



Energy Sanctions and Russia: What Comes Next?

SEPTEMBER 2015

Russia's annexation of Crimea in March 2014 and the upheaval in eastern Ukraine have transformed its relations with the West. Memories of the Cold War suddenly feel less distant.

Moscow's rising assertiveness abroad is often linked to its improved economic fortunes under President Vladimir Putin. In the 1990s, Russia was a country facing chronic financial difficulties. Today, Russia is one of the world's largest economies.¹ The vast increase in Russia's energy export revenues over the past fifteen years has made this economic change possible.

Unsurprisingly, the West has responded to the Kremlin's increasingly bellicose policy in the former Soviet space by imposing punitive measures against Russia's energy sector. The immediate impact of such measures appears limited as neither oil nor gas flowing from Russia is expected to suffer right away. However, the long-term implications may prove more important. Sanctions could diminish Russia's capacity to produce the same amount of oil and hamper a number of its gas objectives abroad. The United States and the European Union (EU) retain a set of policy options that could further constrain the energy sector's role as the power base for the Russian economy with potential implication for the Kremlin's foreign posture.

The Energy Sector Sanctions at Work

Following its annexation of Crimea and the rising turmoil in eastern Ukraine, Russia endured several waves of sanctions. Both the US administration and EU leaders launched punitive measures aimed at inducing the

1 Based on purchasing power parity (PPP), the World Bank ranked Russia as Europe's largest economy and the fifth largest in the world in 2014. Reflecting the recent slump in Russia's currency, its nominal GDP ranked fifth in Europe and tenth in the world. On GDP based on purchasing power parity, see World Bank, World Development Indicators, July 11, 2015, http://databank.worldbank.org/data/download/GDP_PPP.pdf. On nominal GDP see World Bank, World Development Indicators, July 11, 2015, <http://databank.worldbank.org/data/download/GDP.pdf>.

Eurasian Energy Futures Initiative

As a joint initiative of the Atlantic Council's Global Energy Center and Dinu Patriciu Eurasia Center, the Eurasian Energy Futures Initiative covers critical energy issues in the wider Eurasian space. The Initiative analyzes trends and disruptive factors to facilitate the provision of secure, affordable, and sustainable energy for consumers.

Kremlin to reverse its policies in Ukraine. The sanctions initially focused on penalizing Russian individuals—political officials, some members of the military and security services, and businessmen—deemed responsible for the crisis in Ukraine; these measures mostly took the form of travel bans and asset freezes. Soon, the West's attention shifted toward key sectors of the Russian economy: energy, defense, and financial services.

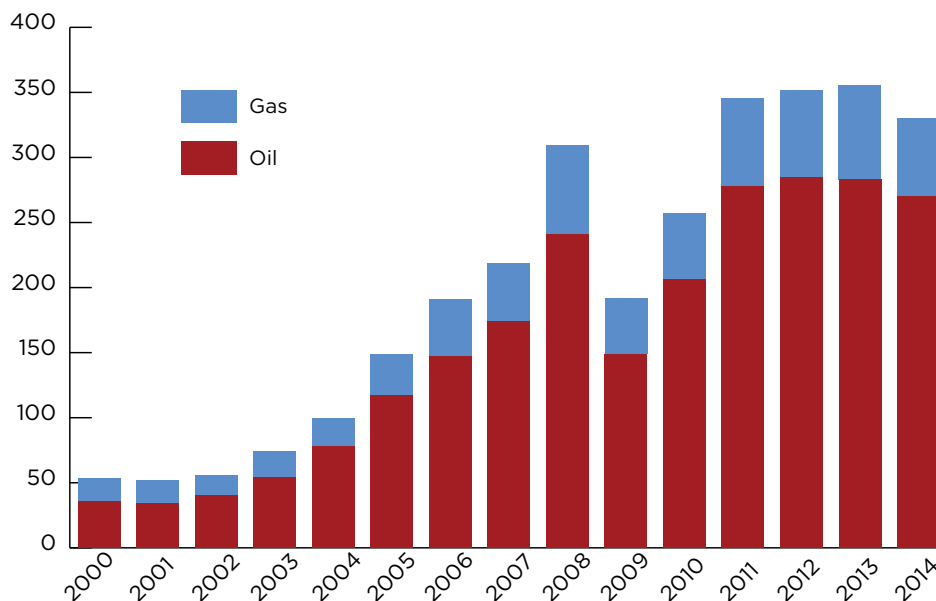
In today's era of "smart sanctions,"² the energy sector has unsurprisingly played a central role in the implementation of sanctions against Russia. Energy has been fundamental to Russia's rising economic fortunes since Putin's rise to the presidency in 2000, with energy export revenues jumping from 53 billion US dollars (USD) in 2000 to 330 billion USD in 2014 (see figure 1).³ This increase in energy revenues has been crucial for securing notable growth in the Russian economy and has allowed Russia to sustain a ballooning military expenditure, thereby advancing its regional posture.

Although Russia derives strength from its massive growth in energy revenues, this source of revenue is also a major weakness. The oil and gas sectors account for

2 "Smart sanctions" are defined as precision-guided measures, designed to inflict the least damage on the overall population while inducing the targeted government to take the desired action. Their effectiveness is a subject to an extensive debate.

3 Calculations based on data from the Central Bank of the Russian Federation.

Figure 1. Russia's Oil and Gas Export Revenues (billion USD)



Source: Central Bank of the Russian Federation.

about half of the proceeds of the Russian federal budget and constitute nearly two-thirds of export revenues.⁴ Because Russia's economy has failed to diversify, its economy remains vastly dependent on its ability to sustain oil and gas output and exports.

However, it is important to note that oil is vastly more significant than natural gas for the Russian economy. It generated about 88 percent of the federal budget's hydrocarbon revenues in 2014.⁵ Likewise, oil accounted for 82 percent of hydrocarbon export revenues.⁶ Gas is primarily important for its strategic character, principally derived from the dependencies it creates with clients.

The US/EU sanctions recognize oil's distinctive role in the Russian economy and, therefore, principally target this sector. The Russian gas sector is not directly targeted, though its main players, Gazprom and Novatek, are affected by financial sanctions and restrictions on technology transfers.

The sanctions do not aim to limit the current supply of energy exported from Russia. The country still maintains its role as the world's largest hydrocarbon exporter, ow-

ing to its dual role as the world's chief gas exporter and, marginally behind Saudi Arabia, its second largest oil exporter.⁷ Targeting the supplies of such a large energy player could have counterproductive impacts on oil and gas prices.

Instead, sanctions aim to make it harder for Russia to develop its more long-term and technically challenging projects, essentially targeting the future of its oil industry. US sanctions prohibit exporting goods, technology, and services used in three categories of oil fields in Russia: deepwater, Arctic offshore, and unconventional (tight) oil. EU sanctions mirror these measures, although they explicitly target fewer Russian companies.⁸

Essentially, sanctions aim to significantly limit US/EU companies' potential role in developing Russian oil through three channels. First, Western oil majors are barred from the three aforementioned categories of prospective oil fields. Second, Western service companies are constrained from providing the critical technology for developing such fields. Finally, Russia's leading oil companies, along with Gazprom and several leading banks, are barred from accessing finance in the US/EU, except on a very short-term basis.

4 Oil and gas exports in 2014 stood at 330 billion USD, which represented 66 percent of total exports—498 billion USD. See Central Bank of the Russian Federation.

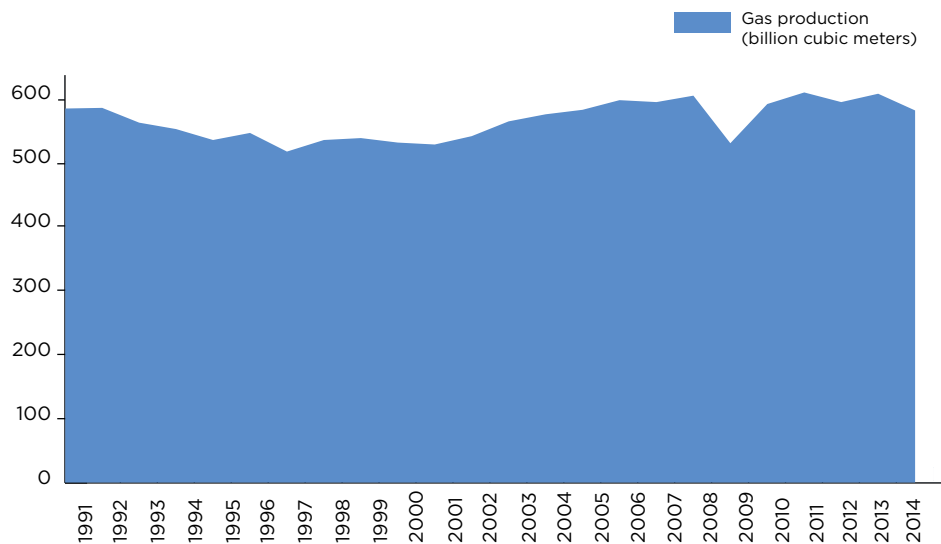
5 Paula Dittrick, "IHS: Western Sanctions Indirectly Could Hinder Russian Oil, Gas Revenues," *Oil and Gas Journal*, March 27, 2015, <http://www.ogj.com/articles/2014/03/ihs-western-sanctions-indirectly-could-hinder-russian-oil-gas-revenues.html>.

6 In 2014, Russia earned 269.7 billion USD from crude oil and petroleum product exports. Natural gas exports delivered additional 60.5 billion USD revenues.

7 *BP Statistical Review of World Energy 2015*.

8 On the US sanctions, see US Department of Treasury, Resource Center, "Ukraine-/Russia-Related Sanctions," <http://www.treasury.gov/resource-center/sanctions/Programs/Pages/ukraine.aspx>. On more on EU sanctions, see European Union, Newsroom, "EU Sanctions against Russia over Ukraine Crisis," http://europa.eu/newsroom/highlights/special-coverage/eu_sanctions/index_en.htm.

Figure 2. Russia's Gas Production since 1991 (bcm)



Source: BP Statistical Review of World Energy 2015.

Timing of the Sanctions

While the energy sanctions grew out of the Crimea crisis and the turmoil in eastern Ukraine, they have come at a particularly difficult period for Russian oil and gas sectors. Both sectors continue to cope with long-term challenges that preceded the sanctions.

Even before the onset of sanctions, few predicted significant growth in the oil sector. Simply maintaining existing output had gradually transformed into a formidable objective.

The underlying challenge has not been the lack of oil reserves, but their deteriorating nature. Current oil reserves are more costly to recover, located deeper in the ground, and produce lower average volumes per drilled well. The sector suffers from years of underinvestment, partly due to an oil tax regime that fails to foster investments, but also due to weak property rights. Underinvestment has resulted in a very large share of mature fields. Such fields, many of them a legacy from the USSR, account for about 86 percent of current output.⁹ As these fields decline, Russia urgently needs to bring new fields on stream.

The slump in oil prices that has accompanied the launch of sanctions has also emerged as a complicating factor. Thus, investors in Russian oil suddenly face the dual

⁹ One estimate is that about 9 million barrels a day (out of 10.5 mbd) came from mature fields. See James Handerson, "Key Determinants for the Future of Russian Oil Production and Exports," *Oxford Institute for Energy Studies Paper*, April 2015, p. 52.

uncertainty created by sanctions and relatively lower prices.

Unlike the oil sector, Russia's gas sector faces no underinvestment challenge. In fact, its problem is quite the opposite—it is confronted with a vast excess supply capacity. Gazprom head Alexei Miller has indicated that the company produced only 444 billion cubic meters (bcm) of gas in 2014, though its current capacity allows it to deliver as much as 617 bcm of output.¹⁰

Lack of markets for Russian gas form the crux of the over supply problem. The domestic market, still the largest client for Russian gas, remains stagnant. So does the European market. Sales to Ukraine, Gazprom's chief client among the former Soviet republics, have been trending downward for years. It is quite revealing that, in 2014, Russia produced less gas than a decade earlier, principally due to a lack of markets. In fact, its output in 2014 was slightly below the volume produced in 1991 (see figure 2).

Sales to alternative markets are not immediately on the horizon. Russian liquefied natural gas (LNG) sales are modest, and face an increasingly crowded market as they expand. Pipeline sales to the Chinese market are still years away and will not deliver the same amount of revenues as European sales do. This is due to various tax incentives granted to Gazprom to develop China-bound

¹⁰ Caroline Copley and Vladimir Soldatkin, "Russia's Gazprom Warns EU over Gas, Ukraine," Reuters, April 13, 2015, <http://www.reuters.com/article/2015/04/13/us-russia-crisis-gas-europe-idUSKBN0N41ED20150413>.

gas as well as the substantial infrastructure investments needed to bring that gas to the market. Such tax incentives, and hence foregone revenues, are rare for Europe-bound gas.

The Russian gas sector remains locked in the European market for the near future. Furthermore, at a time of difficulty in accessing foreign funds, its chief player, Gazprom, appears overstretched across a number of commitments to invest in new export infrastructure, new fields in eastern Russia, and domestic gasification programs.

On a positive note, if Russia's relations with the West returned to normal and sanctions were lifted, both the oil and gas sectors would offer opportunities for advancing cooperation. The oil sector urgently needs foreign partnerships in order to develop the next generation of oil fields. The gas sector, at least on the domestic front, has opened up for new players, presenting potential opportunities for Western companies.

The Immediate vs. Longer-Term Impact

The sanctions' immediate effect on Russia's energy sector could be described as, at best, modest. Russia's oil output has not yet been affected. In fact, during the first seven months of 2015, it stood at 309 million tons, (about 10.7 million barrels a day), which was 1.4 percent higher than a year earlier. Meanwhile, export of Russian crude oil increased by 7.9 percent during this period.¹¹ Russia, overall, continues to have a relatively comfortable reserve to production ratio,¹² though the declining reserve quality is concerning.

Yet, if the crisis in Ukraine remains unresolved or further escalates, Russia's energy sector may go through growing pains.

Demonstrating one early outcome of the crisis, Western oil majors have suspended a series of investments in Russia's oil sector. Russia had just started investing in oil exploration in its offshore regions in the Arctic. Prior to the sanctions, in 2011 state-owned Rosneft had signed a Strategic Cooperation agreement with ExxonMobil to develop the reserves in the Kara Sea in the Arctic. ExxonMobil had just begun exploratory drilling. But in

compliance with the sanctions, it had to suspend its involvement in this project, along with its presence in nine other Russian projects.¹³

The resulting delay in exploring the Russian offshore Arctic is part of a larger international trend. International majors have reported delays in other Arctic projects worldwide.¹⁴ Relatively lower oil prices have prompted oil majors to reconsider their investment plans for the Arctic.

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In Russia's case, however, the problem is bigger than low oil prices. Access to the technology used by international oil majors with a deep offshore and/or Arctic experience remains crucial for developing the Arctic fields. As a result, continuing sanctions are likely to delay Russia's Arctic projects, even if oil prices go back to previous levels.

The near future of Russia's oil output, however, might be more intertwined with the prospects for developing Russia's new conventional fields (greenfields) and unconventional oil resources. After all, bringing significant volumes of oil from Russia's offshore Arctic remained at least a decade away before the onset of the sanctions.

Before the sanctions, Russian companies had planned to add 1.7 million barrels a day of incremental oil output by 2020 from new conventional fields, accounting for about

11 The notable growth in crude oil exports was possible partly due to a 1.3 percent drop in the export of petroleum products and a drop in domestic consumption. See "Dobycha Nefti v Rossii v Iyule Vyroslo na 2.4%, eksport na 7.1%," *Vedomosti*, August 2, 2015, <http://www.vedomosti.ru/business/news/2015/08/02/603114-dobycha-nefti-v-rossii-v-iyule-viroslo-na-24-eksport---na-71>.

12 Reserve to production ratio measures the extent to which the oil industry replaces the oil it produces with new reserves. The average for Russia overall stood at about twenty-six years in 2014, according to *BP Statistical Review of World Energy 2015*.

13 Affected areas included additional projects in the Black Sea region, the Arctic and West Siberia. "ExxonMobil Zamorozila 9 Proektov v Rossii," *Lenta.ru*, September 29, 2014, <http://lenta.ru/news/2014/09/29/exxon/>.

14 For example, Chevron shelved indefinitely its plans to explore the Beaufort Sea in the Canadian Arctic. Likewise, Statoil and EDF have handed back the licenses to drill in the Greenland. See Richard Milne, Christopher Adams, and Ed Crooke, "Oil Projects Put Arctic Projects into Deep Freeze," *Financial Times*, February 5, 2015.



The Prirazlomnaya oil platform in the Russian Arctic shelf. *Photo credit: Krichevsky.*

16 percent of production.¹⁵ However, significant delays in realizing such plans now seem likely. Companies with the most ambitious investment plans for new fields, namely Rosneft and Gazprom Neft, are the ones hit hardest by financial sanctions. Rosneft, in particular, has emerged as Russia's most indebted company, repeatedly turning to the government for financial help.¹⁶ These companies, along with other Russian oil majors, have already requested that the government revise their license terms due to expected delays.¹⁷

Similarly, unconventional oil (tight oil fields), mainly from the Bazhenov formation in Russia, had recently emerged as central to Russia's oil future. Russia, according to the US Department of Energy, has the largest tight oil resources in the world.¹⁸ Many international oil majors had lined up to sign partnerships with Russian oil companies to develop tight oil. Following the sanctions, such projects have been suspended. For instance, Shell

abandoned a joint venture with GazpromNeft to develop shale oil. Total suspended a joint project with Lukoil to develop tight oil in West Siberia.¹⁹

Service companies providing technologies necessary to drill and analyze results in the oil fields have also been required to comply with sanctions. As a result, leading service companies, such as Schlumberger, have announced cuts in staff in Russia.²⁰ According to Russia's Energy Ministry, Western service companies account for about half of the technology utilized in hard-to-recover oil fields and about 80 percent of the technology used for offshore fields.²¹ Service companies' retreat, therefore, is a major concern for Russia's oil majors.

In response to sanctions on the provision of services and technology, Russia is leaning toward a policy of import substitution in the energy sector. The government is in the process of setting targets for replacing foreign technologies used in the oil and gas sectors. It aims to set procurement policies requiring oil and gas companies to use Russian-made equipment and services. However, success in this area is far from certain, and it would take time to get actual results.

15 "Russian Oil and Gas—Brave New World," Sberbank Investment Research, November 2014, p. 2.

16 "Rosneft Requests 42 Billion USD Loan from Russian Government," BBC News, August 15, 2014, <http://www.bbc.com/news/business-28801185>.

17 Thomas Nielsen, "Rosneft Khotela By Prodliť Sroki Razvedki v Arktike," *Barents Observer*, October 29, 2014, <http://barentsobserver.com/ru/energiya/2014/10/rosneft-hotela-prodliť-sroki-razvedki-v-arktike-29-10>.

18 Jack Farchy, "Russian Oil: Between a Rock and a Hard Place," *Financial Times*, October 29, 2014.

19 *Ibid.*

20 See "Sanktsii ES i SShA Rossiiskaia Ekonomika Pochuvstvuet v Polnoi Mere Tol'ko Cherez Neskol'ko Let," *RBK Daily*, December 26, 2014, <http://www.rbcdaily.ru/economy/562949993485670>.

21 Farchy, "Russian Oil: Between a Rock and a Hard Place," *op. cit.*

There are also hints that Russia, responding to sanctions, might become more open to Asian (mainly Chinese) capital and technology for its energy sector. Moscow signed a widely touted 400-billion USD gas deal with China in 2014.²² Closer cooperation with China might help to unlock some projects that suffer from lack of access to funding. But it is far less likely that Russian leaders would agree to cede significant control to Chinese companies, fundamentally transforming ownership in the energy sector. Also, it is unclear whether Chinese companies can bring the necessary technology to develop oil fields in new frontiers, namely the Arctic

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and tight oil. Partnerships with Western oil majors and service companies mushroomed before the sanctions largely because Western technology was more advanced and competitive, particularly in terms of quality.

In the next ten years and beyond, Russian energy prospects might get more dismal. The impact of the sanctions is reflected in the Energy Ministry's forecasts about the oil sector's future. The official Energy Strategy is in the process of revision. The existing strategy was forecasting an output of 535 million tons/year (about 10.7 mbd) by 2030, a modest increase compared to the baseline in 2007. Current proposals consider a drop to 476 million tons/year (about 9.5 mbd) by 2035 as a likely scenario.²³ IHS Cambridge Energy Research Associates (CERA), an energy consulting company, has more pessimistic prediction. If sanctions are kept in place, it predicts oil output could drop to 7.6 mbd by 2025, about 3 mbd lower than last year.²⁴

22 Chris Wright, "\$400 Billion Gas Deal Shows Russia Looking to China to Replace Western Money," *Forbes*, May 22, 2014, <http://www.forbes.com/sites/chriswright/2014/05/22/400-billion-gas-deal-shows-russia-looking-to-china-to-replace-western-money/>.

23 Mikhail Krutikhin, "Kak Vytashchit Rossiiskuiu Neftianku iz Krizisa," *RBK Daily*, March 26, 2015 <http://rbcdaily.ru/economy/562949994500683>.

24 Farchy, "Russian Oil: Between a Rock and a Hard Place," op. cit.

The gas sector, while not directly under sanctions at present, may also suffer negative consequences. So far, actual gas trade with the EU has not been affected. However, rising tensions between Europe and Russia may further intensify European efforts to diversify its gas imports from non-Russian sources (both via pipeline and LNG). This could have an impact on Gazprom's market share in Europe in future. Also, sanctions, if tightened, could cause potential delays in realizing Russian ambitions to invest in LNG (see below), effectively weakening the Kremlin's strategy to diversify gas markets abroad.

Overall, the price of oil, probably more than anything else, will determine whether Russia will be able to continue generating vast amounts of oil and gas revenues. However, if sanctions are not lifted, and especially if they are further tightened, they are also likely to be a cause for concern for Russia's energy industry and government.

A New Wave of Energy Sanctions and Countermeasures?

As the short-term impact of the current sanctions on the Russian energy sector is likely to be modest, the Kremlin may regard them as surmountable for at least a few years.

Long-term prospects may be more alarming, particularly if there are signs of a significant drop in the oil output. The Russian government is considering various responses in the form of new tax breaks and a revised legislation for the use of subsoil resources. But success is far from guaranteed. Also, if the price of oil fails to reach its previous highs, it will be even more urgent for the Russian government to find a way to promote investments in oil and reach new gas clients.

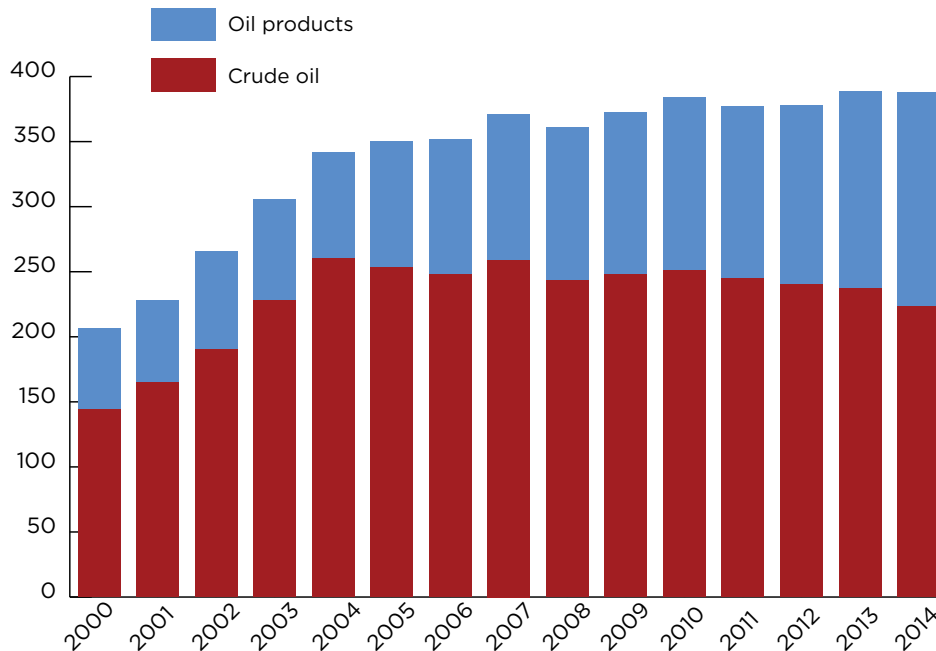
A new wave of sanctions that target the oil and gas sectors could further magnify Russian energy's predicament. Not all options are practical. But the United States and the EU maintain several policy choices that bear relatively minimal risks, which makes them likely to appear on their agenda.

Oil

Banning Russian crude exports, along the lines of recent sanctions targeting Iran, is possibly the most extreme, though largely hypothetical option. Russian oil output represented 12.7 percent of the oil produced worldwide in 2014, more than three times Iran's share.²⁵ Removing a quarter or so of this output from global markets is likely to have a steep impact on oil prices. The supply boom in US unconventional oil somewhat alleviated the price implications of the Iran oil sanctions. Targeting Russian oil exports would

25 *BP Statistical Review 2015*.

Figure 3. Russia's Export of Crude Oil and Refined Products (million tons)



Source: Central Bank of the Russian Federation.

necessitate an even larger boom in global oil supply. Additionally, successfully implementing such sanctions would constitute a monumental task. Russia is far less internationally isolated (compared to Iran) and has a much wider customer base for its oil.

If oil prices went into a sustained downward spiral, an export ban on Russian oil would become more feasible to implement. However, this large drop in oil prices would mean that such sanctions would become less needed, as the impact on the Russian economy would already be severe. In 2014, Russia earned about 269 billion USD from oil and petroleum product exports, according to Russia's Central Bank (see figure 1). If average oil prices dropped to 44 USD/barrel and Russia kept its export volumes the same, this alone would wipe out about 100 bn USD of its annual oil export revenues.²⁶

Nevertheless, the United States and the EU retain several viable options for new sanctions. They could target different parts of the oil value chain.

The oil upstream (exploration and development) is currently subject to sanctions in the form of a prohibition to provide services and equipment for offshore Arctic, deepwater, and shale oil development. But some of the technology and services applicable to these specific areas are actually in much broader use in Russia's conventional oil fields. Vagit Alekperov, the CEO of Rus-

sia's second largest oil company Lukoil, has described hydraulic fracturing as the weakest link for Russian oil production.²⁷ He estimates that fracking and horizontal drilling account for nearly a quarter of Russia's existing (conventional) oil output. Its role in oil production has been growing. In fact, without such technology, Russian oil output would have been already in decline.

As fracking and horizontal drilling technology is principally sourced from the United States, the US administration has the option to modify the current embargo on such technologies. The interpretation of current sanctions that restrict the provision of such technology and services to three categories of oil fields, could be broadened to affect oil production altogether. Such a measure would severely constrain the involvement of US oil service companies in Russia. But it has the potential to curb Russian oil output in the short term, as profitability in many Russian oil fields would drop overnight.

Moving along the value chain to downstream, the refining segment of the oil sector is also a potential new target for sanctions. What makes this business vulnerable is its dependence on foreign parts amid an extensive modernization campaign launched by oil companies.

Russia maintains a longstanding priority of shipping more refined products instead of crude oil. It has made significant strides in that respect. Within a span of a decade, Russian

²⁶ Calculations based on data from the Central Bank of the Russian Federation.

²⁷ "Russian Oil and Gas—Brave New World," Sberbank Investment Research, November 2014, pp. 20-22.

refineries doubled the volume of exports of petroleum products, with over 9 percent annual growth in the past two years alone²⁸ (see figure 3). Tilting the balance further in favor of refined products remains a key Russian objective.

More recently, the Russian government has prioritized improving the quality of refined products. The aim is to produce and export less fuel oil and increase production of lighter products (gasoline and diesel). But realizing this goal hinges on continued supplies of a number of technology parts and catalysts used for improving the depth of refining. Such catalysts are available primarily from US/European companies.²⁹ If the refining sector appears on the sanctions' radar, the impact would be immediate.

Finally, oil trading is a potential area for new sanctions. Russian oil majors such as Rosneft have the option to partially circumvent financial constraints imposed by sanctions through signing up multi-year prepayment deals with international traders. In exchange for committing oil and petroleum product supplies, Russian majors are able to access *continuous* short-term funding facilitated by traders. While this practice does not violate current financial sanctions in the energy sector, it weakens their impact. This leaves the possibility for further tightening the sanctions by redefining their scope.

Gas

The current energy sanctions recognize the difficulty of directly targeting Russia's gas exports. In the short term, effective options are indeed lacking. Gazprom remains Europe's largest gas supplier, with multiple long-term contracts binding European clients to Gazprom. Most importantly, immediate alternative supplies to substitute for Russian gas are limited.

In the longer run, however, both the United States and the EU maintain certain options. For the United States, which does not depend on Russian gas supplies, LNG technology is a potential area for new sanctions. Russian gas players hope to diversify away from the European market by investing in LNG. Russian companies are planning multiple LNG projects, which if realized could substantially boost Russia's gas export potential. However, part of the technology, such as components for liquefaction trains, need to be imported. Reportedly, American companies account for 94 percent of the liquefaction

technology used in LNG worldwide.³⁰ The possibility that sanctions could be extended to LNG technology could emerge as a source for delays in Russia's planned LNG projects.

As another policy option, the US administration could broaden the definition of its oil sanctions in a way that would affect Russian gas as well. A new ruling adopted August 2015 provides a hint that the United States is already considering this option. Thus, for the first time, the United States added a specific Russian oil field, the Yuzhno-Kirinskoye Field, to its sanctions list. The field is predominantly a gas field, and Russian gas production is not currently targeted by US sanctions. But as is often the case with hydrocarbon fields, the field has the potential to deliver significant amount of oil as well, which prompted the US decision.³¹ Similar Russian fields that contain both oil and gas appear as candidates for future sanctions.

The European Union, through revisiting its gas relationship with Russia, maintains several options at its disposal to put additional pressure on Moscow. The EU has already taken some of these steps, including attempts to diversify gas imports through the so-called Southern Gas Corridor,³² building new LNG terminals in Eastern Europe, and creating a more liquid gas market by promoting market integration among its members.

Additional measures could target Russia's two sources of leverage in its gas relationship with EU members: pipeline promises and pricing of natural gas.

The Kremlin has managed to gain substantial clout by promising to build new pipelines across EU member or EU candidate territories. As these potential pipelines involve a vast amount of investment in the transit country and present potential opportunities for the enrichment of a political elite, their appeal to European decision-makers cannot be understated. Russia's negotiations with various partners on the South Stream pipeline project and, more recently, the brewing debate for the future of the "Turkish" Stream pipeline have helped to distract EU members (and EU candidate Turkey) from Europe's long-term gas diversification policy.

As a response, the EU could set a moratorium on any new pipeline projects for Russian gas until condi-

28 Exports of petroleum products increased from 82 million tons/year in 2004 to 165.3 million tons/year in 2014. See Central Bank of the Russian Federation.

29 The dependence appears to be highest with respect to catalysts for hydrocrackers and diesel hydrotreaters. See Peter Kaznacheev, "Sanktsii Zamedlennogo Deistviya, ili Rossiya v Nefianoi Lovushke," *Slon.ru*, December 12, 2014, http://slon.ru/economics/sanktsii_zamedlennogo_deystviya_ili_rossiya_v_neftyanyoi_lovushke-1194826.xhtml.

30 An important component that needs to be purchased is cryogenic heat exchanger for liquefaction. US companies account for 94 percent of this, with the rest provided by German and Dutch companies. See "Russian Oil and Gas—Brave New World," Sberbank Investment Research, November 2014, p. 23.

31 Doina Chiacu, "US Adds Russian Oil Field to Sanctions List," Reuters, August 7, 2015, <http://www.reuters.com/article/2015/08/07/us-usa-russia-sanctions-idUSKCN0QC1UJ20150807>

32 An initiative of the European Commission to bring Caspian and Middle Eastern gas to Europe.

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tions allow for the sanctions to be lifted altogether. EU candidate countries could be requested to support such a moratorium, as part of the objective to create an integrated European energy market. This appears as a feasible policy option because Europe's stagnant gas market has wiped out the urgency of building new import pipelines from Russia. Also, the Kremlin's drive to circumvent Ukraine in the past decade has already created an export capacity that far exceeds Europe's expected gas demand in the years ahead. Such a moratorium, however, will necessitate that supplies coming through Ukraine are not significantly interrupted.

Another source of leverage for Gazprom is the price of gas, which necessitates a more effective response by the EU. Lack of transparency in gas contracts has given Gazprom additional leverage. The Kremlin has had the opportunity to encourage divisions within the EU by offering lower prices to potential allies and higher prices in order to punish others. The EU has responded with an antitrust case against Gazprom, deeming its actions in parts of eastern and central Europe an abuse of its dominant position.³³ This process could probably discourage Gazprom from some of its potentially monopolistic behavior. Yet, the European Commission could strive for more transparency in gas price negotiations to ensure

³³ Kim Hjelmggaard, "EU Opens Antitrust Case against Russia's Gazprom," *USA Today*, April 22, 2015, <http://www.usatoday.com/story/money/business/2015/04/22/eu-commission-vestager-gazprom/26167967/>.

that market drivers rather than politics determine the price. This would be particularly relevant when a contract renewal with Gazprom is on the horizon.

Conclusions

The energy sector remains central to the Russian economy and to its future international standing. A colossal growth in revenues from its oil and gas sectors in the past fifteen years allowed Russia to regain part of its lost power. Yet, the ultimate dependence of its economy on the continuous flow of energy rents has remained unchanged throughout Russia's post-Soviet existence.

Presently, US and EU energy sanctions target precisely this vulnerability. The immediate impact of these sanctions should be expected to be modest. Neither Russian oil production and exports nor gas sales abroad are likely to be significantly affected in the short run.

However, the long-term effects of the sanctions will likely prove more important. Their potency derives largely from their timing. Punitive measures against the Russian oil sector have come at a time when the industry is facing growing urgency for collaboration with US and European companies. Developing a new generation of Russian oil fields hinges on these partnerships to a much greater extent than in the recent past. For the Russian gas sector, on the other hand, the main challenge appears to be a lack of markets. Sanctions could further magnify this challenge by hampering Russia's LNG growth plans and fostering the EU's drive to diversify its gas imports.

The potency of the energy sanctions could be further enhanced through a range of new punitive measures. The United States and the EU have various policy options at their disposal. They can target different parts of Russia's oil value chain and weaken the Kremlin's gas leverage. These could raise Russia's costs further, particularly if tensions in eastern Ukraine escalate.

The areas covered by the energy sanctions highlight the considerable opportunities for collaboration between Russian and Western energy companies. They represent lost commercial opportunities for both sides. However, for Russia, near-term commercial losses may eventually turn out to be of secondary importance if Western sanctions contribute to the long-term decline of Russia's energy sector.

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