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Oil companies in trouble: the condition of refineries in Central European countries

The refining industry, like many other sectors of the economy, is in an extremely difficult situation due to the COVID-19 pandemic. The introduced restrictions (e.g. closed land, sea, and air borders) resulted in a decrease in the demand for all types of fuels. There are over a dozen refineries in Central Europe which had to reduce cut runs. The persistently low refinery margins are likely to have an impact on the industry in the long term, and some plants may even be closed.

Impact of the pandemic on the sector. Undoubtedly, 2020 was a difficult period for the oil industry in the world, as the decline in crude oil consumption was unprecedented. According to estimates by the International Energy Agency (IEA), in 2020 the demand for crude oil decreased by 8.8 million barrels per day (mb/d), and by as much as 20 mb/d (approx. 20% y-o-y) in April 2020 alone. The shock caused by the pandemic forced the countries participating in the OPEC+ agreement (including Russia, Kazakhstan) to take coordinated action. While in March 2020 there was a "price war" due to a different assessment of production cuts by Saudi Arabia and Russia, in April 2020 the OPEC+ countries returned to talks and finally decided to reduce production of crude oil by 9.7 mb/d per month. Active measures contributed to a reduction in the availability of crude oil and an increase the price of this commodity.

The decline in demand for liquid fuels, less crude oil availability, and increasing crude oil prices are major challenges for refineries. According to estimates, it is expected that many such plants worldwide with a total processing capacity of 2.3 mb/d will be closed or will reduce their capacity in the coming years. In Europe, such a situation will apply to refineries with a capacity of at least 0.6 mb/d, notably those in Belgium (Antwerp), Great Britain (Grangemouth), Portugal (Porto), Finland (Naantali), and Italy (Livorno). The closure of the plants will affect both the labour market and the local and regional availability of liquid fuels, making it necessary to increase production or import from other locations.

Troubles for small businesses. There are over a dozen refineries operating in Central Europe which differ in ways such as the scale and depth of crude oil processing, the volume and structure of produced liquid fuels, and their access to crude oil. In 2020, many of them found themselves in an extremely difficult market situation, and the first natural response was to reduce the throughput of crude oil (reduction of utilization rate). Low margins on transport fuels meant that the second response was, inter alia, maximizing the production of diesel over jet fuel. While air traffic was almost completely limited, car traffic (e.g. heavy transport) could function fairly well. In these conditions, eventually there was a significant increase in diesel oil stocks, which resulted in a decrease in the profitability of this fuel production. In addition, there was also a decrease in gasoline consumption (fuel used primarily in private transport), and as a result, problems covered the entire industry, including both complex refineries and those with a smaller refining processing depth.

In the Central European region, the difficult situation concerns mainly the refinery in Kralupy in the Czechia, which is supplied with crude oil from the Adriatic Sea (oil terminal in Trieste in Italy), then via the TAL and IKL pipelines. Due to the low scale and depth of crude oil processing as well as the high cost of crude oil supplies, the refinery could be closed. However, there are other plants in the region, so such a situation would not have a negative impact on regional liquid fuels market. The refineries in Rijeka (Croatia) and Bosanski Bród (Bosnia and Herzegovina) also face problems. In the case of the first refinery, the Hungarian MOL Group, which owns the refinery, has been withholding the modernization process of this plant for years (in the past, the construction of a delayed coking plant was considered, which would enable an increase in diesel production and a reduction of heavy fuels). Nevertheless, currently (due to the liquid fuels demand decline) the investment may not be initiated, which may result in the closing of the refinery. If so, the oil industry in Croatia would be liquidated, and therefore there would be a need to increase liquid fuels imports. With regard to the second refinery, a fire in 2018 has resulted in the reconstruction of the Bosanski Bród refinery that is currently underway (a small plant focused on, among others,

the production of asphalt). The prevailing market conditions will adversely affect the speed of modernization of the company.

A slightly better situation for other refineries. The condition of oil companies is linked with economic situations in the country and region where the refinery is operating and is selling liquid fuels. During the period of the pandemic restrictions, many airlines were grounded and restrictions on the movement of people and goods were introduced, which automatically had an impact on the refining sector. The problems affected all plants, which had to limit runs. This situation in Central Europe affected refineries in Lithuania (Możejki), Poland (Płock, Gdańsk), the Czech Republic (Litvínov, Kralupy), Slovakia (Bratislava), Hungary (Százhalombatta), as well as Bulgaria (Burgas) and Romania (incl. Constana, Ploiești, Onești).

Refineries on the Baltic Sea – in Możejki (Lithuania) and Gdańsk (Poland) – were in a relatively good situation. The Możejki plant is focused on the export of liquid fuels to the Baltic states market, Poland and Ukraine, and on exports by sea. Of course, the plant was forced to reduce its runs, but the situation in the Baltic states forced the refinery to be more flexible. In these countries, demand decline for liquid fuels were not very significant. In 2020, the consumption of the two main transport fuels (gasoline and diesel) decreased in Latvia by 7% compared to 2019, while in Lithuania and Estonia it increased by 4% and 2%, respectively, a result of a large increase in demand for liquid fuels during the summer. The situation of the refineries is stable despite the large production of heavy fuel oil (HSFO). In the case of the refinery in Gdańsk, the commissioning of the delayed coking installation increased the flexibility of the plant's operation, and the maritime location meant that the refinery, apart from directing its products to the local market, also sold liquid fuels to foreign markets (sea transport). Basically, in Poland, thanks to a large and absorbent market, the refineries in Płock and Gdańsk, despite the need to reduce crude runs (in 2020 a decrease of 5.2% compared to 2019), were able to adapt to the unstable market conditions.

Conclusions. The difficulties faced by refineries in Europe are directly connected to the pandemic restrictions which were introduced. Only lifting the restrictions and ensuring free trade and the movement of people will increase liquid fuels consumption. Such decisions will automatically improve the functioning of the refineries in Europe. Given the scale of the restrictions, the decline in revenues from the sale of liquid fuels applies to both smaller and more complex refineries.

A natural response to the changed market conditions was the reduction of crude oil processing, and further, the process of maximizing the production of diesel in relation to jet fuel. Nevertheless, further actions can be foreseen, including the development of the petrochemical segment on the one hand, and, on the other hand, focusing on the production of fuels from plant-based products (biorefinery). The second of these solutions will probably be preferred, taking into account the efforts of the European Commission to reduce CO2 emissions. Such plans have refineries in Finland (Porvoo), France (Grandpuits), and Sweden (Lysekil).

In the countries of Central Europe, the most difficult situation is faced by refineries in the Czechia (Kralupy) and in Croatia (Rijeka). As a result, the revenues of PKN ORLEN S.A. and the MOL Group (the owner of a refinery in Croatia) will decrease, which will make it difficult to rebuild companies that play an important economic role in Poland and Hungary. The closure of crude oil processing plants in Croatia will have negative consequences for both the regional energy security and the regional labour market.