



## Russia's Arctic offshore opportunities

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Russia holds the largest share of estimated Arctic offshore petroleum resources, and is set to lead the way in the region. This summer's planned drilling in the *Universitetskaya* structure in the Kara Sea by Rosneft and ExxonMobil is this year's most high-profile petroleum event in the Arctic; it is attracting great interest due to the high resource estimates for the area. However, only a large oil discovery will be sufficient to justify the costs of development and of necessary infrastructure in the harsh weather conditions of the ice-covered Kara Sea. There is also potential for Arctic petroleum development in the previously disputed area between Norway and Russia, in the Barents Sea; this could contribute to the fulfilment of

Russia's Arctic offshore ambitions.

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### Strategic offshore reserves

Global focus on the Arctic increased substantially in 2008, when the US Geological Service (USGS) published an assessment of potential resources in the region, estimating that up to 22 per cent of the world's remaining, undiscovered, technically recoverable oil and gas may be located in the Arctic. Approximately 84 per cent of the resources are expected to be offshore,

most of it on Russian undisputed continental shelf.

Russia still has substantial resources in its core production areas, pumping up approximately 10 million barrels of oil (mmbpd) a day on a total, national level. Strong pressure to maintain petroleum production volumes, as onshore reserves are in decline, however, has switched attention to the offshore.

Despite other options – such as increased recovery from existing fields, investing in petroleum development in the Far East or in unconventional resources – Russia's President Vladimir Putin has made it clear that *'Offshore fields – especially in the Arctic – are without any exaggeration our strategic reserve for the 21st century'* (quoted in a

*Financial Times* article of 13 April 2012). A draft version of the Energy strategy for Russia until 2035 reveals ambitions that up to 5 per cent of Russia's oil production, and up to 10 per cent of its natural gas production, is intended to come from the Arctic offshore by 2035. If these production goals are achieved, the Arctic will play a significant role in compensating for any decline in production levels in traditional oil and gas producing regions.

### Russia determined to succeed

Russia seems determined to succeed with Arctic offshore petroleum development. Gazprom Neft shelf, after many years of delay, started the first production from a Russian Arctic offshore oil field in December 2013 – the Prirazlomnoye field in the Pechora Sea. Although the field is small in a Russian context, with recoverable oil reserves amounting to approximately 71 million tonnes, it is nevertheless a prestigious achievement for the project operator Gazprom Neft shelf to have pioneered Arctic oil extraction in this way. Large-scale offshore development of the Russian Arctic is, however, likely to require international cooperation to bring in the necessary technological know-how, and to bring down the costs of export infrastructure, oil spill response, and search and rescue.

In 2011 and 2012 the state-controlled Russian oil company Rosneft signed partnership agreements on joint development of the Arctic with the US oil company ExxonMobil in the Kara Sea, Italian ENI in the Barents Sea, and with Norwegian Statoil in the Barents and Okhotsk Seas. The Rosneft–Exxon partnership, which has received the most attention, involves spending approximately \$3.2 billion on geological prospecting and development of three licensed sectors (the east Prinovozemelsky blocks) in the Kara Sea and one area in the Black Sea.

Initial 2D seismic work was conducted in the three Kara Sea blocks (the to-be-drilled *Universitetskaya* structure lies in the first block) by state organizations in the Soviet era; the current estimated recoverable resources in the three blocks stand at 6.2 billion tonnes of oil (45 billion barrels) and up to 20.9 billion tonnes of total hydrocarbons (150 billion boe) (information taken from 'Russia's Arctic seas', Rosneft website). Research available from the Soviet Union in 1988 estimates the recoverable oil resources in the Kara Sea as a whole at approximately [19.9 billion barrels] ('The Kara Sea', CIA Research Paper March 1988), and Igor Sechin, head of Rosneft, has expressed that *'I dream to drill exploration wells in the Kara Sea and discover a unique field with reserves of 3.5 billion tonnes in liquid hydrocarbons and 11.4 tcm of gas.'*

Limited fiscal incentives from the Russian government have long been considered a hindrance for Arctic offshore development, and improvements related to tax and licensing policies are still to be made.

However, following oil company demands – of tax reform as a prerequisite for carrying out investments – new tax legislation on offshore projects in the Arctic has been approved, in order to stimulate petroleum exploration. Within certain conditions, this includes reduction of the mineral extraction tax, exemption from export duty taxes, and abolition of value added tax on imported technology.

Exploration of the Kara Sea will continue over the next years – but high expectations may be followed by disappointment if no substantial oil discoveries are made. The region is very gas-prone, being an extension of the Yamal peninsula where Gazprom's giant Bovanenkovo field sits, and the initial prospects are known to have a high probability of gas being present. The hope is that the fields are so large

that they have a significant oil rim – large enough (perhaps 7 billion barrels in the case of *Universitetskaya*) to justify a stand-alone development. If this is not the case, however, then the huge drilling cost (up to \$700 million for a single exploration well) could be wasted, as Russia already has an oversupply of gas and does not need more in such a remote, high-cost region.

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### Beneficial Barents Sea conditions

Apart from the Kara Sea, the Barents Sea is the most likely area for the Arctic's first large-scale petroleum development. While the Kara Sea is ice-covered for most of the year, the Barents Sea's southern part is warm enough to keep the sea almost ice-free. There is harsh weather and almost complete darkness in winter, but the lack of ice, proximity to land, and shallower water makes parts of the Barents Sea technologically realistic to develop in the relatively short to medium term.

Following the indefinite shelving of the natural gas and condensate field Shtokman in 2012, the focus on the Russian part of the Barents Sea has been limited. The Shtokman field, with estimated reserves of 3.8 tcm, was planned to provide LNG to the USA, but the shale gas revolution resulted in significant changes to global gas market dynamics; this, in combination with increasing development costs, added to existing concerns that the project was not commercially viable. In the longer term, Shtokman may still be developed if technological solutions appear to allow costs to be lowered, or if fiscal conditions improve and gas prices rise again.



However, following the maritime delimitation agreement between Norway and Russia in the Barents Sea in 2010 (after almost 40 years of dispute) new opportunities have emerged in a different part of the Barents Sea. The delimitation agreement involves a compromise between the original Norwegian and Russian claims, dividing a previously disputed area into two equally large parts. Prior to the agreement, there was a moratorium on exploration activities in this area of overlapping claims. With the delimitation agreement in place, this has changed.

In Norway, oil production has halved since 2000, but gas output has increased. In order to compensate for maturing of large fields in the North Sea, the petroleum industry is increasingly turning its focus north, to the Norwegian and Barents Seas.

Norway already has Arctic production of LNG from the Snøhvit field in the Barents Sea, operated by Statoil, and start-up of the nearby Goliat oil field, operated by ENI, is expected in 2015. Currently, there is also significant exploration activity in the Norwegian part of the Barents Sea. Several discoveries have been made over recent years, but there are still uncertainties related to commerciality of development. To date, insufficient gas has been discovered in the Norwegian Barents Sea to justify investments in new transport infrastructure.

Nevertheless, the bids for blocks included in the twenty-third licensing round on the Norwegian Continental Shelf (NCS) show substantial interest for the south-eastern part of the Norwegian Barents Sea, bordering Russia. Nominations received in January 2014 include 160 blocks, of which 140 are located in the Barents Sea and 20 in the Norwegian Sea. In total 40 companies bid for licences.

The delineation agreement between Norway and Russia includes an Annex on the unitization procedures for the area. If a large cross-border discovery is made, development will require cooperation between Norway and Russia (with or without joint development).

At the moment, the prospects for Norway–Russia joint development remain highly speculative, but if sufficient resources are found, then the incentive to find a solution to the infrastructure and other logistical issues will increase. During the early 1980s the Soviet Union conducted some seismic surveying which has served as the basis for initial Russian estimates for the area, with various sources suggesting that yet-to-find recoverable resources could be as high as 6,400 million cubic metres of oil equivalent (c.40 billion boe). Reinforcing these claims, the Russian Ministry of Energy has suggested that the previously disputed area holds an estimated 48 billion barrels of oil equivalent, and although the US Energy Information Agency has

a lower estimate, it still assesses the potential of the area at 12 billion barrels of oil equivalent.

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Even if these estimates are only directionally correct, significant discoveries on either side of the now agreed boundary could be enough to justify joint development of one or more fields. Common infrastructure between Norway and Russia may turn out to be a reasonable solution, justifying what are likely to be high development costs, as both countries can benefit from new production. At the same time, there may also be opportunities for LNG development. If the price difference between the European and Asian markets remains, while the Arctic ice melting continues and opens up the Northern Sea Route for a larger part of the year, Arctic LNG may become more attractive. While Russia has other options for oil and gas exploitation, Norway has few other regions to turn to – and may thus be a driving force for development. Assuming that: the current political disputes between Russia and the West don't escalate, energy prices remain high, and framework conditions are in place, *Russian–Norwegian cooperation in the Barents Sea may turn out to be key for developing the first large-scale offshore petroleum region in the Arctic.*

