Working Group Paper #18

Energy Sanctions: Four Key Steps to Constrain Russia in 2024 and Beyond

The International Working Group on Russian Sanctions

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The International Working Group on Russian Sanctions aims to provide expertise and experience to governments and companies around the world by assisting with the formulation of sanctions proposals that will increase the cost to Russia of invading Ukraine and that will support democratic Ukraine in the defense of its territorial integrity and national sovereignty. Our working group is comprised of independent experts from many countries. We coordinate and consult with the Government of Ukraine and those governments imposing sanctions. This consultation process helps to inform our views, but our members express independently held opinions and do not take direction from or act at the behest of the government of Ukraine or any other government, person, or entity. All members of this working group participate in their individual capacity.

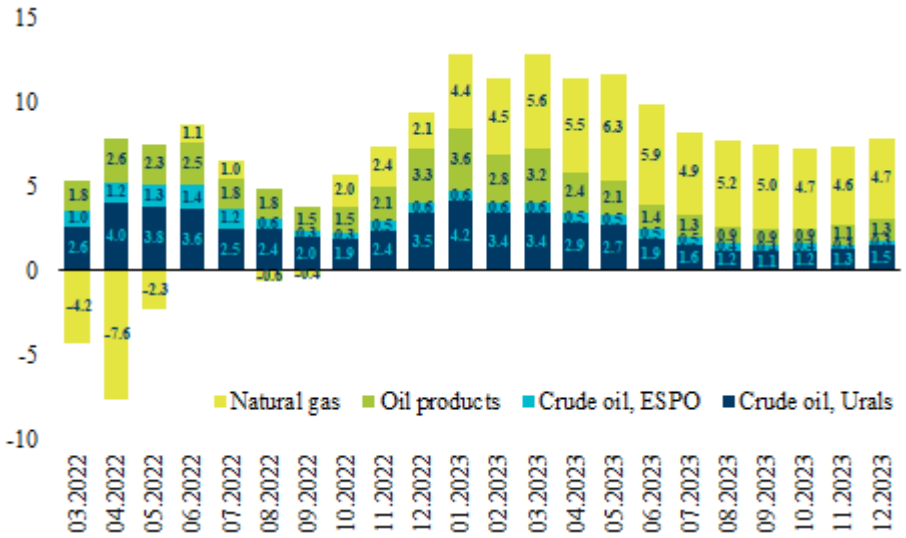
EXECUTIVE SUMMARY

We believe that **a new sanctions push in the energy sphere can constrain Russia's ability to continue its war of aggression on Ukraine in 2024**—and that the time to act is now, with the full-scale war about to enter its third year. Three findings lead us to this conclusion: (i) Russia remains highly dependent on exports of oil and gas, both in terms of inflows of foreign currency as well as budget revenues; (ii) Russia's oil and gas revenues fell dramatically in 2023, exposing its fragility; and (iii) sanctions and related measures have been a key driver of these developments.

In recent years, oil and gas accounted for around 60% of Russia's total goods exports and 40% of the federal government's revenues. This means that both in terms of access to foreign currency as well as funding of the budget, the country remains highly dependent on oil and gas revenues. And while Russia benefited from an extraordinarily supportive external environment in 2022—marked by soaring energy prices—this changed dramatically in 2023 as oil and gas prices normalised and sanctions on hydrocarbons were phased in.

We estimate that sanctions on Russian oil—in particular the EU embargo and G7 price caps—have cost the country $113 billion in export earnings since the start of the full-scale invasion (see Figure 1). The key driver here is the discount on prices for its oil that Russia has had to accept in order to secure firm demand from new, large-scale buyers. In addition, the Putin regime's attempts to weaponize natural gas flows to Europe in 2021-22 backfired. European countries were able to diversify suppliers and cut demand, resulting in prices returning to mid-2021 levels. The result: Russia's primary gas export market is gone for good. We estimate the cumulative loss in gas export earnings since February 2022 is around $55 billion.

Figure 1. Estimated losses in oil and gas exports, in $ billion[1]



Source: KSE Institute

Altogether, markedly lower oil and gas exports have weighed on Russia's external accounts: total exports dropped by 29% in 2023 vs. 2022 to $423 billion, the trade surplus by 63% to $118 billion, and the overall current account balance by 79% to $50 billion. Putin's regime now faces an entirely different macro

[1] Loss of oil export earnings calculated by applying change in the discount for different grades of crude oil and different types of oil products vs. respective pre-February 2022 baselines to realized export volumes. Loss of natural gas export earnings calculated by comparing realized values with the 2021 baseline.

environment where policy space is limited as a result of the $190 billion decline in the current account surplus in 2023 vs. 2022. In 2022, Russia's record surplus protected the economy, allowing the authorities to simultaneously pursue monetary stability (i.e., strengthen the ruble and fight inflation)—by hiking interest rates—and financial stability (i.e., ensure health of the financial system)—by providing banks with liquidity to continue to lend to the private sector and fund the government. That protection has now gone.

As lower inflows of foreign currency have led to a sharp depreciation of the exchange rate—around 40% vs. the U.S. dollar and euro since the fall of 2022—and, in turn, created upward pressure on inflation, the Bank of Russia was forced to hike its key interest rate by a cumulative 850 basis points since mid-2023. This will weigh on the economy by tightening financial conditions and drive up the cost of financing the government. The reimposition of capital controls and the declining quality of reserves—now largely in gold and unconvertible yuan, with barely any accessible reserves in dollars, euros, or other G10 currencies—are also significant constraints.

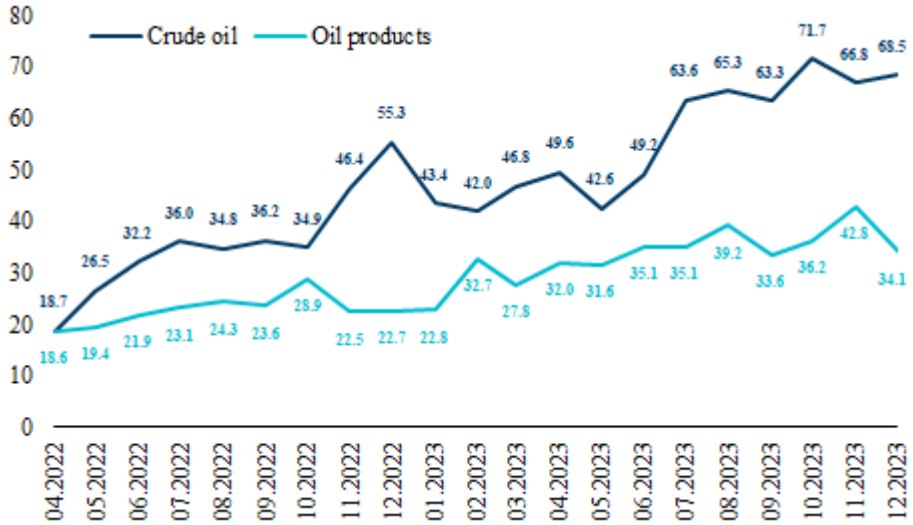
With Russia in a more fragile macro situation, the time for additional action is now. In the past, we focused on advocating for a downward ratchet in the oil price caps.[2] Specifically, we argued that cutting the oil price cap to as low as $30/barrel would still preserve the Russian incentive to supply, given the low lifting cost of Russian oil, while reducing export earnings to a level which would severely constrain Russia, and bring the war to an early end. To that aim, we proposed to start with an immediate $10/barrel cut in the caps, and set the ultimate objective of reducing the cap on Russian crude to $30/barrel.

We believe this argument remains valid. However, in this paper, we focus on the immediate next steps, which we see as strengthening enforcement, implementing an initial downwards ratchet in the price caps and completing the EU embargo on Russian hydrocarbons. Effective enforcement is a necessary condition for the price cap to be effective to prevent it being undermined by circumvention, in particular by the expansion of Russia's shadow fleet of tankers (see Figure 2). On paper, these vessels are not subject to the price cap since they are supposed to be disconnected from any restricted G7/EU shipping services. In practice, however, many have failed to sever all service ties.

For crude oil, the shadow fleet's share of Russia's exports has risen from around one-third in the first half of 2022 to 65-70% in the second half of last year. It has also increased for oil products, but the change is much less pronounced because of a shortage of suitable product tankers in Russia's shadow fleet. Consequently, during the second half of 2023, some 40-50% of seaborne oil exports—crude and product—was still exported with sanctions-compliant vessels. In addition, there is clear evidence that many mainstream vessels using G7/EU services have also likely transported cargoes priced above the caps.

[2] See Working Paper 14 "Using Energy Sanctions to Shorten the War" here.

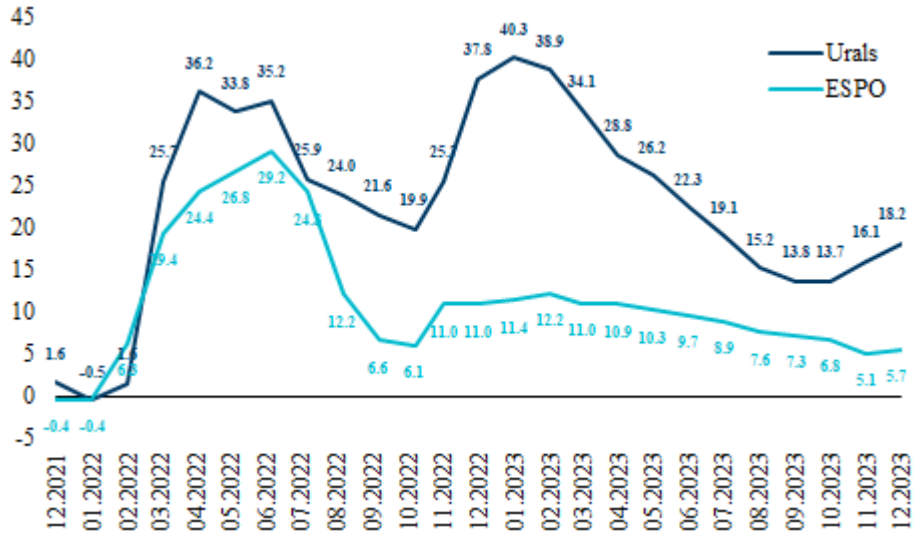
Figure 2. Shadow fleet share of export volume, in %



Source: Kpler, P&I clubs, KSE Institute

Despite this circumvention, Russia's oil has been sold at a deep discount to market prices, highlighting the potential of the policy: Urals crude oil sold for an average $62/barrel in 2023 while the benchmark North Sea Brent averaged $83/barrel. The price fell below the $60/barrel price cap in December for the first time since the first half of 2023, and the discount to Brent widened once again (see Figure 3), in response, we think, to recent enforcement actions by the G7, including the blocking by OFAC of 25 tankers active in Russia's shadow trade.

Figure 3. Discount on Russian oil to dated Brent, in $/barrel



Source: International Energy Agency (Urals and ESPO), World Bank (Brent)

With Russia's brutal war on Ukraine now about to enter its third year, it is time to further increase pressure on the aggressor. The significant deterioration of Russia's external balance, which has been partially driven by sanctions on Russian energy exports, provides Ukraine's allies with an opportunity to drive foreign currency inflows below a critical level and also impact budget revenues that are needed to pay for the planned sharp increase in military spending. Specifically, we believe that Russia's capacity to wage its war on Ukraine would be severely impaired if its export earnings were reduced by a further $50 billion. This would wipe out the current account surplus and significantly widen the budget deficit, in a situation where Russia

faces major restrictions on access to foreign currency and to financing. To achieve this end, we propose to strengthen the oil price cap regime and ratchet the oil price caps to $50/barrel on crude, to ban Russian LNG and gas flows to Europe, and to cut Russian oil and gas off from access to Western technology and services.

First, we propose a two-step strategy on the oil price cap of strengthening enforcement and then lowering the price caps:

1. **Stop the Russian shadow fleet**, which circumvents the price cap and threatens the marine environment. By expanding the number of shadow tankers under sanctions and enforcing existing mandatory oil spill insurance requirements for all tankers passaging through coalition waters, we can force Russia to rely much more heavily on the mainstream fleet once again, which falls under price cap restrictions. Further, **step up investigations and penalties** to alter trade participants' risk calculations. By requiring greater transparency around price cap compliance, conducting comprehensive investigations into suspect transactions, and increasing penalties for violations, service providers and importers will demand higher fees (such as freight rates) and deeper price discounts from Russia to compensate for their risks.

2. Once the price cap's efficacy is ensured and enforcement challenges addressed, **ratchet down the price caps** to deprive Russia of critical foreign currency inflows. We propose initially to reduce the crude oil price cap and the discount product price cap by $10/barrel each, and to reduce the premium product price cap of $100/barrel more substantially, which has generally been above the market price for over the last year. This would cost Russia an additional $25-30 billion per year.

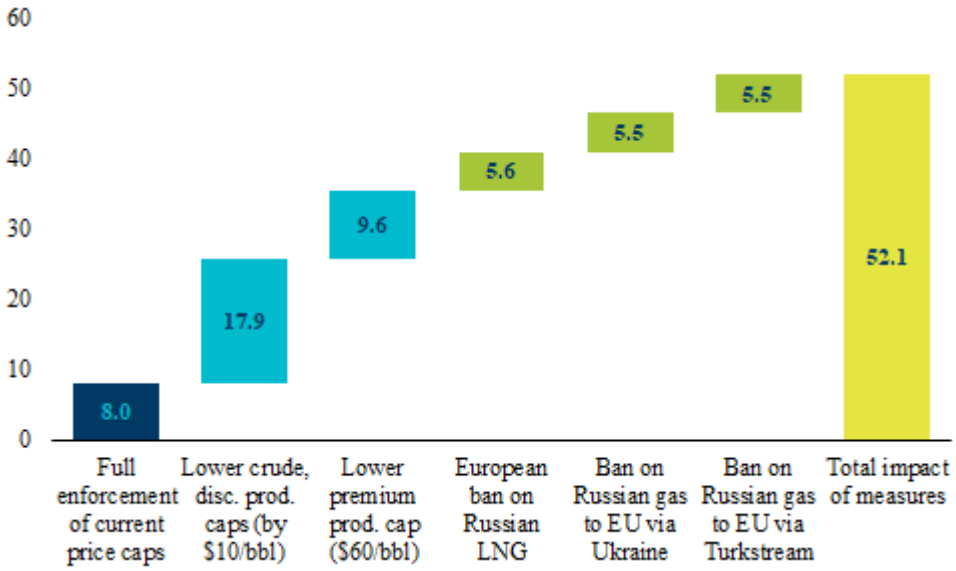
Second, we propose two further steps to reduce oil and gas earnings, to isolate the Russian oil and gas sector, and to send a clear signal on the second anniversary of the full-scale invasion:

1. **Complete the EU/G7 ban on Russian hydrocarbons** by eliminating all purchases of LNG and banning Russian gas flows to Europe. Such a measure would demonstrate the coalition's commitment to a permanent decoupling from Russian energy and deprive the aggressor of important future export earnings. This ban should be phased in over the next one to two years, as other gas supply comes onto the market, to avoid any sharp market tightening and rising prices.

2. **Target oil and gas-related services** that Russia relies on for production and exports. Russia's hydrocarbon sector has had restricted access to western technology since 2014, resulting in a negative impact on new developments. Many foreign companies also exited after February 2022. However, a significant number continue to operate in Russia. Cutting off such services completely could restrict future LNG production, while pushing up costs for oil production by eroding technology-driven efficiencies.

Figure 4 summarizes the impact that we estimate these proposed measures to have on Russia's export earnings per year. Altogether, this package of energy-related actions would cost Russia more than $50 billion per year (compared to 2023) and bring foreign currency inflows down to a critically low level. Proper enforcement of the existing price caps—coupled with actions to address the challenges emanating from the growing shadow fleet—would cost Russia $8.0 billion per year. Lower price caps—$50/barrel for crude oil, $35/barrel for discounted products, and $60/barrel for premium products—would amount to a loss of $27.5 billion. And measures targeting Russian LNG and remaining pipeline gas flows to Europe would reduce exports by another $16.6 billion per year.

Figure 4. Estimated reduction of Russian exports per year vs. 2023, in $ billion



Source: KSE Institute

FOUR KEY STEPS TO CONSTRAIN RUSSIA IN 2024 AND BEYOND

I. IMPROVING PRICE CAP ENFORCEMENT AND PRESERVING ITS LEVERAGE

I.1. STOPPING THE SHADOW FLEET

The coalition should expand measures to limit Russia's ability to rely on its "shadow fleet"—vessels that are not owned, operated, or insured by G7/EU entities. This is critical for two reasons: (i) The shadow fleet allows Russia to circumvent the oil price cap and generate additional export earnings that support macroeconomic stability and government revenues; and (ii) The shadow fleet overwhelmingly consists of vessels at the end of their life spans, many of which likely lack adequate spill liability mandated under international law. Such aging, underinsured, and undermaintained tankers pose a significant environmental risk for coastal states around the world, but especially those in the Baltic Sea and the Mediterranean, which see the heaviest monthly flows of vintage shadow tankers laden with Russian oil.

I.1.a. Scaling up sanctions enforcement against shadow tankers

One strategy that coalition countries have increasingly utilized in recent months—and that we urge them to continue pursuing—is to **sanction individual vessels** that have carried oil priced above the caps while also relying on restricted coalition maritime services. Russia intended to build up a fleet of vessels "immune" to sanctions, but this strategy has fallen far short of the mark because of flaws in conception and execution.[3]

Since mid-October, the U.S. Treasury Department's Office of Foreign Assets Control (OFAC) has sanctioned some 25 individual tankers for price cap violations, nearly all of which belong to the shadow fleet. Thus far, sanctions have proven effective in sidelining blocked vessels from normal commercial operations. Once sanctioned, not a single vessel has so far lifted any new export cargo. Most have idled their engines and dropped anchor near a major Russian port or major offshore anchorage.

It appears that the Kremlin has become careless while assembling its shadow fleet, not just with the already sanctioned vessels, but by leaving some important service relationships with U.S.-based entities in place. For instance, all tankers blocked so far appear to have carried oil priced above the caps while still flagged in countries that outsourced administration of their registries to private U.S. companies. Under U.S. price cap rules, it is not just the U.S.-based providers of restricted maritime services that are potentially subject to enforcement. Any entity anywhere that relies on restricted U.S. services while transporting Russian oil above the price cap may also face such consequences. So, for example, a Liberian-flagged Emirati-owned shadow tanker is potentially subject to enforcement, since Liberia outsources its flagging operations to a U.S.-based company. And if that tanker were chartered by a Hong Kong-based trading company to deliver oil priced above the cap, that trading company would also potentially be subject to enforcement. Thus, shadow tankers relying on restricted U.S.-based services can become vectors of "contagion"—spreading sanctions risk to other participants in the shadow trade.

As a result of Moscow's poor sanctions "hygiene," a large number of shadow tankers could now be at risk of OFAC sanctions. Nearly 150 tankers active in Russia's shadow trade (including Sovcomflot vessels) appear to have relied on U.S. flagging services while carrying oil priced above the cap, by our estimates. Only a sixth of those have actually been sanctioned to date. The balance, however, remain "at risk" of enforcement—even if they have subsequently reflagged. And the many market intermediaries—commodities traders, commercial ship managers, importers, etc.—that transacted with these tankers while they were violating U.S. price cap rules, or with their tainted cargoes, are also potentially "at risk."

[3] See "Dangerous Waters: How far will OFAC go in sanctioning Russia's shadow trade?" by C. Kennedy here.

Thus far, OFAC and other enforcement agencies have been extremely measured in bringing enforcements against these other shadow market intermediaries, sanctioning only a handful of commodity trading firms and ship management companies. Nonetheless, these restrained actions appear to have raised market perceptions of risk around Russia's shadow trade in recent weeks, putting upward pressure on freight rates and pricing discounts for Russian oil.

The recent step-up in price cap enforcement by coalition partners is proving costly for Russia in other ways—particularly in terms of the loss of expensive shadow shipping capacity. Since Spring 2022, more than 250 vintage tankers have been purchased from the global mainstream fleet and repurposed for use in the Russian shadow trade. The current market value of this bought-and-paid-for fleet approaches an estimated $9 billion, much of which was likely financed by Russian banks, we believe.

The market value of the 25 shadow tankers sidelined so far exceeds $800 million. What is more, the cost to replace all "at risk" shadow tankers (including those already sanctioned) in today's used tanker markets on a like-for-like basis would come to some $4.7 billion by our estimates. Any loans secured by cashflows from sanctioned ships are likely to be impaired and may need to be written off entirely if these vessels don't return to service. Such write offs could further stress Russia's increasingly stretched domestic lending markets, adding to the financial fragility noted above.

By now, Moscow will likely understand that coalition authorities have the ability—with the stroke of a pen—to sideline more than half its active shadow tonnage. Further, they may also have realized—correctly—that OFAC likely already has the authorities in place to sanction even shadow tankers that have not relied on U.S.-based marine services, should it so choose. These realizations may now have led some people in the Kremlin and Russian banking circles to fear that Russia's costly program to build out a sanctions-resistant parallel shipping supply chain in the dollar-dominated oil markets could turn out to be a very expensive folly—yet another strategic energy blunder alongside Putin's ill-considered decision to dismantle Gazprom's highly lucrative European export business.

At the very least, such concerns will likely act as a disincentive to putting further capital at risk by continuing to invest in additional shadow fleet expansion. Much, however, will depend on two things: (i) whether Russia manages to return sanctioned tankers to service; and (ii) whether Moscow believes coalition partners are prepared to continue blocking tankers and designating other shadow market participants.

Accordingly, we believe coalition partners should continue with their campaign of stepped-up sanctions against shadow-market intermediaries. Emphasis should be placed on increasing the number of shadow tankers blocked and the prevention of sanctioned vessels from returning to commercial service. To reduce the likelihood that blocked tankers return to service, coalition authorities should make clear that market players transacting with these ships will come under close scrutiny for sanctions violations.

As for scaling up the number of shadow tankers blocked, this would bring six distinct benefits: (i) it would reduce the shadow tonnage available for circumventing the price cap, forcing more export flows back to the mainstream fleet, where price cap restrictions can be more effective; (ii) it could materially increase the amount of non-performing loans in Russia's fragile financial sector; (iii) it could act as a disincentive to further expansion of the shadow fleet; (iv) it could further raise transaction costs for Moscow's shadow trade, as rising levels of perceived risk put further upward pressure on freight rates and oil price discounts; (v) it could reduce the environmental risk posed by Russia's aging shadow tankers, many of which are likely to be inadequately insured and undermaintained; and (vi) it could further stoke tensions among Russian elites around who bears the costs and responsibilities for bad policy decisions. At the same time, removing more shadow vessels from the Russia trade would be unlikely to pose physical constraints on Russian export supplies, since flows could simply shift back to the mainstream fleet.

While Russia will certainly try to restore the sidelined vessels to service and find new business partners to replace sanctioned entities, these measures are a powerful tool to disrupt the shadow fleet's operation and drive up costs in a meaningful way. In addition, the threat of OFAC enforcement action alone already impacts the risk calculations of all involved parties. With each entity or vessel added to OFAC's SDN list, the shadow trade becomes a riskier business. As this realization takes hold, participants will either withdraw or demand higher compensation for their risks. Ultimately, we believe that such measures can significantly constrain the shadow fleet and force Russian exports back onto mainstream tankers that require compliance with the price cap.

I.1.b. Exercise the maritime rights of coalition coastal states—starting in the Baltic Sea—to block passage of shadow tankers violating mandatory spill insurance requirements

We believe that the sanctions coalition should rely on a second strategy to restrict Russia's ability to use the shadow fleet for price cap evasion and to address the big environmental risks emanating from old and underinsured vessels. This strategy does not rely on the imposition of sanctions. Instead, it involves coastal states within the coalition exercising legal rights they already possess under international maritime law to enforce statutory obligations already imposed on the global tanker fleet. By international convention, oil tankers are required to carry significant amounts of mandatory oil spill (P&I) insurance. Some 95% of the global fleet carries adequately capitalized insurance policies and provides high levels of transparency around their policies that align with the International Maritime Organization's (IMO) guidelines on financial adequacy of spill liability insurers.

By sharp contrast, many vessels in the shadow fleet have very low levels of transparency around their spill liability insurance. Inadequately capitalized and sham insurance among shadow fleet vessels has been a source of concern to the IMO's legal committee for many years. The explanation for this persistent problem is straightforward: providing adequate insurance for tankers is costly, as it requires large amounts of capital to be held in reserve. Under maritime law, flag states have primary responsibility for enforcing IMO guidelines for the integrity and capital adequacy of the spill insurance of the vessels on their registries. Unfortunately, as the IMO has observed, some flag states are lax in their oversight responsibilities, certifying tankers that lack adequate insurance. Some—perhaps most—shadow tankers take advantage of lax flag-state oversight to carry sham policies issued by inadequately capitalized niche insurers.

This increases the financial and environmental risk facing coastal communities through whose waters these underinsured or uninsured tankers routinely pass. Tankers with sham insurance can lack both the pressure from their insurers to maintain safety standards as well as the ability to rapidly mobilize funds to mitigate damage from accidents. Today, European coastal communities face the highest exposure to Russia's shadow fleet, with the highest concentration of shadow tonnage in the Baltic Sea. Some 50% of Russia's seaborne exports are channelled through the Baltic due to infrastructure constraints. In recent months, roughly half the tankers transporting Russian oil through the Baltic are from the shadow fleet. Their numbers routinely exceed 70 laden vessels per month.

In our view, a major accident involving the Russian shadow fleet is probably only a question of time. In fact, several close calls already occurred in recent months, including one off the coast of Denmark. Coastal states need not delegate all enforcement authority to flag states where ships in their waters are violating international law and posing environmental risks. Under maritime law, coastal states have authorities to **prevent inadequately insured tankers from passing through their waters**. We saw Turkey exercise similar rights on tanker traffic through the Turkish Straits starting in December 2022.

There are two notable "chokepoints" in the Baltic Sea—the Danish Straits and the Viro Strait (between Estonia and Finland) through which Russian shipping must pass. These three coastal countries enjoy certain

limited rights under maritime law that we believe could be used to legally prevent laden tankers violating insurance laws from claiming innocent passage or other transit rights. We propose that all coalition countries bordering the Baltic Sea assert their maritime legal rights to put in place an insurance verification requirement for any tanker wishing to pass through their waters. This would simply entail insurers maintaining public lists of the tankers they insure and providing financial disclosures (audited financial reports and credit ratings) in line with IMO guidelines. Nearly all tankers in the global fleet already provide such online disclosures. This verification regime would require shadow tankers to do likewise as a condition of passage through coalition waters. Those with adequate insurance should have no trouble providing the disclosures. Those without are in violation of international law and should be barred from operating anywhere in the world.

We acknowledge the legitimate concerns that some coastal states may have with regard to the practical implementation of such a measure. However, an insurance verification system doesn't necessarily require a physical confrontation to deter vessels that may not wish to comply with it. Instead, coalition partners—including the U.S.—could make clear to markets that any vessel refusing to make available credible and adequate financial disclosures from their insurers would be subject to sanctions enforcement action—as would the commodity trader chartering the ship. Again, risks would rise significantly and act as a powerful deterrent. In most cases, returning to insurance from transparent, reputable P&I clubs will be the less costly option for trade participants—and a larger share of Russian exports will be transported under reliance on G7/EU services, which, in turn, triggers the price cap's application. We estimate that 50% of Russia's seaborne oil exports would be affected if an insurance verification requirement were implemented in the Baltic Sea—and as much as 80% if also implemented in the Mediterranean.

I.2. Stepping Up Investigations and Penalties

Limiting the role of the shadow fleet and maintaining the price cap's leverage can only have an impact on Russian export earnings if existing restrictions are also enforced effectively. In the fourth quarter of last year, it appears that more than 95% of all Russian seaborne crude oil exports took place above the price cap's $60/barrel threshold, while roughly 30% of the total volume was shipped with the participation of G7/EU service providers, largely insurance companies.[4] Since weaknesses in the attestation regime have hindered enforcement, we believe that it is critical for coalition authorities to follow through on their recent announcements on **improving the existing attestation system**.

Ultimately, the objective is to provide enforcement agencies with sufficient information to investigate potential price cap violations. There are several ways to achieve this: (i) by mandating the provision of additional information by market participants—this is the course that the coalition has chosen for now; (ii) by requiring pricing information to be provided by reputable commodity traders that can be reached with sanctions in case of violations; and (iii) by leveraging the role that coalition financial institutions play in price cap-related transactions.

There is a second important tool to improve price cap compliance, however: the coalition should significantly **increase punishments for violations**. As the aforementioned figures show, many participants in the trade with Russian oil—brokers, buyers, maritime insurance companies, re-insurers, financial institutions, etc.—have effectively breached the price cap. In addition, as Russian efforts to evade sanctions will continue for the foreseeable future, participants also know that they are likely to violate sanctions at some point soon if they do not undertake proper due diligence. This will significantly alter their internal risk calculations and make them withdraw from certain transactions. In fact, we are already seeing this occur. Following inquiries

[4] See "KSE Russia Chartbook, January 2024" here.

by OFAC, several Greek shipping companies pulled out of the Russian oil export business. More recently, shipments (e.g., to India) have been stalled by hesitancy on the part of financial institutions.

Better price cap enforcement is critical to further reduce Russia's export earnings from oil. We estimate that full enforcement of the existing price caps, including continued measures to address the challenge of the growing shadow fleet, would cost Russia $8.0 billion per year (vs. 2023). Further, better enforcement ensures that Russia would not benefit to the same extent from a windfall gain and foreign currency inflows if global oil prices rose sharply, as they did in 2022. In our view, the price cap has demonstrated its capacity to maintain stability in the global oil market; thus, stepped-up enforcement should not disrupt Russian oil export volumes in a way that would lead to rising energy prices in coalition countries—one of policy makers' key concerns.

2. Ratcheting the Price Cap Down to $50/barrel

The objective of the oil price cap regime is to allow the continued flow of Russian oil to the market, avoiding a global supply shock, while reducing Russia's oil and gas revenues, and therefore Russia's ability to wage war on Ukraine. In many ways, the regime has been successful, since Russian oil has continued to flow to the market, but Russia's oil revenues have been significantly reduced, with Russia's main export benchmark Urals selling at a $21/barrel discount to the Brent benchmark in 2023, compared to a $1-2/barrel discount before the full-scale invasion. Despite current high oil prices and thanks to sanctions, Russia is overall showing increasing signs of economic fragility: a weaker trade balance, rising inflation, high interest rates, and declining quality of reserves.

To constrain Russia further and help end Russia's invasion of Ukraine, the oil price ratchet needs to be tightened once the shadow fleet has been blocked and enforcement tightened. Each $1/barrel decline in the oil price reduces Russia's oil and gas revenues by over $2 billion per year. Lowering the price caps for crude oil and discounted products by $10/barrel to $50/barrel and $35/barrel, respectively, would reduce exports by $17.9 billion per year vs. 2023 in our estimation. In the case of the premium products cap, which primarily impacts diesel, we believe the initial cap was set too high–shown by Russian sales averaging around $85/bbl, well below the cap. In addition, we note that tightness in the diesel market has now faded, as increased supply, including from new refineries in Kuwait and Nigeria, has come online and the refining margin has fallen back to around $10/bbl. A significantly lower premium products cap—$60/barrel instead of $100/barrel—would reduce export earnings by an additional $9.6 bn per year. In keeping with our recommendations in past papers, we propose ultimately to reduce the price caps to $30/barrel for crude oil, $20/barrel for discounted products, and $40/barrel for premium products.

We have three reasons for believing that in practice Russia will continue to supply oil even as the oil price cap is ratcheted down. First, the commercial incentive to supply remains intact down to at least $30/barrel for the vast majority of Russian oil. Russia has some of the lowest lifting costs in the world, with large fields and largely depreciated infrastructure. We estimate the average lifting cost is in the $10-15/barrel range, and these lifting costs in dollar terms will have fallen with the sharp 2023 weakening of the ruble, since the lifting costs are incurred in rubles. Hence, it will still make strong commercial sense for Russia to supply the oil, even if the rent it extracts from oil is sharply reduced. Second, Russia's threats not to supply oil are not credible because the impact on Russia's trade and financial position of a sustained deep cut in supply would be catastrophic, and likely to trigger an immediate financial crisis inside Russia. Third, since Russia no longer supplies oil to Europe, the direct impact of withholding supply would be sharpest on countries who have not sanctioned Russia or have been cooperating with Russia, such as China, India, and Turkey, who Russia will prefer not to antagonise.

In addition, recent experience from Russia's attempt at weaponization of gas supplies to Europe is not encouraging for Putin's regime. The attempt backfired, and Russia has now lost its position in the European gas market. The rest of the world can respond to an oil price spike using similar tools to those used by Europe to reduce their dependency on Russian gas, including using the oil reserves at importing countries, accessing spare capacity at other OPEC producers, supporting strong growth in non-OPEC supply, especially in the U.S., and introducing measures to reduce demand, where the EU managed to reduce gas demand by 17% over 2 years, with a combination of policy measures and high prices.

3. Completing the Ban on Russian Hydrocarbons

The EU has committed to **stop buying all Russian fossil fuels**, under the RepowerEU agreement, with the objective that the embargo should be fully in place by 2027. In coal, it is already complete. In oil, Russian crude and product exports to Europe have fallen dramatically, and all bar one of the remaining exemptions will be eliminated this year: Bulgaria plans to end its import of Russian seaborne crude in March 2024, the Czech and Slovak Republics plan to end their imports of Russian crude along the southern Druzhba pipeline at the end of 2024 when the expansion of the TAL pipeline to provide an alternative source of supply is completed, and the EU agreed to ban Russian LPG imports by the end of 2024 in the 12th package of sanctions. The most notable remaining exemption to the oil embargo is for the supply of oil along the southern Druzhba pipeline to Hungary. Here, we urge Hungary to expand the southern Adria oil pipeline from Croatia to replace Russian oil deliveries along the southern Druzhba and complete the EU embargo on Russian oil.

However, Russia remains an important supplier to Europe in gas. Russia's leverage over Europe was particularly acute here, with Europe dependent on Russia for around 40% of its gas supply before the invasion. In 2021-22, the advantage was with Russia, and it sought to use this dependence to pressure Europe not to support Ukraine, squeezing flows in 2021 and then cutting supply to individual countries and through the Yamal and Nord Stream pipelines in 2022. However, Europe has adjusted rapidly to this challenge. European gas demand is down 17% over two years, supply from other sources, notably LNG, has replaced the Russian pipeline supply, and storage is at record levels. Even so, in 2023 Russian supply was still a material nearly 50 billion cubic meters of natural gas (bmp)—20 bcm in LNG and around 27 bcm in pipeline gas or around 13% of Europe's supply—which generated export revenues for Russia of $25-30 billion.

For the first time since Russia's invasion, the gas market is no longer tight, with supplies ample for this winter, and prices in Europe holding below €30/MwH, and close to pre-crisis levels. Moreover, the market is now heading for a period of ample supply, with 200 bcm of new LNG gas—a 50% increase—already approved, under construction, and coming on line over the next five years. As a result, Europe is in a position to take the initiative in reducing its dependency on Russian gas.

We propose to phase the **banning of Russian LNG in Europe** with the arrival of these major new volumes of LNG on the market from mid-2024 onwards to minimise disruption. Specifically, we propose modest steps in 2024: a ban on the operating companies for Russia's two small Baltic LNG liquefaction terminals (Portovaya, Cyborg-Vysotski) and national bans by member states who are confident about their gas balances, such as the Netherlands and Finland, and a ban on any new spot purchases. Further, we would announce an EU-wide ban on import of Russian LNG—effectively imports from Yamal LNG—from the end of next winter, e.g., April 2025 onwards, which should give the market time to prepare and enable a smooth transition off Russian LNG. This should reduce Russian LNG flows to Europe to about 15 bcm in 2024, a residual 5 bcm in 2025, and nothing from spring 2025 onwards. While some of the Russian LNG will find a

home in other markets, this will only be a partial redirection, given a lack of Russian LNG shipping capacities, and it will need to be at a deep discount to find a buyer.

We believe this looser gas market, and the prospect of a further strong increase in supplies, should allow further measures to be taken to reduce Russia's revenues from gas, without a risk of disruption. Among other things, we urge: (i) the EU to announce a timetable for closing the remaining Russian pipeline gas deliveries to Europe via Turkstream; (ii) implementation of the policy announced by Ukraine of ending transit of Russian gas to Europe via Ukraine, once the current contract expires at the end of 2024; (iii) Asian buyers of Russian LNG—such as Japan and Korea—to minimise their current purchases of Russian LNG and commit to ending their Russian supply contracts once the new volumes of LNG are available; and (iv) now that the gas market is no longer tight, for the G7 to agree to restrictive measures on Russian nitrogen fertiliser exports (urea and ammonia), which are made with natural gas. We estimate that an EU ban of Russian LNG would reduce export earnings by $5.6 billion per year vs. 2023—and a ban on pipeline gas via Ukraine as well as Turkstream $5.5 billion each.

4. Cutting Off Access to Western Oil and Gas Services

Recent actions taken by the United States with regard to the Arctic LNG 2 project have shown how the continued involvement of companies from coalition countries can be leveraged to **constrain Russian oil and gas production and exports**. Russia remains particularly reliant on coalition-based entities for access to advanced oil field services, which cannot be easily replaced with domestic systems or infrastructure from countries such as China. While many of these service providers have announced limitations on expanding their operations in Russia, some continue to operate in the country and generate significant revenues for the government. The precise details of their on-going Russian operations are difficult to determine from public disclosures. In recent years, however, Russia has come to rely increasingly on their more advanced hardware and software products and support services to maintain productivity in Russia's increasingly challenging upstream environment. Despite various initiatives to develop domestic alternatives to these high-end products, the Russian industry has made little progress.

Targeting such products and services has the advantage of not interfering with global energy markets as it need not affect the volume of Russian production. It can, however, meaningfully drive up development and production costs as Russia will need to rely on less advanced technology for its more challenging fields. Russia has been facing challenges with regard to the development of new oil and gas fields since 2014 due to sanctions imposed in the aftermath of the annexation of Crimea and instigation of armed conflict in Eastern Ukraine. In addition, since the start of the full-scale invasion, many foreign companies have pulled out of the remaining projects and exited Russia for good. The departure of their investments and expertise is also taking a toll.

However, the fact that some Western companies appear to continue operating in Russia's oil and gas sectors and continue to provide productivity-enhancing services benefits only the shareholders of those companies, while harming the interests of Ukraine and its allies. We propose that the G7/EU announce that from June 30, 2024, their companies will be prohibited from providing any services to the Russian oil and gas sector—which should be broadly defined to include petrochemicals—as well as exploration, extraction, refining, processing and transportation of hydrocarbons in the Russian Federation or on behalf of a company controlled by individuals or corporate entities based in Russia or Belarus, unless they have been issued a specific license to provide such a service by an authorized G7 or EU agency by that date.

CONCLUSION: TIME TO ACT

Oil and gas sanctions—notably the Western embargo on Russian oil products and the loss of the European gas market, and the G7 oil price cap—have had a major negative impact on Russia. Over two years, we estimate that oil and gas sanctions have cost Russia over $170 billion in lost oil and gas earning, which is around 10% of Russia's 2023 GDP.

As a result, Russia is now in a fragile economic state, as oil and gas prices have normalised and sanctions have bit. This can be seen in the weak underlying trade balance and deteriorating reserves, reflected in high inflation and rates. In the past, Russia has faced an economic and financial crisis when Russia's annual oil and gas earnings have fallen towards $100 billion, and Russia's trade surplus has been eroded. At the moment, Russia is about $50 billion away from this critical point.

We see the second anniversary of Russia's full-scale invasion as the right moment to tighten sanctions by this amount and increase the pressure on Russia to end its invasion. We propose a package of measures—enforcing and tightening the oil price cap, banning Russian LNG and pipeline gas supply to Europe, isolating the Russian oil and gas sector—which should in combination, when properly enforced, reduce Russia's oil and gas earnings by around $50 billion a year, and imply a future of declining oil and gas revenues.

In particular, we estimate the following effects on Russian exports per year from our proposed measures (see Figure 4): full enforcement of the current price caps and addressing of the shadow fleet—$8.0 billion; reduction of the crude oil and discounted products caps by $10/barrel each—$17.9 billion; reduction of the premium products cap by $40/barrel—$9.6 billion; EU ban on Russian LNG—$5.6 billion; a ban on supply of pipeline gas via Ukraine to Europe, which Ukraine currently plans to implement from January 2025—$5.5 billion; EU ban on pipeline gas via Turkstream—$5.5 billion. Altogether, this package would deprive Russia of more than $50 billion in annual export earnings and bring such earnings to a critically low level. By essentially wiping out the current account surplus, the measures would significantly erode macroeconomic stability and reduce the regime's policy space.

This package of measures is targeted on the Achilles heel of the Russian economy—its oil dependence—and, if consistently implemented, would reduce Russia's critical oil and gas earnings to a level which in the past has triggered sharp economic contraction and a financial crisis. In a situation in which the West is struggling to deliver the promised financial and military assistance, we see an additional reason for greater ambition on sanctions, as a means of delivering on the West's commitment to support Ukraine.

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