

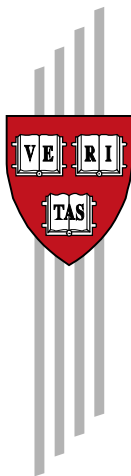
# Cutting Putin's Energy Rent: 'Smart Sanctioning' Russian Oil and Gas

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## Abstract

Following the Russian aggression against Ukraine, major sanctions have been imposed by Western countries, most notably with the aim of limiting Russia's access to hard international currency. However, Russia remains the world's first exporter of oil and gas, and at current energy prices this provides large hard currency revenues. As the war continues, European governments are under increased pressure to scale-up their energy sanctions, following measures taken by the United States, the United Kingdom, Canada and Australia. This piece argues that given the inelasticity of Russia's oil and gas supply, for Europe the most efficient way to sanction Russian energy would not be an embargo, but the introduction of an import tariff that can be used flexibly to control the degree of economic pressure on Russia.

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The major sanctions imposed on Russia in the wake of its invasion of Ukraine have most notably aimed at limiting Russia's access to hard international currency. However, Russia remains the world's first exporter of oil and gas, generating large hard currency revenues. At current energy prices, Russia's energy revenues are estimated at about \$700 million per day for crude oil and refined products, and about \$400 million per day for natural gas sent via pipelines to the European Union (1).

The proceeds of oil and gas exports account for about half of Russia's federal budget (1). As the war in Ukraine continues, importing governments are therefore under increased pressure to target these exports through scaled-up sanctions.

The United States, the United Kingdom, Canada and Australia have said they will ban or phase down energy imports from Russia by the end of 2022. However, the main buyer of Russian fossil fuels, the EU, has so far refrained from a full oil and gas embargo. Instead, the EU has set out a new energy strategy – REPowerEU – which has as its goals the reduction by nearly two thirds of EU gas imports from Russia by end-2022 and making Europe independent from all Russian fossil fuels well before 2030 (2). REPowerEU does not represent a sanction on Russia, but is rather a political decision to reduce permanently the EU's overdependency on Russian energy.

For the EU, an immediate fossil-fuel embargo would have implied substantial costs, as the EU imports about 40 percent of its natural gas and around 25 percent of its oil from Russia. In comparison, the US imports 8 percent of its oil and the UK imports around 5 percent of its natural gas and oil from Russia. Rejecting calls to join an embargo, German Chancellor Olaf Scholz said energy imports from Russia “are of essential importance for the everyday life of our citizens,” and not imposing an embargo was a “conscious” decision by European governments (3).

But the West's mixed approach towards Russian energy imports has been counterproductive. Lower volumes of Russian energy brought to the market and the expectation of potentially tighter sanctions in the future have increased global, and particularly European, prices for the Russian energy still being delivered. The higher prices have overcompensated for the loss of volume brought about by embargos imposed by some countries. A partial wind-down of volumes from Russia will in the short term not reduce Russia's energy revenues.

Only an immediate and full embargo would drastically cut Putin's revenues. But it would also have substantial though perhaps manageable economic repercussions for Europe (4). And given that Russia is the world's largest overall exporter of crude oil, refined products and natural gas to global markets (5-6), a complete embargo on Russian energy would have huge effects on global energy markets, impoverishing some oil consumers and enriching other oil producers.

However, such a global embargo is unlikely because not all countries, including China in particular, will not participate. As a consequence, an embargo by a subset of countries is likely to lead to a substantial redirection of oil, with a much smaller reduction in Russian oil exports.

Instead of continuing to cut volumes only partially, or the Western alliance going for a total energy embargo on Russia, we suggest a smarter approach. Russian oil and gas supplies cannot easily be sold elsewhere, and thus Europe can tax Putin's energy imports while

keeping Russian oil and gas flowing to Europe. We lay out how this can most effectively be done.

### ***Tax incidence: how to take Putin's rents with an import tariff on oil and gas***

A simple insight from tax theory is that the so-called 'tax incidence' depends on the relative elasticity of supply and demand, ie on whether sellers or buyers have relatively better alternatives (7). Imagine that all oil is identical and costless to transport. In this case, Russia would just redirect its oil to China, displacing Gulf oil, which would be redirected to Europe. In such a world, a Western oil embargo would not harm Russia and would not cost Europe anything either. Now consider the current situation, where oil and natural gas mainly flow through existing pipelines and they mostly go West. In this case, Russia would have no choice other than to sell the oil to Europe or not sell it at all. In general, the less elastic the supply (eg because oil cannot be diverted), and the more elastic the demand (eg because Europe can import from the Gulf), the more the larger the share of tax paid by the supplier will be, while the opposite is true in case demand is less elastic than supply. And while a tariff would increase the price for the final consumer, this increase would be relatively small in a situation of highly elastic demand and highly inelastic supply. The extra amount the consumers would pay for oil would be much smaller than the extra tariff revenue the government would receive. EU governments could use this revenue to support those most affected by high energy prices. And given that Russia would mostly pay the tariffs, Putin's rents resulting from the high prices would be taxed effectively.

Therefore, the impact of an oil tax on Russia depends on the relative elasticities of supply and demand. In the following, we show that Russian oil and gas exports to Europe are inelastic. Moreover, we argue that especially for oil, demand is rather elastic while we propose steps to increase the demand elasticity of gas.

### ***The inelasticity of Russian oil and gas exports to Europe***

In 2021, 60 percent of Russia's oil exports went to European Organisation for Economic Co-operation and Development countries. For Russia, redirecting substantial oil exports from Europe to non-OECD-countries such as China and India would be difficult because of bottlenecks in the domestic and export infrastructure, and differences in oil quality between east-bound and west-bound fields. This would make it very costly for Russia to sidestep a Western tax on its oil. An attempt to do so would amount to a self-embargo. Russia's inability to export at full production capacity (minus domestic consumption) will result in domestic storage filling up rapidly, eventually forcing refinery and production shut-ins, hurting medium-term Russian oil export capacity. A full European import stop for Russian oil would thus have high economic cost for Russia.

In 2021, 75 percent of Russian natural gas exports went to OECD Europe. About 90 percent of this gas was transported via four major pipeline systems. This strong reliance on pipelines implies that Russia cannot redirect export flows from Europe to Asia in the near future. That is, Russian gas exports to Europe are even less elastic than its oil exports. Russia exported 155 billion cubic metres (bcm) of gas to the EU in 2021, and only 16.5 bcm to China. On top of volumes, it is also important to flag that commercial conditions in the Chinese market are much worse for Russia than those in the European market. Russia is estimated currently to

charge \$3 /million British thermal unit (MMBtu) on the deliveries to China via the Power of Siberia pipeline, while it charges \$10-\$25 /MMBtu on the deliveries to Europe.

### ***The strategic interaction***

Both parties can unilaterally inflict great harm on the other – and itself – through an embargo. It is therefore not sufficient to consider the question of tax incidence in isolation; an implicit or explicit negotiation needs to be considered. For instance, Putin's threat of a sudden stop to gas supplies, in retaliation for an import tariff, becomes more credible the more tariffs eat into his rents from energy exports.

There are two strategic ways to support smart sanctioning, and to reduce the risk of retaliatory measures.

First, Putin's options should be limited. A large international demand cartel that agrees on a minimum tariff on Russian energy would make it more difficult for Russia to avoid the tariff and more costly to retaliate against the tariff. By imposing an embargo (= infinite tariff), the US, UK, Canada and Australia already meet the criteria for becoming cartel members. Requiring only a more moderate tariff to become a cartel member would increase the likelihood of cooperation by the EU and other regions.

Second, the EU needs more strategic options. Put simply, it needs to prepare for the worst, a full stop to supplies. Even if the EU does not seek an embargo, better preparations increase the effectiveness of the tariff by increasing demand elasticity, ie by making it easier for European demand to shift to other sources, and by limiting the harm Putin could impose on the EU by choosing an embargo.

This will require bold government action to complement private-sector action. EU governments should temporarily suspend regulations that prevent the increased use of immediately available energy resources, or the fast deployment of renewables and the corresponding infrastructure. Governments should also throw big money at the relevant players and use clever market design tools, comparable to interventions during the COVID-19 pandemic (8-9), to accelerate the build-up of the necessary infrastructure. Plus, governments should start acting immediately to reduce Russian imports.

In concrete terms, three steps should be urgently taken.

First, EU governments should act together to procure as much alternative oil, gas and coal as possible. For gas, this would primarily be in the form of LNG. EU joint purchasing of gas would increase bargaining power. For oil and coal, there should be an internationally coordinated effort to make sure that producing countries with seizable spare capacity scale-up their production to compensate for a possible cut off from Russia.

Second, EU governments need to make sure gas storage is replenished adequately ahead of next winter. This entails a regulatory change to oblige companies owning gas storage sites in Europe to refill them to at least 80 percent capacity by October 2022 (2). As winter is the season in which Putin has the strongest leverage over Europe, this represents a key element to ensure EU resilience.

Third, EU governments must promptly unleash both supply and demand-side measures to foster energy security. On the supply side, this can include temporary gas-to-coal switching in power generation, a postponement of planned closures of nuclear power plants, and front-loading of renewables. On the demand side, this notably implies promoting oil and gas savings to reduce the risk of a supply crunch.

## **Conclusions**

Infrastructure bottlenecks prevent Russia from selling all the oil it wants to bring to market, even at lower prices. Europe can exploit this dependency by offering to buy Russian oil and gas only at a substantial discount. One way to do this is through an import tariff.

The EU's current plan to reduce imports of gas from Russia by nearly two-thirds by end-2022 could be a worse choice than the tariff approach in virtually every respect. It could cause the price of Russian imports to increase massively for European consumers. As a result, Russia's revenues could increase even if volumes fall as drastically as the EU wants them to. At the same time, energy supply could drop to critical levels, and dealing with the resulting crisis would put a strain on state budgets and could lead to political challenges.

Another advantage of a tariff is that it can be used flexibly, especially compared to the current choice between zero (business-as-usual) and infinite (embargo) tariffs. Most importantly, the tariff can be fine tuned to incentivise diversification in the West, and to control flexibly the degree of economic pressure on Russia.

More research on how the tariff should be designed would be useful. What system of tariffs on different fossil fuels and in different regions would maximise its economic effectiveness? How should the tariff respond to changing economic and political conditions in order to stop the war and prevent further escalation? That said, our analysis suggests that the potential value of import tariffs on Russian fossil fuels can hardly be underestimated: smart sanctioning deserves more attention in the current global policy debates.

## **References**

(1) International Energy Agency, (IEA), "Frequently Asked Questions on Energy Security" (17 March 2022, <https://www.iea.org/articles/frequently-asked-questions-on-energy-security>). [the easiest access to this source is via the URL]

(2) European Commission, (EC), "REPowerEU: Joint European action for more affordable, secure and sustainable energy"(8 March 2022, [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_22\\_1511](https://ec.europa.eu/commission/presscorner/detail/en/ip_22_1511)). [the easiest access to this source is via the URL]

(3) G. Wearder, German chancellor Scholz pushes back against Russian energy import ban, as oil and gas climb. *The Guardian*, (7 March 2022).

(4) R. Bachmann, D. Baqaee, C. Bayer, M. Kuhn, A. Löschel, B. Moll, A. Peichl, K. Pittel, M. Schularick “What if? The Economic Effects for Germany of a Stop of Energy Imports from Russia” *ECONtribute* Policy Brief No. 028 (March 2022).

(5) International Energy Agency, (IEA), “Russian supplies to global energy markets” *IEA 2022 Ministerial Meeting* (2022, <https://www.iea.org/reports/russian-supplies-to-global-energy-markets>) [the easiest access to this source is via the URL]

(6) U.S. Energy Information Administration, (EIA), “Europe is a key destination for Russia’s energy exports” (14 March 2022, <https://www.eia.gov/todayinenergy/detail.php?id=51618>) [the easiest access to this source is via the URL]

(7) P. Mieszkowski, Tax Incidence Theory: The Effects of Taxes on the Distribution of Income. *Journal of Economic Literature*, **7**, 1103–24 (1969).

(8) K. C. Castillo, A. Ahuja, S. Athey, A. Baker, E. Budish, T. Chipty, R. Glennerster, S. Duke Kominers, M. Kremer, G. Larson, J. Lee, C. Prendergast, C. M. Snyder, A. Tabarrok, B. Joel Tan and W. Więcek. Market design to accelerate COVID-19 vaccine supply. *Science*. **371**, 1107-1109 (2021)

(9) P. Cramton , A. Ockenfels , A. E. Roth and R. B. Wilson. Borrow crisis tactics to get COVID-19 supplies to where they are needed. *Nature* **582**, 334-336 (2020)