuclear energy projects. According to the company's statement, the projects signed as part of the energy transition plan to meet the growing energy demand include the construction of SMR.

- Increasing investments in data centers raise uncertainties over electricity demand. According to the IEA study, while the annual electricity capacity of large-scale data centers, which are becoming increasingly common, may exceed 100 MW, the electricity demanded by data centers is expected to grow rapidly by 2030 with current policies. According to the study, the growth of data centers are not compatible with the rapid construction times and the expansion and strengthening of networks, emphasizing that pressure on local networks will gradually increase. While the IEA warns that the impact of data centers and Artificial Intelligence applications on the energy sector needs to be evaluated more comprehensively, policymakers highlight the need for public-private sector cooperation where the technology and energy sectors come together.

- Federal Network Agency (Bundesnetzagentur), which regulates the energy market in Germany, approves the main hydrogen network, which is planned to be operational by 2032. The hydrogen mainnet is intended to connect Germany's regions that are expected to become major hydrogen consumption and production hubs. The total investment cost of the hydrogen network, which will cover a total of 9,040 kilometers of pipelines, 60% of which will be natural gas pipelines to be converted to hydrogen, is expected to be EUR 18.9 billion.

- Manufacturers of ingot and wafers used in U.S. solar panels to be eligible for 25% investment tax credit for new installations. This incentive is aimed at reducing Chinese dominance in the local market, while encouraging the construction of the early stages of the solar energy supply chain domestically.

- **Development of Artificial Intelligence affecting dynamics of the energy market by increasing demand for data centers.** According to a study carried out by Mckinsey & Company, demand for data centers in Europe is expected to increase from the current 10 GW to 35 GW by 2030. In order to achieve this increase, more than USD 250-300 billion needs to be invested in data center infrastructure. With the accelerating energy transformation, renewable and low-carbon energy sources of energy are expected to lead the way in meeting the energy demand of data centers. Mckinsey & Company emphasizes that the future of data centers, which are critical to Europe's digital infrastructure and competitiveness, depends on strategic choices regarding location, grid and energy management.

- Production of clean energy technologies remains a priority for governments and industrialists. According to the "Energy Technology Perspectives 2024" report published by the IEA, the six major clean energy technologies, including photovoltaic solar, wind, electric vehicles, batteries, electrolyzers and heat pumps commanded a market of USD 700 billion in 2023. Within the framework of current policies, this market is expected to exceed USD 2 trillion dollars by 2035. Pointing out that global investments in clean technology production increased by 50% in 2023 to reach USD 235 billion, the report estimates that total investments will amount to USD 200 billion in 2024 despite the recently postponed photovoltaic solar and battery production projects. The report states that China maintains its position as the cheapest country in the production of clean technology, while the production of clean energy technologies in European Union countries depends on the success in achieving the targets in the Net Zero Industry Law.

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