

# THREE YEARS OF INVASION

**EU imports of Russian fossil fuels in third year of invasion surpass financial aid sent to Ukraine**

**FEBRUARY 2025**

LNG Imports •

€7.46bn

Pipeline  
Oil Imports  
€4.87bn

Pipeline  
Gas Imports  
€9.56bn

Russian Refined Oil •

€5.13bn

**FINANCING  
PUTIN'S  
WAR**

**EU imports of Russian fossil fuels in third year of invasion surpass financial aid sent to Ukraine: *Tighter sanctions that undercut Russian countermeasures can slash Kremlin revenues by 22% annually***

**24 February 2025**

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# 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.

## Disclaimer

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# EU imports of Russian fossil fuels in third year of invasion surpass financial aid sent to Ukraine

*Tighter sanctions that undercut Russian countermeasures can slash Kremlin revenues by 22% annually*



**CORRIGENDUM, 10 APRIL 2025** - The initial report published on 24 February 2025 projected Russia's average annual earnings to be EUR 257 bn. The correct figure is EUR 237 bn. This error was due to us using the USD value but labelling it in EUR. The subsequent change means that the impact of further sanctions is no longer estimated to be 20%. Accounting for the corrected figure means Russian revenues will be slashed by 22%.

These changes are reflected in the strapline of the report; the 'Key findings'; the 'Policy recommendations: Stronger sanctions can slash Russian revenues by EUR 51 bn annually'; and 'Figure 16'.

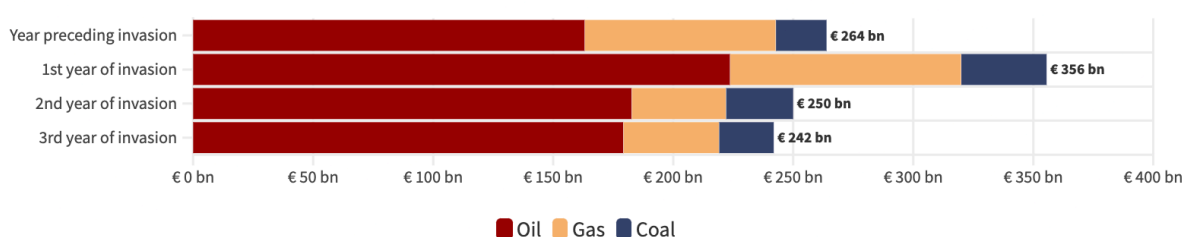
This change does not in any way impact the overall message of the report itself. We regret the error.

## Key findings

- In the third year of the invasion, Russia earned EUR 242 bn from global fossil fuel exports, a 3% year-on-year-drop; EUR 104 bn from crude oil, EUR 75 bn from oil products, EUR 40 bn from gas and EUR 23 bn from coal.
- Despite a host of sanctions, Russian revenues in the third year have dropped by a mere 8% compared to the year prior to the invasion of Ukraine. Since the invasion, Russia has earned an estimated EUR 847 bn from fossil fuels exports globally.
- The EU paid EUR 21.9 bn for Russian fossil fuel imports in the third year of the invasion, a mere 1% year-on-year reduction in volume. The EU's Russian imports in the third year of the invasion surpassed the EUR 18.7 bn of [financial aid sent to Ukraine](#) in 2024.
- The effect of sanctions on Russian Urals grade crude was 70% lower in the third year than the year prior, with sanctions slashing revenues by 6%, totalling EUR 2.6 bn. This is mainly due to Russia's increased use of 'shadow' tankers to transport oil to its new markets, enabling it to bypass the oil price cap.
- Russia relied on 558 Russian 'shadow' vessels to transport 61% of its total seaborne oil exports, valued at EUR 83 bn in the third year of the invasion.
- Despite a range of sanctions, EU Member States spent EUR 7 bn on Russian LNG in the third year of the invasion, with volumes rising by 9% year-on-year.
- G7+ countries imported EUR 18 bn worth of oil products from six refineries in India and Turkey of which an estimated EUR 9 bn was refined from Russian crude. Their imports of oil products made from Russian crude generated an estimated EUR 4 bn in tax revenues for Russia.
- Stronger sanctions countering Russian circumventions and targeted towards growing revenue streams can slash Russian fossil fuel export revenues by EUR 51 bn annually, effectively cutting earnings by 22%.

### Russia's fossil fuel export revenues

EUR BN | February 2021 to February 2025



Source: CREA analysis



**Figure 1 - Russia's fossil fuel export revenues — February 2021 to February 2025**

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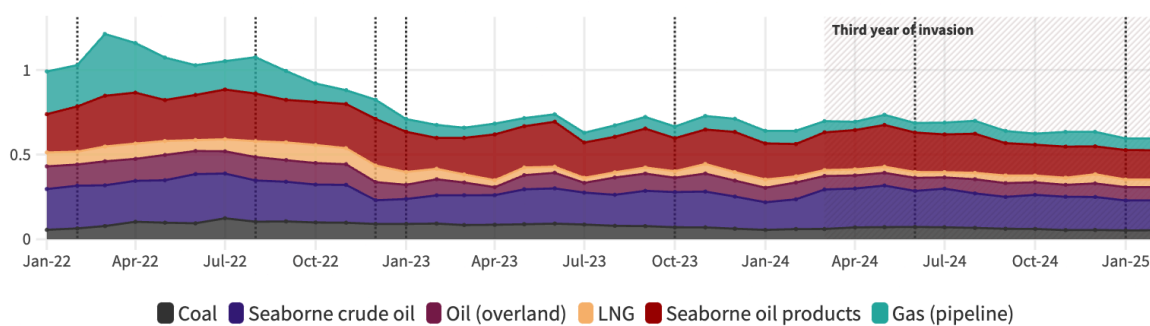
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# Russian fossil fuel revenues stabilise in third year of invasion

In January 2022, one month before Vladimir Putin launched the full-scale invasion of Ukraine, Russia earned EUR 30.7 bn from global fossil fuel exports. Over half of this was derived from sales to the EU. In January 2025, by comparison, Russia's fossil fuel revenues totalled EUR 18.4 bn, 40% lower than three years prior. Russian revenues from EU sales constituted a mere 9% of the total, even if the energy interdependence continues to play out in different ways today.

## Russian fossil fuel export revenue

EUR BN per day | 1 January 2022 to 24 February 2025



Source: CREA analysis based on Kpler, ENTSOG & customs data •

Dotted lines indicate: Russian invasion of Ukraine on 24 Feb 2022; G7+ import ban and price cap on Russian coal; ban and price cap on Russian crude; ban and price cap on oil products; first OFAC sanctions on vessels; EU & UK sanctions on vessels; second OFAC sanctions on vessels



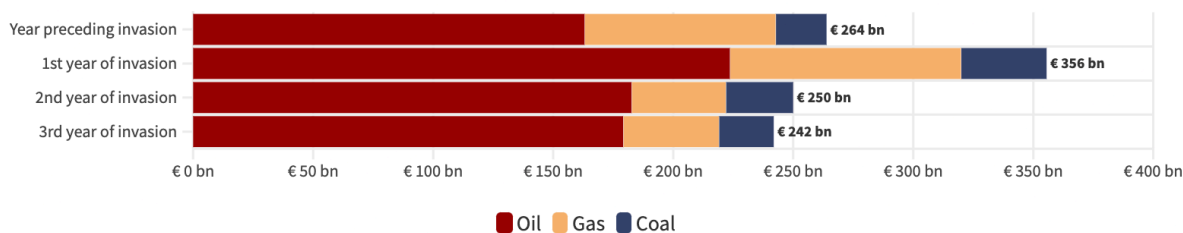
**Figure 2 - Russia's fossil fuel export revenues by product — January 2021 to February 2025**

A combination of sanctions and market diversification should have hurt the Russian energy sector significantly. A closer look reveals a different and difficult reality.

Russian revenues dropped 29% year-on-year in the second year of the invasion. The drop was in sharp contrast to the mere 2% year-on-year drop in export volumes. The key to this contrast were the [deep discounts offered](#) to encourage increased sales to new markets to compensate for revenue loss. The situation has changed significantly now. In the third year of the invasion, Russia's revenues dropped a marginal 3% year-on-year to a total of EUR 242 bn, proportional to a similar 5% drop in export volumes — a sign of sanctions' impact diminishing over time, magnified by Russia's efforts to counter them.

## Russia's fossil fuel export revenues

EUR BN | February 2021 to February 2025



Source: CREA analysis



**Figure 3 - Russia's fossil fuel export revenues — February 2021 to February 2025**

G7+ countries<sup>1</sup> energy sanctions had a significant effect on Russian revenues upon their inception. The worst hit is the Russian coal sector. Russian coal exports have fallen steadily since the invasion of Ukraine, with export volumes in the third year 19% lower than those pre-invasion. Crucially though, despite having lost the entirety of the EU market, Russian revenues from coal in the third year are 8% higher than pre-invasion. This is partially due to higher [coal prices in the wake of the 2022 energy crises](#), but it also shows how Russia has captured new markets and made inroads into recuperating lost revenue streams.

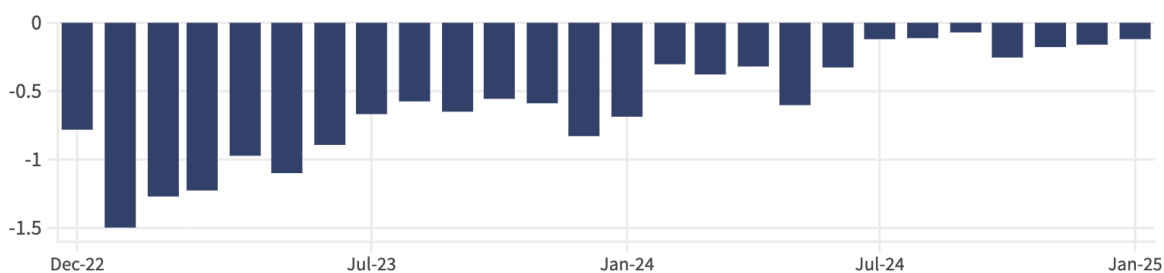
This stagnation of sanctions extends across commodities. The lack of willingness of Ukraine's allies to tighten and update Russian fossil fuel sanctions to counter Russia's adjustments and countermeasures is a chief cause of their devaluation. The crude oil embargo and price cap provides a perfect example of this.

In the second year of the invasion, G7+ oil sanctions cut Russian revenues from Urals grade crude exports by EUR 10 bn, at an average of 20% (EUR 793 mn) per month. In the third year of the invasion, this impact shrunk significantly, with Russian Urals crude oil revenues hurt by EUR 2.6 bn, a mere 6% (EUR 240 mn) reduction on average per month. This also translates to a larger trend. Russian revenues from crude oil saw a 3% year-on-year increase in the third year of the invasion, even as volumes dropped 2%. A vast majority of Russian crude is now transported on 'shadow' tankers thereby bypassing the USD 60 per barrel price cap and rendering it, in effect, redundant.

<sup>1</sup> In this report, sanctioning countries are referred to as G7+ countries which includes G7 countries, EU Member States, Australia, Norway, New Zealand and Switzerland.

## Russia's revenue losses per month due to G7+ sanctions on crude oil

EUR BN lost | December 2022 to January 2025 | Impact on Urals grade crude



Source: CREA analysis using data from Kpler and oilprice.com



**Figure 4 - Revenue losses for Urals grade crude due to price cap & embargo — December 2022 to January 2025**

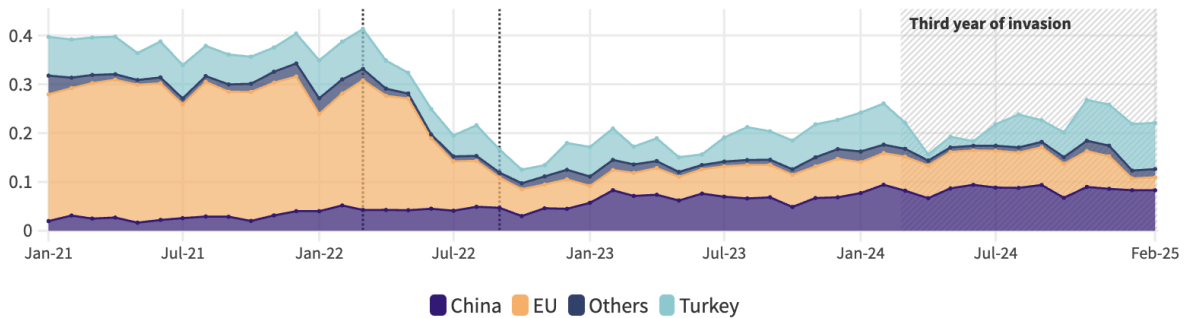
Despite the threat posed by dependence on Russian energy, [which continues to manifest itself](#), EU imports of Russian fossil fuels remain largely unchanged in the third year of the invasion. EU imports of Russian fossil fuels totalled EUR 21.9 bn in the third year of the invasion, a 6% year-on-year drop in value but merely a 1% year-on-year drop in volumes. EU imports of Russian fossil fuels in the third year of the invasion surpassed the EUR 18.7 bn of [financial aid](#) they sent to Ukraine in 2024. The EU's imports from Russia consisted of pipeline gas (EUR 9.6 bn), LNG (EUR 7 bn) and crude oil via pipeline (EUR 4 bn).

Russia's stronghold over new markets has also solidified in the third year of the invasion. The three biggest buyers, China (EUR 78 bn), India (EUR 49 bn) and Turkey (EUR 34 bn) were responsible for 74% of Russia's total revenues from fossil fuels in the third year of the invasion. The value of India and Turkey's imports saw a year-on-year increase of 8% and 6% respectively. Russia's total global fossil fuel earnings in the third year of the invasion reached EUR 242 bn and have totalled EUR 847 bn since the invasion of Ukraine.

In the third year of the invasion, Russia's pipeline gas export revenue rose 5% year-on-year, while volumes rose 9%. Russian pipeline gas export volumes to China saw a 21% year-on-year increase in the third year of the invasion. This exemplified a rapidly rising trend of gas flows being diverted to Asia. [Gazprom reported](#) that daily natural gas flows to China via the Power of Siberia pipeline (completed at the end of 2024, [ahead of schedule](#)) set a new record, indicating a strengthening energy partnership between Russia and China.

## Russia's pipeline gas export volumes

Billion cubic metres (bcm) per day | 1 January 2021 to 24 February 2025



Source: CREA analysis •

Dotted lines represent the beginning of the war & the end of Russian pipeline gas flows to Europe through Nord Stream.



**Figure 5 - Russia's global pipeline gas exports — January 2021 to February 2025**

## Russia's fossil fuel export strategies continue to evolve and grow despite sanctions

After a period of indecision — followed by [Russia's energy blackmail](#) — G7+ countries initiated a series of sanctions on Russian energy in August 2022. Key among them were embargoes on Russian coal, crude oil and oil products as well as an oil price cap — set at USD 60 per barrel for crude, USD 100 per barrel on premium products and USD 45 per barrel for low-value products. Landlocked EU countries, and those dependent hugely on Russian oil were granted derogations with the intention to wean themselves off the supply and find alternatives.

G7+ countries' [failure to evolve and strengthen Russian fossil fuel sanctions](#) has allowed Russia to exploit the sanctions' weaknesses and reshape its export strategies. This CREA analysis examines these strategies by dividing them into four categories: Russian circumventions via 'shadow' tankers; the stagnation of the oil price cap; and sanction gaps like the refined oil loophole and ship-to-ship (STS) transfers in EU waters. The fourth examines the exploitation of exemptions by EU Member States, and the subsequent effect on Russian revenues. Since Russian gas remains unsanctioned — the EU transshipment ban only comes into effect in March 2025 — its impact on Russian revenues is tackled separately.

### 'Shadow' tankers remain crucial to Russian oil exports

Russia's 'shadow' fleet has enabled it to reroute embargoed oil to non-sanctioning countries, bypassing the G7+ price cap and securing crucial revenues to fund its full-scale invasion of Ukraine. According to the [Kyiv School of Economics \(KSE\)](#), acquiring a vast number of vessels requires a significant investment — around EUR 10 bn in 2022.

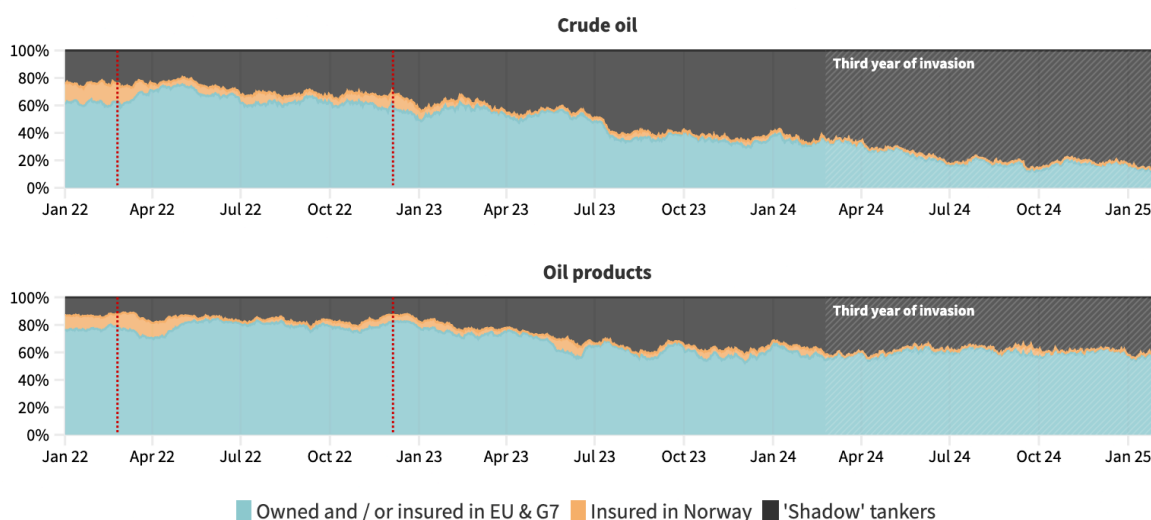
Meanwhile, [a new OCCRP investigation](#) revealed that Western shipowners have earned at least EUR 6.3 bn by offloading hundreds of aging tankers to shell companies, which feed into Russia's 'shadow' fleet.

CREA's analysis found that in the third year of the invasion, Russia relied on 558 Russian 'shadow' vessels to transport 167 mn tonnes, or 61%, of its total seaborne oil exports, valued at EUR 83 bn. The fleet handled 78% of Russian seaborne crude oil shipments, worth EUR 57 bn, and 37% of refined oil products, valued at EUR 26 bn.

Russia's strategic investment in 'shadow' tankers has undermined the effectiveness of the price cap mechanism, diminishing the leverage of G7+ countries in restricting its oil revenues.

### Fossil fuel shipment departures from Russia

By ship ownership / insurer | 30-day running average



Source: CREA analysis •

The dotted lines represent the beginning of the war and the EU's oil ban & the wider price cap.



**Figure 6 - 'Shadow' tankers share in Russian oil exports — January 2022 to January 2025**

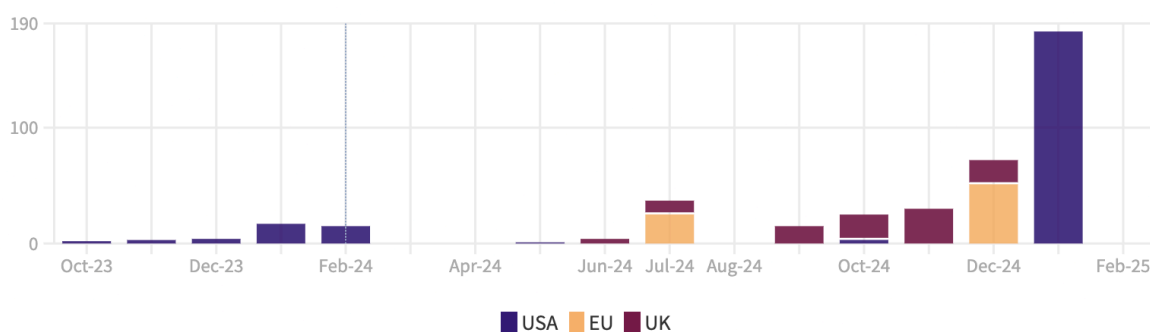
Yet, 'shadow' tankers pose a growing threat not only to sanctions efficacy but also to the environmental security of coastal states. Russia has acquired aging vessels, stripped of Western insurance, and registered in non-sanctioning countries to circumvent restrictions. However, securing protection and indemnity (P&I) insurance for these ships is increasingly complex, and new policies have little transparency. Russian insurers' ability to cover potential oil spills' clean up costs is unknown. [CREA's analysis](#) of global ratings found that Russian insurers had low ratings even before the invasion. Yet, the number of vessels under their coverage has surged, heightening environmental and financial risks. For example, a typical Aframax tanker spill could cost up to [EUR 1 bn to clean up](#).

The ecological threat ‘shadow’ tankers pose to EU waters is growing. As Russia reroutes oil exports from its Western ports, shipments pass through EU Member States’ territorial waters and exclusive economic zones (EEZ). In the third year of the invasion, ‘shadow’ tankers transported 71% of Russia's crude oil and 27% of oil products from Baltic ports through the Dover and Gibraltar Straits. In comparison, ‘shadow’ tankers transported 72% of the crude oil passing through the Black Sea ports through the Turkish Straits and into the Aegean Sea. On this route, 50% of oil product exports were carried by ‘shadow’ tankers. This trade places over half of the EU's territorial waters and EEZ at increased risk of potential spills.

Recognizing these challenges, G7+ countries have ramped up efforts to combat Russia’s ‘shadow’ fleet. The battle against these vessels began in the second year of the war when the US Office of Foreign Assets Control (OFAC) [first sanctioned ships](#) transporting Russian crude oil above the price cap. However, in the third year, Western powers escalated their efforts to target the ‘shadow’ fleet. The US, EU, and UK collectively sanctioned 276 vessels as of 17 January 2025.

### Russian ‘shadow’ tankers under sanctions

Number of vessels | October 2023 to February 2025



Source: CREA analysis •

Dotted line represents the start of the third year of the full-scale invasion of Ukraine



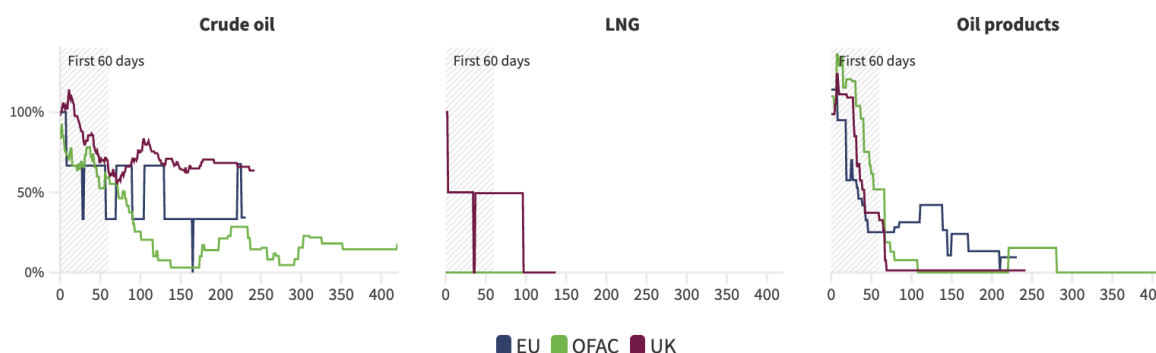
**Figure 7 - Russian ‘shadow’ tankers under sanctions — October 2022 to February 2025**

Sanctions on Russian ‘shadow’ tankers have severely disrupted oil trade flows. According to CREA’s analysis there has been a sharp decline in shipments on the targeted Russian ‘shadow’ tankers immediately following the sanctions from [the EU](#) and [UK](#), and after the wind-down period of 60 days from [the US](#). The US measures were the most stringent, slashing the delivered volume of crude oil by 86% and refined products by 97%. The EU’s sanctions also had a significant impact, reducing crude deliveries by 76% and oil product shipments by 57%. Similarly, UK measures slashed crude deliveries by 34% and effectively eliminated oil product exports, which fell by 97%.

The impact has been particularly acute for vessels sanctioned by OFAC which have struggled to secure buyers for future deliveries, further decreasing Russia's energy revenues.

### Effectiveness of sanctions over time by sanctioning entity

% of initial volume (avg 120 days preceding sanctions) delivered by sanctioned tankers | Days relative to date sanctioned | 60-day rolling average



Source: CREA analysis •

Only includes sanction actions that have been running for at least 60 days. When there is no data on the amount of oil delivered by sanctioned tankers we use the average volume transported in the latest 60 days. Each sanction action's effectiveness is weighted by the number of vessels tracked in the period.



**Figure 8 - Effectiveness of vessel sanctions over time by sanctioning entity**

The data highlights that sanctioning vessels is one of the most effective levers for disrupting Russia's oil trade. With sanctioned tankers struggling to secure buyers for their loads, the Kremlin's logistical hurdles will increase, forcing it to devise alternative routes and delay shipments. The added pressure to source new vessels could further strain Russian exports, driving up costs and eroding vital energy revenues while already grappling with tightening financial constraints.

### Rapid response to sanction evasion cuts Russia's revenues by EUR 2.7 bn

The Arctic LNG-2 project, a prominent Russian initiative in the Arctic, has been severely [impacted by Western sanctions](#). Designed to boost exports, the project relied on foreign technology, expertise, and financing, all restricted by sanctions. In addition to sanctioning the installation itself, there was a concentrated effort to target its shipping logistics — specifically the Arc-7 class vessels necessary for year-round LNG exports.

In the third year of the invasion, [reports indicated the emergence of a 'shadow fleet'](#) for the transportation of liquefied natural gas (LNG), echoing tactics previously used to circumvent oil sanctions. Unknown entities, often based in non-sanctioning jurisdictions, were acquiring and registering aging LNG carriers, with suggestions that Russian firms would provide insurance coverage for them.

CREA analysed nine vessels operating within this so-called ‘shadow’ LNG fleet. These ships could partially offset export restrictions on Russian LNG, particularly from the first production train of the Arctic LNG-2 (ALNG-2) project.

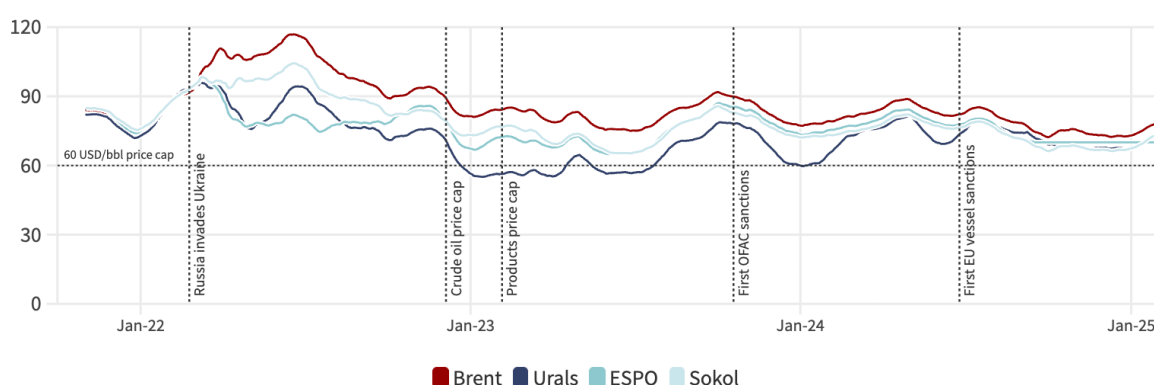
OFAC acted swiftly to neutralise Russia's developing LNG ‘shadow’ fleet. By monitoring shipping activity, ownership transfers, and cargo, OFAC identified and designated the vessels involved in sanctions evasion. This decisive response disrupted Russia's LNG export plans and showcased the success of international sanctions enforcement.

The potential impact of these sanctions-evasion efforts is substantial. If LNG ‘shadow’ tankers operated at a scale similar to their oil counterparts, they could facilitate the export of 8.4 bn cubic metres per annum (bcma) of LNG from the first production train alone — adding revenues of approximately EUR 2.7 bn.

## Failure of price cap policy emblematic of sanctions stagnation

### Russian and Brent oil prices over time

Price of oil (USD/bbl) with 30 day rolling average



Source: oilprice.com



**Figure 9 - Russian oil prices compared to Brent oil over time**

The aim of the G7+ price cap on Russian oil was to reduce Russian revenues without destabilising global energy prices. Set at USD 60 per barrel, the price cap was applicable to all Russian oil transported on G7+ owned or insured tankers, which at the time transported 80% of all Russian oil.

The trend has now swung the other way. Russia's network of ‘shadow’ tankers now transports the majority of its oil to markets globally, thus negating the impact of the policy. CREA's analysis has also found that the price cap has never worked for the higher priced East Siberia Pacific Ocean (ESPO) and Sokol blends of Russian crude oil that trade

primarily in the Pacific ports and East Asian markets. Since late 2023, Russian oil has regularly traded above the price cap.

The level of the cap itself should also be questioned. The current level is [four times Russia's production cost](#). A lower cap of USD 30 per barrel would have slashed Russia's oil export revenue by 24% (EUR 79 bn) from the start of the sanctions in December 2022 until the end of January 2025. Upon its initiation, G7+ countries also committed to [reviewing the mechanism every two months](#) and adapting to its effect. This has not happened, and the level of the price cap has remained unchanged for over two years now. The [EU also committed](#) to set the price level '*at least 5% below the average market price for Russian oil and petroleum products*', which has also not held true.

Enforcement remains a key concern for the price cap policy. [Investigations by CREA, Bruegel](#) and the [Financial Times](#) have found a number of violations of the price cap which contributes to boosting Russian revenues. Although multiple [reports evidence violations of the price cap policy](#), no public records have been identified by CREA analysts to confirm that fines have been issued on the perpetrators. The lack of penalties implemented on perpetrators of the policy, more than two years since its initial implementation, suggests enforcement agencies either lack enough proof to win their court cases or struggle to investigate offenders. The UK serves as an example of this failure. The Office of Financial Sanctions Implementation (OFSI) has launched [706 Russian sanctions investigations](#) since Russia's invasion of Ukraine but no fines have been implemented on entities breaching the price cap. This suggests the policy is either too difficult to enforce or poorly policed.

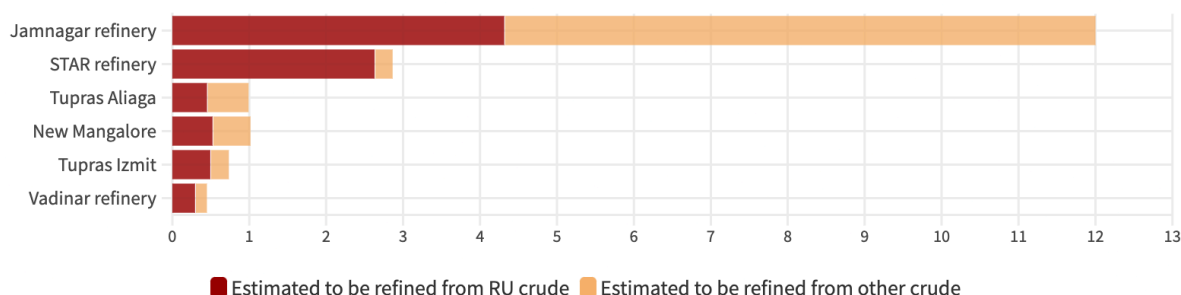
Price cap contraventions also feature suppressing the reported price paid for Russian oil to appear below the cap level. Russian oil traders [frequently underreport the price paid](#) for the oil and fraudulently produce [attestation documents](#) to obtain Western maritime insurance or transport their oil on Western-owned tankers. The attestation process upon which the policy relies is flawed [according to maritime insurers](#) because it asks the vessel charterer to confirm compliance with the price cap without requiring the actual price paid to be included in the documentation, increasing the risk of non-compliance. Structural weaknesses within the policy, as well as Russia's ability to adapt and circumvent measures, have rendered it more symbolic than economically crippling.

## Refined oil loophole adds EUR 6.2 bn to Russian revenues

Russia's first step towards countering G7+ oil sanctions was to offer [deep discounts](#) on its oil to [attract new markets](#). Many non-sanctioning countries used this to [satisfy domestic demand](#), but a key loophole in the sanctions increased this flow significantly over time. The loophole in the legislation allowed non-sanctioning countries to import Russian crude, refine it, and export the refined products to G7+ countries.

## G7+ countries' imports from refineries using Russian crude

EUR BN of exports | March 2024 to February 2025



Source: CREA analysis



**Figure 10 - G7+ countries' imports from refineries using Russian crude — March 2024 to February 2025**

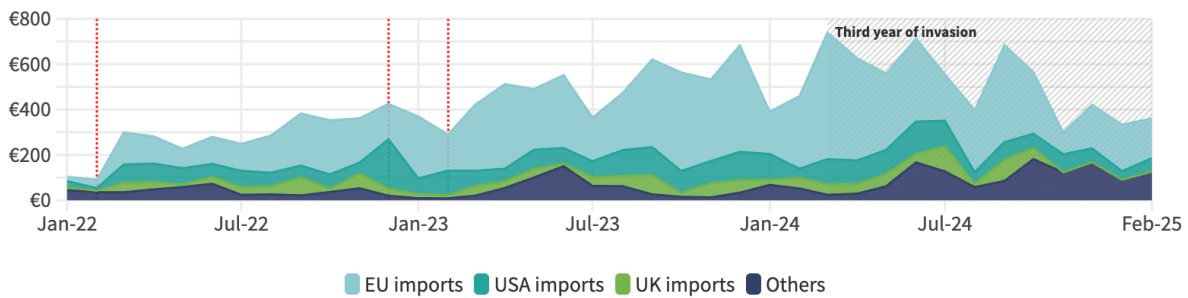
In the third year of the invasion, G7+ countries imported EUR 18 bn of oil products from six refineries in India and Turkey that process Russian crude. An estimated EUR 9 bn of this was refined from Russian crude.

G7+ countries' imports of refined oil products from the refineries using Russian crude generated an estimated EUR 4 bn in tax revenues for the Kremlin in the third year of their invasion of Ukraine. This legal loophole expanded by 3% in the third year of the invasion.

In the first three quarters of 2024, as refineries in India and Turkey increased their consumption of Russian crude, the volume of Russian crude used to create products for G7+ countries jumped by an estimated 10%. Concurrently, this also contributed to a rise in the price of Russian oil, boosting the value of the crude used for these exports by an estimated 25%.

## Russian crude used to make oil products for G7+ countries

EUR MN | January 2022 to February 2025 | Six refineries in India & Turkey



CREA

**Figure 11 - Value of Russian crude used to make oil products for G7+ countries — January 2022 to February 2025**

The EU is the biggest importer of oil products from India's and Turkey's refineries. On average, 13% of these refineries' total production is targeted towards exports for the bloc in the third year of the invasion. The top five importers within the EU were the Netherlands (EUR 3.3 bn), France (EUR 1.4 bn), Romania (EUR 1.2 bn), Spain (EUR 1.1 bn), and Italy (EUR 949 mn). The single biggest buyer was Australia, whose imports from these refineries totalled EUR 3.38 bn in the third year of the invasion.

## Ship-to-ship transfers in EU waters pose increased risk of spills

Ship-to-ship (STS) transfers, commonly and legally used in the shipping industry to [expedite cargo delivery](#), have become a key strategy for countries like Russia, Venezuela, and Iran to bypass Western sanctions and sustain oil exports. Conducting transshipments in international waters allows [tanker operators to conceal the oil's origin](#), thereby [complicating enforcement](#) and inspections.

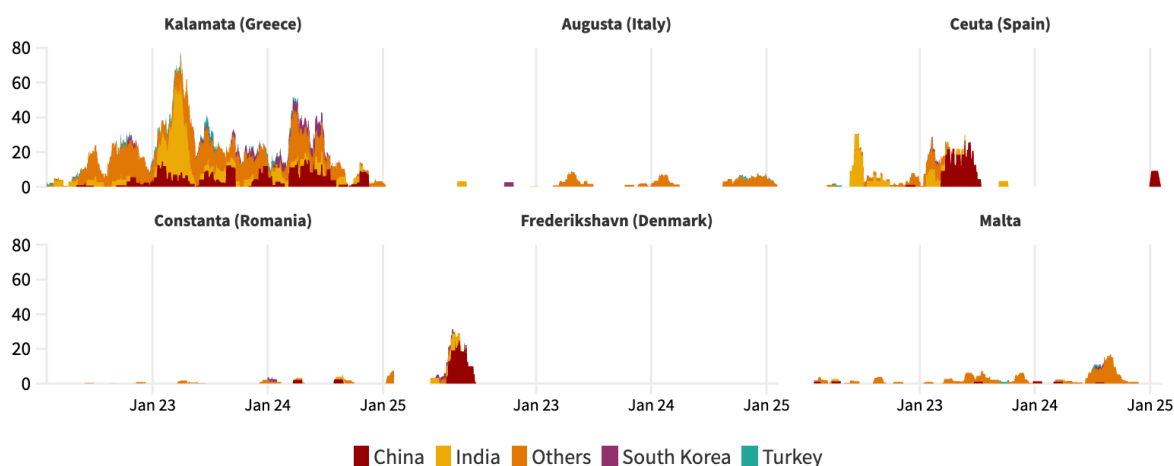
This opacity raises significant environmental concerns too. There is reasonable doubt on whether 'shadow' tankers conducting STS transfers would be able to cover potential spill costs, which could reach up to a billion euros. Such a spill could impact coastal states' fisheries, tourism, and other critical sectors.

CREA analysis suggests that since the start of the full-scale invasion, 17 mn tonnes of Russian oil, valued at EUR 11 bn, has been transshipped via STS operations in EU territorial waters and EEZ. An estimated 35% of these STS transfers were conducted by 'shadow' tankers. However, in the third year of the invasion alone, 5.2 mn tonnes of oil was transshipped via STS operations in EU waters, with 'shadow' tankers accounting for 43% (EUR 1.3 bn) of them.

Several zones in EU waters, notably the shallow waters off Greece, Romania, Italy and Malta have become key hubs for these illicit operations. The highest volume of STS activities was recorded in Greece (54%), Romania (31%), Italy (11%), and Malta (4%).

### Top 6 areas for ship-to-ship transfers of Russian oil in EU waters

January 2022 to February 2025 | Split by destination | 30-day rolling average of volume of oil (thousand tonnes)



Source: CREA analysis, Kpler, Equasis



**Figure 12 - Top six areas for STS transfers of Russian oil — January 2022 to February 2025**

CREA's analysis highlights how STS transfers involving shadow tankers are critical for Russian oil to reach non-sanctioning countries and circumvent Western restrictions.

In the third year of the invasion, 23% of the oil transshipped in EU waters was destined for China, 11% for India, 10% for South Korea, and 2% for Turkey, with the remainder distributed among other markets.

This pattern clearly indicates Russia's utilisation of EU waters to optimise its logistical routes, making oil shipments faster, more cost-effective, and strategically beneficial. By leveraging these transit points, vessels are able to bypass sanctions while also satisfying a steady flow of oil to buyers in non-sanctioning countries and maintaining revenues.

Additionally, some of Russia's 'shadow' tankers have been dedicated to conducting STS transfers. CREA categorises these tankers as 'hub tankers'. Over half of their exports are conducted via STS transfers rather than direct shipments. Some of them have in fact been used exclusively for STS operations since the start of the full-scale invasion.

These vessels serve two strategic purposes: they shorten logistical routes, making Russian oil shipments more efficient, and they obscure the true origin of the cargo, complicating

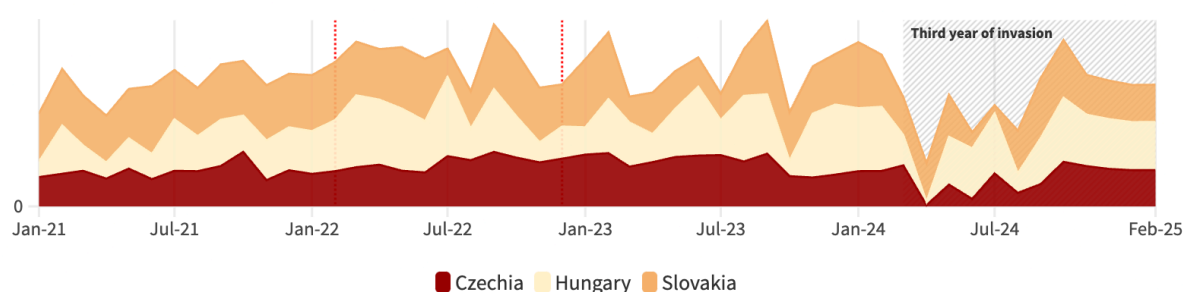
sanction enforcement. Since February 2022, CREA has identified 87 ‘hub tankers’, with 68 still active in the third year of the invasion.

## EU Member States exploiting exemptions on Russian oil

The EU granted Czechia, Hungary and Slovakia an exemption to import Russian crude oil, which [came into force on 5 December 2022](#), to enable a gradual reduction of their historically high reliance on flows through the Druzhba pipeline. However, these countries exploited this exemption, with cumulative imports reaching EUR 19 bn (39 mn tonnes) since Russia's full-scale invasion of Ukraine. In the third year of the invasion, they imported EUR 4.9 bn (10.8 mn tonnes) of pipeline oil from Russia.

### EU imports of Russian crude via pipeline

Thousand tonnes per day | 1 January 2021 to 24 February 2025 | Countries provided derogation



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  
Disruptions to supply via the Druzhba pipeline in April, June, August and December 2024 led to drops in supply.



**Figure 13 - EU imports of Russian crude oil via pipeline — January 2022 to February 2025**

Hungary and Slovakia have shown little intention of reducing their dependence on Russian crude, with combined imports increasing by 15% in the first year of the invasion.<sup>2</sup> While their import volumes dropped by 16% to 8 mn tonnes in the third year, both countries maintain close ties with Russia and have [rejected offers](#) from Croatia to use its Adria pipeline to supply non-Russian crude. In August 2024, it was proven that the pipeline was [capable of fully meeting both](#) Hungary and Slovakia's annual needs of 14.3 mn tonnes. However, Hungary's [foreign minister Péter Szijjártó](#) dismissed these claims as ‘unreliable’. Despite Croatia's repeated offers to further expand the pipeline's capacity, they contracted only 2.2 mn tonnes of non-Russian crude through it for 2024.

Czechia, despite showing strong support for Ukraine, has similarly exploited the exemption. While their imports have fallen by 48% to 2.7 mn tonnes in the third year of the

<sup>2</sup> MOL, the Hungarian oil and gas major, controls all crude oil imports into both Slovakia and Hungary as it operates the only refineries in these countries. For this reason, import figures for both countries have been combined. Ultimately, MOL will make the decisions about diversifying oil supplies in both countries if no legally binding requirements are set by national Governments or the EU.

invasion, this was largely due to multiple disruptions to the Druzhba pipeline throughout the year and had less to do with a planned phaseout.

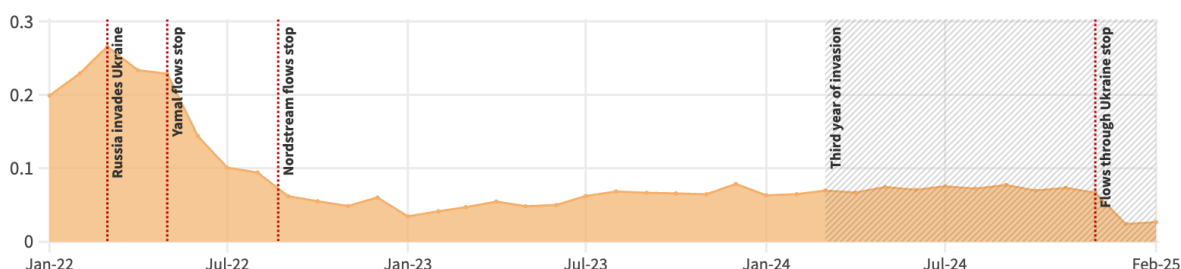
The Czech government plans to end its reliance on Russian crude by [mid-2025](#), once testing of the upgraded Transalpine (TAL) pipeline is complete. The pipeline, which delivers non-Russian crude from Italy's port of Trieste, can now [fully meet Czechia's annual demand](#).

Even before this upgrade, Czechia had several options to end its reliance on Russian crude that included bidding for unused capacity from the TAL pipeline; importing non-Russian crude via the Adria pipeline (which serves refineries across Croatia, Hungary, Slovakia and the Czech Republic); increasing petroleum product imports from Germany; and utilising its substantial storage capacity of 3.6 mn tonnes — equivalent to roughly half of its annual imports. By immediately ending its reliance on Russian crude through any of these options, Czechia could deny the Kremlin approximately EUR 58 mn in tax revenues every month.

## Russian revenues from gas burgeoning in absence of EU sanctions

### EU import volume of Russian pipeline gas

billion cubic metres (bcm) per day | 1 January 2022 to 24 February 2025



Source: CREA analysis



**Figure 14 - EU imports of Russian gas via pipeline — January 2022 to February 2025**

Despite the formal cessation of Russian gas transit through Ukraine at the end of 2024, the Kremlin's influence over the EU's energy security remains a persistent threat. A lack of action from the EU towards Russian gas contributes heavily to this. Any drop in imports or cut-offs in supply have been initiated either by Russia or third parties. Currently, despite 15 rounds of sanctions, Russian gas can flow into the EU without any restrictions or limits on the quantities that companies within the bloc can purchase through either the Turkstream pipeline or via shipments of LNG.

The EU's total gas consumption increased by 3% year-on-year in the third year of the invasion, despite an annual [20% drop in the EU's gas-powered power generation](#). While the EU total gas consumption was 16% lower than pre-invasion levels, Russian gas flows have consistently flowed through the EU's gas network. EU Member States' imports of Russian pipeline gas via Turkstream, for example, grew by 21% year-on-year, totalling EUR 6.2 bn.

Furthermore, [Slovakia has established a company capable of operating within Ukraine](#), leaving the door ajar for a potential resumption of gas flows through that route. This is a clear sign that some within the European Union may still be open to future gas trade with Russia. To avert this, the EU must go beyond simply reducing its reliance on Russian gas caused by the cessation of flows through multiple pipelines (-59% in the third year compared to pre-invasion) and make any prospect of future fossil fuel imports from Russia legally untenable.

The key to reducing Russian gas imports is to diversify sources. The volume of pipeline gas that the EU imported from non-Russian sources increased by a mere 1% in the third year of Russia's invasion compared to the year before its incursion started. Although the EU's imports of non-Russian LNG have risen by 29% (19.8 bcm) in the third year of the invasion compared to that prior, the proportion of the EU's total LNG imports that came from Russia also rose from 18% to 20%. These statistics highlight how the EU has not been successful in diversifying gas imports away from Russia and attaining sufficient non-Russian gas supplies. As a result, the EU has faced skyrocketing energy prices that have [crippled energy-intensive industrial output in countries like Germany, which is down 20%](#) since the invasion of Ukraine.

[Russia's recent strikes on Ukraine's gas infrastructure](#) have sent European gas prices soaring to a two-year high, underscoring Russia's ability to use energy as a tool for geopolitical leverage. The EU must take bold and decisive action to eliminate this looming risk once and for all.

One proposed solution comes with inherent risk. Ukrainian President Volodymyr Zelenskyy [has offered to transit Azeri gas](#) to Europe. Significant uncertainties linger over the volume and potential swap arrangements. [Azerbaijan currently does not have the production capacity to offer additional volumes of its gas to Europe](#), thus, an Azeri-Russia gas swap deal would be a creative way to relabel Russian gas that continues to flow to the EU. Any reliance on Russian fossil fuels comes at a huge risk of supply like that which caused the 2022 energy crisis, triggered by Russia, which [forced the EU to spend over EUR 800 bn on consumer subsidies](#) to ease the supply crunch.

## Russian LNG flows to the EU rise in spite of looming sanctions

At first glance, the latest wave of sanctions targeting Russia's LNG sector appear poised to disrupt operations as the invasion enters its fourth year. The European Union's [14th sanctions package](#) has banned the transshipment of Russian LNG via EU ports to non-EU destinations, forcing shipments from Arctic LNG facilities, primarily to Asia, to take a more extended and costlier logistical route. The added distance is expected to increase transport costs, and CREA's analysis estimates the financial impact of the transshipment ban at EUR 63 mn.

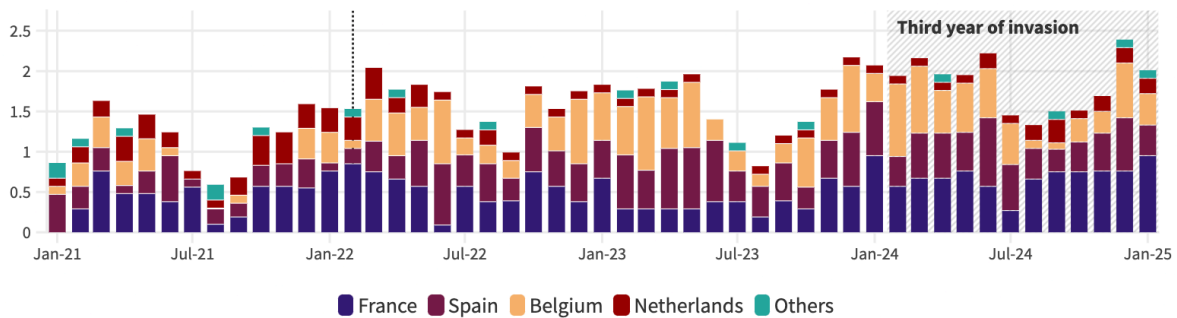
The [EU has moved](#) to curb imports of Russian LNG at terminals not connected to the bloc's gas grid, a measure driven by Sweden and Finland, where most of these off-grid facilities are located. CREA data reveals that these terminals have received shipments from Russia's Vysotsk plant, which has an [annual capacity](#) of 1.9 bcm. In the third year of the invasion, these terminals imported just 9% of Vysotsk's capacity, valued at EUR 45 mn.

The new sanctions would push Russia to seek alternative LNG markets, as cargoes destined for Sweden and Finland were redirected due to reduced purchases since the invasion began. However, the [latest sanctions](#) imposed by the US OFAC on the Vysotsk and Portovaya LNG facilities are set to halt exports from these plants, and are expected to slash revenues by EUR 1.3 bn annually.

Beyond logistical hurdles, the [EU has imposed restrictions](#) on the export of Western technology deemed critical for Russia's Arctic LNG-2 and Murmansk projects. It is worth noting though that the Arctic LNG-2 project was [already non-operational](#) before the latest sanctions ([see infobox](#)) due to the OFAC sanctions, which effectively cut it off from the U.S. financial system and restricted international business dealings. [Additional EU measures will target future LNG developments, including those in Murmansk](#), though their impact will likely materialize only in the coming years.

## EU's monthly LNG imports from Russia by Member State

billion cubic metres (bcm) | January 2021 to January 2025



Source: CREA analysis •

Dotted line represents the beginning of the full-scale invasion.



**Figure 15 - EU's monthly LNG imports from Russia by Member State — January 2021 to January 2025**

Despite a range of sanctions on Russian LNG, EU Member States imported EUR 7 bn of the commodity in the third year of the invasion. While the value of the imports saw a modest 2% year-on-year increase, volumes went up by 9%. France led the way, increasing imports by 46% to 7.7 bcm, while Spain saw a 12% decline to 5.7 bcm. Belgium's imports dropped by 21% to 5.1 bcm, while the Netherlands recorded an 81% surge, reaching 1.7 bcm.

However, LNG arriving at these terminals does not necessarily remain in these countries. Once integrated into the EU gas network, the supply is redistributed across the bloc, which allows other Member States to obfuscate the origin of imported gas. Once LNG is regasified and fed into the EU's integrated gas network, its origin becomes difficult to trace. This allows some Member States to receive Russian gas indirectly while publicly asserting reduced dependence. Recent [research has revealed](#) that German companies continue to import Russian LNG through intermediaries, highlighting loopholes in Europe's energy diversification efforts.

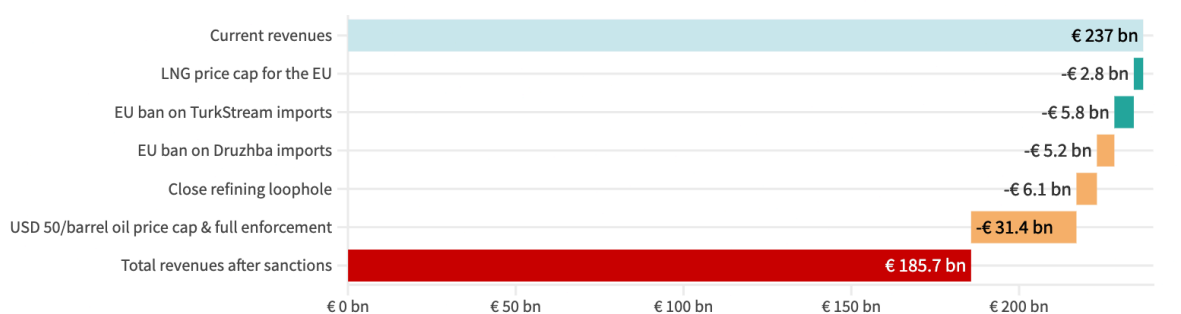
Despite rising Russian LNG imports — and the revenues flowing to the Kremlin — political divisions among EU Member States have so far blocked a collective ban. While the [REPowerEU plan](#) targets ending reliance on Russian energy by 2027, the European Commission is drafting a transition strategy, emphasizing that the [phase-out should be accelerated before 2027](#). However, no exact date has been set. A gradual approach risks prolonging Russia's earnings. To counter this, the EU Commission and Member States must urgently devise measures to curb Russian LNG revenues without jeopardizing energy security.

# Policy recommendations: Stronger sanctions can slash Russian revenues by EUR 51 bn annually

As Russia has adjusted to sanctions — in particular, finding ways to circumvent the oil price cap — it is necessary for G7+ countries to evolve their measures too. CREA's analysis estimates that Russia is currently earning an estimated EUR 237 bn annually from fossil fuels. Embargoes on Russian pipeline gas imports to the EU, the EU price cap on LNG, end of derogations for pipeline oil, closure of the refining loophole, and a lowered and fully enforced price cap can cut Russia's current earnings by an estimated 22% (EUR 51 bn).

## Impact of additional sanctions & policies

EUR BN per year



Source: CREA analysis



Figure 16 - Impact of additional sanctions and policies on Russian revenues

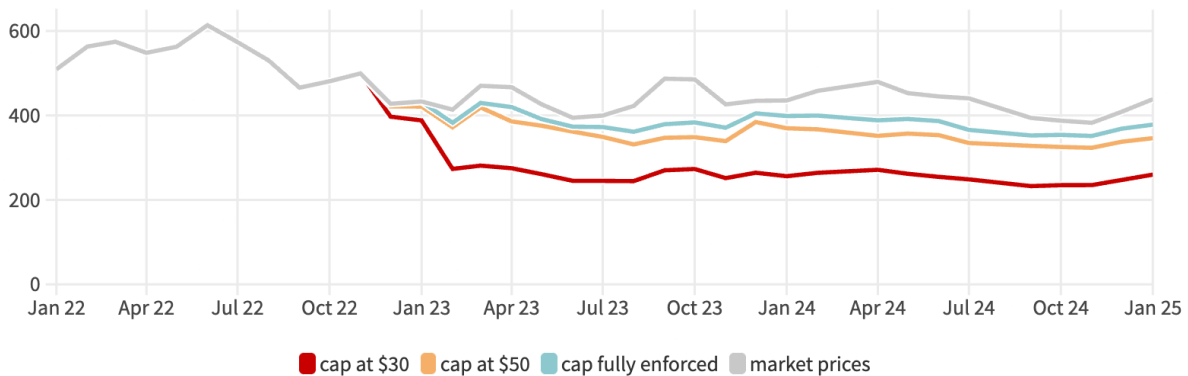
## Tackle 'shadow' tankers to regain leverage over oil price cap

**Tackling 'shadow' tankers is vital** for G7+ countries to regain their leverage over the transport of Russian oil. Expanding sanctions to target more Russian 'shadow' vessels will curb their revenues and allow G7+ countries to redress the oil price cap mechanism.

If the threat of 'shadow' tankers is effectively addressed, **lowering the price cap** becomes a feasible policy. A USD 50 cap would slash revenues by EUR 31.4 bn. In contrast, a [USD 30 cap](#) would cut revenues by EUR 65.7 bn annually.

## Russia's seaborne oil export revenue with enhanced price caps

Pricing scenario | EUR MN per day



Source: CREA analysis based on Kpler, Eurostat and customs data



**Figure 17 - Russian seaborne oil export revenues with enhanced price caps**

Sanctioning ‘shadow’ vessels alone is insufficient, as Russia has shown it can bypass sanctions by acquiring new ships. Therefore, price cap enforcement must also be reformed. G7+ countries should require maritime insurers to verify, via bank statements, that oil prices paid are below the cap to **combat certification fraud** and prevent Russia from inflating export earnings.

Russia is also profiting off oil price cap manipulation via inflated shipping and insurance costs. [According to a Financial Times investigation](#), this sort of overcharging, at almost double the commercial rates, could be earning Russia an extra USD 9 per barrel, worth around USD 800 mn in just three months. CREA’s data shows that from February to September 2024, 331 shipments arriving in India’s Sikka port averaged USD 90.8 per barrel. In this period, 65% of the tankers were subject to the cap. **Applying the price cap to cost, insurance and freight (CIF) price** would have cut Russia’s crude export revenues by 34% — about EUR 5.8 bn in 2024.

## Address existing loopholes and end derogations on Russian oil

**Plugging the refining loophole** is crucial for further reducing Russia’s oil revenues. The EU must amend its regulations to prohibit the imports of oil products refined from Russian crude. These amendments should enhance sanctions enforcement by requiring transparent reporting on the origin of crude oil, strengthening compliance, and ensuring the integrity of the internal market. A ban on imports of oil products made from Russian crude would cut Russian crude earnings by EUR 6.1 bn annually.

**EU Member States must prohibit STS transfers of Russian oil** in their territorial waters or EEZ to prevent sanctions circumvention. [Greece’s successful military exercise](#), which

tracked STS transfers by Russian vessels in EU waters and then pushed out such transfers, highlights the effectiveness of such targeted action.

The EU should **set a precise end date for the derogation on Russian crude oil** to ensure timely diversification. Despite current [derogation legislation stating](#) that ‘Member States must take all necessary measures to obtain alternative supplies’, the oil transfer [agreement](#) with Ukraine, which expires at the end of 2029, highlights the ongoing risk of reliance on Russian crude. In 2024, EU Member States imported EUR 5.2 bn of Russian oil via the Druzhba pipeline. Hungary, Slovakia, and Czechia can diversify by sourcing non-Russian crude through the TAL and Adria pipelines.

## Decouple from Russian LNG and cut revenues in transition period

CREA also recommends that the **EU decouple itself entirely from Russian LNG** imports. Doing this would cut Russian revenues from facilities chiefly supplying LNG to Europe. In the third year of Russia’s invasion, 52% of all Russian LNG shipments went to EU ports. Furthermore, it would require Russia to re-route its LNG shipments to Asia, increasing their shipping costs and pressuring Russian LNG traders to offer gas at a more significant discount, thereby cutting revenues further.

Even while the EU completely decouples from Russian LNG, it must implement measures to cut Russia’s revenues through the transition. **A price cap on Russian LNG**, [set at EUR 17/MWh](#) (megawatt hour) — equal to Yamal’s break-even cost — would cut Russian revenues by 49%, or an estimated EUR 2.8 bn annually. Unlike oil, G7+ countries still hold significant leverage over the transport of Russian LNG, 95% of which was transported on G7+ owned/insured tankers in 2024. A volume cap should be imposed, allowing Member States to import Russian LNG only up to a specific yearly limit, to reduce Russia’s earnings and prevent increased dependency during the transition period.

An additional step would be for EU Member States to **impose a complete transshipment ban within the bloc**. While this would affect only a tiny volume of annual imports (0.5 bcm in 2023) and reduce Russia’s revenues by EUR 23 mn, it would prevent the trade of Russian gas between Member States and lower the collective dependency.

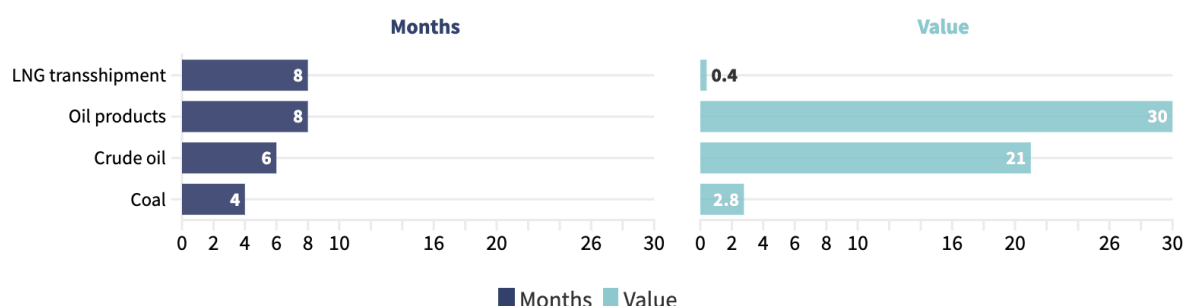
The EU should **improve transparency in natural gas and LNG imports** by updating [the Regulation on Wholesale Energy Market Integrity and Transparency](#) (REMIT) to require detailed reporting on the exact origin of gas, including whether it has been transshipped, blended, or processed in third-party countries. By providing regulators, businesses, and consumers with clear information on the origins of natural gas, these measures would enhance market transparency, bolster energy security, and support sanctions enforcement.

## Address Russian countermeasures by enacting sanctions quickly

**G7+ countries must minimise the wind-down period** to limit Russia's revenue and adaptation to sanctions. Russia has earned an additional EUR 52 bn in the wind-down periods before the full implementation of sanctions. Given Russia's urgent need for funding right now, a prolonged phase-out sustains the Kremlin's war economy and provides time to adapt to sanctions and develop new circumvention strategies.

### Wind-down period for fossil fuels and the value Russia gained during this period

Wind-down period in months | value in billion euros



Source: CREA analysis.



**Figure 18 - Russian revenues gained during wind-down periods**

The wind-down periods should be as short as possible to maximize the effectiveness of restrictions and enhance the impact of new measures. The EU and its allies must implement clear, time-bound exit strategies and enhanced enforcement measures to prevent Russia from securing prolonged revenues and undermining sanctions efforts.

To ensure the EU's long-term energy security and uphold sanctions effectiveness, **legally binding targets must be reinforced** to prevent Member States from reverting to Russian energy under economic or political pressure. Given the push by certain/some political forces to reconsider restrictions on Russian fossil fuels, it is critical to establish clear, enforceable exit pathways that eliminate loopholes and maintain momentum toward diversification.

# Methodology

The data used in this analysis is based on CREA's [Russia Fossil Shipment Tracker methodology](#). Our methodology detailing G7+ countries' imports of oil products from refineries processing Russian crude [can be found here](#). More information on CREA's definitions and classification of Russian 'shadow' tankers can be [found here](#). Data used to calculate the EU's gas consumption was taken from [ENTSOG](#) and [Bruegel](#).

To calculate the EU's financial aid to Ukraine, CREA used monthly data from the [Ukraine Support Tracker](#) provided by the [IFW Kiel Institute](#). For the headline of this briefing we compare the amount that the EU spent on Russian fossil fuels in the third year of the invasion with the amount of financial aid that the EU sent to Ukraine in 2024 due to the lag in the Kiel Institute's data.

Due to the timed nature of this publication, the analysis forecasts data for February 2025. To do this, we took the average deliveries to each country for each commodity from Russia in the period of 2 January 2025 to 31 January 2025 and flat-forecast for 24 days of February in 2025.

We chose this methodology as, for most commodities, recent volumes and prices have been relatively stable. In addition, it would be very complex to model and forecast each commodity and destination precisely for potentially minor gains in accuracy. Our forecasts ignore the impact of OFAC sanctions — which have a wind-down period until March.

## Modelling the impact of LNG sanctions

We evaluated the economic impact of sanctions on Russian LNG exports to the EU, focusing on rerouting volumes originally destined for the EU to Asia via the Suez Canal. To estimate revenues, we used benchmark spot prices for Europe and Asia, factoring in transportation costs.

For Arctic LNG-2, we assumed sanctioned vessels would reroute their full capacity to Asia, applying a standard price benchmark despite potential discounts based on rerouting full capacity to Asian markets.

For the analysis of Russian LNG transshipment in EU ports, we utilized data from the Institute for Energy Economics and Financial Analysis (IEEFA). We sincerely thank Anna Maria Jaller-Makarewicz for providing the data and her valuable contributions to this research.

For the transshipment ban, we assumed all affected volumes would be redirected to China, using standard shipping cost estimates. The same assumptions were applied to intra-EU transshipments to maintain consistency.

To evaluate the impact of OFAC sanctions on the Vysotsk and Portovaya LNG terminals, we estimated revenue losses based on maximum export volumes and European price benchmarks.

For LNG modeling, price data from LSEG (London Stock Exchange Group) was used.

Parameter	Value
European LNG Spot Price (TTF)	34.6 EUR/MWh
Asian LNG Spot Price (JKM)	37.4 EUR/MWh
Transportation Cost to China	5.88 EUR/MWh
Transportation Cost to Belgium & France	1.09 EUR/MWh
Excluded Transshipment Volume	16.8 bcma
Arctic LNG-2 Rerouted Capacity	8.7 bcma