

James Henderson considers the strategic implications of Russia's eastern oil resources

The hydrocarbon potential of Russia's eastern regions has been apparent since the Soviet era, when the authorities imagined that oil and gas production from the area would supplement and ultimately replace West Siberian output. However, the remoteness of the region, a lack of funds and the continued success of the oil and gas sector in the west of the country meant that it was not until the 1990s that serious exploitation of eastern fields was initiated, and even then the original Sakhalin 1 and 2 projects remained Russia's only significant eastern oil and gas investments until 2008.

However, the region has now become a strategic priority for Russia's oil and gas sector, mainly because the Russian administration, concerned about the lack of economic development in the east of the country and the potential for oil production decline in West Siberia, has started to provide significant investment incentives. Major infrastructure, in the form of the East Siberia Pacific Ocean (ESPO) pipeline, has been built by state company Transneft to provide 600,000 b/d of current export capacity, rising to a potential 1.6 million b/d over the next decade, direct both to China and to the broader Asia-Pacific markets. Tax incentives have also been introduced, with a particular focus on reduced rates of export tax providing a major boost to the economic returns from East Siberian fields. These tax breaks remain short-term at present, reducing the economic security for investors in new fields, but a current review of the country's oil tax system could provide greater long-term direction by the end of 2011.

Importantly, though, investment is also being encouraged by the rapidly growing demand for Russian crude in Asia-Pacific markets, which has

now reached a level where previous political obstacles to interaction with Russia have been overwhelmed by the commercial necessity of securing a diversity of oil imports. Most importantly, China's relationship with the Russian oil sector was sealed with the \$25 billion loan offered to Transneft and Rosneft in 2009, and it will now receive at least 300,000 b/d of crude over the next 20 years via a direct pipeline link. Other Asia-Pacific countries are also now viewing Russian ESPO crude, purchased at the eastern port of Kozmino Bay, as a welcome source of diversification from Middle Eastern and West African imports, which is particularly important as the Asia-Pacific region's oil import requirement is expected to grow at 2.5 percent per annum over the next twenty years.

This new demand for Russian crude on the East will be met from five core hydrocarbon regions in Eastern Russia, which have the potential to produce over 2 million barrels per day of oil by 2020 and 2.5 mmb/d beyond that. As shown in Figure 1 the major short-term growth in Russia's east-facing production is likely to come from the Yamal-Krasnoyarsk region in the north-west of East Siberia, where Rosneft's major Vankor field is located. Vankor production is set to reach a peak of 510,000 b/d within the next two to three years, and output from the region is likely to be supplemented over time by new discoveries as well as by fields in nearby Yamal where TNK-BP and Slavneft have significant reserves awaiting development. Currently identified assets could see regional output grow to 750,000 b/d, with new infrastructure providing spare capacity for potential new discoveries and the flexibility to send oil both east via the ESPO and west via the existing Transneft pipeline system over the next two decades.

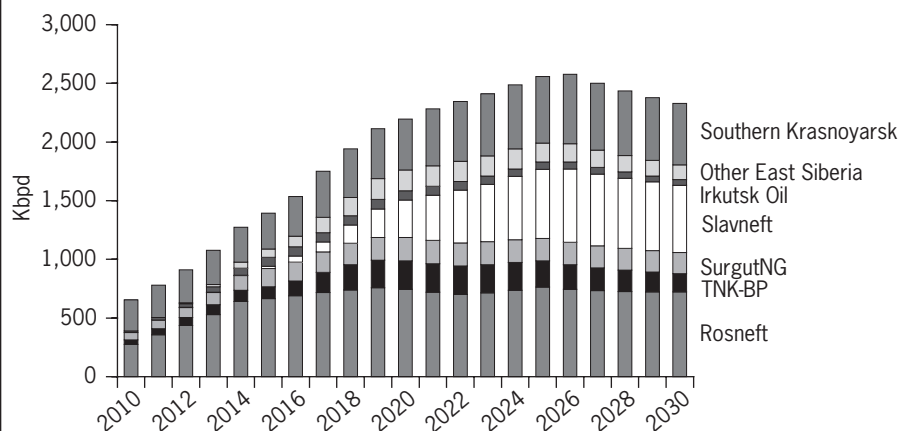
Further east the Irkutsk region is likely to be the area of fastest output growth in Russia over the next decade, driven by the exploitation of Rosneft's licences around the existing Verkhnechonskoye field. An initial 1 billion barrel discovery has already been made and total resources in the region

are estimated at 8 billion barrels, with production potentially reaching 400,000 b/d by 2020. Directly north of Irkutsk the Sakha region also has significant growth potential based on the assets owned by Surgutneftegas around the Talakanskoye field, and the company's strategic ambition to grow its output in the area could see output triple to 200,000 b/d by 2020.

Oilfields in Southern Krasnoyarsk also offer the potential to create a major hydrocarbon centre, with initial development likely to be focused on Rosneft's Yurubcheno-Takhomskoye field. However, of all the onshore regions identified so far Southern Krasnoyarsk is furthest from the ESPO and therefore will require the greatest expenditure on new infrastructure. As a result it is unlikely that the region will be fully developed before 2020, but output could still reach 350,000 b/d beyond that date. Finally, although Sakhalin Island has been the main source of East Russia oil production over the past two decades, its relative importance is now likely to decline as the major East Siberia fields are developed. Nevertheless ongoing development of the Sakhalin 1 project and continued exploration activity could still see output reach 500,000 b/d by 2020.

From a corporate perspective state company Rosneft is set to be the driving force behind the growth in Russia's eastern production growth

Figure 2: Eastern Russia Oil Production by Company

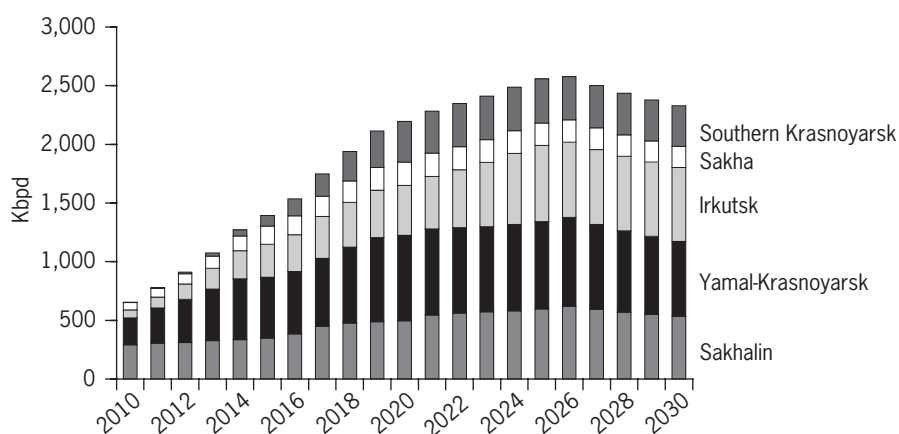


Source: Author's Estimates based on Company Data

over the next two decades (see Figure 2). The company has significant positions in four of the five regional areas discussed above (with Sakha being the current exception) and could see its output from Eastern Russia triple to 750,000 b/d by 2020. TNK-BP and Surgutneftegas are the other main producers at present, and both have growth potential based on their existing fields and new developments. TNK-BP's Verkhnechonskoye field should reach peak output by 2017, by which time the company's fields in the Yamal-Krasnoyarsk region should also be onstream, leading to overall eastern output of up to 250,000 b/d by 2020. Surgutneftegas, on the other hand, is likely to remain focused on

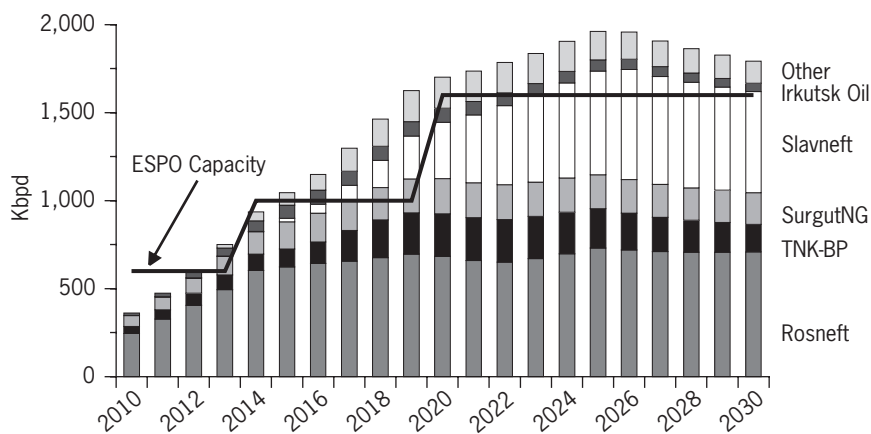
the Sakha region, where the eight fields it owns on the tax-exempt list could lead to output of 200,000 b/d on a similar timescale. However, the company with the greatest growth potential is Slavneft, jointly owned by GazpromNeft and TNK-BP, which has exposure to large fields in Yamal-Krasnoyarsk and Southern Krasnoyarsk. All of its assets are dependent on the construction of new pipelines, but the new political and corporate focus on Russia's East means that the momentum to build the infrastructure that will enable commercial development of new fields is strong. As a result the company could go from zero eastern production to output of over 300,000 b/d by 2020, with the potential to double that figure again by 2030 if its main fields are developed.

Figure 1: Future Oil Supply Potential from Eastern Russia



Source: Author's Estimates based on Company Data

However, while the potential for oil output in Russia's eastern regions is clearly large, it would be wrong not to acknowledge some important risks to the development of that potential. The most obvious risk is the ongoing difficulty presented by the regions' geography and geology. Despite the building of the ESPO, transport infrastructure remains scarce, and when this is combined with the extra cost of importing oil service equipment and personnel the commercial returns from any project can be quickly undermined. Furthermore, the formation of many of the oilfield reservoirs in East Siberia is different

Figure 3: Eastern Siberia Oil Production and ESPO Capacity


Source: Author's estimates

to those seen in the west of the region, again with potential consequences for cost and exploration risk.

However, these challenges, or at least the cost of them, can be alleviated by the introduction of a tax system that incentivises investment and risk-taking. Until 2009 East Siberia fields were taxed in the same way as the mature producing assets in West Siberia, with the main element of the tax system being two revenue-based taxes, MET and the Export Duty. Following a series of changes during 2009 and 2010, 22 East Siberian fields now pay a reduced export duty and zero MET, but the tax that is paid is still largely revenue based and does not allow for the cost recovery that is essential to the economics of new fields. As a result, companies are still questioning the true economic incentive to invest, especially as the tax breaks are removed when a 15 percent IRR cap has been reached. Furthermore, the potential for further changes in the tax system is high, as a debate about the whole structure of oil taxation in Russia is ongoing, with the oil industry pushing for a lower tax burden but the Ministry of Finance arguing for increased tax revenues in order to maintain Russia's fiscal stability during the current global economic crisis.

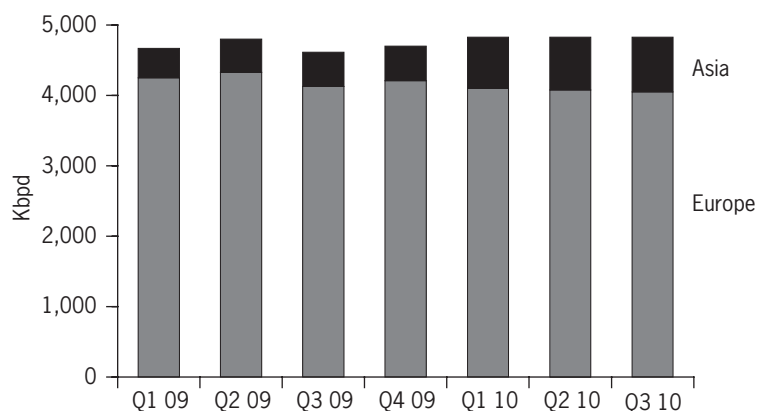
A broader risk is that the incentive for Russian oil companies to send oil east rather than west may not

fully materialise due to political factors, such as Russia-China relations breaking down, or commercial factors such as disagreements over oil prices. However, the commercial reality of growing oil demand in China and the Asia-Pacific region as a whole combined with the potential for growing supply in Russia would appear to provide a strong basis for believing that the export-import trade in oil and oil products will increase rapidly. Infrastructure issues will be resolved as the industry grows, geological risk is unlikely to prevent long-term development given the progress already made at a number of fields and licences, and the Russian government is likely to continue to

provide tax incentives as its eastern regions will remain a vital strategic priority for decades to come. Therefore, although the development of any new hydrocarbon province is never without significant risks, the commercial logic behind the development of hydrocarbons in East Siberia would appear to be strong enough to mitigate their likely impact.

It appears, therefore, that Russian oil companies, led by Rosneft and encouraged by the incentives offered by the Russian government, are increasingly focused on developing the oil resources of East Siberia and Russia's Far East. Further, it would also seem likely that the resources are technically available in the region to generate a significant boost to production, with a theoretical potential as high as 2.5 mmb/d, if a reasonable amount of exploration success is assumed. As a result, even allowing for production from Sakhalin Island of up to 500,000 b/d, it is not hard to create a scenario in which the full 1.6 mmb/d export capacity of the ESPO pipeline is filled by 2020 (see Figure 3).

As a result it would appear very likely that the Russian government's target of 1.5 mmb/d of East Siberian oil production by 2030 (as stated in its most recent Energy Strategy) can be met or even exceeded, and that this growth will enable Russia to maintain its overall oil output at or above 10 mmb/d. Furthermore, it also seems very feasible to assume that Russia's

Figure 4: Russia Crude Oil Exports to Europe and Asia


Source: Energy Security Analysis Inc.

oil exports to Asia will increase along the same trajectory towards the government's target of 1.3 mmb/d by 2030. Indeed it is interesting to note that oil output from East Siberia and Russia's Far East is already playing a key role in maintaining the country's oil production and exports. In 2010, for example, overall Russian oil production rose by 2.2 percent from 9.92 mmb/d to 10.15 mmb/d, an increase of 230,000 b/d, while over the same 12-month period production from East Siberian fields rose by 237,500 b/d, accounting for 103 percent of Russia's total production growth and demonstrating that the region is already making up for declines elsewhere in the country.



A similar story is also emerging in terms of Russia's crude exports. Figure 4 shows that prior to the start-up of the ESPO in December 2009 Russia was exporting between 400–500,000 b/d of crude to Asian markets via a combination of tankers from Sakhalin Island and rail transport to China. In 2010 the level of exports jumped by almost 300,000 b/d as the ESPO opened as far as Skovorodino, allowing onward transport of crude to Kozmino Bay on the Pacific Coast. From January 2011 ESPO exports will jump by up to a further 300,000 b/d as the spur pipeline from Skovorodino to the Chinese border also becomes operational, and as a result it is again apparent that exports from Eastern Russia to Asia have already started to replace the declining sales to Europe that can be seen appearing through 2010. Although the effect is only marginal at present it is expected to accelerate over the next three years, with exports to Europe estimated to decline by 600,000 b/d between 2009 and 2014 while exports to Asia should have increased by around 800,000 b/d over the same period. It would therefore appear that crude from Russia's eastern regions is likely to have an important role not only in bolstering Russia's oil production and exports over the next two decades but also in encouraging a further shift in geo-political focus away from Russia's traditional western customers towards the emerging energy markets of the Asia-Pacific region.