

Monthly Energy Bulletin

TSKB Economic Research

May 2021 #36

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24 June 2021

Mini YEKA GES-3 contests completed

1,000 Megawatts (MW) of capacity were allocated in 74 contests completed within 8 days. The weighted average of the prices realized in the contests was 21.5 krus per kilowatthour (krs/kWh).

The 18.2 krs/kWh price for the 15 MW capacity allocation in the Osmaniye-2 region emerged as the winning bid in the Solar Power Based Renewable Energy Resource Fields (YEKA GES-3) contests.

In the contests, Gün Güneş Enerjisi and Natürel Enerji's subsidiary, Margün Enerji, were the two firms providing the biggest capacity allocation. A capacity allocation of 105 MW was provided for each of these two firms. HMN Enerji, which belongs to the Kalyan Group, was allocated 70 MW of capacity while Kalyon Enerji was allocated 50 MW in capacity.

Fatih Dönmez, the Minister of Energy and Natural Resources, stated that a further 1,000 MW in YEKA for wind capacity (YEKA RES) would be allocated during 2021. In addition, Mr. Dönmez announced that the YEKA RES contests would be organized for 2,000 MW of capacity in the wind energy field.

Within this scope, the aforementioned YEKA RES-3 contest announcement was published in the Official Gazette on May 30. According to this announcement, capacity allocations of between 20-90 MW are planned to be provided in the contests which will be organized in 42 connection regions within the scope of the YEKA RES-3 contests. The introductory ceiling price was determined as 45 krs/kWh in these contests. The guaranteed purchasing duration and the value per MW of connection capacity will be limited to the time that electricity is provided to the transmission and/or distribution grid, with the first 35 gigawatthours (GWh) generated from the first day that the wind power plant was commissioned. The deadline for the submission of bids for the contests is October 12, 2021.

24.93
TWh

May Gross
Generation

360.59
TL/MWh

Average
MCP

19.33%

Daily average licensed electricity generation decreased by 7.35% MoM, while rising 19.33% YoY in May.

[Click](#) for details.

77.44%

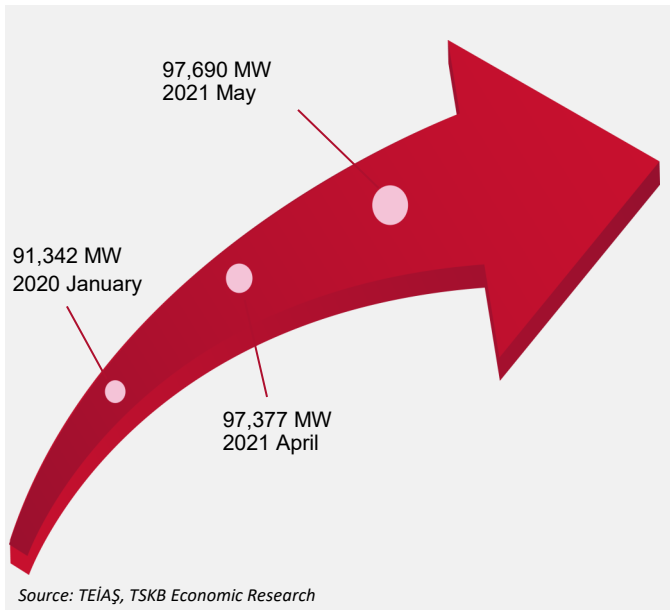
Market Clearing Price (MCP) increased by 77.44% YoY and and by 15.52% MoM in May.

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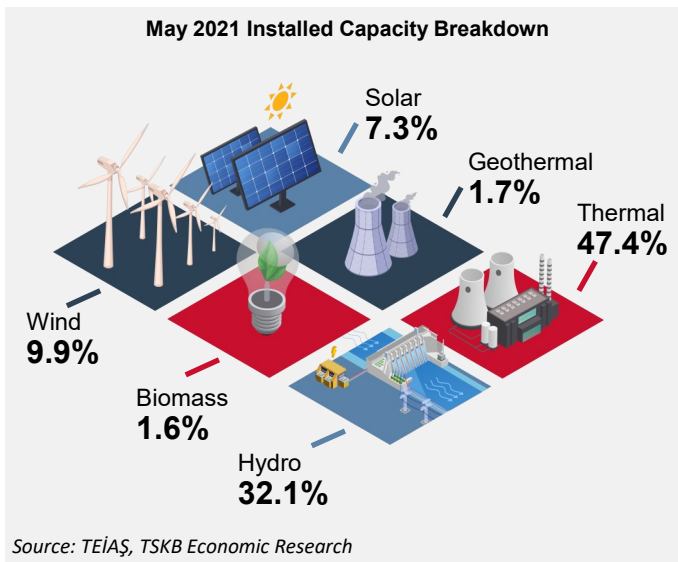


Installed Capacity Analysis

Turkey's total installed capacity, which reached 97,377 MW at the end of April, increased to 97,690 MW at the end of May. In May, wind power plants with a total net installed capacity of 175.7 MW was commissioned. In the same period, the total net installed capacity of solar power plants increased by 88.6 MW.

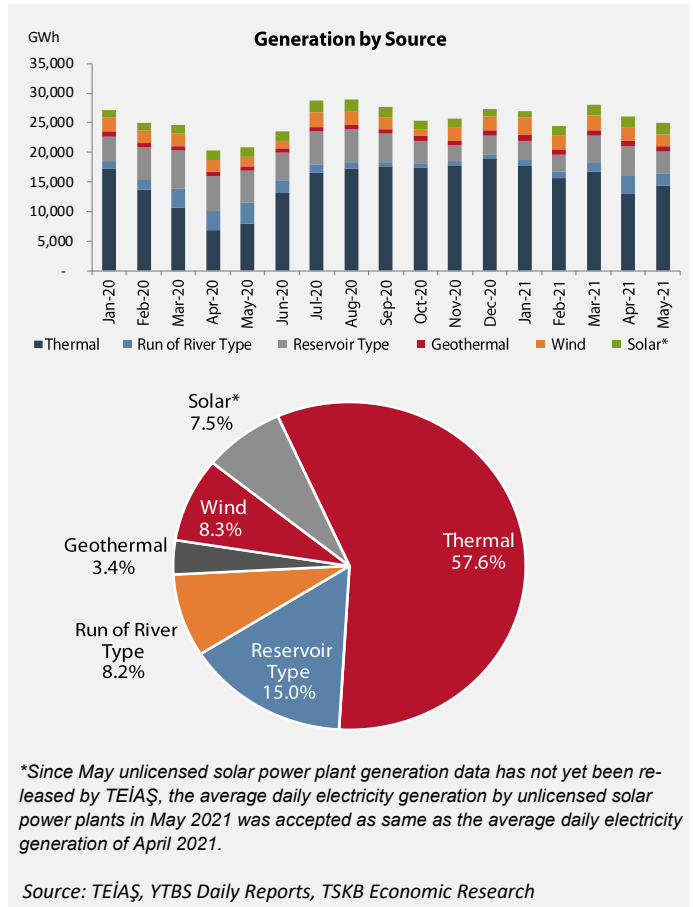


Of all the power plants in operation during May, 52.6% of the capacity consisted of power plants generating electricity from renewable resources. Thus, the share of renewable power plants in total installed capacity continued to stay above 52%. Hydroelectric power plants accounted for 32.1% of Turkey's total installed capacity in May, while the combined share of wind and solar power plants amounted to 17.2%.



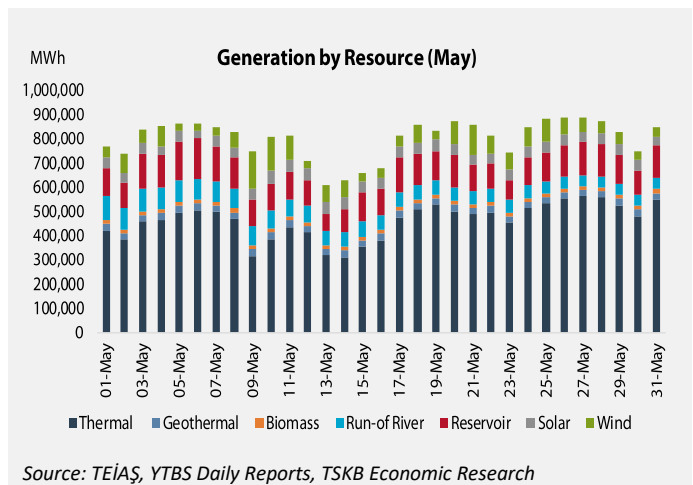
Electricity Generation Analysis

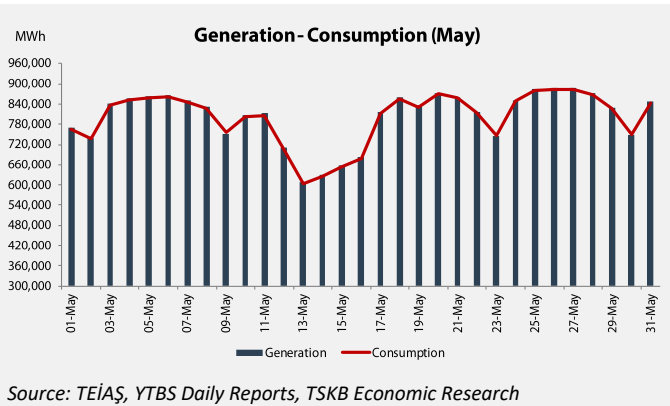
Turkey's total electricity generation decreased from approximately 26.04 TWh in April to 24.93 TWh in April. Average daily electricity generation in May decreased by 7.35% compared to April. On the other hand, average daily electricity generation inclined by 19.33% compared to the same month in the last year.



Thermal power plants, which had supplied 50.3% of the electricity generated in April, accounted for 57.6% of the total electricity generated in May. Hydroelectric power plants which had a share at the rate of 30.8% in April, provided 23.2% of the monthly based total electricity generation in May.

Renewable power plants, which comprised an average share of 42.5% in electricity generation throughout 2020, accounted for 57.6% of all electricity generated in May 2021. In the same period, electricity generation derived from dam-type hydroelectric plants provided a 15.0% contribution to total generation, with wind power plants accounting for 8.3% of total generation.





Source: TEİAŞ, YTBS Daily Reports, TSKB Economic Research

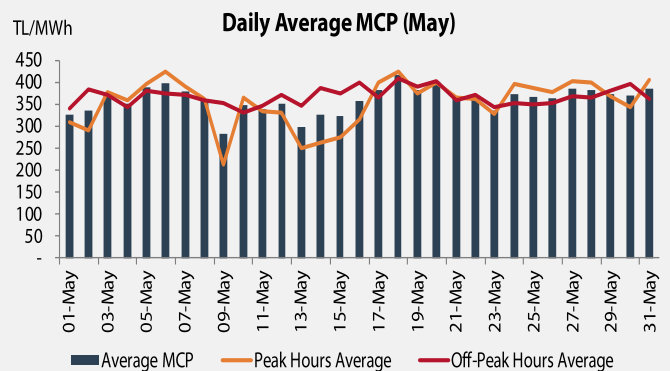
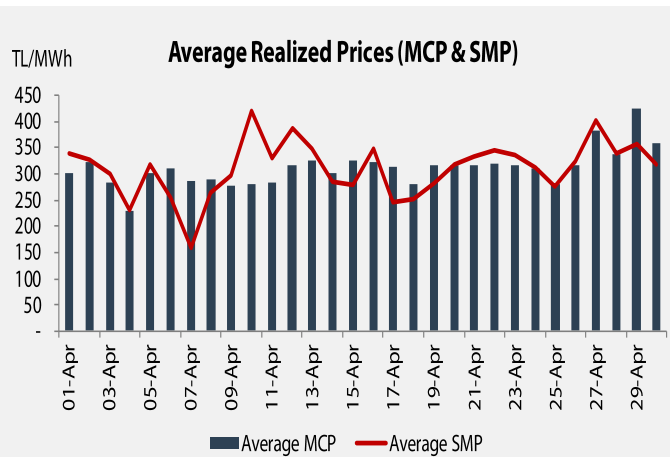
In May 2021, the average amount of electricity generated by licensed power plants was 803,206MWh per day. The highest generation realized by licensed plants during May was 888,271 MWh, recorded on Thursday, May 27th. The lowest volume of generation by licensed plants during the same period was 608,161 MWh, which was realized on Thursday, May 13th.

Daily electricity consumption averaged 799,321 MWh in May. The highest amount of consumption during the month was recorded on Thursday, May 27th (884,168 MWh), while the lowest level of consumption was recorded on Thursday, May 13th (602,282 MWh).

Electricity Price Analysis

In May, the average daily market clearing price (MCP) and system marginal price (SMP) stood in a range of TL 195 /MWh to TL 435 /MWh. The average MCP for May 2021 was TL 360.59 /MWh, while the average SMP was TL 363.58 /MWh in the same period. The lowest average MCP value was recorded on Sunday, May 9th, at TL 282.40 /MWh, while the lowest average SMP was TL 197.78 /MWh on Friday, May 14th.

Compared to the average MCP in April, the May average was recorded 15.52% higher.

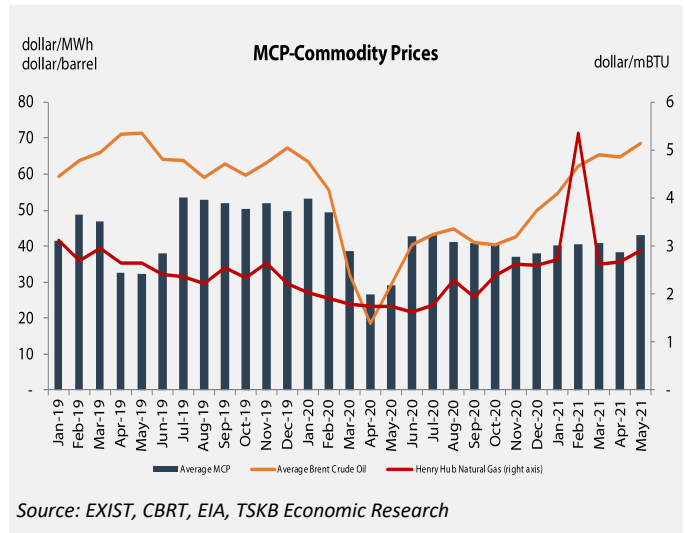


Source: EXIST, TSKB Economic Research

The daily average MCP for May stood at TL 354.14 /MWh for peak hours (from 8AM to 8PM), 1.8% lower than the daily average value. The highest peak-hour average recorded was TL 423.42 /MWh on Tuesday, May 18th, while the lowest peak-hour average was TL 213.41/MWh, recorded on Sunday, May 9th.

Average pricing in off-peak hours (from 8PM to 8AM) for the same period stood at TL 367.95 /MWh. The highest off-peak hour average was TL 407.05 /MWh, recorded on Tuesday, May 18th, with the lowest off-peak-hour average, of TL 329.84 /MWh, recorded on Monday, May 10th.

While the average MCP in April 2021 was realized as USD 38.21 /MWh, the average MCP in May was recorded as USD 43.15 /MWh. MCP prices in dollar terms were 47.87% higher when compared to the same period of last year.



Source: EXIST, CBRT, EIA, TSKB Economic Research

Brent crude oil prices, which had averaged USD 41.76 /barrel in 2020 and USD 64.81 /barrel in April 2021, increased to USD 68.53 /barrel in May staying at its pre-COVID-19 levels. In May, the price per barrel of Brent oil was 12.93% higher than in the previous month and 47.87% higher than in the same period of the previous year. We attribute the steep YoY increase in April and May to the low base effect in April and May 2020.

The average price of Henry Hub natural gas, which was USD 2.66/ mBTU in April, increased at the rate of 9.4% and went up to USD 2.91 /mBTU in May. When compared to the same period of the previous year, an increase of 66.29% was observed in May 2021.





Sector News

Local News

- **The Energy Market Regulatory Authority (EMRA) published its sector market reports for March.** According to the "Electricity Market Sector Report", licensed electricity production increased by 13.54% in comparison with the same month of the previous year in May 2021 to reach 27.07 TWh. Licensed electricity production provided by natural gas fired power plants increased by 30.1%, generation from coal power plants operating with local and imported coal increased by 31.6% and generation from hydroelectric power plants increased by 22.9%. According to the "Natural Gas Market Sector Report", Turkey's natural gas imports rose by 47.9% to reach 5.83 billion cubic meters (bcm) in May, in comparison with the same month of the previous year. 91.9% of the imports (5.35 billion cubic meters) are carried out by Boru Hatları ile Petrol Taşıma A.Ş. (BOTAŞ), with 4.78% (278.5 bcm) carried out by Bosphorus Gaz Corporation A.Ş. In March, natural gas production increased by 42.3% to reach 6.54 bcm. According to the "Oil Market Sector Report", Turkey's crude oil importation fell by 10.7% to 2.4 billion tonnes. Crude oil account for the lion's share (70.9%) of the total imports of oil products. (May 31, 2021)

- **Energy Efficiency Action Plan achieves USD 1.2 billion in savings in 2017-2020 period.** Alper Bayraktar, the Deputy Minister of Energy and Natural Resources, stated in his speech that USD 1.2 billion in savings have been achieved through USD 4.8 billion in investment in the 2017-2020 period under the Energy Efficiency Action Plan. Bayraktar also noted that emission reductions of 10 million tonnes had been achieved. (May 27, 2021)

- **Power plant area ratio to no longer be a requirement in Solar Power Plant applications.** According to the regulatory change published in the Official Gazette, solar power plant

applications will not check whether or not the power plant area is smaller than 1.66 times of total facility area, apart from in rooftop solar power plant investments. (May 27, 2021)

- **Extension to the deadline for the submission of bids for Çamlıca 1 Hydroelectric Power Plant (HES).** The Directorate of the Privatization Administration announced that there would be a closed auction for the privatization of the immovables used by the Çamlıca 1 HES, which belongs to Elektrik Üretim A.Ş. (EUAS), with the transfer of operational rights method. The deadline for the submission of bids, which had been June 9, was extended to June 29. (May 27, 2021)

- **YoY Increase of 6.5% in Turkey's natural gas consumption to 47.7 bcm in 2020.** According to the Turkey Natural Gas Distributors' Association (GAZBİR)'s 2020 Natural Gas Sector Report, residential use accounted for the highest share of natural gas consumption, with a share of 32.3%, with power plants accounting for 28.6% of the total and industry accounting for 26.7% of total natural gas use. In terms of natural gas subscribers, Turkey ranked third in Europe at the end of 2020, after Italy and Germany. (May 27, 2021)

- **Waste without identification documents will not be permitted to enter Turkey.** In a press statement, Murat Kurum, the Minister of Environment and Urbanization, stated that the government had completely banned the importation of mixed plastic waste from the beginning of 2021 requiring identification documents for imported recyclable raw materials. (May 25, 2021)

- **Natural Gas Futures Market (VGP) to open in the last quarter of 2021.** The Board Manager of EPIAŞ, Abdullah Tancan, remarked that the Power Futures Market was planned to be brought online on June 1st, and with the VGP to be running

in the last quarter of the year. The VGP is aimed at eliminating the risks caused by price uncertainty as well as increasing liquidity and depth. (May 25, 2021)

- **Regulatory change to capacity mechanism.** According to the change published in the Official Gazette, power plants operating with imported resources which are older than 13 years are included in the scope of the facilities which will benefit from the capacity mechanism. However, power plants operating with imported resources where their efficiency rate has fallen below 50% will not be eligible to benefit from the mechanism. In the 12-month period prior to the deadline for applying to the mechanism, there would be no payments for those whose weighted average capacity usage rate based on domestic resources had fallen below 10% during the related term. In the facilities work with imported resources, this will be for the rates fell under 15%. The ones which will benefit capacity mechanism in 2021 have to apply until the end of business day in June 4. (May 24, 2021)

- **TSKB to obtain USD 200 million in financing for solar power plants.** According to the statement from TSKB, 162 of its 330 renewable energy projects for which it has obtained finance over the 20 years are GES, with more than USD 250 million in total provided to finance 250 MW of installed capacity so far. The bank, which is planning to focus on the investment in this field in the next few years is aiming to provide USD 200 million in GES financing. In a statement, the Sales Manager of Institutional Banking at TSKB, Volkan Karaben, said, "Providing accurate and effective resource models to the financing needs of GES projects, which has key importance in the transformation to the low carbon economy for our country, is one of our priorities." (May 20, 2021)

- **Adapazarı Natural Gas Power Plant resumes electricity generation.** In a statement released by Enka İnşaat on the Public Disclosure Platform, it was stated that electricity production at the Adapazarı Natural Gas Power Plant had resumed, after electricity generation had been suspended in 2019. The Adapazarı Natural Gas Power Plant has an installed generation capacity of 820 MW. (May 18, 2021)

- **Electricity Futures Market (VEP) and Green Certification System (YEK-G) to be activated on June 1st.** In a written statement issued by the EMRA, VEP will provide the opportunity to determine the planned trading volume themselves to market participant with the relevant legislation. Within this scope, large consumers such as malls, organized industrial zones and industrialists will be able to purchase the electricity for future periods beforehand and protect themselves from price changes. This will allow producers to sell electricity beforehand, also protecting the producers from price changes. Under the YEK-G system, a certificate will be issued which will guarantee that the electricity consumers use is generated by renewable energy resources. Under the designed system, the amount of electricity produced from renewable energy resources, per megawatt-hour, will also be certified. (May 17, 2021)

- **Regulations based on storage services in electricity market published in the Official Gazette.** According to Electricity Market Storage Activities Regulation, storage facilities can be built in the production facility, adjacent to the consumption facility or independently. Provided they do not fall below 2 megawatts of installed power capacity, legal entities holding a supply license will be able to build one or multiple independent electricity storage facilities within the same supply license. In addition, the TEİAŞ will announce the criteria for electricity

storage facilities by September 1st, 2021. (May 10, 2021)

- **YEK-G system and organized YEK-G market operation procedures and principles determined.** According to the decision published in the Official Gazette, only licensed production facilities based on renewable energy resources will be able to apply to issue YEK-G documents. One YEK-G document will be issued for each MWh of documentable production amount. YEK-G document will be valid for 12 months starting from the end of the production period. Assigned supply companies will disclose all electricity supplied to consumers from the green tariff produced by renewable energy resources by placing a special sign or a logo on the bills of consumers. (May 10, 2021)

- **TL 286 million capacity mechanism support to be provided for March.** According to the capacity mechanism list published by TEİAŞ, the highest payment will be provided to Soma Termik Santral Elektrik Üretim A.Ş., amounting to TL 17.6 million. Payments will be provided to fifteen local coal fired thermal power plants, three local and imported coal fired thermal power plants, 14 natural gas fired electricity power plants and 8 hydroelectricity power plants. (May 4, 2021)

- **Natural gas prices updated.** According to the tariff table for May published by BOTAŞ, the price BOTAŞ has applied to natural gas distribution companies for residential consumers has been determined as TL 1,315.50 for 1,000 cubic meters of natural gas with an increase at a rate of 1%, and a price applied for industrial subscribers determined as TL 1,471.40. The price applied for 1,000 cubic meters of natural gas in electricity production facilities has been set at TL 1,631.70, following an upward price adjustment of 12%. (May 3, 2021)

News From Abroad

- **A total of 64 carbon pricing tools have been used in activities which constitute more than 20% of the global greenhouse gas emissions in 2020.** According to "The Situation of Carbon Pricing and Its Tendencies" report published by the World Bank, USD 53 billion in income was provided in 2020, corresponding to an increase of 17% in comparison with 2019. This report also determined that a significant proportion of carbon prices fell below the USD 40-80 per tonne price range as suggested within the Paris Agreement to meet the target of global warming of "under 2°C" in 2020. (May 26, 2021)

- **Report on air pollution caused by coal fired electricity generation published in Europe.** The analysis published by



Ember notes the countries where air pollution caused by coal generated electricity production in Europe is highest. In the ranking made in the country scale, Turkey and Ukraine ranked as the most polluting nations in all pollutant types. Germany and Poland were the biggest nitrate pollutants. (May 25, 2021)

- **Emission Trade System (ETS) being introduced in the UK.** The ETS was established in the UK because of the country's exit from the EU, for companies which are participating in the European Union's ETS system. The ETS is involved in the activities including burning fuels in the facilities whose total nominal heat input exceeds 20 MW, except the facilities directed to burn dangerous wastes or municipal waste. (May 24, 2021)

- **34% fall in coal imports to Europe in 2020.** According to The European Association for Coal and Lignite (Euracoal), coal imports into the European Union and the UK decreased by 34% in comparison with the previous year, declining to 61.7 million tonnes. According to Eurocoal, Germany's imports decreased by 32% to 19.7 million tonnes and Poland's imports were down by 17% to 11 million tonnes. (May 29, 2021)

- **Same 20 companies account for 55% of single use plastic wastes which are difficult to recycle.** The Plastic Waste Producers Index, published by the Australia-based Munderoo Foundation for the first time, claimed that fossil fuel-based polymer producers and their investors are responsible for this crisis. According to the analysis in the report, 20 companies accounted for more than half of 130 million tonnes of single use plastic waste in 2019 with the US-based ExxonMobil and Dow at the top of the list. Along with the China based Sinopec, these three companies create 16% of the world's single use plastic waste. The report predicts that plastic will account for 5-10% of total carbon emission by 2050. In addition, the world's biggest 20 banks have provided USD 30 billion in credit to polymer producers since 2011. (May 20, 2021)

- **10% fall in greenhouse gas emissions caused by energy production in European countries in 2020.** According to a statement issued by the Statistical Office of the European Union (Eurostat), Greece achieved the steepest decrease in its emissions with a fall of 18.7% followed by Estonia (18.1%) and Luxemburg (17.9%). Spain ranked 4th with a fall of 16.2% followed by Denmark in 5th place with a fall of 14.8%. (May 20, 2021)

- **Oil investments will need to stop to reach the zero-emission target by 2050.** According to the "Net 0 by 2050: A Roadmap for the Global Energy Sector" report published by the International Energy Agency (IEA), wind and solar power capacities will have to be ramped up rapidly in order to attain the objective. The report remarks that the sale of vehicles running on fossil fuels will have stop by 2035. Fatih Birol, the director of IEA, highlighted that clean energy investments would contribute to global economic growth and boost employment. (May 18, 2021)

- **Daily average oil consumption set to reach 97.69 million barrels per day in 2021 according to USA Energy Information Administration (EIA) in its April report.** In its "Short Term Energy Outlook" March report, the EIA had projected daily consumption of 97.67 million barrels per day in 2021. The EIA projects total production of 96.72 million barrels per day in 2022. The EIA report projects that Brent crude oil prices will average USD 62.26 per barrel in 2021. (May 17, 2021)

- **Global oil demand to rise by approximately 5.4 million barrels per day in 2021 to reach 96.4 million barrels per**

day according to the "Oil Market Report" prepared by the IEA. In its April report, the IEA projected that global oil demand would increase by 6% YoY in 2020. According to the report, the Asian Pacific Region is expected to be the leading consumer of oil in 2021 at 35.8 million barrels per day, followed by the American continent (30.2 million barrels per day) and Europe (13.8 million barrels per day). The IEA's April report projects global oil demand of 96.7 million barrels per day in 2021. (May 17, 2021)

- **Global oil demand projected to reach 96.5 million barrels per day in 2021 according to the March "Oil Market Report".** The report, prepared by the Organization of Petroleum Exporting Countries (OPEC), forecasts that daily average oil demand will reach 96.5 million barrels per day, increasing by 6.6% in 2021 when compared to its 2020 level. Thus, OPEC maintained its oil demand projection for 2021 at the previous month's level. According to the report, global oil supply increased by 150,000 barrels per day in April, when compared to its previous month's level, to reach approximately 93.06 million barrels per day. (May 12, 2021)

- **Global renewable installed power increases by 280 gigawatts (GW) in 2020.** According to the Renewable Energy Market Update Report, which includes the IEA's 2021-2022 outlook, solar energy installed power reached 135 GW in 2020, an increase of 23% from its 2019 level. Thus, total solar power capacity has reached 737 GW. In same period, installed wind energy capacity increased by 114 GW to 737 GW. After the increase, total renewable energy installed power capacity has reached 2,970 GW. (May 12, 2021)

- **Germany is raising its climate objectives.** According to a statement made during a press conference held by the Minister for the Environment, Svenja Schulze, and Deputy Prime Minister and Finance Minister, Olaf Scholz, the objective for reducing greenhouse gas emissions will be raised from 55% to 65% for 2030 in the existing law. The objective of being carbon neutral by 2050 will be brought forward to 2045. In addition, the objective for an 88% reduction in emissions will be set for 2040. (May 7, 2021)





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