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War in Ukraine: Kiev's efforts to ensure the availability of petroleum products

The ongoing war that began in 2022 has brought about significant changes in Ukraine's energy market. In late 2023, the government in Kiev introduced measures to bolster the country's energy security by establishing a system of crude oil and petroleum products reserves. While work on the relevant legislation had been underway for years, it was the war and Ukraine's attainment of associate state status in the International Energy Agency that expedited the process. These measures aim to ensure the availability of petroleum products, particularly considering the limited prospects for rebuilding Ukraine's refining sector in wartime conditions.

Refining sector. The energy sector plays a crucial role in Ukraine's economy¹. Prior to the outbreak of full-scale war, the country had only one operational refinery – in Krzemenchuk – with a technical capacity of 372,000 barrels per day. However, due to a lack of modernisation, the actual petroleum products production capacity was significantly lower. Consequently, liquid fuel availability on the market relied heavily on imports, which constituted approximately 97% of domestic consumption (around 12% of which was from the "grey market"). Petroleum products for the domestic market were primarily imported overland from the Russian Federation, Belarus, and Lithuania, while sea imports primarily originated from Azerbaijan and Turkey.

As a consequence of the war, the refinery in Krzemenchuk was destroyed in 2022 and subsequently partially rebuilt (current information on whether petroleum products production continues at the plant is unavailable). The conflict in Ukraine has also shifted petroleum products import routes, with the majority of products now sourced from or passing through Lithuania, Poland, Romania, Slovakia, and Hungary ("IEŚ Commentaries", no. 778). The naval blockade of Ukrainian ports on the Black Sea has halted imports via this route since February 2022 (the last three deliveries by sea to the Odessa terminal occurred in 2022). One key import route is through Romania, which experienced a 30% increase in diesel imports in 2023 compared to 2022. Meanwhile, deliveries of this product from the Russian Federation plummeted by 87% (due to sanctions imposed since February 2023), but increased from other sources (including Kuwait, Italy, and Turkey).

Rebuilding refining capacity. The most favourable solution for Ukraine's energy security, in terms of ensuring the availability of petroleum products on the domestic market, would be the reconstruction of the refinery in Krzemenchuk or the construction of new plants. However, constructing them during the ongoing war poses significant problems and risks (including a lack of funding and the possibility of attacks from Russia). Consequently, ensuring the availability of petroleum products from domestic plants is currently unfeasible. Nonetheless, the availability of petroleum products is assured and import channels operate without major obstacles. Additionally, there are refineries in the region capable of supplying products to Ukraine as well.

It can be assumed that in the event of the war ending, Ukraine would take active steps to rebuild or construct the refinery. Subsequently, it would be necessary to determine a suitable location for the plant, as well as to guarantee access to crude oil (including the construction of a transmission system). The existing system currently only allows for crude oil supplies from the Pivdenny terminal near Odessa. Additionally, there is a possibility to supply crude oil from the south through the Omišalj oil terminal in Croatia, the Adria pipeline, and a reverse flow on the Družba pipeline (although appropriate modernisation work would need to be carried out on the Hungary-Ukraine section). Another potential solution would be to construct the Brody-Adamovo

¹ See more: J. Olchowski, H. Bazhenova, *Ukraina*, [in:] *Raport. Bezpieczeństwo energetyczne państw Europy Środkowej i Wschodniej*, eds. B. Surmacz, M. Paszkowski, Lublin 2023, pp. 191-199.

pipeline and ensure the availability of crude oil shipped through the Gdansk oil terminal. In this regard, the most optimal solution would be to construct a refinery in the western part of Ukraine (rather than rebuilding the refinery in Kremenchuk) to maximise the ability to import crude oil through various channels.

Law on minimum stocks of crude oil and petroleum products. One of the tools for ensuring the availability of fuels in the event of shortages in the domestic market is the maintenance of adequate minimum stocks. This approach requires (1) appropriate national regulations for the creation and maintenance of stocks, as well as (2) the construction of suitable tanks.

In terms of appropriate national regulations, Ukraine enacted the Law on Minimum Stocks of Crude Oil and Petroleum Products² in 2023. This legislation was implemented not only for practical reasons, such as enhancing energy security, but also in response to international obligations. Ukraine, having attained the status of an associate state in the International Energy Agency since July 2022, and being designated as a candidate state for the European Union since June 2022, is obliged to establish an appropriate stockpile system as per the requirements of both organisations. The regulations introduced by Ukrainian law in 2023 are akin to the solutions adopted by member states of the IEA and the EU³. Presently, the responsibility for the cost of building and maintaining stocks lies with petroleum products importers and producers, including refineries.

In the latter case, an effective system of tanks is imperative to maintain crude oil and petroleum products (particularly given the destruction of the Krzemenchuk refinery in Ukraine, where petroleum products stocks, rather than crude oil, will primarily be created and maintained). As of now, no such system exists within the territory of Ukraine and the majority of petroleum products depots have been established by private entities (such as the SOCAR company from Azerbaijan). However, the foundation for an adequate stockpile system could be the oil terminals on the Black Sea (Pivdenny and Yuzhnyy)⁴, as well as tanks situated in idle refineries⁵. Following the introduction of the 2023 law, which mandated the establishment of appropriate tanks, entities importing petroleum products have been somewhat compelled to construct these facilities.

Conclusions

- The Russian-Ukrainian war has substantially restructured the logistics of petroleum product supplies to Ukraine. In the present wartime context, access to petroleum products holds crucial significance from both economic and military standpoints. With the destruction of the nation's sole operational refinery, the availability of products in the domestic market is now reliant solely on imports.
- The prospects for rebuilding the refining sector in Ukraine, as well as securing the availability of crude oil, are currently minimal. The construction of new crude oil processing plants will only be feasible once the geopolitical situation stabilises.
- The introduction of the Law on Minimum Stocks of Crude Oil and Petroleum Products in 2023 represents a significant step towards ensuring the country's energy security. In Ukraine, efforts towards establishing an appropriate system had been ongoing for many years, but it was the exigencies of war that underscored the necessity for comprehensive legislation. This law sets the foundation for constructing a system that could guarantee the availability of petroleum products in emergency

² Law on Minimum Petroleum and Fuel Stocks, 21 November 2023, Document 3484-IX, <https://zakon.rada.gov.ua/laws/show/3484-20#Text> [4.04.2024].

³ The law specifically regulates, among other things: (1) the construction and maintenance of stocks (the volume of stockpiles to be determined based on either 90 days of average daily net imports or 61 days of average daily domestic consumption, whichever is greater); (2) the supervision of stocks, which has been entrusted to the relevant state bodies; (3) the manner in which market players – importers and refiners – accumulate stocks; (4) the definition of an emergency, including the protocol for the release and appropriate use of the accumulated stocks; and (5) the procedure for replenishing stocks after release.

⁴ Ukraine maintained a terminal in Theodosia on the Black Sea, but after the annexation of Crimea, it is now under the control of the Russian Federation.

⁵ In the past, seven refineries operated in Ukraine: Krzemenchuk, Kherson, Odessa, Lisychansk, Drohobych, Shevelinka and Nadvirnia.

situations. Additionally, it can serve as a crucial tool in combating the 'grey market' within this sector and enhancing state supervision over the liquid fuel industry. A lack of adequate oversight had previously led to unregulated petroleum products imports from the Russian Federation before the war, as well as the collapse of the refining sector in Ukraine.