

RUSSIA'S OIL EXPORT STRATEGY: TWO MARKETS, TWO FACES

BY SAMMY SIX



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LIST OF ABBREVIATIONS

Cif	Cost, Insurance and Freight
CNPC	China National Petroleum Corporation
EIA	Energy Information Administration (US)
E&P	Exploration and Production
ERI RAS	The Energy Research Institute of the Russian Academy of Sciences
ESPO	Eastern Siberia Pacific Ocean (pipeline)
Fob	Free On Board
GDP	Gross Domestic Product
IEA	International Energy Agency
IOC	International Oil Company
Mb/d	Million Barrels per Day
NCI	Nelson Complexity Index
NWE	North West Europe
OECD	Organisation for Economic Cooperation and Development
ONGC	Oil and Natural Gas Corporation, Limited
OPEC	Organisation of Petroleum Exporting Countries
TNK-BP	Tyumenskaya Neftyanaya Kompaniya – British Petroleum
ULSD	Ultra Light Sulphur Diesel

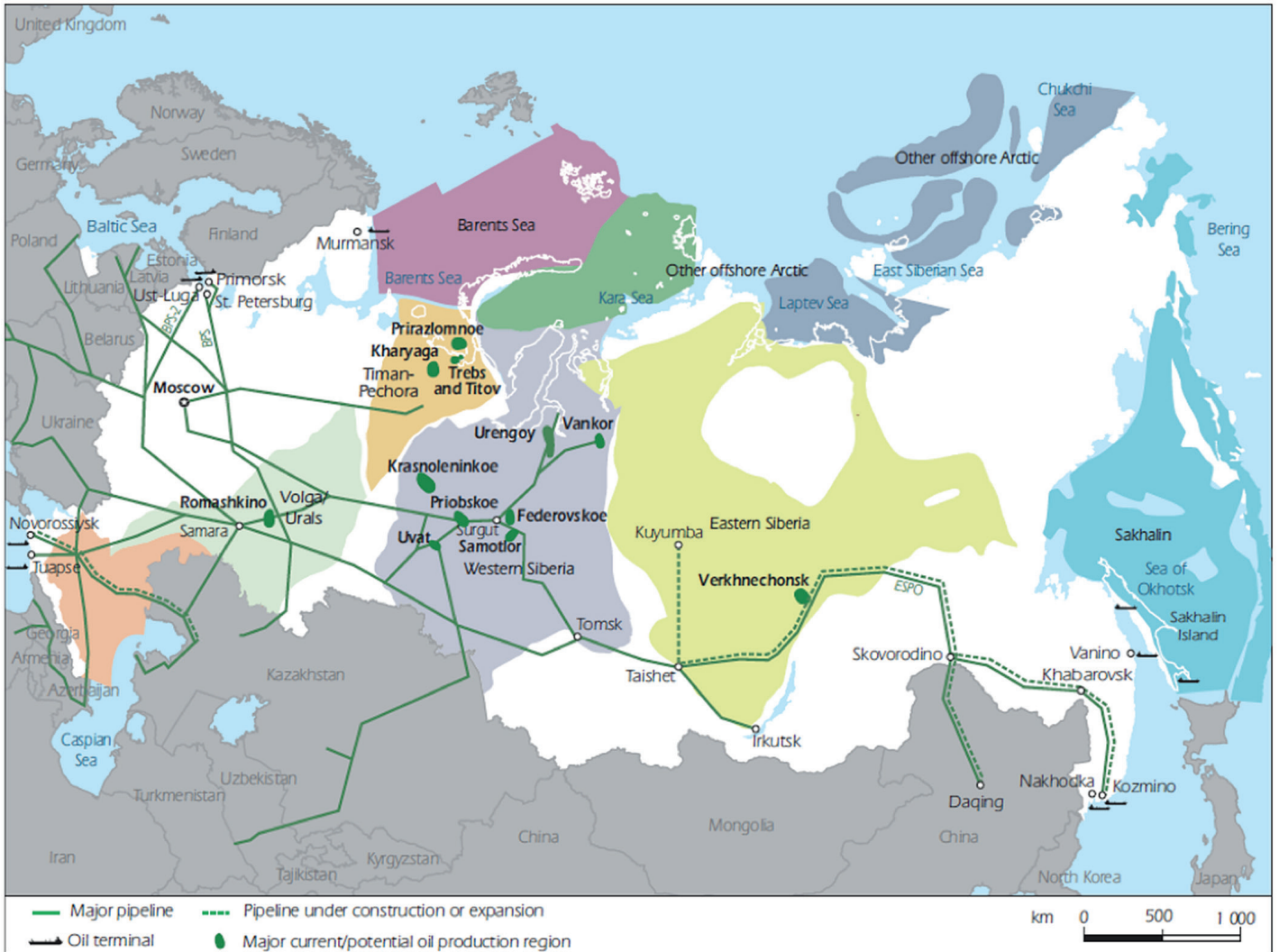


FIGURE 1: RUSSIA'S OIL-PRODUCING BASINS AND EXPORT INFRASTRUCTURE (SOURCE: IEA)

1 INTRODUCTION

The prime position of the Russian Federation in global oil markets can hardly be overestimated. In 2013, Russia extracted on average 10.5 million barrels per day (Mb/d) of crude oil, or about one in eight barrels produced globally. This post-Soviet record output made Russia the world's largest oil producer, ahead of OPEC leader Saudi Arabia. Given the country's relatively low domestic oil consumption rates and the dominance of natural gas in its energy mix, about three-quarters of Russian oil – in the form of both crude and refined products – is earmarked for sale on the international market. The Russian government is, to a large degree, dependent on the revenues associated with the export of oil to balance its budget.¹

Europe has traditionally consumed the bulk of Russian oil exports due to its geographic proximity and extensive pipeline linkages with Russia's main producing regions. The Russian oil industry, however, is increasingly shifting its attention from Europe towards Asia because of the latter region's growing oil demand and rapidly increasing import dependency. Growth in oil demand is believed to lie exclusively in non-OECD countries, and predominantly in China and India. Exports of Russian crude oil to China and the rest of Asia have been on the rise in the past couple of years, while flows to Europe are on the decline. Similarly to its plans regarding natural gas, Russia intends to double the flow of oil to Asia by 2035, as stated in its Energy Strategy. In order to accomplish this ambitious goal, the Russian oil industry is increasingly shifting its operations from its mature (or 'legacy') basins in western Siberia and the Volga Ural provinces, to its frontiers in the east. Output growth from these new fields is necessary to offset production declines and to fulfil gradually intensifying supply commitments with China. President Putin has implemented tax breaks and other fiscal incentives in order to stimulate production from greenfields in eastern Siberia and Russia's Far Eastern provinces.

Capital and technology constraints, however, largely due to Western sanctions adopted against Russia during the Ukraine crisis, add uncertainty as to whether Russia will be able to develop its frontiers and honour its supply commitments. It is

¹ In 2012, the Russian oil industry accounted for 18 percent of Russia's GDP, almost 50 percent of its total export revenues and 42 percent of the country's total budget revenues (OIES, 2014). Russia's exports of liquid hydrocarbons in 2013 generated about four times the revenue of its natural gas exports (EIA, 2014).

therefore likely that Russia will have to re-route increasing volumes of crude oil to Asia that were intended for the Western market.

While the appeal of the dynamic Asian market is obvious, Russia will also try to solidify its dominant position in Western markets. Europe is a key generator of rents for Russia. Because the European crude oil market has matured and consumption in terms of volumes is on a downward trajectory for the medium to long term, Russia will have to compete in terms of quality. It can do this by stimulating a modernisation of its refining industry in order to expand the production of refined products which meet the quality requirements of the European Union.

Meanwhile, global oil markets are fundamentally changing. The surge in light, tight oil production in the US has significantly reduced US imports, freeing up millions of barrels of oil from West Africa and the Middle East. The US shale revolution, together with weak oil demand growth in Europe and Asia, is responsible for an abundance of supplies in the market – which has only recently translated into a drop in oil prices. These dynamics will have repercussions for Russia's strategy, as export competition towards Asia will further intensify. Especially OPEC member states in the Persian Gulf will try to undercut the competitiveness of Russian crude exports feeding into Asia. Countries such as Saudi Arabia and the UAE are not only competing with Russia on the crude export market, but also on the refined product export market. Similar to the Russian strategy, large-scale, new-build refineries and secondary conversion capacity additions that are coming on-stream in the Middle East and elsewhere are eyeing the export market. In the short to medium term, oil markets are therefore likely to see an intensification of the competition between Russia and other oil exporters.

2 THE EASTERN MARKET: NEW GROWTH

In 2013, demand for oil by developing countries (non-OECD) overtook that of the developed world (OECD) for the first time since the beginning of the oil age.² Strong economic expansion by emerging markets, especially within the Asia-Pacific region, has been the main driver of increasing global oil consumption over the past two decades.³ China, in particular, has seen its thirst for oil nearly double in only the past ten years, making the country the world's second largest oil consumer after the US.⁴ Consumption in China alone is expected to reach 18 Mb/d by 2035, compared to 10 Mb/d today.⁵

With forecasts ascribing nearly all of the world's net growth in oil demand to China, India and the Middle East, Russia realises that it can no longer continue to miss out on the action. The growth potential of the Asian market contrasts starkly with the outlook of a declining European market, which has always been Russia's main customer. Due to geographical and infrastructural reasons, the large majority of Russian crude oil exports have traditionally found their way to Europe.⁶ Oil consumption in Europe, however, is expected to decline due to efficiency gains, inter-fuel substitution and saturation effects.⁷

Until recently Russia, the world's largest oil producer, has not played a meaningful role in meeting Asia's growing appetite for oil. Russia's dependence on the mature and declining European market, as well as the country's inadequate exposure to the growing Asian market, are the main drivers behind Moscow's ambitious strategy to expand its market share in the East. In its Energy Strategy, similar in scope to its natural gas export targets, Russia plans to at least double its oil exports to Asia by 2035, which would inflate the region's share in total Russian oil exports to about one-third.⁸ It further aims to increase exports to China threefold, to 1 Mb/d, by as early as 2020.⁹

2 Reuters (2013). "Developing World Oil Demand Surpasses Wealthy Nations: EIA".

3 The Asia-Pacific region, in 2013, consumed a little over 30 Mb/d of oil, or about one-third of global consumption (BP Statistical Review of World Energy, 2014).

4 China's oil consumption increased from 5.7 Mb/d in 2003 to 10.7 Mb/d in 2013. The US consumes about 18.9 Mb/d (BP Statistical Review of World Energy, 2014).

5 BP Energy Outlook 2035 (2014).

6 EIA (2014). Russia Country Profile.

7 IEA (2012). New Policies Scenario.

8 Reuters (2014). "Russia to Double Oil, Gas Flows to Asia by 2035".

9 Reuters (2014). "Russia-China Crude Oil Deals".

In order to break into the Asian market and meet its export targets, Russia is opening new exploration and production frontiers in its vast eastern provinces. Consisting of eastern Siberia and the far east, Russia's eastern frontier is envisioned in the government's Energy Strategy as the foremost centre of future production growth. Up to twenty percent of total production by 2030 – which Russia sees declining only marginally from its current high levels above 10 Mb/d – will have to be supplied by eastern Russia.¹⁰

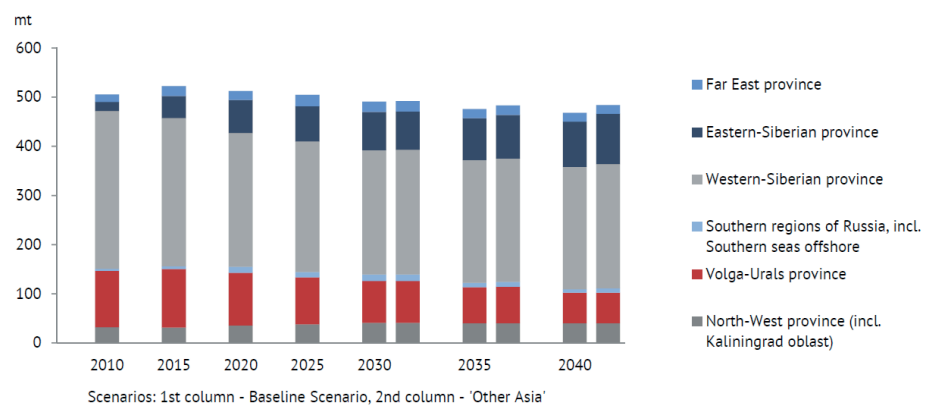


FIGURE 2: OIL AND GAS CONDENSATE PRODUCTION IN RUSSIA BY KEY PRODUCING REGION (SOURCE: ERI RAS)

Due to its sheer geographical size, remoteness and harsh climatic conditions, which have led to there having been only limited exploration efforts, it is difficult to estimate just how many and what volume of oil reserves eastern Russia holds. Based upon asset data from companies active in the region, eastern Russia disposes of approximately 10 billion barrels of proven and probable oil reserves – meagre compared to the 48 billion barrels in western Siberia, Russia's main producing basin – although others think eastern Siberia and the far east might hold up to 161 billion barrels of recoverable reserves.¹¹ In eastern Siberia, state-owned oil company Rosneft has evolved into the leading upstream player, due to the inherent strategic character of eastern resource development and the company's possession of former Yukos and TNK-BP assets in the region.

Gaining access to the mineral riches of Russia's east has been dubbed by President Putin as nothing less than the country's "national priority of the century".¹² Although financial incentives have been put in place to further stimulate the exploration,

10 The Energy Research Institute of the Russian Academy of Sciences (2014). Global and Russian Energy Outlook to 2040.

11 The Oxford Institute for Energy Studies (2011). "The Strategic Implications of Russia's Eastern Oil Resources".

12 RIA Novosti (2013). "Development of Far East, Siberia 'National Priority' – Putin".

production and export of eastern Russia's prize,¹³ lifting the region's output to the desired levels will not be an easy task.¹⁴

The move towards new production frontiers is nothing new for Russia. Major centres of domestic production have, over the decades, continuously shifted eastwards, further away from the centres of consumption in the west and south.¹⁵ The Soviet oil industry's reallocation from the Volga-Ural region to western Siberia in the 1960s is a good example of this dynamic. Then, similar to now, expanding operations eastwards led to a systematic increase of development and transportation costs, which diminished the marginal return of the incremental barrel.

Moreover, eastern Russia is not the only frontier play being opened up. In order to offset production declines from older fields in mature basins, mainly located in western Siberia and the Volga Ural regions¹⁶, Russia's oil industry is adopting an 'all-of-the-above' E&P strategy. Next to the Timan Pechora Sea, in the north-west of the country, and the Russian sector of the Caspian Basin, upstream investment is also increasingly being directed towards the vast stretches of the Russian Arctic shelf¹⁷ and the huge unconventional Bazhenov play, the world's largest shale basin.¹⁸

13 Generous tax breaks and an annulment of the export duty were largely lifted in 2011, but at the end of 2013 the government announced a series of tax discounts, including a five-year grace period for income, land and property taxes and discounted insurance premiums. Export taxes, although re-introduced, were lowered compared to the national standard. EIA (2014), RIA Novosti (2013), Rosneft (2013).

14 It is often said that "West Siberia was an oil man's dream, while East Siberia is an oil man's nightmare": not only is eastern Siberia's geology a lot more heterogeneous and complex, oil found there is also often of a lesser quality, production sites are remote and isolated, there is almost no infrastructure, and weather conditions vary between extreme cold in the winter (temperatures can get as low as -60°C) and intense heat in the summer (with temperatures reaching up to 40°C). Global warming, moreover, has led to severe permafrost erosion, which complicates the installation of a wider network of infrastructure. Gustafson (2012), Environmental News Network (2013).

15 Gustafson, T. (1989). "Crisis Amid Plenty: The Politics of Soviet Energy under Brezhnev and Gorbachev".

16 Daily oil production from western Siberia, Russia's key oil province responsible for sixty percent of Russia's total liquid output, dropped by around seven percent between 2006 and 2012. It is expected to fall further to ten percent in the coming five years. Average decline rates from mature western Siberian fields are believed to be as high as 3.5 percent per year. Samotlor, the crown jewel of western Siberia and Russia's largest oil field, has been depleted by eighty percent, a fate it shares with over a third of all Russian oil fields. Depletion and production declines have also set in the Volga-Ural region, Russia's second most important oil province, with output expected to be trimmed by more than forty percent by 2030. EY (2013), Centre for Eastern Studies (2012), WSJ (2013), UPI (2009), The Centre for Global Studies (2006).

17 Russia's continental shelf covers over six million square kilometres, an area so expansive it may hold up to seventy percent of all Arctic oil and gas reserves estimated at 90 billion barrels of oil and 1,669 Tcf of natural gas. In terms of oil potential, the Barents Sea and Kara Sea (an extension of the West Siberian plateau) seem most promising for Russia. In its Energy Strategy, Russia plans to increase the share of Arctic oil to five percent of total output by 2035, and natural gas to ten percent. Doing so will require investments up to \$400 billion, which, according to Rosneft CEO Igor Sechin, is "comparable to the cost of space exploration". USGS (2008), OIES (2007), EY (2013), RT (2012).

18 Russia holds the world's largest technically recoverable shale oil resources, estimated at 75 billion barrels. Almost all of Russia's unconventional resources are found in the Bazhenov shale, which is the source rock of many of the giant oil fields in West Siberia. The Russian Ministry of Natural Resources set a target for future production from tight oil reservoirs at 1 Mb/d, or ten percent of total output, by 2025. In only ten years' time from now, Russia hopes to match current production volumes of the Bakken in North Dakota, the birthplace of the US tight oil revolution. EIA (2013), OIES (2013).

Russia's lack of technical expertise and know-how led to the country's partnering up in recent years with several Western IOCs in order to access its Arctic and unconventional potential.¹⁹ Due to Western sanctions targeting Russia's financial and oil sectors, adopted during the 2014 Ukraine crisis, operations of virtually all of these joint ventures between Russian and Western oil companies have ground to a halt.²⁰ Eastern resource development could well benefit from an increase in foreign investments now that Russia's more capital- and technology-intensive frontiers are, at least in the short term, barred from further development.

Diplomatic strains between Russia and the West, which have resulted in mutual economic sanctions, are acting as a catalyser towards further political, economic and financial co-operation between Russia and China.²¹ Energy has been very instrumental to this end. It is no surprise, for example, that Gazprom and CNPC finally managed to conclude a \$400 billion natural gas supply deal in the spring of 2014, after a decade of difficult negotiations.²² Ever-close energy ties between Russia and China are, however, primarily the result of mutually beneficial commercial interests rather than a full harmonisation of political agendas.

The entanglement of China in Russia's eastern frontier can be seen in this light. Apart from satisfying obvious security of supply interests – Russian oil as a hedge against rising Middle Eastern imports²³ – eastern Russia is also a prime destination for long-term Chinese investments. Chinese capital, for example, financed the construction of the second phase of the Eastern Siberia Pacific Ocean (ESPO) pipeline. The 1 Mb/d pipeline²⁴ has been transporting oil from eastern Siberia to Russia's Pacific coast outlet at Kozmino since 2010. A spur pipeline to Daqing has been pumping Russian crude directly into China since 2011. With a total length of almost 5,000 km, ESPO is the world's longest oil pipeline and, with a cost of about \$30 billion, Russia's most expensive energy project ever.²⁵

19 Including, among others, Rosneft-ExxonMobil (2011), Rosneft-Statoil (2012), Rosneft-Eni (2012) Lukoil-Total (2014), Shell-Gazprom Neft (2014).

20 Natural Gas Europe (2014). "Western Sanctions on Russian Oil and Gas: The Turn of the Screw?"

21 WSJ (2014). "An Isolated Russia Signs Business, Finance Pacts With China".

22 Financial Times (2014). "China and Russia Sign \$400bn Gas Deal".

23 Currently, China has a well-diversified pool of suppliers, led by Saudi Arabia (19%), Angola (14%), Russia (9%), Oman (9%) and Iraq (8%). However, as China's hunger for crude increases (+ 8 Mb/d in the coming two decades) it will become harder to keep that pool of suppliers as heterogeneous as it is today. The Middle East already supplies over half of China's crude oil import needs, a dominance which is set to increase significantly. The International Energy Agency predicts that by 2035 almost ninety percent of oil exports from the Middle East will flow to Asia. EIA (2014), IEA (2012).

24 Russia initially planned to expand the capacity of its ESPO pipeline from 1 Mb/d to 1.6 Mb/d by 2030. However, it has signalled that it will speed up its efforts in order to reach that goal as soon as 2020. Reuters (2014).

25 EurActiv (2010). "Russia Launches 'Geopolitical' Oil Pipeline To Asia".



FIGURE 3: OIL FIELDS IN EASTERN RUSSIA AND ESPO PIPELINE (SOURCE: ARGUS)

Chinese companies are also important upstream partners, with two of the largest Chinese NOCs, CNPC and Sinopec, having farmed in to several eastern Siberian blocks.²⁶ In September 2014, Rosneft sold CNPC a ten percent equity stake in the Vankor field, the largest oil field in north-eastern Siberia and ESPO's main source of crude.²⁷ Shortly after, Rosneft proposed a similar deal to India's ONGC,²⁸ highlighting the company's financial troubles after losing access to Western capital markets.²⁹ The field produced about 430,000 bpd in 2013, starting from zero in 2009, and the wider Yanao-Krasnoyarsk cluster of which Vankor is part is expected to more than double its output by 2025.³⁰

26 Wood Mackenzie (2013). "Russia's Pivot East: The Growth in Energy Trade With China".

27 Financial Times (2014). "Rosneft Proposes Chinese Company Take Stake in Russian Oilfield".

28 The Economic Times (2014). "Russia's Rosneft Offers ONGC Videsh Ltd Stake in Vankor Oilfield".

29 Bloomberg (2014). "Rosneft Said to Ask State for up to \$42 Billion on Sanctions".

30 Oilprice (2014). "Rosneft To Spend \$83 Billion To Develop Siberian Oil Field".

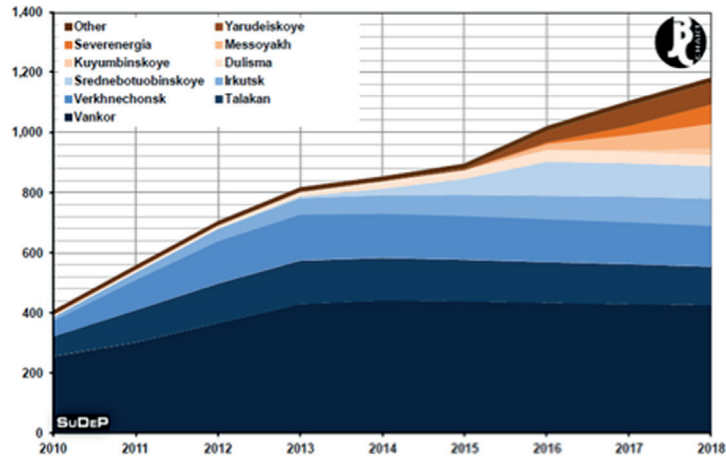


FIGURE 4: EASTERN SIBERIAN SUPPLY (SOURCE: JBC)

What these strategic Chinese investments have in common is that they have been agreed upon as part of so-called ‘loan-for-oil’ or ‘oil-for-export’ schemes. In this way, China provides a portion of the funds in exchange for guaranteed oil supplies. The spur pipeline to Daqing and the second phase of ESPO, for example, are part of a \$25 billion ‘loan-for-oil’ deal in which Rosneft committed to supplying CNPC with 300,000 barrels of oil per day for the next twenty years.³¹ In 2013, the two companies expanded this agreement, with Rosneft agreeing to double its exports to China to over 600,000 bpd by 2018 as part of a 25-year supply deal worth \$270 billion. Russia’s leading oil company has since continued to push for additional supply deals with China, mainly for future deliveries of crude to existing and planned Chinese refineries. By the end of the decade Rosneft will have to ship over 1 Mb/d of crude to China, which will make the country Russia’s single largest customer, overtaking Germany.

Long-term supply deals offer a certain degree of security of demand, but they can also hamper overall export diversification efforts. Russia’s gradually rising oil supply commitments to China are already limiting the volumes of oil available on the spot market along the Pacific Coast. Exports of crude from Kozmino, which are sold on the spot market to a variety of Asian and even US buyers,³² were planned to increase to 600,000 bpd in 2014, but this target will be missed by more than 100,000 bpd.³³

31 Reuters (2014). “Russia-China Crude Oil Deals”.

32 In 2013 about 330,000 barrels per day of ESPO oil were shipped directly to China, while 440,000 bpd were sold on a spot basis from Kozmino. ESPO Blend was exported by tanker from Kozmino to customers such as Japan, South Korea and the US, as well as China (Wood Mackenzie, 2013). See also Figure 3.

33 The Moscow Times (2014). “Russia to Ramp Up Oil Exports From Pacific Kozmino Port”.

At least until 2018, it is unlikely that Russia will be able to simultaneously honour rising supply commitments to China and increase seaborne exports from Kozmino.³⁴ In order not to violate contractual obligations with the Chinese, Russia will have to reroute some volumes destined for Kozmino into the spur pipeline to China. Stagnating supplies of oil available on the Kozmino spot market would also undermine Russia's efforts to promote the ESPO Blend as a new price benchmark in Asia.³⁵

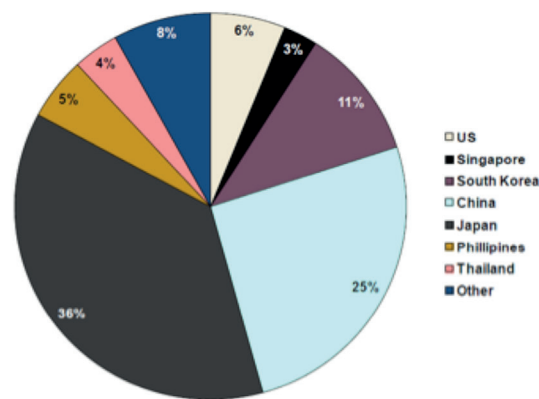


FIGURE 5: ESPO BUYERS BY SHARE IN 2013 (SOURCE: JBC)

On the whole, Russia seems well able to solidify and further expand its position as an upcoming supplier to Asia. The resource base in eastern Russia is large to potentially huge, and the main take-away infrastructure is firmly in place. The challenge for Russia in Asia then consists primarily of avoiding becoming a captive supplier to one single market, in this case China, which would obviously run counter to its initial export diversification strategy. From a Chinese perspective, increasing the share of piped oil imports is a strategic imperative because it will limit the country's exposure to the world's two largest transit chokepoints, the Strait of Hormuz and the Strait of Malacca.³⁶

34 Platts (2013). "Growing Russia-China Links Could Hurt Crude Oil ESPO Trade".

35 The possibility of ESPO becoming an oil benchmark is tied to a number of issues, such as adequate crude supply, long-term quality of the ESPO Blend, diversity of buyers and sellers, and hedging opportunities on a futures exchange. For more on this see Henderson, J. (2013). "Russia's ESPO Crude: A New Benchmark For Asia? In: Oxford Energy Forum", November 2013.

36 EIA (2014).

3 THE WESTERN MARKET: CASH COW

Russia has had a long history of oil trade with Europe, something it lacks with Asia. Exports of oil from the Soviet Union to Europe increased significantly during the 1970s, stimulated by rapid production gains from western Siberia and rising global prices due to the first oil shock.³⁷ Oil exports were prioritised above natural gas because they fetched a higher price at calorific value parity, required less capital investment and gave the seller greater flexibility. From the 1980s onwards the Soviet Union embarked on a 'fuel-switching campaign' which saw oil give way to natural gas for internal uses, both within the Soviet Union and in Eastern Europe. In this way Moscow was able to free up additional oil that could then be exported to Western Europe. This was much more lucrative, given that Eastern European countries largely imported oil from the Soviet Union at subsidised prices until 1985. Exports of liquid hydrocarbons, and to a lesser extent also natural gas, provided the Soviet Union with the hard currency needed to pay for Western imports, such as grain.³⁸

To this day, Europe is by far Russia's main oil customer.³⁹ In 2013, Russia exported a total volume of 4.4 Mb/d of crude oil to global markets, of which about 3.5 Mb/d – or 80 percent of total exports – were delivered into Europe. The majority of crude oil exports to Europe, about 2 Mb/d, is shipped via tanker from Russia's Baltic ports of Primorsk and Ust Luga for delivery into North-west Europe, and its Black Sea port of Novorossiysk for delivery into Southern Europe. The Druzhba or 'Friendship' pipeline,⁴⁰ which pumps oil from predominantly western Siberia and the Urals to Eastern and Central Europe, transports an additional 1 Mb/d of crude. The Urals Blend, a mixture of mainly Russian oil varieties, is Russia's main exported oil grade

37 Gustafson, T. (1989). "Crisis Amid Plenty: The Politics of Soviet Energy under Brezhnev and Gorbachev".

38 From 1973 to 1985, energy exports – oil and natural gas – provided the USSR with about 80 percent of its hard currency revenues. In the early 1970s, crude oil and refined product exports accounted for about 13 percent of Soviet exports by value, which rose to almost 38 percent by the beginning of the 1980s. Gustafson (1989); Jensen, R.G., Shabad, T. & Wright, A.W. (1983). "Soviet Natural Resources in the World Economy".

39 PIW (2014). "Russia Faces Crude Quality Balancing Act"; Reuters (2013) "Russia to Lift Oil Exports to Asia at Expense of Europe".

40 The Druzhba pipeline has played a crucial role in meeting Europe's demand for crude oil for over half a century. The pipeline, which has a total capacity of 2 Mb/d, consists of a northern leg running into Poland and Germany and a southern leg delivering crude to Slovakia, Hungary and the Czech Republic. With a total length of over 4000 kilometres, it is one of the longest oil pipelines in the world. State-owned company Transneft operates the pipeline. Pipelines International (2009). "Druzhba Pipeline".

and is considered a medium-heavy sour crude.⁴¹ Russia's main European customers are Germany, the Netherlands, Poland and Belarus.⁴² Russia is also a large exporter of refined products, especially of fuel oil (1.1 Mb/d)⁴³ and diesel (900,000 bpd)⁴⁴ which, like crude, are mainly sold to the European market.

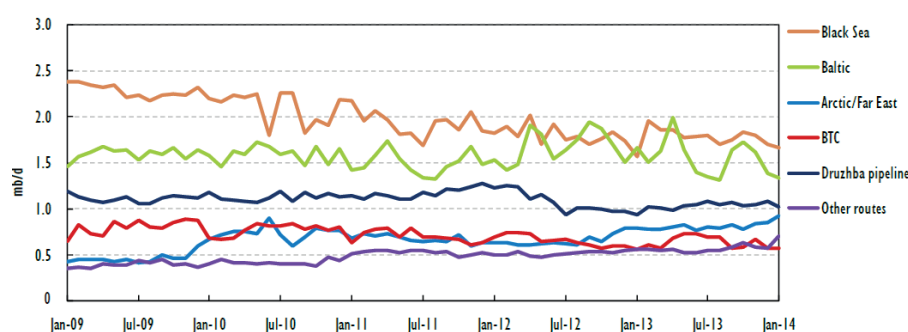


FIGURE 6: RUSSIAN CRUDE EXPORTS BY MAJOR EXPORT DIRECTION (SOURCE: IEA)

Exports of Russian crude oil to Europe are declining as flows to Asia are being prioritised.⁴⁵ Although eastern Siberian oil production is on the rise, Russian companies are struggling to meet export targets to Asia. Export commitments to China are increasing exponentially while overall Russian oil exports are set to gradually decline by about 1 Mb/d by 2035 as a result of an overall decline in production and an increase in domestic refining activity.⁴⁶ Therefore it has already become necessary to redirect some crude intended for Europe from western Siberia⁴⁷ – with the Volga-Ural basin to follow⁴⁸ – into the ESPO pipeline system. This dynamic is likely to persist until at least 2020, after which a relative surge in supply from eastern Russia should make additions from brownfields in mature producing regions largely unnecessary.⁴⁹ In the meantime, Russia has also called on Kazakhstan to supply ESPO with additional volumes of oil as part of a deal exempting Russian oil

41 The Urals Blend makes up about 80 percent of total Russian crude exports. The quality of Urals Blend varies significantly at each export point, but its average gravity is 31.3 API with a sulfur content of about 1.25 percent. (EIA, 2014).

42 EIA (2014). "Russia Country Profile".

43 Reuters (2013). "Glut of Cheap Fuel Oil Thwarts Russian Plan to Modernise".

44 Financial Times (2014). "Flood of Russian Diesel Inflicts Pain on European Refiners".

45 Financial Times (2014). "Russian Oil Exports to Europe Slow As Prices Weaken".

46 IEA (2014); ERI RAS (2014).

47 IEA (2014). "Russia 2014 Report".

48 Reuters (2014). "Transneft Aims to Ship Central Russian Oil to Asia by 2020".

49 From 2020 onwards, combined output of oil from eastern Siberia and Sakhalin is forecasted to expand beyond 2 Mb/d, reaching 2.5 Mb/d by the mid-2020s. OIES (2012).

products to Kazakhstan from export duties.⁵⁰ Similar to Russia, Kazakhstan will have to divert crude intended for European markets in order to honour its new supply commitments.

Piping oil to Asia is more attractive for Russian companies than sending it to Europe, due to lower export taxes for oil going through the ESPO pipeline.⁵¹ This governmental incentive results in a higher netback for Russian companies at the end of ESPO relative to European outlets, which makes Kozmino Russia's most profitable crude outlet.⁵² ESPO crude also fetches a higher price because of the Blend's superior quality compared to Urals.⁵³ Light and sweet oil from western Siberia is needed in the ESPO stream in order to offset more sulphurous volumes from eastern Siberia.⁵⁴ Ensuring the continued high quality of the ESPO Blend is thus also an important driver behind the redirection of crude flows from west to east.

Destination	Price assessment	Freight/Trans-shipment	Netback (Sept. 2013)
NW Europe	Urals cif NWE	Primorsk – Rotterdam (100,000t)	\$46.85
Mediterranean	Urals cif NWE	Novorossiysk – Augusta (80,000t)	\$47.83
Asia-Pacific	ESPO Blend fob	Kozmino	\$52.16

* Netbacks for Russian crude are calculated as daily prices for Urals basis cif Rotterdam and cif Augusta minus freight, insurance, navigation expenses (Rotterdam and Primorsk port duties, Black Sea straits delays), current export duty and the Transneft pipeline tariff from Nizhnevartovsk.

FIGURE 7: RUSSIAN NETBACKS OF CRUDE OIL (SOURCE: ARGUS, PIW)

This prioritisation of eastward flows is already visible in the decline of crude exports to Europe. Sales of crude to North-west Europe from Primorsk, Russia's largest oil outlet, have fallen by about one-fifth in recent years.⁵⁵ Partly this has been the result of a redirection of flows to Ust Luga, Russia's other main Baltic port. Cargoes from Novorossiysk have slumped by more than ten percent over the same period of time. Oil exports through the Druzhba pipeline have also declined, primarily as a result of

50 Shipments of Kazakh crude to Ust Luga and Novorossiysk, as well as through the Caspian Pipeline Consortium's system, will likely be reduced in order to add to ESPO. Argus Nefte Transport (2014). "Kazakh Crude for Kozmino".

51 See footnote 12.

52 Argus (2013). "Russian Crude Development and ESPO Supply Outlook for 2013 – 2020".

53 ESPO Blend is a mixture of crudes from a variety of Siberian fields and is considered a relatively sweet and medium-light blend, with a gravity of 35 API and a sulfur content of 0.5 percent. EIA (2014).

54 IEA (2014). "Russia Country Report".

55 IEA (2014); Financial Times (2014).

increasing flows through the Baltic Pipeline Systems.⁵⁶ Although the export of Russian crude to Western markets has always been characterised by a certain degree of volatility – shipments fluctuate due to a variety of factors such as pipeline and refinery maintenance, seasonal swings in demand, etc. – it appears that the overall decline in exports of crude oil to Europe is of a structural nature, driven by Russia’s ever-increasing need to deliver rising volumes of oil to the Asia-Pacific market.⁵⁷

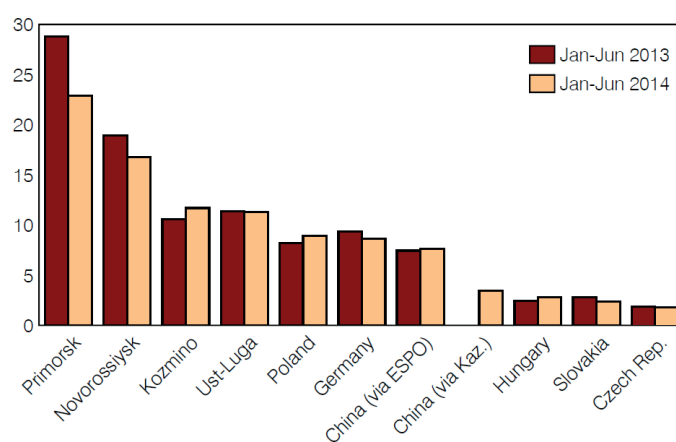


FIGURE 8: RUSSIAN CRUDE OIL EXPORTS BY ROUTE IN MT (SOURCE: ARGUS NEFTE TRANSPORT)

The share of Europe in total volumes of Russian crude oil exports will, over the coming decades, progressively decline as Asia’s share further increases.⁵⁸ According to the Energy Outlook of the Russian Academy of Sciences, in twenty years’ time, exports of Russian crude to Europe will halve relative to 2010 levels. It is expected that the Asia-Pacific region will overtake Europe as Russia’s largest export market for crude by 2040. Until then, Europe will remain Russia’s main crude outlet and will continue to provide Russia with substantial amounts of export revenues. The export of crude oil through the Druzhba pipeline, for example, still generates about \$1.5 billion annually for Transneft, which also wants to maintain a balance between shipments going east and west because it wants to protect the quality of both the Urals and ESPO Blends.⁵⁹ Although exports of crude to Europe are on the decline, Russia will want to keep the continent as one of its main customers for export diversification and security of demand purposes. Russia, moreover, will boost its

56 The Baltic Pipeline System has a combined export capacity of 2.1 Mb/d and was built in order to reduce transit reliance on the Baltic States (in the case of BTS-1) and Belarus and Ukraine (in the case of BTS-2). IEA (2014).

57 Bloomberg (2014). “Russia’s Black Sea Oil Flows Declining as Baltic Cargoes Gain”.

58 The Energy Research Institute of the Russian Academy of Sciences (2014). “Global and Russian Energy Outlook To 2040”.

59 PIW (2014). “Russia Faces Crude Quality Balancing Act”.

status as an important transit country for crude oil to Europe, as increasing volumes of Caspian oil – predominantly serviced from Kazakh fields – will flow through the Caspian Pipeline Consortium’s system.⁶⁰

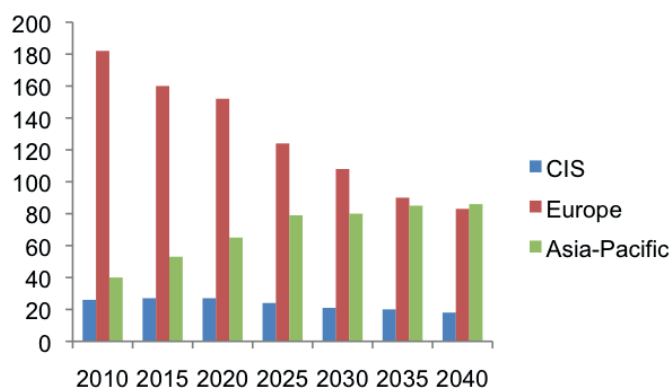


FIGURE 9: CRUDE OIL EXPORTS FROM RUSSIA BY DESTINATION, IN MT, 2010-2040 (BASELINE SCENARIO, ERI RAS)

The eastward shift of Russia’s oil exports will be felt in Europe. Russia is by far Europe’s main supplier of crude. In 2013, Russian crude exports to Europe totalled 3.5 Mb/d, accounting for about one-third of its import needs.⁶¹ Other large suppliers of crude oil to Europe – Saudi Arabia (890,000 bpd), Nigeria (810,000 bpd), Kazakhstan (580,000 bpd) and Libya (560,000 bpd) – lag far behind Russia. At the same time, domestic production of crude oil in Europe is declining quickly. Liquid output from Europe fell just below 3 Mb/d in 2013, on the back of steady production declines in the UK (- 8.6% y-o-y), Norway (- 4.4% y-o-y) and Denmark (- 12.8% y-o-y).⁶² Natural decline rates of the largest offshore UK and Norwegian fields are now around 11 percent, which will quickly drive down production even as new fields, such as the Johan Sverdrup field in the Norwegian sector of the North Sea, come on-stream.⁶³ It is expected that between 2010 and 2015 North Sea oil production will have fallen by almost 1 Mb/d, with overall output from the North Sea dropping below 2 Mb/d by 2020.

60 The Energy Research Institute of the Russian Academy of Sciences (2014). “Global and Russian Energy Outlook to 2040”.

61 European Commission (2013). “Registration of Crude Oil Imports and Deliveries in the European Union”.

62 BP (2014). “Statistical Review of World Energy”.

63 PIW (2014). “Will Shrinking North Sea Output Diminish Brent?”

A significant reduction in exports of crude from Russia, even in the face of declining domestic production, should, however, not necessarily compromise Europe's security of supply. First of all, global oil markets are well supplied. Additional crude oil could be sourced from the Middle East, which has large volumes of crude available for export that are similar in quality to Russia's medium-heavy and sour Urals Blend.⁶⁴ Other exporting regions, such as West Africa⁶⁵, the Caspian region⁶⁶ and Latin America⁶⁷ could also ramp up exports to Europe. Due to the liquidity of the international oil market, which distinguishes it from gas markets, Europe can draw from freely traded barrels of oil across the globe. Until recently, securing oil supplies was not seen in Europe as a priority as equally pressing as securing natural gas supplies. Political upheaval in key exporting countries such as Iraq and Libya, however, are reminders of the inherent relative fragility that also characterises global oil markets.⁶⁸

A second reason why Europe's security of supply might not be in peril is the fact that demand for crude oil in Europe is likely to be in long-term decline. The IEA predicts in its New Policies Scenario that oil demand in Europe will fall from 12 Mb/d in 2013 to 9 Mb/d in 2035.⁶⁹ Other IEA scenarios all envision a drop in European oil demand as well. This drop in demand is primarily driven by lower economic growth, higher vehicle efficiency as a result of various EU policies to reduce emissions in the transport sector, and the substitution of oil in transport with biofuels and natural gas.⁷⁰

A structurally lower demand for crude oil in Europe will also be catalysed by the closing of a substantial part of Europe's refining capacity.⁷¹ Since 2008, almost 2 Mb/d of refining capacity in Europe has been shut down due to falling demand, high oil prices and growing international competition from new-builds in Asia and the Middle East. In addition, the US has renewed its refining competitiveness.⁷² More closures seem imminent given the continued surplus of capacity⁷³ and weak refining margins. As a result, European refineries are planning to further reduce throughput

64 DWA Solutions (2007). "Consequences of a Heavier and Sourer Barrel".

65 Business Day (2014). "Nigeria's Quest for New Markets for Crude Oil Yielding Results".

66 Oilprice (2013). "Will Caspian Oil and Gas Producers Take Russia's Place in the EU?".

67 Financial Times (2014). "Russian Oil Exports To Europe Slow As Prices Weaken".

68 Energy Intelligence (2014). "World Watch".

69 IEA (2014). World Energy Outlook.

70 See also CIEP (2014). "The Changing Market for Energy in Transport: Impact of the Competition for Low Carbon Mobility in Europe".

71 See also CIEP (2012). "A Cinderella Story: Restructuring of the European Refining Sector".

72 Platts (2014). "Europe's New Refiners May Stifle Further Plant Closures: Gunvor Analyst".

73 Overcapacity in Europe is estimated at 1-2 Mb/d, or up to 15 percent of Europe's current refining capacity of about 13 Mb/d (Platts, 2014; Reuters, 2014).

volumes, already at a 25-year low, which will limit the search for alternative crude supplies that would otherwise offset falling Russian exports.⁷⁴

The European continent will cement its significance for Russia as its main export market for refined products. According to the Energy Outlook of the Russian Academy of Sciences, total exports of oil products from Russia will fall by almost half by 2040.⁷⁵ This trend can be explained by the combined effects of a decline in total crude production and an increase in crude exports to Asia, which limits the availability of crude feedstock, as well as rising domestic demand for transport fuels. Although oil product exports from Russia are undergoing a quantitative change, in terms of destination little is changing. Europe is forecasted to continue to account for almost 90 percent of total Russian oil product exports.

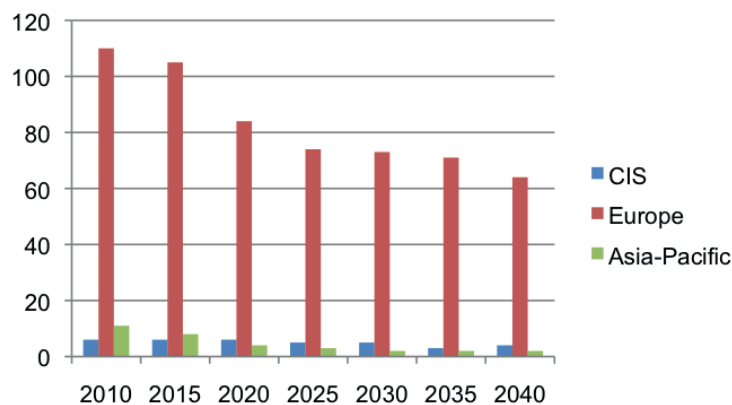


FIGURE 10: OIL PRODUCT EXPORTS FROM RUSSIA BY DESTINATION, IN MT, 2010-2040 (BASELINE SCENARIO, ERI RAS)

The composition of oil product exports from Russia will shift from predominantly fuel oil towards higher quality fuels such as Ultra-Light Sulphur Diesel.⁷⁶ Complementary to its quantitative strategy of increasing volumes of crude exports to Asia, Russia will compete on the European market predominantly in terms of quality. In order to do so, Russia is increasing the share of ULSD in total diesel production as well as sharply limiting the production of fuel oil. Currently, Russian product exports to Europe consist predominantly of fuel oil, with the share of diesel rising. By 2015, exports of diesel and, to a lesser extent, jet fuel will likely overtake those of fuel oil in terms of volumes, after which the share of fuel oil in total exports will decline in favour of diesel and jet fuel.

74 Platts (2014). "European Refiners Opt For Lower Runs Rather Than Shutdowns, Says Industry".

75 The Energy Research Institute of the Russian Academy of Sciences (2014). "Global and Russian Energy Outlook to 2040".

76 Reuters (2014). "Russian Oil Shift East Accelerates, Dictated By Politics".

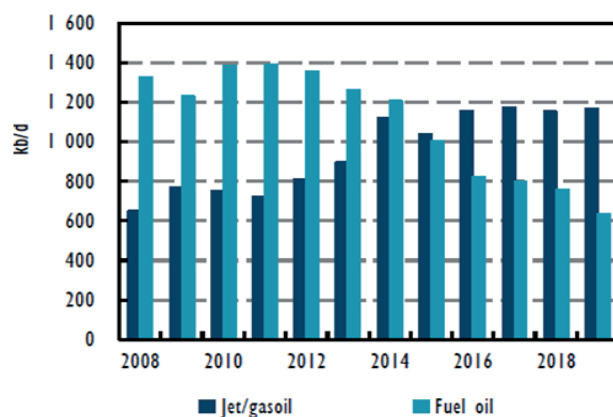


FIGURE 11: FSU KEY PRODUCT EXPORTS (IEA)

The shift towards exporting more diesel rather than fuel oil makes commercial sense because demand for the former is increasing while the reverse is true for the latter. Fuel oil is expected to be replaced by other fuels in most end-use sectors, starting its long-term decline in demand.⁷⁷ Russia has traditionally been the world's largest exporter of fuel oil, accounting for about half of the globally traded fuel oil market.⁷⁸ Diesel demand, on the other hand, is on the rise, even in Europe which is experiencing an overall drop in oil demand. More than half of the cars in Europe are fuelled by diesel,⁷⁹ driven by fiscal incentives, which has saddled Europe with a shortage of diesel and a surplus of gasoline. This structural imbalance is forecasted to widen even more in the coming years, providing Russia with a lucrative opportunity to fill the gap. Apart from international markets, demand for cleaner fuels is also increasing in Russia. Due to the modernisation of Russia's auto fleet and refining complex, higher fuel standards have been adopted, in line with European emission standards.⁸⁰

77 According to the IEA's New Policies Scenario, global demand for fuel oil will drop by ten percent, to 7.4 Mb/d, between 2012 and 2035 (IEA, 2013).

78 The Oxford Institute for Energy Studies (2012). "The Impact of Russia's Refinery Upgrade Plans on Global Fuel Oil Markets".

79 In 2012, diesel engines made up almost 55 percent of the European car market, compared to 31 percent in 2000 (PR Newswire, 2013).

80 Euro-3 and Euro-4 fuels will be banned, respectively, as of 31 December 2014 and 31 December 2015, after which only Euro-5 standards will remain on the market. IEA (2014).

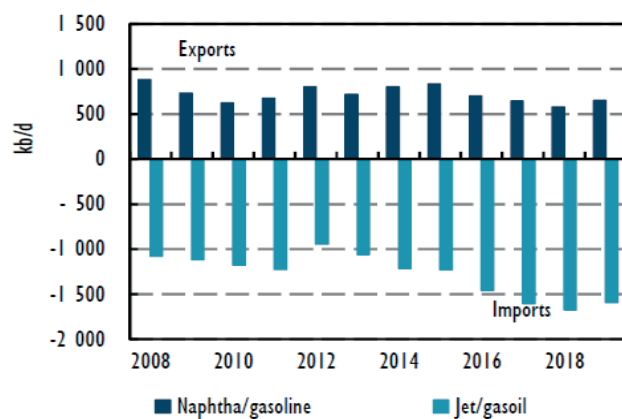


FIGURE 12: EUROPE'S KEY PRODUCT BALANCES (IEA)

In order to meet rising domestic and international demand for higher quality fuels, Russia is stimulating a qualitative overhaul of its refining sector. Russia's downstream capacity is, with 5.8 Mb/d, the third-largest in the world, after the US and China, but the majority of its refineries are outdated and inefficient.⁸¹ Russian refineries have an average Nelson Complexity Index⁸² of just above 5, as compared to 6.5 in Europe and 9.6 in the US.⁸³ As a result of this lack in sophistication, Russian refineries have traditionally always been geared towards fuel oil production. The fuel oil yield of a simple Russian refinery (meaning a refinery equipped only with a crude distillation unit) is typically between 40 and 50 percent.⁸⁴ The main instrument the government has to be able to enforce qualitative investments in the downstream is fiscal policy.⁸⁵ In the past decade, the government's tax policy and regulations have predominantly shaped Russia's downstream industry. Gradually, new export tax policy came to favour the export of oil products over crude oil.⁸⁶ Export duties on heavy and, later, light products were lowered relative to the export tax on crude oil. The Russian government envisioned that refiners would invest these cost savings in upgrading production technologies, thus increasing the depth of refining.⁸⁷

81 IEA (2014). "Russia Country Profile".

82 The Nelson complexity index (NCI) describes a measure of the secondary conversion capacity of a petroleum refinery relative to the primary distillation capacity (Oil & Gas Journal, 1996). The index measures the complexity and cost of each major type of refinery equipment. In forming the index, the distillation column is given a value of 1 and the other units are assigned a value based on conversion and cost relative to the distillation column. The larger the Nelson index of a refinery, the more complex it is (EIA, 2012).

83 Norton Rose Fulbright (2013). "Refining and Petrochems in Russia – Overview of Recent Developments".

84 Oil and Gas Journal (2014). "New Russian Export Regime Will Spur ULSD Exports".

85 EY (2014). "Russia's Downstream Sector: Sights Set on Modernization".

86 IEA (2014). "Russia Country Profile".

87 EY (2014). "Russia's Downstream Sector: Sights Set on Modernization".

Spurred by lower export taxes on products, vertically integrated oil companies in Russia significantly increased their downstream capital investments.⁸⁸ This caused an increase in refining capacity from 3.9 Mb/d in 2004, to 4.7 Mb/d in 2008 and 5.8 Mb/d in 2013⁸⁹, as well as high utilisation rates which today reach nearly 93 percent. Contrary to what the government anticipated, however, these investments predominantly went toward the expansion of primary processing capacities, which did not lead to a reduction in fuel oil production.⁹⁰ Simple and old refineries remained profitable because strong trading gains from light products compensated for less valuable fuel oil exports.

Currently the export tax system is again evolving in order to encourage investments in secondary refining capacity (catalytic reforming, coking, visbreaking, etc.) which yield more gasoline and diesel and less fuel oil. Export taxes on light products are being lowered, while export taxes on heavy products will gradually increase up until the level of export taxes on crude oil, thus rewarding refineries that can produce more higher quality products.⁹¹ Despite the often contradictory and confusing nature of Russia's oil export reforms, major upgrades of the refining complex in Russia will most likely materialise quickly.⁹² Under the recent proposals, simple refineries will be forced to modernise their processing units, given that the only other alternative will be closure. Complex refineries will further benefit from increasing volumes of high quality fuels and scaling down the production of fuel oil. The imminent export tax reform on oil and oil products will lead Russian refiners to focus on increasing the yield of middle distillates⁹³ as much as possible, as export taxes on fuel oil will increase to the level of the export tax on crude oil and there are no plans to lower the current high export tax on gasoline. That leaves especially diesel highly lucrative to produce, given that the export tax on diesel will gradually fall from 66% to 61% of the export tax on crude oil by 2016.⁹⁴ By the end of the century, the yield of the Russian refined barrel is expected to have changed substantially.

88 Capital investments in the downstream rose more than six fold – from \$1.4bn in 2005 to \$10bn in 2013. Rosneft (including TNK-BP) contributed more than 50 percent to total downstream investments over the past three years (EY, 2014).

89 IEA (2014). "Russia Country Profile".

90 EY (2014). "Russia's Downstream Sector: Sights Set on Modernization".

91 Ibidem.

92 ESAI (2014). "Russian Refinery Modernization to Continue Despite Tax Uncertainty".

93 ESAI (2014). "New Russian Export Regime Will Spur ULSD Exports", in: OGI.

94 Currently Russia's export tax system on oil products is known as the '60-66-90' tax system. Introduced in 2011, the maximum rate of export duty on crude oil was decreased from 65% to 60% of the Urals Export Blend oil price, while export duties on light and heavy products were equalised at 66% of the export duty on crude oil. The export duty on gasoline was raised to 90% of the export duty on crude oil due to a gasoline crisis in the domestic market.

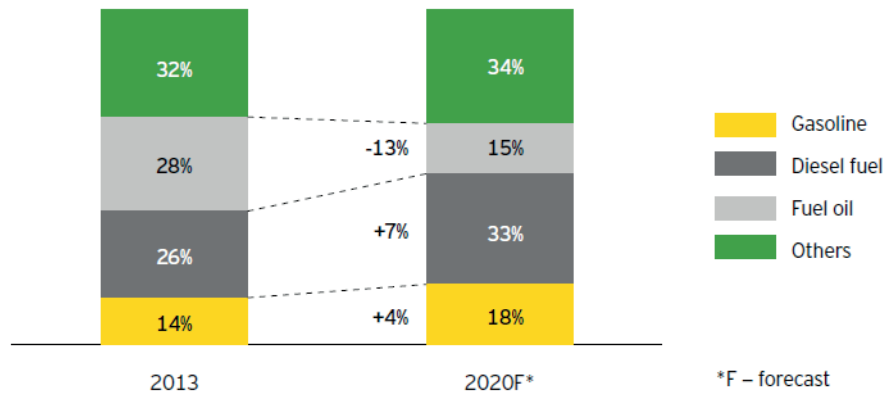


FIGURE 13: PRODUCT MIX OF DOMESTIC RUSSIAN REFINERIES AFTER UPGRADING (EY)

Due to secondary conversion additions, the bulk of which is expected to be built from 2014 through 2016, the share of Ultra-Light Sulphur Diesel (ULSD) will increase to make up the large majority of total diesel production.⁹⁵ Russian refineries are expected to produce around one million barrels of ULSD by the end of the decade, up from 250,000 bpd in 2012 and 500,000 bpd in 2013.⁹⁶ Although a portion will be used to meet domestic demand, approximately 900,000 bpd of ULSD is earmarked for export by 2020.⁹⁷

Rising exports of cheap ULSD from Russia are bad news for the European refining sector. For years, the European downstream industry has been relatively protected from international competition in the diesel market because of Europe's structurally short position and the inability of most refiners to meet Europe's stringent quality requirements.^{98, 99} Now that an increasing number of Russian refineries are able to produce ULSD, European refineries are seeing their last profitability edge disappear. An increasing share of the demand for diesel in Europe will thus be met by foreign suppliers such as Russia – as well as the US and the Middle East – which will take market share from domestic European refiners.

Apart from being flooded by swelling volumes of cheaper imported diesel, European refiners will also see an increase in their feedstock costs from Russia. The Russian Urals Blend, on which a large part of European refiners depend for feedstock needs,

95 ESAI (2014). "New Russian Export Regime Will Spur ULSD Exports", in: OGI.
 96 FT (2014). "Flood of Russian Diesel Inflicts Pain on European Refiners".
 97 ESAI (2014). "New Russian Export Regime Will Spur ULSD Exports", in: OGI.
 98 FT (2014). "Flood of Russian Diesel Inflicts Pain on European Refiners".
 99 Reuters (2013). "Glut of Cheap Fuel Oil Thwarts Russian Plan to Modernize".

is now being sold to Europe at a higher price.¹⁰⁰ Traditionally the Urals Blend was sold to Europe at a discount of about \$1 to \$2 per barrel compared to the Brent benchmark due to its higher sulphur content, but Russia's recently acquired export flexibility and ambitious domestic refining plans will make this price gap shrink.¹⁰¹ Apart from becoming relatively more expensive, the Urals Blend will also deteriorate in quality as increasing volumes of light sweet crude are redirected to Asia. European refiners will furthermore see their feedstock costs increase not only because of the rising cost of Urals but also because of a gradual disappearance of heavy fuel oil from Russia, which has been used in Europe as a feedstock for secondary conversion.

In the midst of a refining crisis in Europe, Russian companies are increasingly interested in acquiring stakes in EU refining capacity for a variety of reasons.^{102,103} First of all, due to the high costs associated with closing a refinery, most oil companies prefer to sell their assets, often at bottom prices.¹⁰⁴ This represents a bargain for those Russian companies seeking a downstream foothold in Europe. Second, most acquired refineries can be supplied by Russian Urals Blend, which these integrated companies can source cheaply. This makes refineries in Central and Eastern Europe that are connected to the Druzhba pipeline especially interesting, as the cheap fuel allows these companies to boost the value of their crude supplies, even more so when the export duty on crude oil is lowered.¹⁰⁵ Third, turning a profit might be easier by investing in European refineries rather than in upgrading assets back home in Russia. Adapting an existing, more modern refinery in Europe and supplying it with cheap Russian crude can indeed be more efficient than having to build entirely new conversion units in Russia. Overall, seizing stakes in the European market is considered part of a typical diversified portfolio approach. It also helps Russian companies to keep some assets and capital abroad, away from Russian policy-makers.

100 FT (2014). "Russia – ESPO: Asia's Gain, Europe's Pain".

101 Carnegie (2010). "Russia's Oil Exports".

102 EurActiv (2014). "Russian Strategy to Buy Up Europe's Refineries Exposed".

103 Since 2009 onwards, Russian oil companies have significantly expanded their strategic positions into the European refining complex. Russia's largest private oil company, Lukoil, now owns refineries in Italy (Sicily), Bulgaria (Burgas) and Romania (Ploiesti). It also has a 45 percent interest in a Total refinery in the Netherlands (Vlissingen). Source: Lukoil website. Rosneft, meanwhile, has a 50 percent interest in Ruhr Oel (BP owns the other half) which has interests in four refineries in Germany (Karlsruhe, Schwedt, Neustadt and Gelsenkirchen). Source: Rosneft website. Rosneft also acquired a 21 percent stake in Italian refiner Saras. Source: Natural Gas Europe. The company is actively looking to raise that stake. Source: Reuters. Gazprom Neft owns two refineries in Serbia (Pancevo, Novi Sad) and one in Italy (Bari). Source: Gazprom Neft website. Gunvor, a commodity trading firm with Russian roots, took over two refineries from Petroplus, one in Belgium (Antwerp) and one in Germany (Ingolstadt). Source: FT.

104 Petroleum Economist (2014). "A Bleak Outlook for Europe's Refiners".

105 Bloomberg (2010). "Rosneft Will Buy PDVSA's Stake in German Refining Venture for \$1.6 Billion".

Russia's move into European refining has been met with great ambivalence at the European level. For instance, countries with large refining interests have accepted and even welcomed Russian companies.¹⁰⁶ Take-overs of troubled refineries are seen as crisis relief measures which help retain employment while also guaranteeing supplies of oil. Others are less optimistic and fear that the involvement of Russian companies is compromising Europe's energy security. The European Commission, for example, stated that "Combined with the dependence on Russian crude oil, and the emerging influence of Russian players, the refinery industry is vulnerable to political interference".¹⁰⁷ This statement must be viewed in light of the Ukraine crisis which has sparked a sometimes emotional debate about Europe's dependence on Russian oil and gas.

106 Eurasia Daily Monitor (2012). "Russian Oil Companies Buying West European Refineries".

107 EurActiv (2014). "Russian Strategy to Buy Up Europe's Refineries Exposed".

4 OIL MARKETS IN FLUX: INTENSIFYING COMPETITION

As has been the case for the past five years, oil markets continue to be characterised by large supply gains from a resurgent US. Bolstered by rapidly rising shale and tight oil production, at the end of 2014 the US is expected to produce well over 9 Mb/d of crude oil, predominantly from three hydrocarbon basins: the Bakken in North Dakota and the Eagle Ford and Permian in Texas.¹⁰⁸ The US is firmly on track to beat its 1970 record output of 9.6 Mb/d, thereby completely reversing a presumed long-term decline in oil production in a little over half a decade. Since the onset of the US shale revolution, global oil prices have remained remarkably stable at high levels between USD 105 and USD 115, further stimulating high-cost, non-OPEC production. This price stability can be explained by the many supply outages in key oil producing states, such as Libya and Iran, which have largely offset US gains in production. Therefore, in effect, the US supply shock has largely been met by a counter supply shock¹⁰⁹, which has kept oil prices in check.

Market fundamentals are, however, now softening as (1) higher OPEC production is adding to non-OPEC supply growth and (2) global oil demand is growing at a slower pace than expected due to the combined effects of weak macroeconomic forecasts in Europe as well as China and a strong US dollar.¹¹⁰ As a consequence, crude prices have dropped by one-third in the second half of 2014, to around 70 USD at the time of writing.¹¹¹ Global oil prices are likely to continue their downward slide because OPEC decided against a collective production cut, which for now is keeping the supply overhang in the market intact.¹¹²

Apart from seeing their governmental revenues shrink, OPEC producers have been struggling to find outlets for their surplus oil. Asian demand has not been growing enough to absorb all the volumes of OPEC oil that were formerly imported by the US. As a result, the Atlantic Basin is awash with oil, especially of the light sweet grade.¹¹³ Nigeria and Angola, West Africa's two main crude producers, have seen their exports to the US market plummet – in the case of Nigeria, to zero – as US

108 EIA (2014).

109 Oxford Institute for Energy Studies (2014).

110 IEA (2014).

111 Bloomberg (Dec, 1, 2014).

112 Wall Street Journal (2014). "OPEC Leaves Production Target Unchanged".

113 PIW (2014). "Global Oil Surplus Boosted by More Non-OPEC Growth".

refiners are replacing seaborne imports of light, sweet crude with domestic production of a similar quality. Nigeria has been able to sell more of its oil to Asia's four largest consumers – China, Japan, India and South Korea – but had to let go of a large part of its price premium to Brent in order to do so.¹¹⁴ Angola has held on to the US market better than Nigeria but has not been successful in increasing sales to Asia, even though the country is now offering its crude at a sizeable discount to Brent, contrary to its former premium.¹¹⁵

Middle East producers, who export mainly medium-sour barrels to world markets, were initially less affected by the US' reduced crude import need. However, because of the US' de facto ban on crude exports, US refiners are increasingly blending incremental volumes of light, tight oil with heavier imports from Canada and Mexico.¹¹⁶ In this way, a generic type of medium-sour barrel is created, which is now responsible for also curtailing imports from the Middle East. Gulf OPEC exporters, therefore, are now forced to redirect even more of their crude to Asia, which is increasingly becoming a buyer's market. Strengthened competition over market share in Asia has placed the main Gulf exporting countries at loggerheads, even fuelling rumours of an impending price war. Saudi Arabia, for example, dropped its premium on Arab Light to regional benchmark Oman/Dubai for sales going into Asia and now even offers its staple crude to its largest market at a discount.¹¹⁷ Other regional competitors, such as Kuwait and Iraq, have made comparable adjustments to their formula price terms.¹¹⁸ This streak of aggressive pricing shows how the Gulf's largest crude exporters are trying to defend their market share towards Asia by prioritising volume over price. As a consequence of this strategy, a surplus of Middle Eastern medium-sour crudes is building up in the Pacific Basin, similar to the light, sweet surplus in the Atlantic Basin.¹¹⁹

Russia, on the one hand, will be relatively shielded from growing competition towards Asia because of its oil supply deals with China that provide it with a certain degree of long-term security of demand. Direct piped deliveries of Russian crude to China through ESPO (via Skovorodino to Daqing) averaged 330,000 bpd in 2013, which will rise to 620,000 bpd by 2018 as part of a recently concluded Rosneft-CNPC supply deal. Russia is thus ensured of a substantial share of Asia's largest import market at least until 2038. A growing share of Russian eastbound crude, on

114 Platts (2014). "African Energy Outlook".

115 Ibidem.

116 PIW (2014). "Blending Could Further Dent US Crude Imports".

117 PIW (2014). "PIW Scorecard: Weakness Shows In Term Sales".

118 FT (2014). "In Oil Price War, Saudi's Biggest Rival Is Next Door".

119 PIW (2014). "Saudis Hold Asia Steady as Storm Gathers".

the other hand, is sold on the Kozmino spot market to a variety of Asian buyers, where it will face increased competition from African and Middle Eastern exporters. The ESPO Blend has traded at increasing premiums to the Oman/Dubai benchmark since 2010 because of its superior quality and the proximity of Kozmino to key Asian refining centres.¹²⁰ It is uncertain whether the ESPO Blend will be able to hold on to its high premium. Although the crude slate of most Asian refineries is geared towards medium-sour barrels, reflecting the dominance of the Middle East as suppliers to Asia, some large and complex refineries can also use light, sweet crudes as feedstock. Due to the oversupply of these grades in the Atlantic Basin, Asian refiners are increasingly looking towards buying more of these discounted grades.¹²¹ This means that ESPO Blend will increasingly have to compete not only with Middle Eastern sour barrels, but also with West African sweet barrels of a more similar quality.

Russia will face increased competition from the Middle East in the products market as well. New-build refineries in Saudi Arabia (Jubail: 400,000 bpd, Yanbu: 400,000 bpd) and additions to existing refineries, e.g. in the UAE (Ruwais: 420,000 bpd) will expand the region's primary refining capacity by almost 1.5 Mb/d already by 2015.¹²² Similar to Russia's upgrades, these new refineries are heavily geared towards the production of ULSD, of which a large part will be available for export, mainly to the European market. In its Energy Outlook to 2040, The Russian Academy of Sciences clearly underscores the competitive threat these new Middle Eastern new-builds pose for the Russian strategy towards increasing the volume of oil products to the Western market.¹²³

120 Hellenic Shipping News (2014). "Asia-Pacific Crude-ESPO Premiums Edge Higher".

121 PIW (2014). "PIW Scorecard: Weakness Shows in Term Sales", "Saudis Hold Asia Sales Steady as Storm Gathers".

122 IEA (2014).

123 The Energy Research Institute of the Russian Academy of Sciences (2014). "Global and Russian Energy Outlook to 2040".

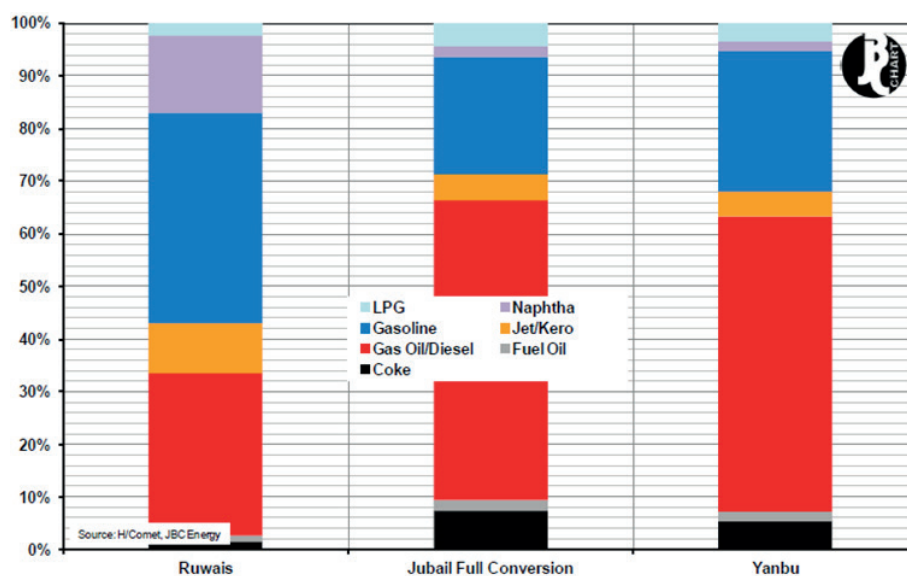


FIGURE 14: REFINING YIELDS FOR SELECTED MIDDLE EASTERN REFINING PROJECTS (JBC)

Apart from the Middle East, Russia will also increasingly compete with the US for the European diesel market. Spurred by access to cheap, domestically produced tight oil which remains subject to a de facto export ban, US Gulf refiners are producing and exporting record volumes of oil products.¹²⁴ Although some regions in the US remain import dependent, overall the US now exports close to 4 Mb/d of refined fuels to world markets.¹²⁵ The majority of exported products are sold to Latin America, with Europe in the second position. ULSD exports from the US to Europe have more than doubled between 2010 and 2013, a figure that continues to rise. In the first half of 2014, the US exported about 320,000 bpd of diesel and gasoil to Europe, which is about half of the volume (630,000 bpd) shipped by Russia.¹²⁶

Asian refinery new-builds, which will account for half of the world's new capacity additions through to the end of this century, can further complicate the picture for Russia.¹²⁷ Apart from some Indian refineries that are already competing on the product (diesel) export market, such as the 400,000 bpd Vadinar and 1.24 Mb/d Jamnagar facilities, Chinese refineries are also making increasing amounts of product available for export.¹²⁸ International sales of diesel from Chinese refineries have so

124 Argus (2014). "Outlook: Import Options Grow For Diesel in Europe".

125 EIA (2014).

126 FGE Energy (2014). "Diesel Slumps in Europe as Imports From Russia, US Worsen Glut".

127 IEA (2014).

128 Argus (2014). "Outlook: Import Options Grow For Diesel in Europe".

far mostly gone to Vietnam and Singapore, although more of them could soon end up all over the globe, including Europe. Refining capacity additions in China are geared towards diesel production, similar to the projects in the Middle East, in order to meet growing domestic demand for that fuel. Demand for middle distillates in China, however, has been sluggish at best, due to (1) China's economic rebalancing, which has led to demand destruction for gasoil in the industrial sector and (2) the substitution of gasoil by natural gas in the transportation sector.¹²⁹ As a result of rapidly rising vehicle ownership, demand growth for gasoline has now overtaken that of diesel. Chinese new-build refineries are thus likely to increasingly compete with Russia in servicing the European diesel market.

In a market characterised by (1) a glut of crude oil and (2) impending refining overcapacity, Russia's East-West strategy will be challenged for now. In Asia, Russia will have to compete on price with the oil producers of the Middle East, which have access to the world's lowest cost supplies, alongside producers in West Africa and Latin America. In Europe, Russia is already battling with Middle Eastern and US refineries over the diesel market, and Asian refineries will soon join.

129 Platts (2014). "Gasoline Replaces Gasoil as China's Driver of Oil Demand Growth".

5 CONCLUSIONS

After largely having missed out on servicing Asia's rapidly increasing oil demand during much of the first decade of the 21st century, Russia is now building up its position with regard to the Eastern market. Owing to its recently developed export infrastructure and large resource base in its new eastern upstream provinces, Russia will soon see a substantial rise in its deliveries of oil to the Asian market. Although flows to Europe are declining as a consequence of this export reorientation effort, Russia will hold on to its Western market as long as possible. Europe is a cash cow for Russia, a market which is characterised by low demand growth but which still generates the bulk of Russia's oil exports revenues. Looking forward, we can envision Russia as a lynchpin to both Europe and Asia, the destination of its oil exports being determined predominantly by arbitrage signals.

This strategy has its clear limitations, as Russian crude exports to the larger Asian market are being pressured by gradually tightening supply commitments with China. Direct deliveries of crude to China will provide Russia with a certain degree of security of demand, especially in times of increasing international competition, but at the same time this can hamper its initial export diversification efforts. Russia thus risks becoming China's captive supplier, a position which it is trying to move away from towards its traditional European market.

Russia will retain its position as Europe's dominant crude supplier for the foreseeable future, although total crude exports will decline substantially. Overall deliveries of refined products to the Western market will also decline, although exports of higher quality products such as ultra-light sulphur diesel will rise significantly, on the back of a qualitative overhaul of the Russian refining complex. The Russian government is determined to add value to its exports of raw minerals, even though this will translate into a loss of budget revenues given the lower export tax on high quality fuels in relation to crude. Rising flows of Russian diesel will furthermore add pressure to an EU refining sector that is already negatively affected by increasing international competition from resurgent refineries in the US and new-builds in the Middle East. A build-up of Russian diesel on Europe's doorstep will likely provide further impetus to the EU's shifting security of supply discussion from a crude to a product dependency perspective.

Whether Russia will succeed in its dual ambition to transform into a pre-eminent supplier of oil to the Asian market and hold on to its dominance towards the European market will, to a large degree, depend on the international context. Western sanctions, which aim to compromise Russia's ability to develop its future generation of oil supplies, are already making it difficult for some Russian oil companies to maintain their current output levels. More than the Western sanctions, which are temporal by nature, Russia is hurt by the recent decline in oil prices. Russia is not only a resource state that depends on high commodity prices to balance its budget, but its oil industry also needs high oil prices in order to successfully develop Russia's eastern greenfields. Increasing production from these fields are key in expanding market share in Asia and keeping exports to Europe from collapsing, given the relatively high decline rates of oil coming from Russia's legacy basins.



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