One year on, who is funding Russia’s war in Ukraine?

Russia’s illegal and brutal full-scale invasion of Ukraine started a year ago. Russia’s fossil fuel revenues have continued to enable the war even though they have declined. In this briefing, we highlight how Russia’s fossil fuel revenues have decreased, what the impact of the recent sanctions has been to Russia’s revenues, and the leverage and options Ukraine’s allies have to further starve the Kremlin of fossil fuel revenues.
Key findings

- Russia’s fossil fuel export revenues have fallen 50% below their 2022 peak in January–February 2023, with revenue from exports to the EU falling almost 90%.
- Yet, Russia is making an estimated EUR 560 mln per day on exporting fossil fuels.
- The key enabler of Russia’s ongoing export earnings and therefore the invasion is the European shipping industry. Ships owned or insured in the EU and the UK are carrying EUR 310 mln per day worth of Russian fossil fuels, 65% of the total value of Russia’s seaborne fossil fuel exports.
- The excessively high levels of the oil price caps as well as gaps in enforcement allow the Kremlin to continue to profit handsomely off fossil fuels transported and insured by the European shipping industry. Revising the price cap for crude oil to USD 30/barrel and for premium oil products to USD 35/barrel would cut Russia’s revenue by an estimated EUR 150 mln per day.
- The EU, Japan and South Korea continue to import approximately EUR 125 mln per day of oil, gas and coal from Russia. Restricting or placing price caps on these imports would be effective in squeezing Kremlin’s revenue.

Contents

Key findings

Russia’s fossil fuel revenues have shrunk since the first months of the invasion but still fuel the war

Russia’s fossil fuel exports by region

European shipping industry continues to fill Kremlin's coffers

Sanctions are affecting Russia’s war economy but need strengthening

Russia budget revenues from taxing oil and gas extraction and sales have shrunk thanks to the price cap and embargo on Russian oil

Policy recommendations: next opportunities for Ukraine’s friends to cut the revenues feeding Putin’s war
Russia’s fossil fuel revenues have shrunk since the first months of the invasion but still fuel the war

Russia made an estimated EUR 560 mln / day on fossil fuel exports in the month up to the anniversary of the invasion of Ukraine. This is down 50% from a peak of EUR 1,130 mln / day in March 2022. Yet, Russia’s earnings in January–February until the anniversary of the invasion will amount to approximately EUR 30 billion.

Russia’s daily revenue in the past month was made up of EUR 280 mln from crude oil, EUR 120 mln from oil products, EUR 60 mln from pipeline gas, EUR 60 mln from coal, and EUR 40 mln from LNG.

Daily Russian revenues from exporting fossil fuels

Global | Million EUR, 30-day running average

Source: CREA analysis • The dotted lines represent the beginning of the invasion (24 February) as well as the sanctions on crude oil (5 December) and oil products (5 February).
Russia’s fossil fuel exports by region

Fossil fuel revenues Putin earns from exports to the EU have collapsed one year after the full-scale invasion of Ukraine. The EU ban on Russian coal entered into force in August 2022, and bans on seaborne crude oil and oil products kicked in in December 2022 and February 2023 respectively. The EU has not sanctioned Russian gas, but Putin has cut off the supply of much of pipeline gas, and reducing vulnerability on Russia’s gas imports to the EU has been a high political priority over the last year. Russian LNG imports to the EU currently face no sanctions.

In the most recent 30 days, exports to the EU were down 86% from a peak of EUR 700 mln per day in March 2022. Yet the EU is still sending EUR 100 mln per day to Russia for fossil fuels, made up of EUR 30 mln from pipeline gas, EUR 30 mln from crude oil, EUR 30 mln from oil products, and EUR 10 mln from LNG. The continued imports of pipeline gas and LNG, as well as various exceptions to the bans on importing crude oil and oil products, have meant that the EU still remained Russia’s second-largest client after China, ahead of India, after the oil products ban took effect.

Ukraine’s Asian allies also continue to import fossil fuels from Russia. In 2023, Japan has so far imported an average of EUR 14 mln per day, South Korea EUR 10 mln per day and Taiwan EUR 1.6 mln per day. These values are down 50%, 60% and 80% from their peaks in March–April 2022.

China’s fossil fuel imports from Russia have remained roughly stable. After the EU oil ban, China became the largest importer. The country is also paying Russia more per barrel than any other oil importer, based on Chinese customs data. This is due to the gaps in the enforcement of the oil price cap on the route from Russia’s far eastern ports to China.

India became the third-largest buyer of Russian oil after China and the EU soon after the start of Russia’s assault against Ukraine, from virtually zero before the start of the invasion. The country’s imports have kept climbing in volume terms, but the fall in prices has limited revenue to Russia. India’s import costs have however increased, as the discount on Russian oil is captured by intermediaries.

The US and UK have reduced their imports of Russian fossil fuels to virtually zero. However, the U.S. continues to import chemical products that don’t fall under the customs...
definition of “oil products”. We include all oil and chemical products carried in oil and chemical tankers in our tracking; under this definition, the U.S. is among the largest importers of oil and chemical products from Russia.

In 2023, in the run-up to and after the EU oil products ban, Turkey, United Arab Emirates and Morocco have emerged as the largest importers of Russia’s oil products. A long list of smaller buyers has emerged as well, including Tunisia, Brazil, Egypt and Algeria. This reflects the characteristics of oil products — they are easier to import into different markets than crude oil as suitable refinery capacity is not required, but transport distances are typically shorter due to the smaller size of tankers. Oil products exports take place almost solely from ports in the Baltic and Black Seas and are very strongly controlled by the European shipping industry, making the revision of the oil products price cap the key tool to cut Russia’s revenue from this trade.
Who's buying Russia's fossil fuels after EU bans?

shipments arriving in 2023 to date, with flows banned from February 5 excluded

Coal

- China
- Turkey
- India
- South Korea
- Japan
- Taiwan
- Morocco

0.00 0.25 0.50 0.75 bln EUR

Oil products

- Turkey
- United Arab Emirates
- Morocco
- United States
- China
- Singapore
- Tunisia
- India
- Brazil
- Bulgaria
- Egypt
- Algeria
- Indonesia
- Georgia
- Nigeria

0.00 0.25 0.50 0.75 1.00 bln EUR

LNG

- Japan
- Belgium
- Spain
- China
- South Korea
- Netherlands
- Portugal
- Sweden
- Finland
- Norway

0.0 0.1 0.2 0.3 0.4 0.5 bln EUR

Crude oil

- China
- India
- Turkey
- Malaysia
- Egypt
- Bulgaria
- Singapore
- Marshall Islands
- United Arab Emirates
- Saudi Arabia
- Tunisia
- Cuba
- Senegal
- Taiwan
- South Korea

0 1 2 3 4 5 bln EUR
Daily Russian fossil fuel revenue flows by fuel and region

Million EUR per day

Source: CREA analysis. • The dotted line represents the beginning of the invasion.
European shipping industry continues to fill Kremlin’s coffers

European-owned and insured ships have carried EUR 310 mln per day of Russian fossil fuels in 2023, representing 65% of the total value of Russia’s seaborne fossil fuel trade. Because of the excessively high level of the price caps for crude oil and oil products, and gaps in enforcement, the Kremlin is still able to cash in significant tax revenue on this trade. The reliance of Russia on price cap coalition countries’ maritime insurance and vessels required to transport its oil demonstrates the strong leverage that the price cap coalition has to achieve its aims in lowering Russia’s fossil fuel export earnings used to fund the war.

For every barrel of crude oil shipped out of Russia, the Kremlin leaves about USD 15/barrel to oil producers and rakes in the rest as tax, to be used to finance atrocities in Ukraine. At the current crude oil price cap level of USD 60/barrel, three fourths of the price therefore ends up in the state budget. Furthermore, the reported prices for crude oil out of Russia’s Far East ports are still above the price cap, at USD 70–75/barrel and yet, European-insured tankers continue to carry this oil, predominantly to China.

The EU and G7 need to act urgently to stop allowing their shipping, insurance and financial industry from acting as the central enablers of the Russian state and Russia’s invasion of Ukraine, by revising the price caps to a level much closer to the costs of production in Russia (estimated average production costs of less than USD 15 per barrel) and beefing up the disclosure requirements, auditing, enforcement and penalties for the violation of the price caps.

---

1 The ESPO price benchmark stood at USD 69.55 and Sokol at USD 75.08 on Feb 20, 2023, according to Oilprice.com.
The price cap coalition’s high shares of insurance and ownership in Russian fossil fuel shipments demonstrate that the price cap coalition continues to have strong tools to lower down the oil price caps and reduce the Kremlin’s revenues from war enabling fossil fuels. The insurance and ownership shares of Russian fossil fuel shipments are much higher for shipments leaving from Russia’s Western ports than the ports in the Far East. Across the different port areas, the price cap coalition’s leverage is strong and presents a robust case for lowering the price cap to be closer to Russia’s costs of oil production, in order to deny the Kremlin taxable revenues.
Sanctions are affecting Russia’s war economy but need strengthening

The sanctions introduced in particular in and after December have significantly cut Russia’s fossil fuel export revenues. The fall in the prices of all fossil fuels, helped by reductions in consumption, has made a further dent. The revenues now stand at EUR 560 mln per day. Further steps to lower the oil price cap, ban pipeline oil and gas imports as well as LNG exports to the EU would cut Russia’s daily earnings by a further 40% from the current level.
Fact box: Russia budget revenues from taxing oil and gas extraction and sales have shrunk thanks to the price cap and embargo on Russian oil

Russia’s federal budget is highly dependent on taxes levied on exports of fossil fuels, especially on oil and gas. The Russian Federal budget was approximately 343 Billion dollars in 2021 while taxes on oil and gas extraction and sales amounted to 127 Billion dollars, the equivalent of 37% of the total budget. Taxes on oil and oil products account for 80% of total oil and gas taxes while the rest is accounted for by taxes levied on fossil gas. As shown in Figure 1, oil and gas taxes are correlated to the prices at which Russia can sell its fossil fuels. Russia’s budgetary vulnerability to fossil fuel revenues gives the price cap coalition strong leverage to starve Putin’s war enabling revenues through lowering the price caps on oil and oil products.

In 2022, Energy Intelligence reported revenues from oil and gas taxes increased by 93% in the January-May period as compared to the same period of 2021 on the back of Brent prices averaging 104 USD per barrel, slightly higher than 101 USD per barrel for the entire year of 2022. Current estimates of the 2022 Federal budget amount to 358 Billion USD for all revenues. In 2022, the taxes from oil and gas extraction and sales accounted for a record 46% of the federal budget according to our calculations based on Bloomberg data and estimates of Russia’s federal budget for 2022.

There are two significant taxes on Russia’s oil exports: the Mineral Extraction Tax (MET) and the Export Duty (ED). For 2022, the target rate for the MET in 2022 was 18,219 RUB/t (appr. USD 37 per barrel), based on an assumed average selling price of USD 62.2/barrel, and the export duty is set at USD 5.9 per barrel. These high rates of tax demonstrate that oil production costs in Russia are very low and at current selling prices, the clear majority of sales revenue is retained by the state as tax, making funds available for financing the full-scale invasion of Ukraine.

Figure 1: Mineral Extraction Tax and Export Duties monthly revenues plotted against Ural prices in 2021
Figure 2 presents the oil and gas tax revenues to the Russian federal budget. In 2022, Russia earned USD 166 Billion from the taxes on sales of oil and gas. This accounted for 46% of the federal budget in 2022. There are two major spikes in the monthly revenues, the first immediately following the invasion of Ukraine when Brent prices averaged USD 111 per barrel and the discounts on Russian oil were just starting to occur, and the second in October when Gazprom was levied a one-off tax as its revenues soared with the increase in gas prices.
Recent media reports on data for January 2023 reveal that the income of the federal budget from oil and gas taxes has decreased by 54% compared to December 2022 and by 46% compared to the same month of 2021. The production of oil and oil products has remained constant in January 2023, at 10.9 million barrels per day, in line with the September - November average and higher than the entire 2022 average at 10.7 million barrels per day which includes the decline in April and May following the invasion of Ukraine.

The only variables that changed in December which could have had an effect on the revenues are the oil price cap of USD 60 per barrel imposed on December 5th by the price cap coalition and the EU embargo on Russian oil. Additionally, the European Union has put in place an embargo on oil products in February 2023. As Russian oil production volumes have not shrunk in January, the fall in revenues is highly likely accounted for by a steepening of the discounts at which willing buyers are offtaking Russian crude and crude oil products.

The evolution of the January 2023 tax revenues from oil and gas production and sales is highly likely pointing to the oil price cap and embargo on Russian oil and oil products in Europe being very effective tools to diminish revenues of the federal budget from Russia’s mineral wealth. In this context, the announced production cut of roughly 5% of Russian
production of oil in March, the equivalent of 0.5 million barrels per day, is proof of Russia not being able to find enough offtakers for its crude oil and products rather than an intention to slash production volumes to respond to the sanctions, a view exposed in the most recent IEA Oil Market Report.

Policy recommendations: next opportunities for Ukraine’s friends to cut the revenues feeding Putin’s war

The upcoming review of the level of the oil price cap in March is a prime opportunity for Ukraine’s allies to starve Putin’s regime of remaining fossil fuel revenues. We recommend lowering the price cap from its current level of USD 60 per barrel for crude oil down to a price level much closer to Russia’s low production costs which average an estimated USD 15 or less per barrel. Lowering the price Russia receives for their oil exports would deny the Kremlin of taxable revenues, while still incentivising continued supply. We recommend:

● Revise the oil price cap down to USD25–35 per barrel for crude oil and USD5 per barrel higher for premium refined products. This level substantially reduces Russian mineral tax revenues while keeping Russian oil production economically viable.

● Enhance monitoring and enforcement:
  ○ permanently ban tankers that violate the price caps from entering EU and G7 ports or territorial waters.
  ○ instead of relying on attestations, require copies of the underlying sales contracts. Alternatively, require either that payments be processed through an authorized intermediary, or that attestations can be allowed only from trading and financial entities on a pre-approved list established by the G7/EU sanction authorities to reduce the risk of fraudulent documentation.
  ○ establish a dedicated Russian oil sanctions monitoring and enforcement authority that conducts regular monthly and extraordinary audits on attestations and other required paperwork.

● Introduce additional sanctions to limit Russian seaborne oil trade. These include:
  ○ restrictions on the sales of tankers, to prevent Russia, its allies and related traders from acquiring old tankers to use to circumvent the cap.
○ prohibit transhipment of Russian oil through territorial waters and exclusive economic zones of price cap coalition countries.
○ require enhanced P&I insurance disclosure and review for any vessels not insured by the International Group when passing through the Danish Straits and other EU/G7 territorial waters or exclusive economic zones in order to ensure the enforcement of environmental norms for tankers in the Baltic and Black Seas.

● Institute price caps and/or import restrictions on pipeline oil and gas, and LNG coming to the EU from Russia.
● Introduce export restrictions on all software, technology and equipment used for the development, production and rehabilitation of oil and gas fields as well as coal mines.
● Address oil blending to ensure traded oil is not partly Russian, including through laboratory analyses and technical audits to check its origin.
About the data

To carry out the research, CREA researchers compiled data on the movements of thousands of cargo ships carrying fossil fuels and other cargo from Russian ports to the rest of the world, to track shipment destinations and volumes on a day-to-day basis. The tracking covers ship-to-ship transfers to the extent possible. The research also incorporates real-time data on gas flows to Europe via pipelines, and estimates other flows using historical monthly trade data and news reporting. To estimate the value of the imports, CREA developed pricing models that estimate the average value of Russian exports based on current spot market prices. The methodology is laid out in more detail here on the CREA website.

About CREA

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 key to successful policies, investment decisions, and advocacy efforts. CREA was founded in December 2019 in Helsinki and has staff in several Asian and European countries. Our work is funded through philanthropic grants and revenue from commissioned research.

In our statement of support for Ukraine, CREA absolutely condemns the Russian military’s unprovoked and unjustified attack against another sovereign nation, Ukraine. The assault goes against the fundamental values of human well-being, safety, and dignity that our organisation seeks to advance. We urgently call for an end to the assault and stand in solidarity with the Ukrainian and Russian people calling for just peace.