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# Sanctions hypocrisy

G7+ Imports EUR 1.8 Billion of Turkish Oil Products  
Made from Russian Crude

## **Sanctions hypocrisy: G7+ imports EUR 1.8 bn of Turkish oil products made from Russian crude**

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Center for the Study of Democracy (CSD)

## **About CREA**

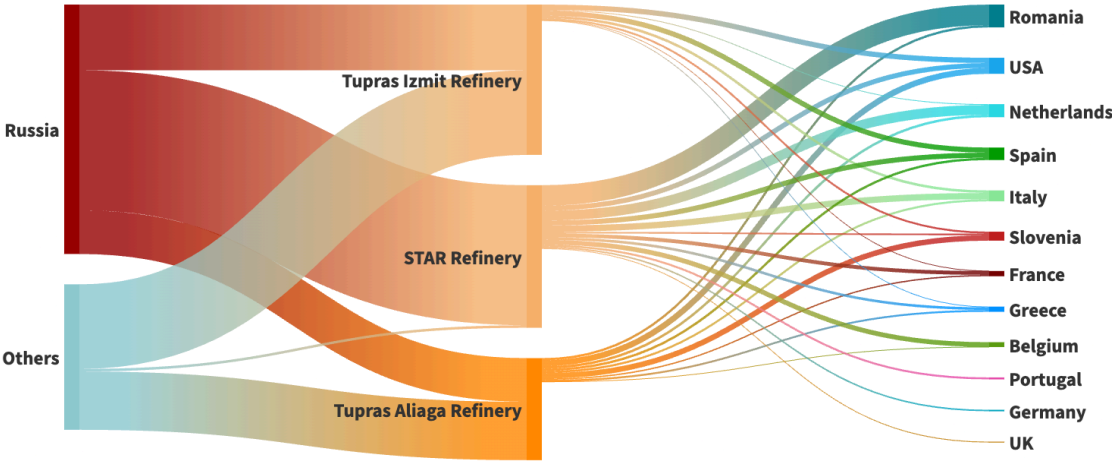
The Centre for Research on Energy and Clean Air (CREA) is an independent research organisation focused on revealing the trends, causes, and health impacts, as well as the solutions to air pollution. CREA uses scientific data, research, and evidence to support the efforts of governments, companies, and campaigning organisations worldwide in their efforts to move towards clean energy and clean air, believing that effective research and communication are the keys to successful policies, investment decisions, and advocacy efforts. CREA was founded in Helsinki and has staff in several Asian and European countries.

## **About CSD**

Founded in late 1989, the Center for the Study of Democracy (CSD) is a public policy institute fostering the reform process through impact on policy and civil society. CSD's mission is "building bridges between scholars and policy-makers". Since 2014, CSD has pioneered the assessment of Russian economic influence through the Kremlin Playbook series of reports, focusing particularly on Russia's weaponization of energy and state capture to exert outsized influence over decision-making in strategic economic and political areas.

# Sanctions hypocrisy: G7+ imports EUR 1.8 bn of Turkish oil products made from Russian crude

**Sanctioning countries' imports of oil products from refineries using RU crude**  
Imports from 3 Turkish refineries | Tonnes | January 2024 to June 2024



Source: CREA analysis •  
First step of flow shows crude imports by source. Second step shows oil products exported by refinery.



## Key findings

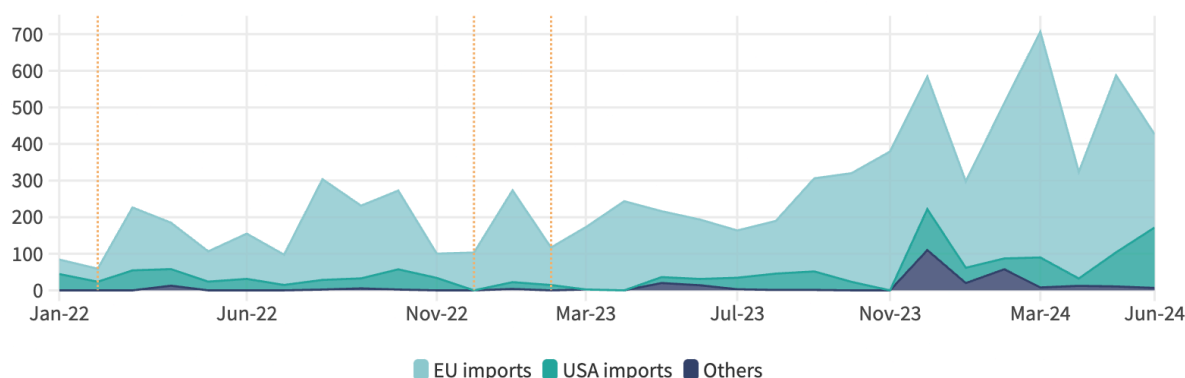
- G7+ countries<sup>1</sup> imported EUR 1.8 bn of oil products derived from Russian crude, from three refineries in Turkey in the first half (H1) of 2024.
- G7+ countries have grown their oil products purchases from these refineries by 62% year-on-year.
- Turkey expanded its dependence on Russian seaborne crude oil imports from around 34% in 2023 to 70% in the first half of 2024, taking advantage of a USD 5-20 per barrel discount for purchases of the Russian Urals crude blend.
- The Azeri owned STAR refinery is 98% dependent on Russian crude, with 73% of its crude imports supplied by the US sanctioned company Lukoil. 87% of its seaborne exports of oil products are directed to G7+ countries.

<sup>1</sup> 'G7+' refers to the G7 countries, EU member states, Australia, Norway, and Switzerland.

- The USA's imports of oil products from Turkish refineries rose by more than three times year-on-year in H1 2024 and have generated EUR 125 mn in tax revenues for Russia.
- The USA's H1 2024 imports of oil products from the STAR refinery have generated EUR 38.3 mn in revenues for the US sanctioned company Lukoil — the single largest crude supplier to the refinery.
- The USA's H1 2024 Turkish imports of gasoline, estimated as being derived from Russian crude, could have fuelled an estimated 338,782 American vehicles every month in the same period.
- The total volumes of crude oil processed by Turkish refineries to export oil products to EU and G7 countries have secured EUR 750 mn in tax revenues for the Kremlin in the first half of 2024 alone.

## G7+ countries enabling rising demand for Russian crude

**Volume of Russian crude used to make oil products for sanctioning countries**  
3 Turkish refineries | Thousand tonnes | January 2022 to June 2024



Source: CREA analysis •

Dotted lines indicate: Russian invasion of Ukraine on 24 Feb 2022; G7+ import ban and price cap on Russian crude oil on 5 Dec 2022; ban on imports of refined oil products on 5 Feb 2023



On 5 December 2022, G7+ countries implemented a [ban](#) on imports of Russian crude oil and a USD 60 per barrel price cap on the commodity when transported by Western owned/insured tankers. A month later, Romania, an EU Member State, received a shipment of gasoil from the STAR refinery in Turkey, which uses Russian crude. The fairly innocuous shipment violated no sanctions as the import of refined products made from processing Russian crude oil in third countries is under no ban.

Yet, this glaring loophole in the sanctions opened a backdoor for Russia to shift its crude exports to new buyers in third countries that are not imposing sanctions. These countries

started importing increasingly large volumes of Russian crude and refining it into oil products that are then legally exported to G7+ countries.

Turkey has risen from being the 14th largest buyer of Russian crude oil before Russia's full-scale invasion of Ukraine, to the third largest importer in the first half of 2024. In the same period, three Turkish refineries have used EUR 1.2 bn worth of Russian crude to create oil products imported by G7+ countries: STAR Refinery, Tupras Izmit Refinery and the Tupras Aliaga Izmir Refinery. Imports of refined oil products from these three Russian crude processing facilities in Turkey have generated EUR 750 mn in tax revenues for the Kremlin, financing its brutal war on Ukraine.

The Russian oil and gas sector is a [crucial revenue stream for the Kremlin](#), contributing 32% to the federal budget in 2023, a decrease from 42% in 2022. Furthermore, the Kremlin allocated a [third of all 2024 spending](#) on the military. The tax revenue received from sanctioning countries imports of Turkish oil products made from Russian crude would enable Russia to recruit over 6,200 soldiers every month even after the [new sign on benefits they are offering](#) to those willing to fight in Ukraine.

G7+ countries have displayed little desire or political will to address the refining loophole and stop it since the beginning of Russia's full-scale invasion of Ukraine. While the loophole goes unchecked, G7+ countries have actually increased their imports from non-sanctioning countries taking advantage of the situation by simply switching their supplier from Russia to third countries that are essentially functioning as Russian middlemen merchants. Having discovered that Western countries are not concerned about the origin of the crude used to create products for them, non-sanctioning countries have switched suppliers and are now heavily dependent on Russian crude oil and indirectly supply Russian coffers.

While the oil price cap and embargo did lower Russia's oil export earnings by an [estimated 14%](#) in the second year of the invasion, the loopholes have allowed Russia to continue relying on its traditional Western markets and make up for the loss of revenues by selling larger volumes to third countries, who then sell derived products on to Western markets. The latter would not be possible if G7+ countries did not accept final products from the third country refineries and oil export terminals. By buying oil products from refineries that rely on Russian crude oil, G7+ countries are maintaining and even increasing demand and therefore boosting the price of Russia's oil exports.

# G7+ countries' imports emboldening Turkish refineries' reliance on Russian crude

## Oil products imported by sanctioning countries from Turkish refineries

Mn tonnes of oil products | January 2024 to June 2024 | Imports from 3 Turkish refineries



Source: CREA analysis

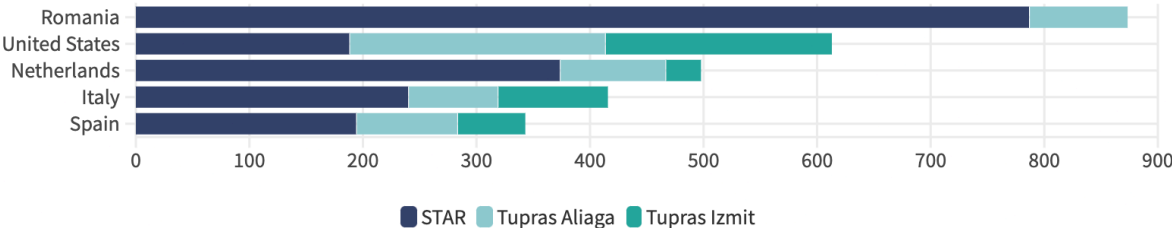


While India and China have become the largest consumers of seaborne Russian crude, Turkey's imports have also grown significantly since the start of the sanctions. Turkey's imports of seaborne Russian crude have risen by 54% in the first half of 2024, compared to the same period in 2023. Furthermore, a staggering 70% of Turkey's seaborne crude imports in the first half of 2024 came from Russia, up from 34% a year earlier. This can be explained by [an estimated USD 5-20 per barrel discount](#) on purchases of the Russian Urals crude blend. If we assume similar oil price spreads between Brent and Urals as in other markets where the value of crude imports is reported by national customs agencies, then Turkish refineries could have saved up to EUR 3.1 bn in 2023 and 2024 by buying Russian crude.

This growing demand for Russian crude is an indirect result of G7+ countries' continued demand for refined oil products from Turkish refineries. 77% of these three refineries' exports are directed to G7+ countries, which means that the EU and the USA, in particular, could impose strong pressure on the three refineries to reduce their reliance on Russian crude if they are to continue to sell to Western markets.

## Top 5 importers of oil products from Turkish refineries using Russian crude

Top 5 sanctioning countries | Thousand tonnes | January 2024 to June 2024



Source: CREA analysis



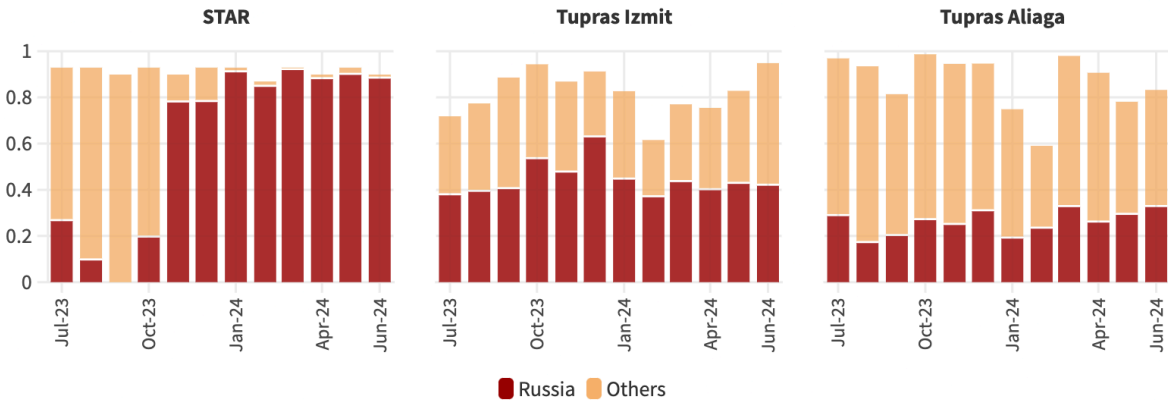
G7+ imports of oil products from Turkish refineries rose by 62% in H1 2024 up to 4.1 mn tonnes compared to H1 2023. CREA's analysis suggests that 2.6 mn tonnes of these imports

worth EUR 1.8 bn were processed from Russian crude. The European Union as a whole has imported EUR 2.47 bn of refined oil products from these refineries in the first half of 2024, of which EUR 1.5 bn is derived from Russian crude. The three largest importing countries of Turkish oil products derived from Russian crude were Romania (EUR 448 mn of their total imports were derived from Russian crude), the USA (EUR 232 mn), and the Netherlands (EUR 216 mn). The United Kingdom also imported EUR 26 mn of jet fuel from refineries in Turkey in the first half of 2024, EUR 16.5 mn of which was derived from Russian crude.

At the same time, these Turkish refineries satisfied a mere 2% of the total demand for refined products imported into G7+ countries in the first half of 2024. Hence, any sanction, ban or temporary closure on imports from refineries using Russian crude in Turkey would not lead to a supply deficit or to a significant increase in domestic fuel prices.

## G7+ countries’ imports rise at same time as refineries’ reliance on Russian crude

**Turkish refineries crude runs**  
Origin of crude | Mn tonnes | July 2023 to June 2024



Source: CREA analysis using Kpler data



While the share of Russian crude oil being processed in Turkish refineries has grown steadily since the full-scale invasion of Ukraine, there has been a significant increase in their import volumes in the first half of this year. Two refineries in particular (STAR and Tupras Aliaga) have become increasingly dependent on Russian crude. The STAR refinery has used 5.3 mn tonnes of Russian crude in the first half of 2024, a 151% increase when compared to the six months prior. In the first half of 2024, a staggering 98% of the refinery’s runs were on Russian crude.

In this period, more than 87%, or 2.56 mn tonnes, of the STAR refinery’s seaborne exports, are directed to G7+ countries. Its largest importers are EU Member States: Romania

(786,942 tonnes), the Netherlands (373,712 tonnes), Italy (240,177 tonnes), and Spain (194,318 tonnes). The United States rounds off their top five importers, having imported 188,336 tonnes of refined products. A quarter of the STAR refinery’s exports to G7+ countries is diesel with blending comps (18%) and gasoil (17%) constituting the other major products exported.

Due to this refining loophole, individuals in the USA and other sanctioning countries could be fuelling their vehicles with a de facto Russian product.

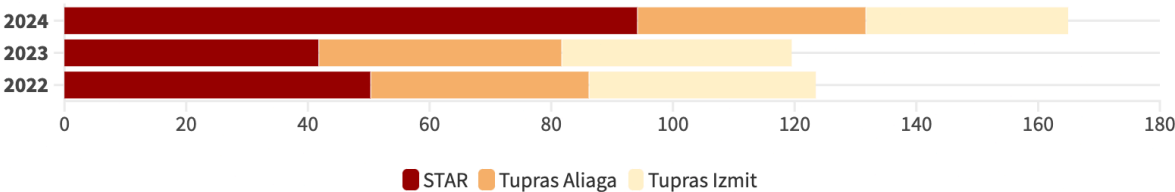
A similar trend can be observed in the Tupras Aliaga Izmir refinery, which depended on Russian crude for 34% of its runs in the first half of 2024. Their demand for Russian crude has increased by 9% in the first half of this year (1.6 mn tonnes) compared to the six months prior. In the same period, the refinery has exported 1 mn tonnes of refined oil products to G7+ countries — 61% of its total global exports — of which 324,027 tonnes is estimated as being derived from Russian crude. Diesel (34%, 328,756 tonnes) and fuel oil (34%, 321,129 tonnes) are the most exported products to G7+ countries from this refinery. The United States is the largest importer (225,193 tonnes) from the Tupras Aliaga Izmir refinery, taking in 14% of its total global exports.

In contrast to the other two, the Tupras Izmit refinery’s reliance on Russian crude has dropped by 11% in the first six months of this year compared to the prior six. The refinery nonetheless remains 54% reliant on Russian crude, consuming 2.5 mn tonnes of Russian crude in the same period. Meanwhile, it has exported 593,000 tonnes of oil products to G7+ countries (constituting 77% of its total exports) of which 320,000 tonnes were derived from Russian crude.

## USA’s increased demand for refined oil products raises refineries’ demand for Russian crude oil

### USA's average monthly imports of oil products from 3 Turkish refineries

Thousand tonnes | Imports from refineries using Russian crude



Source: CREA analysis • 2024 average calculated on volume of imports from January to June



While EU Member States’ imports of refined oil products from Turkish refineries remain the highest with Romania gobbling up 24% of the bloc’s total purchases, it is the United States

who is the second largest importer of refined oil products from these three refineries (15% of the total) in the first half of 2024.

The USA's imports from these refineries have risen an astronomical 335% year-on-year in the first six months of 2024, up to around 613,000 tonnes — already higher than their total oil products imports from them in 2023. CREA estimates that 386,000 tonnes of the imported refined oil products in the first half of 2024 were derived from Russian crude. These imports consist mostly of gasoline. The USA's imports of gasoline from these refineries, estimated as being refined from Russian crude, could have fuelled up an estimated 338,782 American cars every month.

The increased imports may explain why Turkish refineries have further shifted their dependence to Russian crude oil, which is sold at a large discount compared to alternative blends, and which has become harder to sell amidst sanctions. The Russian crude used by these Turkish refineries to produce fuels for the USA has sent an estimated EUR 125 mn to the Kremlin in tax revenues.

The US's growing reliance on Russian refined oil products from Turkey could be extending to supply the Pentagon. In the first four months of 2024, the US Department of Defense awarded contracts for petroleum products to the Petrol Ofisi Turkish petroleum distribution company [worth USD 1.14 mn](#) — on top of USD 2.64 mn of contracts to the same company in 2023 — despite the growing use of Russian crude in Turkish refineries.

[Petrol Ofisi](#) is not a company that owns or operates any known refinery in Turkey. It is the country's single largest distributor of refined oil products and runs [1,900 petrol stations](#) as well as retail outlets.

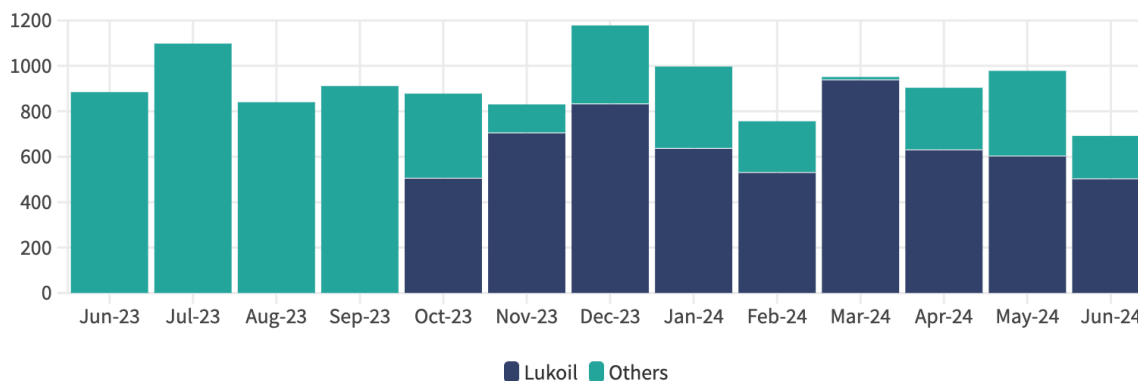
The company also owns an oil terminal in Cyprus — an EU Member State that imported 176,000 tonnes of oil products from the STAR refinery and Tupras Izmit refinery in the first six months of this year. The United States' Department of Defence could be importing refined oil products from a distributor that is in turn buying it from refineries processing Russian crude. Strict due diligence is required to ensure that the US military is not purchasing refined oil made from Russian crude. Although this is a legal process due to the loophole in the sanctions, purchases from third countries of refined Russian oil would be sending funds to the Kremlin used to finance their invasion of Ukraine.

The US Department of Defence's lack of due diligence and monitoring when awarding contracts to suppliers has also been scrutinised in the past. Investigations in 2023 found that military installations in the USA might be [receiving refined oil products from a Greek refinery](#) that has in turn received re-exported Russian oil products from Turkey.

# Lukoil’s influence on oil markets continues to benefit the Kremlin

## STAR Refinery's crude oil runs by supplier

Volume in thousand barrels | By sellers



Source: CREA analysis based on Kpler data •

Others includes other Russian suppliers like Tatneft, Rosneft, Surgutneftgas



One of Turkey’s largest oil refineries is the STAR refinery in Aliaga, owned by the State Oil Company of Azerbaijan Republic (SOCAR). Through 2023, in the early months of the sanctions, only 25% of the refinery’s runs, on average, were on Russian crude.

The refinery’s strategy changed drastically in October 2023, after [SOCAR took a USD 1.3 bn loan from Lukoil](#), and in turn allowed the second largest Russian oil company to supply crude to the STAR refinery again. While the deal envisioned that Lukoil would cover only half of the refinery’s capacity, in reality the Russian firm has almost monopolised the supply. Lukoil has supplied crude to the refinery in the past, but there was a complete cut off in supply after the EU/G7 ban on Russian crude imports. It was not before the loan deal with SOCAR that Lukoil started selling to the refinery again. Since then, STAR’s crude purchases from Lukoil have expanded dramatically, rising by 88% over the last six months.

Lukoil’s decision to sell more oil to the STAR refinery came about only after it became increasingly clear that a derogation from the EU’s seaborne crude oil import ban provided to Bulgaria would end much earlier than the initial deadline of the end of 2024. In the last six months of 2023, before the end of the derogation on 1 March 2024, Lukoil exported 2.92 mn tonnes of crude oil to Bulgaria. In August and September 2023, Lukoil sold record volumes of Russian crude to its fully-owned refinery subsidiary near the Bulgarian port of Burgas on the Black Sea.

After Russian crude imports were halted by Lukoil on 1 January 2024, the Russian company increased their exports to the STAR refinery, more or less replacing the volumes previously sent to Bulgaria with similar ones going to the STAR refinery. In the first six months of 2024,

Lukoil exported 3.8 mn tonnes of crude oil to the STAR refinery — making up 73% of their total imports.

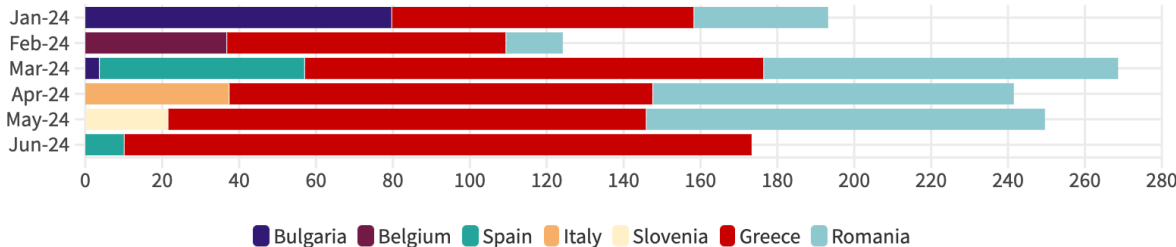
The shift, which was the result of the Western oil sanctions, shows how Russian companies can find new buyers for their crude in third countries mainly due to G7+ countries' continued imports of refined products from third countries.

Azerbaijan, the host of COP 29, is a petrostate hugely dependent on fossil fuel exports for its economy. The country was expected to help replace Europe's energy dependence on Russia and also help diversify Turkey's own domestic supply. Currently it is serving as a backdoor for the Kremlin to maintain and even increase its oil revenues while also ensuring Turkey's dependency on Russia and Lukoil.

What is even more extraordinary in this situation that is completely legal, is that the US enforcement agency — The Office of Foreign Assets Control (OFAC) — has [listed Lukoil as a sanctioned entity](#). The United States' imports of oil products in the first half of 2024 from the STAR refinery have generated EUR 38.3 mn in revenues for the Russian owned company Lukoil — an entity that is sanctioned by the United States and that is closely involved in financing Putin's war-chest.

### Lukoil subsidiaries exert control on supply chains in the EU

**Countries with companies linked to Lukoil importing refined oil products from Turkey**  
 Thousand tonnes of refined oil products | January to June 2024



Source: CSD analysis using Kpler data



A second worrying aspect of the oil trade since the sanctions on Russia is the wider influence Lukoil has within EU Member States, wherein its subsidiaries and affiliates regularly purchase refined products for the EU market from Turkish refineries processing Russian crude. In the first half of 2024, Lukoil directly bought 10 cargoes of refined oil products from Turkish refineries with a total volume of around 242,000 tonnes worth EUR 168 mn, destined for the EU market.

Romania, the largest importer within the EU, has purchased EUR 642 mn of refined oil products from the STAR refinery alone in the first half of 2024. 90% of these imports end up

at Oil Terminal SA in the port of Constanta. [Petrotel Lukoil SA](#) — a Lukoil subsidiary — operates a refinery in Ploiești, Romania, and owns a network of 315 fuel stations throughout the country. In January 2024, Petrotel Lukoil SA [entered into a one-year, EUR 20 mn contract with Conpet](#), the national operator of the Romanian oil and oil products pipelines, to transport crude and oil products from Romania's Oil Terminal SA to Petrotel Lukoil SA.

It is these trade patterns — where Lukoil supplies Russian crude to STAR refinery in Turkey, who then exports the refined oil products to a terminal in Romania owned by a partner company — that has allowed them to gain more revenue through controlling both ends of the supply chain. Furthermore, there is a possibility that these products are being further exported to Moldova. Romania doubled its exports of petroleum products to Moldova in 2023. [Lukoil Moldova owns around 20% of the country's retail market and is responsible for 40% of the diesel imports and more than one third of the gasoline consumed](#), according to a report by Moldova's anti-trust regulator.

Lukoil's presence extends in a similar way across other EU Member States like Spain and the Netherlands, both of whom are big importers of refined oil products from the STAR refinery.

Lukoil has a significant presence in the Netherlands' domestic market, where it holds a [45% stake in the Zeeland refinery](#) (the French company Total controls the other 55%). Furthermore, Lukoil has a retail network of over 250 petrol stations across the Netherlands, Belgium and Luxembourg. In Spain, [Lukoil has a 50% stake in a joint venture with Meroil](#), a Spanish oil operator, which owns a storage capacity of 360,000 cubic metres of refined oil products at the port of Barcelona.

Lukoil's active trading of refined products from Turkey is no surprise given the company's long-term presence in the country. [When Lukoil acquired Turkish fuel distributor Akpet for USD 500 mn in 2008](#), the Russian company also received direct access to the Tupras refineries, which process on average 44% Russian crude (of which on average 7% in H1 2024 has been supplied by Lukoil).

This has allowed Akpet, now owned by Lukoil, to sell large volumes of refined oil products to the Mediterranean European market. Akpet operates ten supply terminals and storage facilities with a combined capacity of 250,000 cubic metres in Mersin, Izmit, Kırıkkale, Trabzon, and Alanya — some of the largest ports exporting oil products to the European Union. The company also owns eight oil product terminals with maritime access at the Samsun, Mersin, and Hatay ports, including facilities within the Dortyol terminal. [In addition, in 2023, the Russian oil company, Tatneft, acquired a 50% stake in Akpet for USD 160 million.](#)

For years, Akpet also used its terminals to import refined products from Lukoil's refineries in Italy and Bulgaria. However, Lukoil was forced to rearrange its supply chain strategy for refined products after it sold the ISAB refinery in Sicily, and it could no longer take advantage of the derogation for the import of Russian crude to its facility in Bulgaria. The imports from STAR suggest that Lukoil seeks an alternative supply route to maintain its share in the EU's fuel distribution market.

## **Cheaper costs and profiteering expose G7+ countries' hypocrisy over sanctions**

The change in the landscape of the oil trade within sanctioning countries is also an indicator of how many of them have capitalised on the relatively cheaper prices offered by refineries in third countries using Russian crude. Despite the relatively small market share of imports coming from Russia, as long as the oil products are cheap, sanctioning countries are more than happy to look the other way and avoid plugging the refining loophole.

EU Member States' imports clearly reveal the state of play. In 2024, the average price for gasoline imported from Turkey by EU Member States was EUR 0.63 per kg. The average price of gasoline from Saudi Arabia was EUR 0.70 per kg. This 10% price difference benefits companies purchasing the oil products without necessarily translating on to the market. A similar trend can be seen in the average price of diesel from Turkey (EUR 0.7 per kg), which is 7% cheaper than diesel from Saudi Arabia (EUR 0.76 per kg). This price difference has mainly benefitted companies without translating to lower prices for consumers in the bloc.

Saudi Arabia remains the highest exporter of refined oil products to the bloc, for now, and their export volumes to the EU have increased by 9% year-on-year. At the same time, the EU's imports from Turkey have increased 44%, making them the third highest exporter of oil products to the EU — they were in seventh place in H1 2023. The lower prices of Turkish oil products and the associated cost benefits have no doubt played a significant role in this expansion. A second reason for this sharp increase also lies in the fact that they may be [re-exporting oil products from Russia to the EU](#) without these products being refined.

In fact an increased reliance on cheaper Russian crude has not benefited Turkish consumers either. The [average price of market gasoline in Aliaga](#) (home to two of the three refineries this analysis focuses on) in June 2024 (TRY 42.2/litre) was 11% higher than that in January (TRY 37.9/litre) and 80% higher than June 2023 (TRY 23.4/litre) — when they were in fact less reliant on Russian crude. There has been a massive 97% rise in the average price of gasoline in the first half of 2024 compared to the same period last year. Turkish consumers are receiving no benefits of the continued imports of Russian crude by

these refineries, and instead may well be locked into energy dependence on a volatile state.

At the same time, with the EU and other sanctioning countries looking away, Russia continues to reap the benefits of the increased crude exports to Turkey, slowly increasing its market share, earning massive revenue and boosting its coffers for the continued invasion of Ukraine.

## **Policy recommendations: What can Ukraine's allies do to cut Russian revenues further?**

**Ban imports from refineries using Russian crude:** The first and most important step sanctioning countries should take is to ban the imports of oil products from refineries using Russian crude oil. This would enhance the impact of the sanctions by disincentivizing third countries from importing large amounts of Russian crude and thereby suffocate Russia's search for new markets.

**Sanction Lukoil owned and operated refineries:** The USA should also ban imports of oil products from refineries owned, operated or running on crude oil sold by the sanctioned Russian company Lukoil. Any purchases of refined products from refineries part-owned by Lukoil or from refineries running on Russian crude purchased from Lukoil are sending funds to a sanctioned entity that is closely related to the Kremlin.

**Low reliance will not impact domestic prices:** Banning imports from these refineries or Lukoil supplied entities will not have any effect on oil prices or create any domino effect. For example, the USA's purchases from STAR refinery constitute a mere 1% of its total seaborne imports of refined oil products. Banning these imports — from a refinery with huge imports of Lukoil crude — would have no effect on domestic prices or supply. This applies to the expanded price cap coalition too. Their relatively low reliance (2%) on oil products produced from Russian crude in these Turkish refineries means that a ban on these imports would have no significant inflationary pressure on domestic oil prices.

**Target wider network of Russian companies operating in Europe:** The EU should also impose sanctions on the remaining Russian oil companies operating on the European fuel distribution market including affiliates and subsidiaries of Lukoil, Tatneft and Rosneft, which benefit from their intricate supply chains for the import of petroleum products made from Russian crude in third countries.

**Lower the price cap:** An additional effective way to cut Russian revenues would be by lowering the crude oil price cap. Lowering the price cap would be deflationary, reducing Russia's oil export prices and inducing more production from Russia to make up for the

otherwise drop in revenue. A lower price cap of USD 30 per barrel (still well above Russia's production cost that [averages USD 15 per barrel](#)) would have slashed Russia's oil export revenue by EUR 62 bn since the sanctions were imposed in December 2022 until the end of July 2024. A USD 30 per barrel price cap would have slashed Russian revenues by EUR 3.51 bn in July alone.

## Methodology and assumptions

### Data sources

CREA analysis is based on an array of different data sources including: Kpler, Eurostat, Comtrade, Equasis, P&I providers, Global Energy Monitor.

Our estimation of refinery runs based on crude production regions is derived from Kpler. We assumed that the domestic consumption of oil products is the difference between the production capacity of the refinery and the total seaborne oil products exported.

### Estimating the value and volume of oil products made from Russian crude for export to G7+ countries

We assume that all feedstock crude oil is perfectly mixed by refineries over the analysis period. For each refinery, we multiply the percentage of the feedstock crude oil that is of Russian origin to the total volume of oil products flowing out of the refinery. This allows us to attribute products as being derived from Russian crude. For example: if 30% of a refinery's feedstock crude is of Russian origin, and the refinery exports 100 tonnes of diesel, we assume that 30 tonnes of the diesel comes from Russian origin crude.

Similarly, we derive the volume of Russian crude used to make these products as the percentage of the refineries' output being directed towards export multiplied by the volume of their imports of Russian crude. Our data on each refinery's monthly output comes from the [Turkish energy regulator's reports](#). We combined this with CREA data on exports to G7+ countries of oil products from these refineries and each refinery's volume of imports of Russian crude oil.

CREA's pricing model aggregates pricing data from a variety of different sources including Eurostat, UN Comtrade and OilPrice.com to derive monthly average prices of commodities. Read more about our pricing methodology [here](#).

## Calculating the number of American cars fuelled using gasoline made from Russian oil

We estimated that the US imported 37,172 tonnes of gasoline from the three Turkish refineries using Russian crude throughout the first half of 2024. 23,418 tonnes of this was estimated as being produced from Russian crude. On average the US imported 3,903 tonnes of gasoline per month made from Russian crude from the three analysed Turkish refineries.

$$3,903 \text{ metric tonnes} = 4,302.4 \text{ US tons} \left( 3,903 \times \frac{1,000}{907.18} \right)$$

$$\underline{1 \text{ US ton} = 748.0519480519 \text{ gallons.}}$$

$$4,302.4 \text{ US tons} = 3,218,425.9 \text{ gallons of gasoline}$$

The average US vehicle fuels up 9.5 gallons of gasoline according to data from the [American Petroleum Institute](#).

## Diesel & gasoline pricing

We estimated the per unit pricing for imports of diesel and gasoline using European Union Member States' import data from Eurostat. We eliminated any anomalous data — insufficiently representative of quantity or value — mainly of volumes below 500 kg for this analysis.

## Assumptions

We assume that refineries perfectly mix the crude imported over the period of analysis, January 2024 to the end of June 2024, for the production of oil products.