

Monthly Energy Bulletin

TSKB Economic Research

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Maximum price limit used in Day-Ahead Market and Balancing Power Market updated twice

The Energy Market Regulatory Authority (EPDK) increased the maximum price limit of the Day-Ahead Market and the Balancing Power Market to TL 2,750 per megawatt-hour (MWh) initially and then to TL 3,200/MWh, in May.

Since 2015, the maximum price limit of the Day-Ahead Market and Balancing Power Market had been applied as TL 2,000 /MWh, and was updated with a decision taken in October 2020, when it started to be applied as double the weighted average market clearing price (MCP) for the previous 12 months, by taking the existing calendar month as a basis starting from the calendar month two months' prior, with a condition of not exceeding TL 2,000 /MWh. One year after this date, also in response to the rise in global commodity prices, the maximum price limit was updated again to triple the weighted average market clearing price (MCP) of the previous 12 months.

In the following process, with the EPDK decision published in the Official Gazette dated 30 March 2022, the maximum price limit, estimated at TL 2,500 /MWh by 1 April 2022, was updated twice again in May.

First of all, the price was set at TL 2,750 /MWh with the decision published in the Official Gazette dated 19 May 2022. Thereafter, with EPDK's decision published in the Official Gazette dated 28 May 2022, it was to be applied as TL 3,200 /MWh with effect from 1 June 2022.

25.18
TWh

May Gross
Generation

1,763.03
TL/MWh

Average
MCP

-6.0%

Daily average licensed electricity generation decreased by 6.0% MoM and 0.3% YoY in May.

[Click](#) for details.

-3.7%

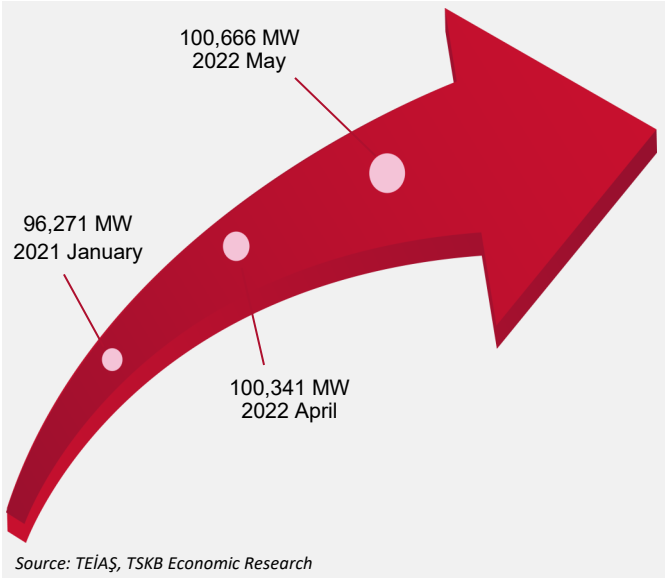
Market Clearing Price (MCP) increased by 388.9% YoY and decreased by 3.7% MoM in May.

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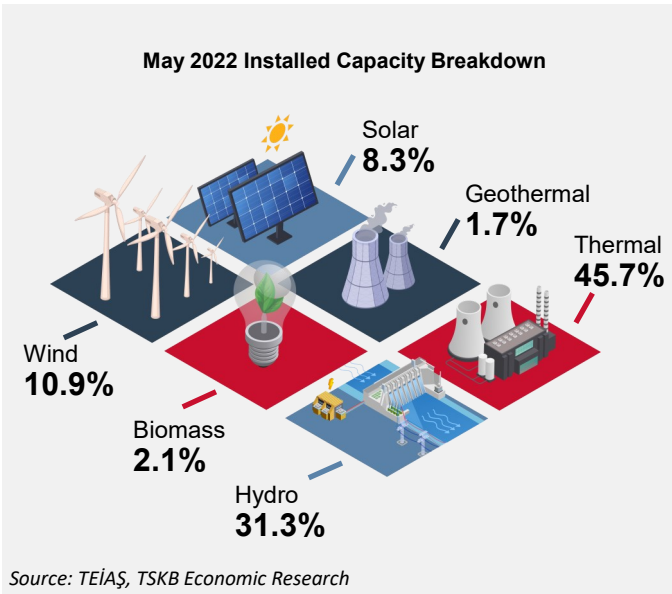


Installed Capacity Analysis

Turkey's total installed power, which had reached 96,271 megawatts (MW) at the end of January 2021, reached 100,666 MW by the end of May 2022. The 251 MW increase in the installed capacity of solar energy power plants, in comparison with the previous month, was the biggest driver of the increase in May. In the same period, there was a 47.8 MW increase in the total net installed power of wind farms and an increase of 7.4 MW in the total net installed capacity of hydroelectric power plants.

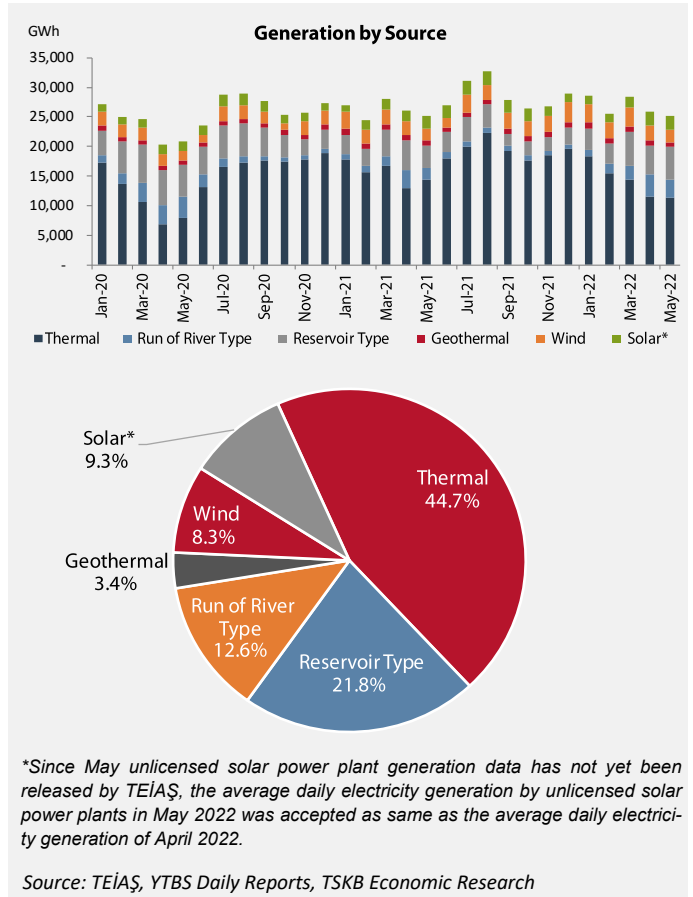


Power plants generating electricity via renewable sources accounted for 54.3% of the installed capacity of operating power plants in May, thus remaining above 54%. Hydroelectric power plants account for 31.6% of Turkey's total installed electricity power capacity while the share of wind and solar power plants in total installed power has reached 18.6%.



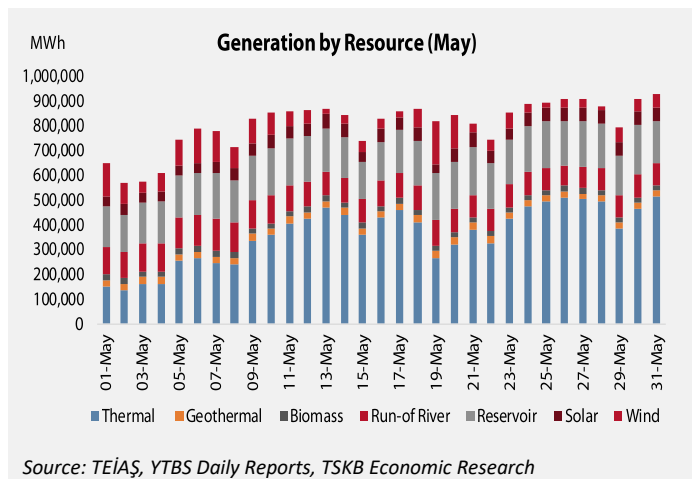
Electricity Generation Analysis

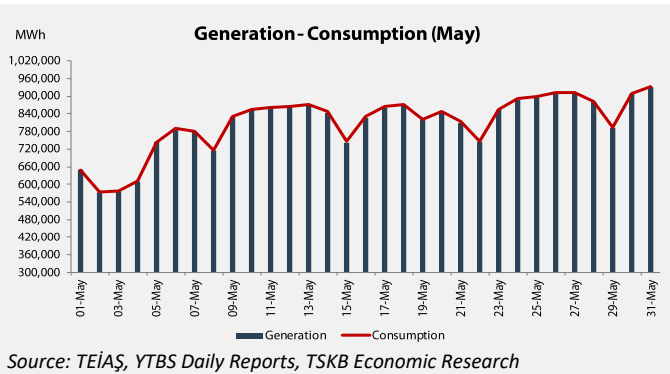
Turkey's total electricity generation, which was approximately 25.92 terawatt-hours (TWh) in April, was realized at 25.18 TWh in May, marking a 6% increase in the daily average electricity generation in May compared to April. When compared with the same period of the last year, there was a decline of 0.3% in daily average electricity generation.



The thermal power plants, which provided 44.6% of the electricity produced in April, generated 44.7% of all electricity in May. Hydroelectric power plants, which accounted for 33.4% of electricity generation in the previous month, accounted for 34.3% of all electricity generation in May. In the same period, the amount of electricity generated by the wind farms decreased 1.7% in comparison with the previous year, to 8.3%.

The average share of renewable energy power plants in electricity generation, which was 36.0% in 2021, was realized at 55.3% in May 2022. In the same period, dam-type hydroelectric power plants contributed 21.8% to total generation while run-of-the-river hydroelectric power plants accounted for 12.6% of total electricity generation.





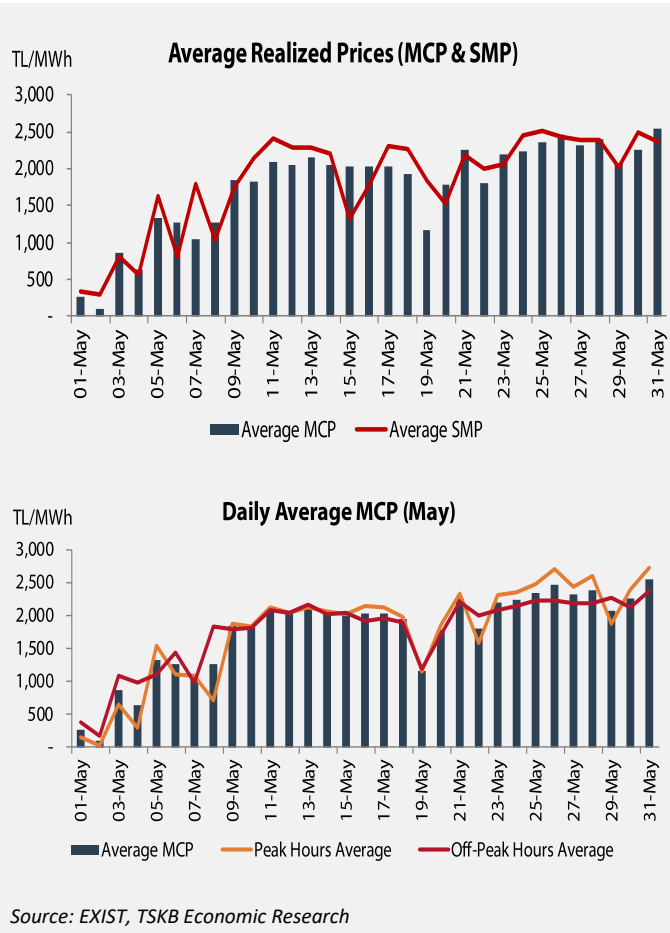
Average daily electricity generation stood at 807,786 MWh in May. The highest level of generation from licensed power plants was realised on Tuesday, May 31st at 930,777 MWh with the lowest generation from licensed power plants in the same period realized on Monday, May 2nd, at 572,528 MWh.

In the same period, daily average electricity consumption was realized at 933,175 MWh. The highest consumption in May was realized on Tuesday, May 31st, at 933,175 MWh, while the lowest consumption was recorded on Monday, May 2nd, at 572,207 MWh.

Electricity Price Analysis

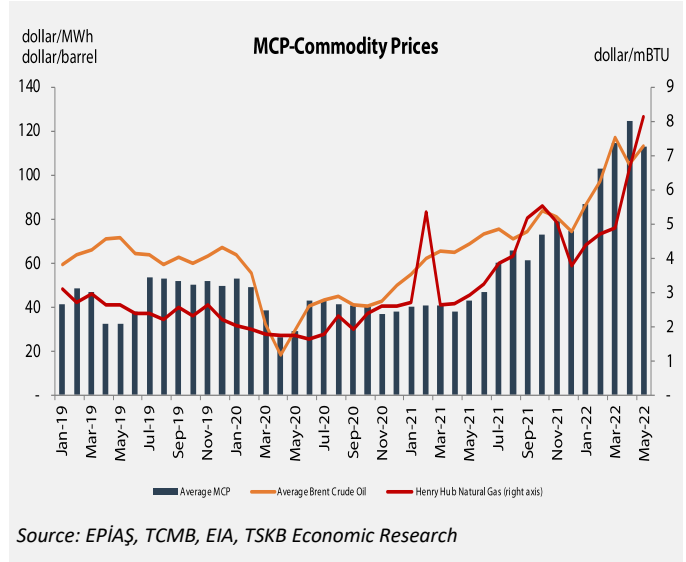
In May, the daily average market clearing price (MCP) and system marginal price (SMP) were realized between TL 105 /MWh and TL 2,552 /MWh. The average MCP in May was TL 1,763.03 /MWh, while the average SMP in the same period was TL 1,825.31 /MWh. The lowest average MCP was recorded on Monday, May 2nd at TL 105.83 /MWh with the lowest average SMP realized on the same day at TL 289.72 /MWh.

In terms of the hourly data, the MCP in May realized the determined maximum price limit of TL 2,750 /MWh for 78 hours, with the SMP reaching the maximum for 94 hours. In the same period, the SMP was recorded at zero for 70 hours.



An analysis of the MCP for May finds an average peak hours rate (between 8PM and 8AM) of TL 1,763.08 /MWh, marking a limited increase in comparison with the daily average value. The maximum price limit of TL 2,750.00 /MWh was recorded in peak-hours for 43 hours while the minimum price for peak hours, at TL 1.00 /MWh, was realised on Monday, May 2nd.

In the same period, the average off-peak hours rate (between 8PM and 8AM) was TL 1,762.98 /MWh. The maximum price limit of TL 2,750.00 /MWh was realised for 35 hours during off-peak hours. The minimum price of TL 0.99 /MWh was recorded on Monday, May 2nd during off-peak hours.



The average MCP in April was USD 124.44 /MWh while the average MCP in May decreased to USD 112.64 /MWh – 161.1% higher than the same period of the previous year.

Average Commodity Prices

Brent crude oil prices, which averaged USD 104.60 per barrel in April, increased by 8.4% on the month to reach USD 113.30 per barrel in May - 65.4% higher than in the same period of the previous year.

The contract price for Henry Hub natural gas, which averaged USD 6.6 /mBtu in April, rose 23.3% on the month to reach USD 8.1 /mBtu on average in May. This is 179.7% higher than in May 2021.





Sector News

Local News

- **Vice President Fuat Oktay said that the first natural gas extracted from the Black Sea would be used in the first quarter of 2023.** Vice President Oktay stated that the drilling of 7 wells had been completed and four wells were in the process of opening. He added that this natural gas would be ready to use in the first quarter of 2023. The Minister of Energy and Natural Resources, Fatih Dönmez, gave a speech at the same event, where he added that 4,200 people were working on the project and that the pipeline would begin to be laid in the first half of June. (30 May 2022)

- **The Minister of Energy and Natural Resources Fatih Dönmez announced that the domestic generator would start mass generation.** In his speech at the "Target 2053: The Future of Thermal Power Plants Workshop" organized by Elektrik Üretim.A.Ş., Fatih Dönmez stated that the government would produce domestic turbines in due course while mass production of domestic generator gets underway. He added that both the generator and turbine would be used in Hasan Polatkan Dam. Reiterating that required clean energy investments were continuing in order to ensure existing thermal power plants generate power with lower emissions, Mr. Dönmez stated that the chimneys of 13 thermal power plants which had been previously determined were brought in line with the conditions determined in the legislation. (26 May 2022)

- **Wind and solar energy resources save USD 7 billion in energy imports.** According to a study conducted by EMBER, the generation of electricity from wind and solar energy has saved USD 7 billion in energy imports in Turkey over the last 12 months. In the study, which highlights the 7-fold increase in natural gas prices in global markets over the last year, it was stated that 46.3 TWh of electricity had been generated by wind and solar power plants between May 2021 and April 2022, do-

ing away with the need to import that much energy. In addition, according to the analysis, assuming that natural gas prices remain at their current levels in the coming months, wind and solar energy are expected to lead to savings of approximately USD 700 million every month in Turkey. (25 May 2022)

- **Energy efficiency brings USD 1.56 billion in savings.** At the opening of the International Energy Summit which was hosted by the Independent Industrialists' and Businessmen's Association (MUSIAD), the Minister of Energy and Natural Resources Fatih Dönmez made a speech where he stated that the USD 6.45 billion in energy efficiency investments undertaken in the last 5 years had already achieved USD 1.56 billion in savings. Mr. Dönmez remarked that more investment had been made in energy efficiency in 2021 than any other year, with also the highest level of savings realized during the year. He added that energy efficiency practices had prevented 15.61 million tonnes in carbon emissions in 2021. (23 May 2022)

- **Deadline for YEKA GES-5 competitions updated.** According to the decision taken by the Ministry of Energy and Natural Resources published in the Official Gazette, the applications for the Renewable Energy Resource Areas Solar Power Plants -5 (YEKA GES-5) competitions, which had been set for 31 May 2022, will be extended to a new date to be announced later. (18 May 2022)

- **TL 50 billion to be invested in natural gas distribution over the next 5 years.** According to the "Sector Report for 2021" published by the Turkish Natural Gas Distributors Association (GAZBIR), a total of TL 2.7 billion was invested in natural gas distribution in 2021, while the number of natural gas subscribers reached 18.5 million, marking an increase of 6% YoY. The report, which stated the plan to invest TL 50 billion over 5 years in natural gas distribution in the 2022-2026 period, set out the target of providing access to natural gas for 94% of Turkey's districts. (17 May 2022)

- **EPDK increases average electricity wholesale price for 2021.** According to the board decision published in the Official Gazette, within the scope of the Law on the Use of Renewable Energy Resources for the Purpose of Electric Power Generation, the Turkey Average Electricity Wholesale Price for 2021 has been set at 51.47 kurus per kilowatt-hour. (16 May 2022)

- **Natural gas tariff left unchanged for May.** According to the tariff table for May published on the website of Boru Hatları ve Petrol Taşıma A.Ş. (BOTAŞ), the sales price which BOTAŞ will apply to natural gas distribution companies for residential consumers has been left unchanged at TL 2,511 for 1,000 cubic meters of natural gas. On the other hand, the tariff for the industrial subscribers has been raised to TL 9,450 for 1000 cubic meters of natural gas. In the tariff for electricity generation purposes, the tariff has been left unchanged at TL 10,750 per 1,000 cubic meters. (5 May 2022)

- **Turkey ranks first in Europe and fourth in the world in solar panel production.** The Minister of Energy and Natural Resources, Fatih Dönmez, stated that Turkey ranked first in Europe and fourth in the world in terms of solar panel production, with the goal of being in the top three in the world. According to press reports, ETKB data indicate that solar power panels with a generation capacity of 185,000 megawatts (MW) are being manufactured worldwide each year. China ranks first in the world with a production capacity of 124,000 MW. China is followed by Vietnam (14,000 MW) and South Korea (9,200 MW). Turkey ranks fourth in the world with a production capacity of 7,960 MW. (05 May 2022)

News From Abroad

- **Fatih Birol, President of the International Energy Agency (IEA), said that more importance was being given to the renewable resources.** President Birol gave a speech at the World Economic Forum (WEF) where he stated that the world was going through a global energy crisis and that there were supply constraints in oil, natural gas and coal at the same time. While drawing attention to the fact that other countries are being used as a substitute for Russia's energy resources, the IEA President remarked that more importance was being given to renewable resources in general, with some countries which had abandoned nuclear power now starting to put nuclear on their agenda again. Pointing to the possibility of an increase in the tendency towards coal power, Mr. Birol cautioned that this would put reaching the climate targets at risk. (27 May 2022)

- **Organization of Petroleum Exporting Countries (OPEC) authorizes Iraq to increase oil production to 4.5 million barrels per day.** According to a statement issued by Iraq's OPEC representative, Mohammed Saadoun, OPEC allowed Iraq to increase its oil production to 4.5 million barrels per day from June. In this statement, it was emphasized that production could also be increased by 50,000 barrels per day in July, August and September. Iraq produced 4.43 million barrels of oil per day in April - 160,000 barrels per day over the quota set by OPEC and its allies. (16 May 2022)

- **OPEC revises global oil demand estimation downward.** In its monthly oil market report, OPEC predicted global oil demand of 100.29 million barrels per day for 2022, a reduction of 210,000 barrels per day compared to its previous month's forecast. In addition, it was noted that global oil production had decreased by 770,000 barrels per day in April compared to the previous month to approximately 98.74 million barrels per day. OPEC's share in global oil production, on the other hand,

stood at 29%, compared to 28.7% in the previous month. (13 May 2022)

- **IEA projects global oil demand of 99.4 million barrels per day in 2022.** In its "Oil Market Report" for April, the IEA reduced its global oil demand projection by 10,000 barrels per day compared to the previous month's projection. The IEA expects the Asia-Pacific Region to lead global oil demand, with demand of 36.92 million barrels per day this year, followed by the American Continent (30.92 million barrels per day) and Europe (14.27 million barrels per day). (13 May 2022)

- **World Bank warns that some metal prices may rise in the energy transition.** In the report titled "Commodity Markets: Development, Challenges and Policies" published by the World Bank, it is stated that the demand for metals necessary for building renewable energy infrastructure and producing electric vehicles is likely to increase in the coming years, which may drive metals prices higher. The report also noted that prices of these metals may remain high for some time, depending on the speed of the energy transition, the volume of mining capital investment, environmental constraints on these industries, and policy measures and incentives. (13 May 2022)

- **Rise in natural gas prices may saddle EU with EUR 250 billion in additional costs by 2030.** According to a study conducted by Ember and Global Witness, the amount of electricity to be generated from natural gas within the scope of "REPowerEU", prepared to reduce the dependence on Russian natural gas, will be lower in quantity than the target amount in the "55 Harmonization Package", while its cost will be high. The analysis finds that at the current high prices, the EU's current natural gas usage plans would incur costs of EUR 250 billion more than expected by 2030. (12 May 2022)

- **EU to announce a EUR 195 billion plan by 2027 to reduce its dependence on energy imports from Russia and increase renewable energy projects.** According to a Bloomberg report, the EU's executive body will propose an increase in its renewable energy target from 40% to 45% by 2030. This strategy is planned to save EUR 80 billion in natural gas, EUR 12 billion in oil and EUR 1.7 billion in coal. The package which is expected to be announced on May 18, will include a roadmap for bio-methane, a plan to increase hydrogen production and imports, and a draft for non-EU energy participation. (12 May 2022)



- **6% in global renewable energy capacity in 2021.** According to the "Renewable Energy Market Update" Report published by the IEA, the amount of renewable energy capacity brought into use in the world last year reached 295 GW, a 6% increase compared to the previous year. Solar power plants accounted for half of this capacity in 2021, with China accounting for 46% of the new renewable energy capacity. The report stated that the renewable energy capacity is expected to reach 320 GW in 2022 – an increase of more than 8%. In addition, the report emphasized that wind and solar energy had the potential to reduce the European electricity sector's dependence on Russian natural gas by 2023. (11 May 2022)

- **Global solar power capacity will increase by 200 GW by the end of 2022.** According to the "Solar Energy Global Market Outlook" report published by Solar Power Europe, the total global solar power capacity reached 940 GW with a 168 GW increase in 2021. While the report shows that global solar power capacity is expected to increase by 200 GW by 2022, it is estimated that the capacity will increase to 2.3 terawatts by the end of 2025. (11 May 2022)

- **The EU countries required to have 1,000 GW of solar capacity by 2030.** According to a Bloomberg news report, in a letter dedicated to European Commission Vice President Frans Timmermans and EU Energy Commissioner, Kadri Simson, from member states Austria, Belgium, Lithuania, Luxembourg and Spain, it is remarked that the EU's solar energy capacity will reach 1,000 GW by 2030, and that the EU can install solar panels on at least 70 million roofs by 2030. (6 May 2022)

- **35-fold increase in lithium will be needed by 2050.** The EU will need to procure more raw materials for the generation of clean energy technologies in the coming years, according to the findings of a study conducted by Eurometaux, the European Union of Metal Manufacturers. Therefore, the battery industry will need 35 times more lithium and 4.3 times more cobalt than today. (5 May 2022)

- **Greece starts work on EUR 363.7 million LNG storage and gasification unit (FSRU) project in Alexandroupoli.** The project, which is aimed to be completed in 2023, is expected to be anchored 17.6 kilometers south west of Alexandroupoli Harbour, with the FSRU having a capacity of 153,500 cubic meters and providing approximately 5.5 bcm of natural gas supply to the national gas transmission system annually. (5 May 2022)





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