

Monthly Energy Bulletin

TSKB Economic Research

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TL 780 million to be invested in production and transmission infrastructure to bring natural gas discovered in Black Sea into use

The underwater natural gas production facilities in the first section of the integrated project will be built in the Turkish Exclusive Economic Zone and the on-shore natural gas operation facility in the second section will be built in the Filyos Industrial Zone. The natural gas transmission lines forming the third section that will connect both the units will be built offshore and onshore. An investment of TL 780 million will be undertaken for the project, which is formed of three sections in total.

The natural gas reservoir in which the underwater production is located, will be built at a depth of approximately 2,200 meters and a distance 155 kilometers from the Filyos Industrial Zone. In the first stage, 6 up to 10 wells will be attached to the underwater production system. A total of 10 million cubic meters of natural gas will be produced daily from these wells. The natural gas will be transported to the Filyos Operation Facility with the pipeline built. In the second stage, 40 million cubic meters of natural gas will be transported and processed daily from a total of 30-40 wells that will be built.

The off-shore pipeline and relevant systems that will be built in the sea section of the project will be designed to have a service life of 40 years. The main equipment will have a 25-year design life according to the maintenance procedures and intervals proposed by the supplier.

The first natural gas from the Sakarya Gas Field will start to be used in 2023 with full start-up of the field to be realized at some point after 2023.

24.03
TWh

February Gross
Generation

286.89
TL/MWh

Average
MCP

-1.63%

Daily average licensed electricity generation decreased by 1.63% MoM and 0.16% YoY in February.

[Click](#) for details.

-3.86%

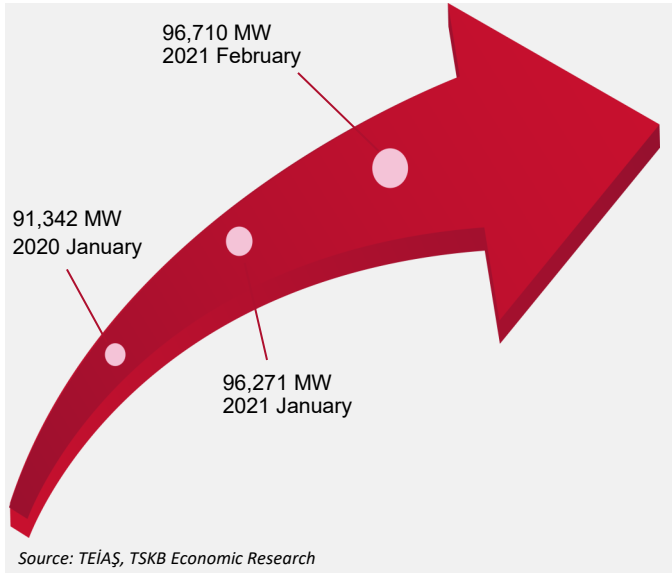
Market Clearing Price (MCP) declined by 3.86% YoY and and by 3.64% MoM in February.

[Click](#) for details.

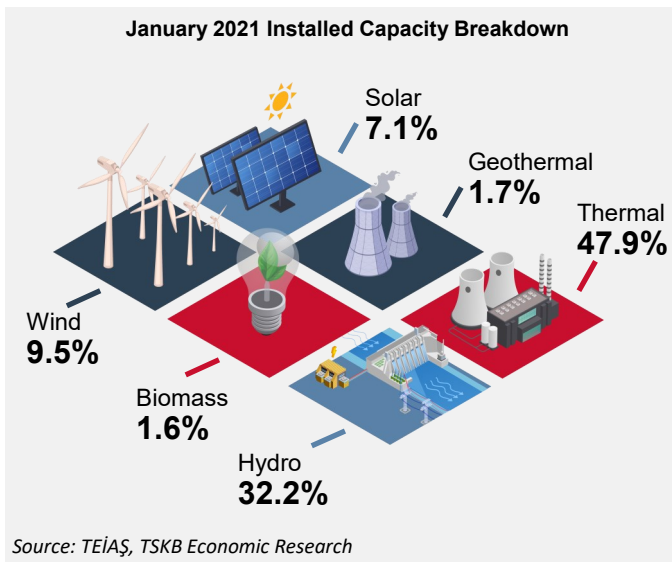


Installed Capacity Analysis

Turkey's total installed capacity, which reached 96,271 megawatts (MW) at the end of January 2021, increased to 96,710 MW at the end of February 2021. In February, wind power plants with a total net installed capacity of 184.8 MW was commissioned. In the same period, the total net installed capacity of solar power plants increased by 63.6 MW and the total net installed capacity of hydroelectric power plants increased by 184.1 MW.

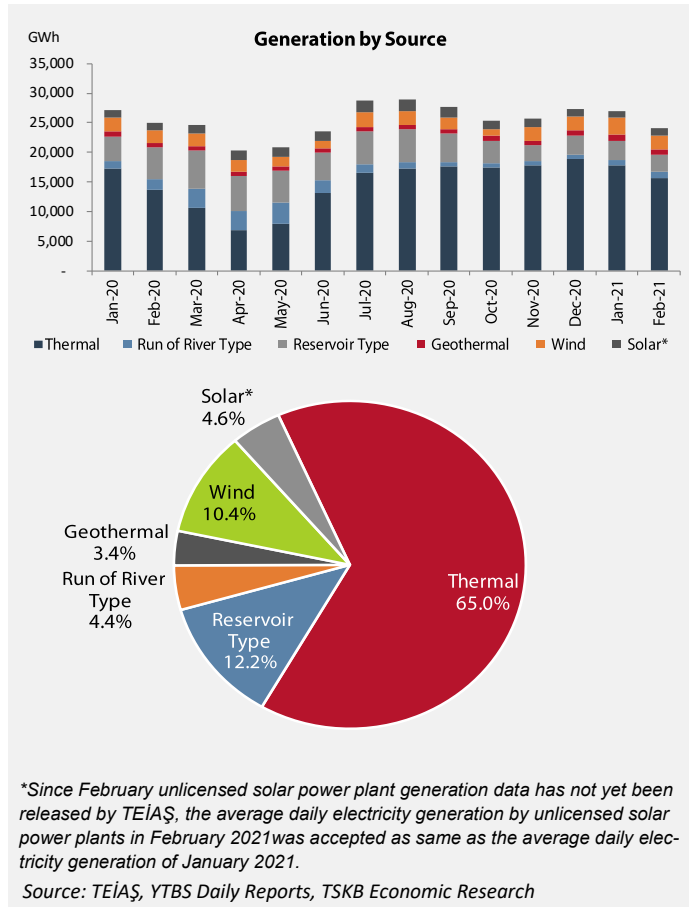


Of all the power plants in operation during February, 52% of the capacity consisted of power plants generating electricity from renewable resources. Thus, the share of renewable power plants in total installed capacity continued to stay above 51%. Hydroelectric power plants accounted for 32.2% of Turkey's total installed capacity in January, while the combined share of wind and solar power plants amounted to 16.6%.



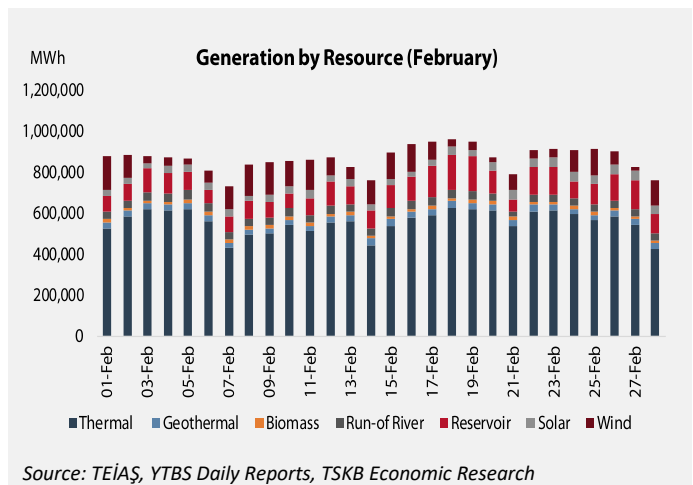
Electricity Generation Analysis

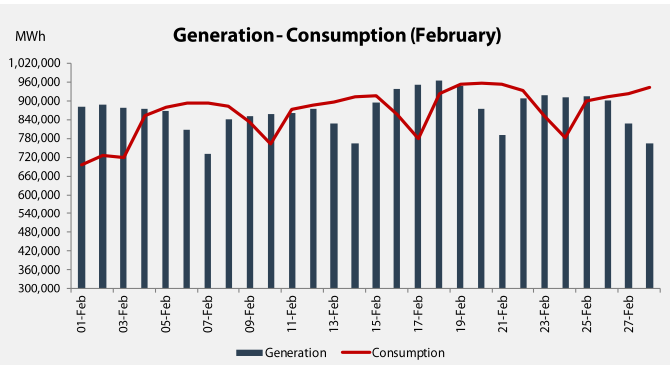
Turkey's total electricity generation stood at 24.03 terawatt-hours (TWh) in February, comparing with a figure of about 27.05 TWh in January 2021. Average daily electricity generation in February decreased by 1.63% compared to January. On the other hand, average daily electricity generation in February declined by 0.16% compared to the same month in the last year.



Thermal power plants, which had supplied 65.6% of the electricity generated in January, accounted for 65% of the total electricity generated in February.

After accounting for 15.9% of electricity generated in January, hydroelectric power plants provided 16.6% of the total monthly electricity generated in February 2021. Renewable power plants, which comprised an average share of 42.5% in electricity generation throughout 2020, accounted for 35% of all electricity generated in February 2021. In the same period, electricity generation derived from dam-type hydroelectric plants provided a 12.2% contribution to total generation, with wind power plants accounting for 10.4% of total generation.





Source: TEİAŞ, YTBS Daily Reports, TSKB Economic Research

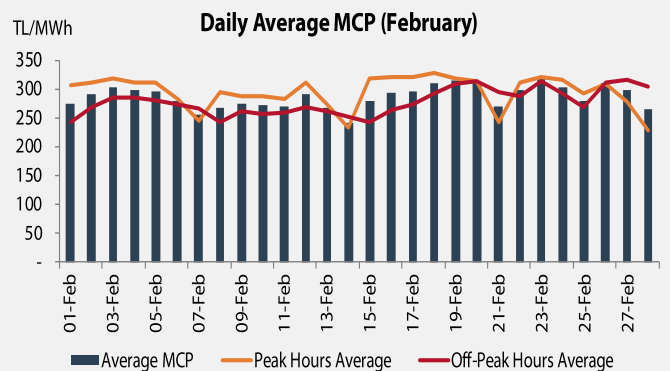
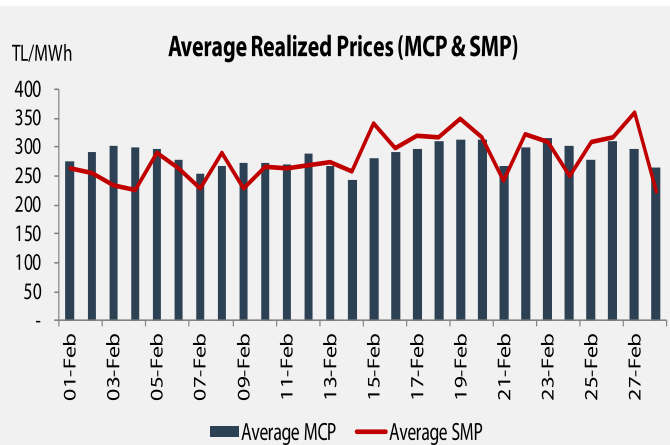
In February 2021, the average amount of electricity generated by licensed power plants was 869,099 MWh per day. The highest generation realized by licensed plants during February was 965,639 MWh, recorded on Thursday, February 18th. The lowest volume of generation by licensed plants during the same period was 730,214 MWh, which was realized on Sunday, February 7th.

Daily electricity consumption averaged 860,890 MWh in February. The highest amount of consumption during the month was recorded on Thursday, February 18th (959,045 MWh), while the lowest level of consumption was recorded on Sunday, February 7th (732,653 MWh).

Electricity Price Analysis

In February, the average daily market clearing price (MCP) and system marginal price (SMP) stood in a range of TL 220 /MWh to TL 360 /MWh. The average MCP for February 2021 was TL 286.89 /MWh, while the average SMP was TL 281.93 /MWh in the same period. The lowest average MCP value was recorded on Sunday, February 14th, at TL 242.34 /MWh, while the lowest average SMP was TL 223.85 /MWh on Sunday, February 24th.

Compared to the average MCP in January, the February average was recorded 3.64% lower. The decrease in electricity consumption and the increase of the amount of electricity generated from renewable energy plants are believed to have been behind this decline.

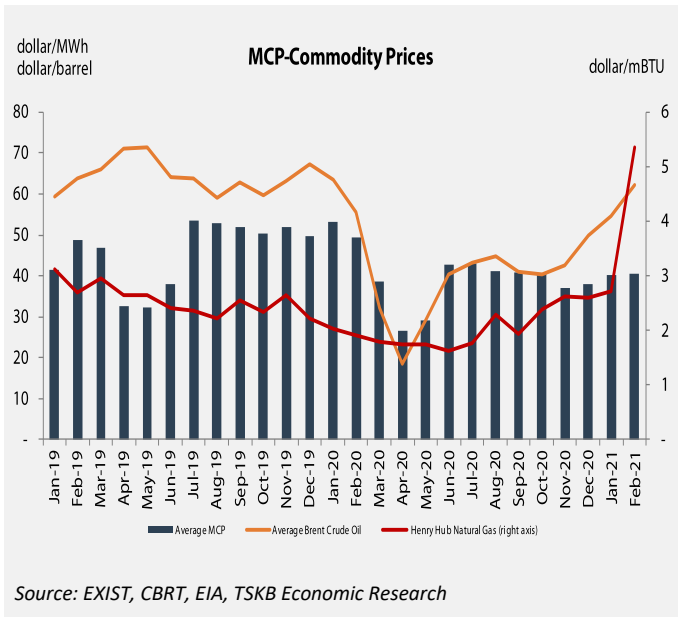


Source: EXIST, TSKB Economic Research

The daily average MCP for February stood at TL 295.60 /MWh for peak hours (from 8AM to 8PM), 3% higher than the daily average value. The highest peak-hour average recorded was TL 328.67 /MWh on Thursday, February 18th, while the lowest peak-hour average was TL 228.01 /MWh, recorded on Sunday, February 28th.

Average pricing in off-peak hours (from 8PM to 8AM) for the same period stood at TL 278.17 /MWh. The highest off-peak hour average was TL 316.06 /MWh, recorded on Wednesday, February 27th, with the lowest off-peak-hour average, of TL 241.73 /MWh, recorded on Monday, February 8th.

While the average MCP in January 2021 was realized as USD 40.19 /MWh, the average MCP in February was recorded as USD 40.49 /MWh. MCP prices in dollar terms were 17.84% lower 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 54.77 /barrel in January 2021, rose to USD 62.28 /barrel in February reaching its pre-COVID-19 levels. In February, the price per barrel of Brent oil was 13.71% higher than in the previous month and 11.89% higher than in the same period of the previous year.

The price of Henry Hub natural gas, which averaged USD 2.71 /mBTU in January 2021, jumped by 180.1% to USD 5.35/ mBTU in February. When compared to the same period of the previous year, an increase of 97.42% was observed in February 2021. It is believed that cold temperatures in the United States, and in particular the cold snap to hit the state of Texas in the second week of February was responsible for the rise in commodity prices.





Sector News

Local News

- Energy Market Regulatory Authority (EMRA) publishes its sector market reports for December. According to the “Electricity Market Sector Report”, licensed electricity generation in December 2020 increased by 4.3% compared to November of the previous year to reach 26.80 TWh. 35.9% of the licensed electricity generation was supplied by coal plants, 33.3% from natural gas plants and 14.8% from hydroelectric plants. The increase in industrial production and irrigation-sourced consumption was effective in the increase of electricity generation. According to the “Natural Gas Market Sector Report”, Turkey’s natural gas imports reached 6.26 billion cubic meters in December 2020, an increase of 15.6% compared to the same period of the previous year. A total of 4.87 billion cubic meters of imports were realised through pipelines while 1.39 billion cubic meters were received through liquefied natural gas plants. Natural gas consumption in November increased by 16.6% to reach 6.07 billion cubic meters. Natural gas consumption in power plants stood at 1.55 billion cubic meters during the month, an increase of 42.8%, while residential consumption was realised at 2.32 billion cubic meters, an increase of 14.3%. According to the “Petrol Market Sector Report”, Turkey imported a total of 2.83 million tonnes of crude oil in December 2020, a decrease of 22.3% compared to the same month of the previous year. During this period, the highest volume of crude oil imports came from Iraq, with 490,900 tonnes imported, followed by Russia (460,920 tonnes) and Nigeria (412,510 tonnes). (February 26, 2021).

- Environmental Indicators Manual published by the Minis-

try of Environment and Urbanization. The manual, which contains the progress of data and evaluations related to indicators by year in up to 90 copies under 16 titles, includes environmental themes such as weather and water pollution, climate change, waste management and biological diversity. According to the data in the manual, greenhouse gas emissions per capita were calculated as 6.4 tonnes of CO₂ in 2018, a figure below the average of European Union Countries. (February 26, 2021)

- Investment of TL 66.7 billion planned for electricity distribution. The Minister of Energy and Natural Resources, Fatih Dönmez, said: “In addition to the future investments, for the first time a separate budget item has been set for scheduled maintenance. The scheduled maintenance used to be covered with the operational budget. We reserved a budget of TL 10.5 billion for scheduled maintenance” by pointing out that a total budget had been put aside for TL 66.7 billion of investment in electricity distribution between 2021 and 2025. Dönmez added that TL 1 billion had been set aside for R&D activities over the next 5 years, adding that the R&D budget for this year stood at TL185 million. (February 25, 2021).

- Aydem Renewable Energy obtains zero waste certification for 8 more hydroelectric plants (HPP). The company, which had already obtained certification for 4 HPP plants stated: “The target is to complete this process by the end of 2021 for 13 more plants operating with renewable resources”. (February 24, 2021).

- **The transmission network investment ceiling pricing of the Petroleum Pipeline Corporation (BOTAS) for 2020 has changed.** In accordance with the decision taken by the Energy Market Regulatory Authority, which was published in the Official Gazette, the ceiling price for the transmission network investment, which had been set at TL 762.9 million in the Board Decision taken in 2020 while approving the national transmission network investment programme of BOTAS, was adjusted to TL 866.2 million. (February 22, 2021).

- **The “Fight Against Climate Change Final Declaration” announced.** In the 14-article final declaration setting out the fight against climate change, as announced by the Minister of Environment and Urbanization, Murat Kurum, plans were set out to create a “National Climate Change Platform” and a “National Climate Change Research Center”. The declaration pointed out that smart city and zero water implementations would be generalized and the “Emission Trade System” would be realized. Stating that a climate law was necessary, Murat Kurum said that the fight against climate change was a matter of development which profoundly affected many sectors. (February 18, 2021).

- **“Industrial Water Usage Efficiency Project According to NACE codes” inaugurated by the General Directorate of Agriculture and Forestry Water Management.** In the project which started on January 18th 2021 and will continue for 750 days, it is stated that classifications will be made according to the four-digit NACE code and that research would be carried out into potential for water savings in 616 activity branches. Under the project, which will visit 400 industrial facilities, a Current Status Report on industrial water efficiency, an Industrial Water Use Efficiency Report and an Action Plan on the NACE code are to be prepared, while project outputs are planned to be used to create a final action plan for all basins. Those output of the project is expected to raise awareness regarding water efficiency and will bring a number of benefits such as establishing an infrastructure for planning works and legal regulations which will be carried out by the Ministry in the coming period. (February 15, 2021).

- **Decision taken to establish three companies by BOTAS and President of Turkey Petroleum Corporation (TPAO), a subsidiary of Turkish Petroleum Overseas Company Limited (TPOC).** According to the decision published in the Official Gazette, three companies - Turkish Petroleum International A.Ş., BOTAS International A.Ş. and Turkish Petroleum Off-Shore Technology Center A.Ş. - will be established. Turkish Petroleum International A.Ş. will have TL 11.8 billion in capital, BOTAS International A.Ş. will have TL 3.6 million in capital and the Turkish Petroleum Off-Shore Technology Center A.Ş. will have TL 21.5 million in capital. (February 15, 2021).

- **Third FSRU (Floating Storage Regasification Unit) facility to enter operation in 2021.** The Minister of Energy and Natural Resources, Fatih Dönmez, who carried out an evaluation during the Advisory Council 7th Meeting, stated that two FSRUs were currently in operation and that the natural gas storage capacity, which is planned to reach 11 bcm by 2023, had reached 4.1 bcm. Fatih Dönmez mentioned that the government planned to supply 405 bcm of natural gas discovered in the Black Sea last year to the network, adding that exploration activities both onshore and offshore were continuing intensively. (February 12, 2021).

- **78.1 TWh of electricity generated by HPPs in 2020.** The Minister of Agriculture and Forestry, Bekir Pakdemirli, stated that the 78.1 TWh of electricity generated by HPPs in 2020 had provided a contribution of TL 31.2 billion to the country's economy. (February 8, 2021).

- **Capacity mechanism support of TL 232 billion provided to 38 power plants in December.** TEİAŞ published its 2020 December “Capacity Mechanism Price List”. Accordingly, a total payment of TL 231.93 million will be made for the month of December to 38 power plants out of 45. A payment of TL 166.42 million was carried out to 39 plants as part of the previous month's capacity mechanism. The highest payment will be made to the SOMA Thermal Power Generation plant, with a payment of TL 14.89 million. (February 3, 2021)

- **Lignite coal production of 5.86 million tonnes realized in November.** The Turkish Statistical Institute (TÜİK) published the “Solid Fuels Statistics” for the month of November. Accordingly, total lignite coal production has increased by 3.6% compared to the previous month and by 18.1% compared to the same month of the previous year. The production of bituminous coal in November was realized at 106.711 tonnes with an increase of 6.6% compared to the same month of the previous year. When examining the solid fuels distribution according to their delivery points, 50% of the bituminous coal distribution was directed to thermal plants, 12.8% to coke plants, 13.6% to industry other than iron and steel while 78.8% of the lignite coal distribution was made to thermal plants, and 13.2% industry other than iron and steel. (February 2, 2021)

News From Abroad

- **One in every two vehicles should be electric in order to reach 2050 net zero emissions target, according to IEA President, Fatih Birol.** Speaking during a panel discussion organized by Sabancı University Istanbul International Energy and Climate Center (IIECC), the IEA President, Fatih Birol, stated that 3% of cars sold at the end of 2020 were electric. (February 24, 2021)

- **China to increase its use of local hydrogen and biomass.** The China State Council called on local administrations and relevant authorities to increase the use of renewable resources and the development of the use of hydrogen energy and biomass energy depending on local conditions as part of the



country's low carbon development and zero carbon target. (February 24, 2021)

- **South Sudan approved Paris Climate Agreement.** According to the update published in the website of the United Nations, on February 23rd, 2021, South Sudan joined the list of countries to have approved the agreement. (February 24, 2021)

- **USD 300 billion to be invested in hydrogen.** According to the "Hydrogen Insights 2021" report prepared by the Hydrogen Council and McKinsey & Company, investment in global hydrogen projects are on course to post significant growth to reach USD 300 billion by 2030. It is estimated that 85% of these projects will be in Europe, Asia and Australia. (February 22, 2021)

- **Increase in global oil demand expected.** The "Oil Market Report" prepared by the IEA to review the month of January set out its projection that global oil demand would reach 96.44 million barrels per day in 2021, with an increase of approximately 5.4 million barrels per day compared to the previous year. The Asia Pacific Area is expected to take the lead in demand for oil in 2021 with demand of 35.8 million barrels per day followed by the American continent, with 30 million barrels per day, and Europe with 14 million barrels per day of demand. According to the report, global oil supply reached 93.63 million barrels per day in January, with an increase of approximately 580,000 barrels per day compared to the previous month. (February 12, 2021).

- **The Organization of Petroleum Exporting Countries (OPEC) published its "Monthly Oil Market Report" regarding the month of February.** In the report, global oil demand in 2021 is envisioned to average 96.1 million barrels per day, with an increase of 6.4% compared to the previous year. (February 12, 2021)

- **The US Energy Information Administration (EIA) published its "Short Term Energy Outlook" regarding the month of February.** The EIA estimates that consumption of oil products consumption in January 2021 averaged 93.9 million barrels per day. This compares to consumption of 96.7 million barrels of oil products per day in January 2021. The report also

projects that consumption of oil products will average 97.7 million barrels per day throughout 2021. According to the report, Brent crude oil prices will be USD 56 /barrel on average in the first quarter of 2021 and USD 52 /barrel for the rest of the year. (February 11, 2021)

- **The capacity of offshore wind farms reached 25,000 MW in European Union Countries.** According to the report announced by Wind Europe, this additional capacity come on the back of 356 offshore wind turbines being connected to the electricity grid. The offshore wind turbine capacity in EU countries increased by 2,918 MW, with the Netherlands leading this growth with 1.493 MW of new capacity followed by Belgium (706 MW) and the United Kingdom (438 MW). (February 9, 2021)

- **General Motors (GM) to make all global operations and products carbon neutral by 2040.** Accordingly, the company will produce electric vehicles by ending production of the internal combustion engine by 2035. The company plans invest USD 27 billion in 30 electric vehicle models to be launched in the next 5 years. In addition, GM declared that it would ensure that 100% of the power required by its facilities in the USA would come from renewable energy by 2030, with all global facilities running off renewable energy by 2035. (February 4, 2021)





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