

# Oxford Energy Comment

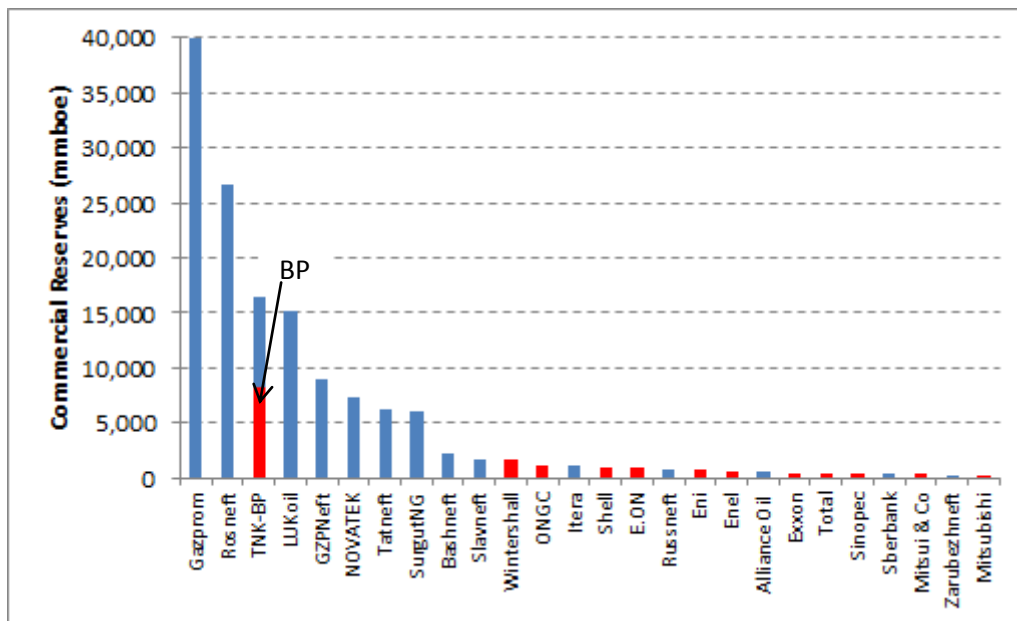
May 2012

## Joint Ventures in the Russian Offshore – Positive News but only for the Long Term

**James Henderson**

Partnerships between Russian oil companies and their international peers have been relatively rare over the two decades of the post-Soviet period, with BP’s 50% share of TNK-BP still remaining by far the largest international investment in the Russian oil and gas sector to date. Foreign companies have of course been represented at Sakhalin (Exxon, Shell and others) and in various onshore projects such as Severenergia (ENI), Achimgaz (Wintershall) and South Russkoye (E.ON and Wintershall), while Total now also owns 15% of Novatek. Nevertheless, as Figure 1 shows, foreign companies other than BP continue to be small players in the overall context of the Russian oil and gas industry.

**Figure 1: Oil company ranking by reserves in Russia**



Source: Wood Mackenzie Consultants CAT database [Key: red indicates foreign investors]



The key reasons for this relative lack of international involvement have been clear from both a domestic and an IOC (International Oil Company) viewpoint. Having recovered from the post-Soviet collapse in the 1990s, Russian companies have successfully used cashflow from higher oil prices, domestic technology and international service companies to recover the Soviet-era brownfield assets that have formed the core of the Russian production base in West Siberia without the need to offer equity in those assets to international companies looking to participate in Russia's huge resource base. Conversely, IOCs have seen their competitive advantages (management and technical skills plus access to capital) eroded by the increasing availability of all three to their Russian peers from other sources, and have also been reluctant to invest in a relatively high cost fiscal environment with significant perceived political and commercial risk. However, Russian production has peaked at around 10 million barrels per day, and although the Russian Administration appears to have no aspirations for it to grow further, the risk of a sharp production decline as the "brownfield miracle" ends, which has been highlighted by a number of commentators over the past few years,<sup>1</sup> is now becoming increasingly evident. Indeed in a recent presentation to investors LUKOIL CEO Vagit Alekperov suggested that without significant tax incentives Russian oil production could fall as low as 6 million barrels per day within 10 years.<sup>2</sup>

In response to this issue the development of Russia's offshore resources has now started to be viewed by a number of government figures as the foundation for the long-term maintenance of Russia's position as a major global oil producer.<sup>3</sup> From the Russian side, Rosneft and Gazprom, as the state representatives in the sector, have led the offshore initiative and have been given exclusive access to offshore licences surrounding Russia's borders (with the exception of the Caspian where LUKOIL has been the leading player for a decade). Furthermore, they have been encouraged by the Russian Administration to look for foreign partners to assist in the development of what will be remote and technically challenging assets, with President Putin himself stating that "we hope that major world corporations will act as partners of Russian companies in the development of offshore projects."<sup>4</sup> The response to this encouragement has been dramatic, with Rosneft in particular seizing the opportunity to arrange joint ventures with three IOCs, Exxon, ENI and Statoil, over the last two weeks of April and the first week of May 2012. Indeed it is clear from the statements of all the parties involved that

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<sup>1</sup> For example Poussenkova N., "The Wild Wild East: East Siberia and the Far East, a New Petroleum Frontier", Carnegie Moscow Centre, Working Papers No.4, 2007; Yenikeeff, S., "Problems of Oil Production", Oxford Energy Forum November 2009, p.11; Komduur, R., "Wanted: Russian resolve on oil strategy", European Energy Review, April 2010

<sup>2</sup> Presentation to Investors, March 2012, "Third Decade of Evolution: New Challenges, New Opportunities", p.19, London

<sup>3</sup> Igor Sechin, the Deputy Prime Minister with responsibility for Energy stated at the press conference to announce the Rosneft-Exxon deal in April 2012 that 70% of Russia's resource base is now offshore and that 30-40% of future production will come from this source

<sup>4</sup> Interfax, 12 April 2012, "Russian govt decides to zero new shelf project export duty" Moscow



the IOC capabilities of technical and project management expertise, as well as their willingness to fund a very significant capital requirement, are of interest once again as Russia acknowledges its need for assistance in the development of its offshore resources.<sup>5</sup>

Indeed, an examination of the details of the three joint venture agreements that have been signed points to a number of common features that can provide some interesting pointers to both the Russian and IOC strategies with regards to the development of Russia's continental shelf as well as to the potential impact of these new partnerships. Table 1 provides a summary of the deals that have been struck, and highlights one immediate conclusion which is that the size of the potential resources to be explored is enormous. These three deals alone cover licences that contain estimated recoverable resources totalling almost 200 billion barrels of oil equivalent, with around one third of this likely to be oil. This compares to Russia's current total proved reserves of 77 billion barrels of oil plus 45 trillion cubic metres of gas (a total of 350bn boe)<sup>6</sup> and indicates the potential of these new ventures to dramatically increase the country's reserves base.

**Table 1: Summary of Rosneft's offshore JVs with Exxon, ENI and Statoil in April/May 2012**

IOC Partner	Arctic Component	Other Offshore	Total Offshore Resources (gross bn boe)	Other Russian Assets	IOC Stake in Exploration JVs	International Assets
<b>Exxon</b>	3 licences in Kara Sea	1 licence in Black Sea	Oil - 46, Gas - 90, Total - 136	Tight oil assets in West Siberia	33.33%	West Texas (unconventional oil), Alberta (unconventional oil), Gulf of Mexico (deep water exploration)
<b>ENI</b>	2 licences in Barents Sea	1 licence in Black Sea	36	None	33.33%	Access of ENI North African assets, other international projects to be discussed
<b>Statoil</b>	1 licence in Barents Sea	3 licences in Sea of Okhotsk (edge of Arctic)	26	North Komsomolsky (heavy oil), Stavropol licence (shale oil)	33.33%	Access to Statoil Norwegian licences in North Sea and Barents Sea

*Sources: Rosneft, Exxon, ENI and Statoil published data*

However, the issue of resource size also highlights two key issues for Russia's new offshore strategy, especially in Arctic waters. Firstly, any new discoveries will need to be vast in order to justify the likely expense of future developments in remote and very harsh environments. Multi-billion barrel discoveries will be needed in order to generate production from individual licences of at least 0.5-1.0 million barrels per day (bpd) if suitable economic returns are to be generated, even under the more

<sup>5</sup> Press releases from Rosneft and Exxon (April 16, 2012), Rosneft and ENI (April 25, 2012) and Rosneft and Statoil (May 5, 2012)

<sup>6</sup> BP Statistical Review of World Energy 2011



generous tax terms that the Russian government has offered to incentivise investment. Furthermore, the early discoveries at least will need to be made up of barrels of oil not cubic metres of gas, as it is really only oil that the companies are looking for at this stage (highlighted by the fact that it is Rosneft not Gazprom that is currently leading the initiative). Gas found offshore, especially in the Arctic, is likely to be of little commercial value given that it will be even further from market than Russia's significant existing reserves in West Siberia and the Yamal peninsula and would have a requirement for so much new infrastructure that the cost would almost certainly be prohibitive. Consequently the results of the first exploration wells from the new Rosneft partnerships will be eagerly anticipated not only for the size of the potential discoveries but also for their specific hydrocarbon content.

A further observation from the new partnerships is that they do not just concern offshore assets, although they are clearly of prime importance, and also do not just concern Arctic licences. On the second point, it is noteworthy that Exxon and ENI have both taken interests in Black Sea licences, while Statoil will be exploring in the Sea of Okhotsk with Rosneft in addition to its Arctic licence in the Barents Sea. Although the potential resources identified in both the Black Sea and the Sea of Okhotsk are large, the prospectivity of these areas is not generally regarded as being as great as Russia's northern Arctic waters, and so one might be tempted to interpret IOC involvement in these licences as a necessary condition for the award of more attractive northern acreage. However, it is significant that Exxon and Statoil have also taken interests in heavy oil and shale oil plays onshore Russia, with a focus on the transfer of technology used on international unconventional oil assets to a domestic Russian context. Quite clearly the Russian Administration is keen to fully exploit the technical advantage brought by IOCs across the full scope of Russia's potential new resource base in return for access to prime Arctic offshore acreage.

This element of "quid pro quo" in the new Rosneft partnerships is seen in another common theme, namely the offer of reciprocal international assets to Rosneft. Exxon has offered Rosneft the opportunity to buy interests in its unconventional oil assets in West Texas and Canada, as well as equity in 20 deep water licences in the Gulf of Mexico. All three opportunities have clear relevance to the assets which its partnership with Rosneft will explore in Russia, and demonstrate how Rosneft and Russia's strategy involves a desire to both expand internationally while also gaining vital technical knowledge through taking a minority interest in overseas projects with an experienced international partner. Meanwhile ENI and Statoil have made more generic, but potentially relevant, international offers. ENI have promised to discuss bringing Rosneft into international assets, with a particular focus on North Africa, while perhaps more pertinently Statoil has offered the opportunity to invest in Norwegian exploration and development licences in the North Sea and the Barents Sea, close to one of the licences it will be exploring with Rosneft in Russian waters.



However, while all of these offers of international assets do highlight the element of reciprocity that has been vital to a number of other international partnerships in Russia (most notably Wintershall's relationship with Gazprom)<sup>7</sup>, it is also important to note that the assets on offer are much less significant than the licences on offer in Russia. While the Exxon assets in North America have been welcomed by Rosneft and certainly offer both prospectivity and a learning opportunity, they probably do not offer the dramatic upside that exploration success in the Kara Sea could potentially provide. The ENI and Statoil offers are even more nebulous at present, and certainly none of the IOCs could be said to have offered truly equivalent assets for the licences provided in Russia. Although this may not be important at this early stage, when IOC technology and risk capital is much needed to catalyse initial exploration of Russia's continental shelf, it may become more important as the investments in Russia progress. If Rosneft enjoys less success internationally than its IOC partners enjoy in Russia, then relationships could easily sour, in particular as cash flow generation from Russian offshore fields comes closer. It may therefore be important for all the IOCs to concentrate as much on the international side of the partnership as on exploration in Russia if their involvement in the Russian Arctic is to reap success on a timely basis.

The issue of international reciprocity may, however, fade into insignificance compared to the major challenges to be faced in the exploration and development of offshore assets in Russian waters. As already mentioned, the Russian government has responded to Russian and IOC pressure concerning the fiscal terms for new developments in Russia by introducing a new tax system for offshore fields. Although the exact terms depend upon the location and prescribed difficulty of each development, essentially the changes will remove all export tax duty for offshore fields for between 5 and 15 years while introducing a variable royalty from 5-30% (with corporation tax of 20% remaining in place).<sup>8</sup> The Administration has also been explicit in stating that it is targeting rates of return in the range of 16.5%-22.5%, but while this would certainly improve the commerciality of offshore developments in Russia and rank them closer to global peers it would still mean that the Russian offshore regime is less attractive than a number of comparable offshore regions in the global oil industry (see Figure 1). One clear consequence of this could be that if problems of a geological, technical or environmental nature are met then the incentive to continue investing in Russia as opposed to other areas may diminish.

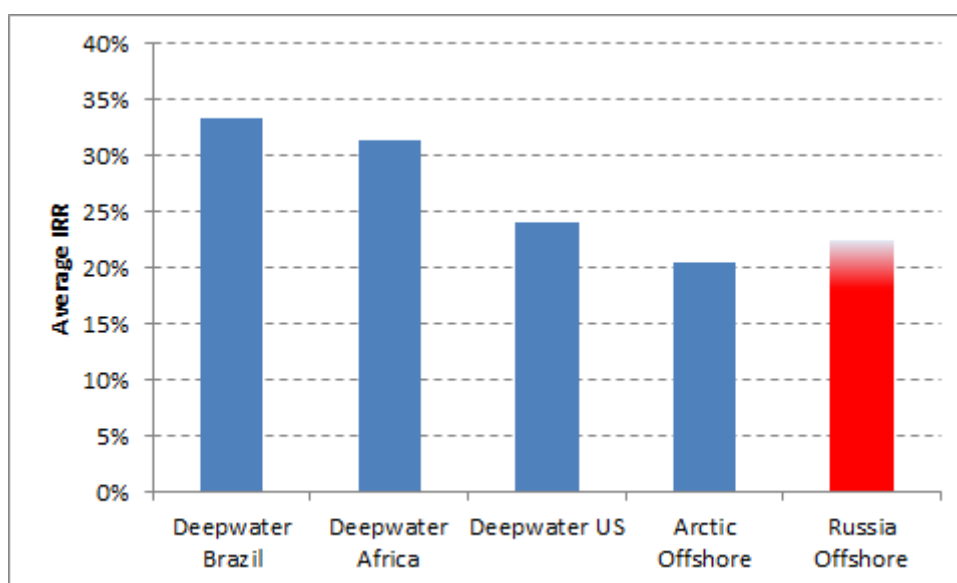
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<sup>7</sup> Wintershall offered upstream assets in Libya as well as a 50% share in a gas marketing joint venture in Germany (Wingas) in return for which it now owns equity in the South Russkoye field in West Siberia as well as three licences in the Achimov layer of the giant Urengoy field via its Achimgaz JV with Gazprom. Although this reciprocity was not all specifically linked by asset, it nevertheless helped to cement Wintershall's strong relationship with Gazprom

<sup>8</sup> These changes are due to be voted into law in October 2012



**Figure 2: Comparative IRRs of global oil projects compared to Russia offshore**



*Source: Wood Mackenzie Consultants, Goldman Sachs Research*

At present the size of the potential resource base is enough to counter this possible long-term economic disincentive, as there are few if any regions of the world that can offer the exploration upside identified to date in the Russian offshore, especially the Arctic. However, the timing and extent of the development of these resources remains open to huge question, and the prognosis that first oil could emerge from Russia's Arctic regions in 2020 (as suggested in the press conference following the announcement of the Rosneft-Exxon partnership)<sup>9</sup> would appear to be somewhat optimistic on the basis of historical analogies in Russia and other Arctic developments.

Table 2 provides a summary of the planned exploration and development timing and costs for the various offshore licences included in Rosneft's three new partnerships. It details when the first exploration well on each licence is due to be drilled, what the cost of the initial exploration phase is expected to be, an estimate of the possible total development cost and finally this author's estimate of the timing of possible first oil from each licence, assuming the exploration phase is successful.

An initial conclusion to be drawn from the table is that only two or three exploration wells are planned to be drilled before 2015, with the majority not expected until closer to 2020. It should be emphasized too that this is just the estimate for the first well on each licence, and that even if a discovery is made with this first well further exploration and appraisal drilling would be expected before any development plan was made. For example, the second well on ENI's Fedynsky licence will

<sup>9</sup> Exxon and Rosneft Investor meeting, April 18, 2012



not necessarily be drilled before 2025. As a result, it is likely to be some considerable time before any clear view of the potential for proved reserves is established.

It is also important to underline that all three IOCs have committed to underwrite all of the initial exploration cost, in effect carrying Rosneft for free through this phase. Although this is not uncommon (BP for example carried Rosneft in the exploration of the Sakhalin 4 and 5 licences), it does mean significant upfront costs for the IOCs with no guaranteed return and no tax shelter. This compares with Norway where, for example, 78% of exploration costs are effectively subsidised by the Norwegian taxpayer. As a result, any initial disappointment could see a lack of enthusiasm for future drilling (other than that mandated by the licence agreement) among the IOCs who are paying the entire exploration cost.

Having said this, the geological potential of the region and the enthusiasm with which IOCs are entering the agreements suggests that discoveries are likely to be made. Moving those discoveries from initial exploration success to first oil is likely to be a lengthy process, however. Establishing quite how long it will take is difficult to estimate, due to the fact that there are very few comparable assets to use as analogies, but one potentially relevant field is Hibernia, which is located in the Arctic region offshore Canada and is operated by an ExxonMobil consortium. The Hibernia field was discovered in 1979 by the 10<sup>th</sup> well drilled in the basin where it is situated (although exploration in the Grand Banks region off Newfoundland began in the 1960s and the first well in the Jeanne d'Arc basin where Hibernia is located was drilled in 1971). A development plan was submitted in 1986 and first production then commenced in November 1997, more than 18 years after the field had been discovered and 26 years after first drilling in the surrounding basin. By comparison, it has been suggested that, following a first exploration well in 2014 in the East Prinovozomelskiy 1 licence, a final investment decision on full field development could be taken in 2016<sup>10</sup> with first oil in the period 2018-2020.<sup>11</sup>

Although no exploration wells have yet been drilled in the Kara Sea it would be unfair to say that it was a completely unexplored area, as it is essentially on trend with existing discoveries in the West Siberia basin, especially those on the Yamal peninsula, and 2-D seismic has been shot. However, no drilling has yet taken place and therefore even if one makes the optimistic assumption that the first exploration well is an immediate success and that the time from discovery to first oil can then be 50% faster than at Hibernia, given ExxonMobil's obvious experience in the Arctic, this would still suggest that initial production would commence no earlier than 2026. Some test oil from appraisal wells might

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<sup>10</sup> Comment in Exxon – Rosneft joint investor conference, as cited by Mamedov, G., 19 April 2012, "Rosneft/Exxon alliance outlines long-term opportunities", p.3

<sup>11</sup> RIA Novosti, 18 April 2012, quoting Deputy Prime Minister Igor Sechin at investor press conference, "Rosneft, Exxon may start Kara, Black Sea oil output in 2018-20"





flow before then, but it is hard to imagine a full field development in less than 10 to 12 years from the first successful exploration well.

**Table 2: Exploration and Development Costs and Timings for Russian Offshore**

IOC Partner	Licences	First Well	Exploration Expense (\$bn)	Potential development cost (\$bn)	Possible First Oil*
Exxon	East Prinovozomelskiy 1 (Kara Sea)	2014	3.2	200-300	2026
	East Prinovozomelskiy 2 (Kara Sea)	2016			2028
	East Prinovozomelskiy 3 (Kara Sea)	2018			2030
	Tuapse (Black Sea)	2014/15			50
ENI	Fedynsky (Barents)	2020	2.0	57	2032
	Central Barentsevsky Barents)	2021			2033
	West Chernomorsky (Black Sea)	2015/16			50-55
Statoil	Perseevsky (Barents)	2020	2.5-3.0*	100	2032
	Magadan 1 (Okhotsk)	2016			2028
	Lisyansky (Okhotsk)	2017			2029
	Kashevarovsky (Okhotsk)	2020			2032
<b>Total</b>			<b>7.7-8.2</b>	<b>457-562</b>	

Source: Rosneft, ExxonMobil, ENI and Statoil press releases. \* marks Author's estimates

This analysis is reinforced by two relevant developments in neighbouring Norway and also by the Sakhalin example in Russia. The Snohvit field, an Arctic LNG development, was discovered in 1984 but first LNG was not produced until 2007. The field was hampered by various technical and commercial issues which extended the timeline, but it is certainly not inconceivable that such issues could also affect any Kara Sea development, given its remote location and geographical challenges. At the other end of the scale the Ormen Lange gas field, located in the southern section of the Norwegian sea and therefore much easier to develop than any northern Arctic asset, took ten years to bring from discovery to first production in 2007, while the Exxon-led Sakhalin 1 project in the Far East of Russia, which had been discovered in 1977, began appraisal drilling in 1995 prior to first oil output in 2005. This would certainly seem to suggest that a decade is an absolute minimum timescale from first exploration to initial production, with 15 years a more realistic estimate in the harsh Arctic conditions associated with the key licences in Rosneft's new JVs. As a result it would appear that the first significant oil production from Russia's Arctic region is very unlikely before 2026, with 2030 as a more realistic target, while even discoveries in the warmer Black Sea region would be unlikely to come onstream in less than 10 years from first exploration success.





To further reinforce this point, Table 2 also summarises the potential capital expenditure for development of all the licences recently included in Rosneft's partnerships with ExxonMobil, ENI and Statoil. Given that as much as \$500 billion could need to be committed to Russian offshore development from these three joint ventures alone, with the first potential discovery on the ExxonMobil acreage (the University prospect with 9.4 billion boe of potential resources) likely to cost tens of billions of dollars to develop, it would seem inconceivable that any IOC would be prepared to commit so much capital to a project unless it had been fully appraised both technically and commercially. Given the lack of data concerning Russia's Arctic regions (and indeed the Arctic in general), which in itself complicates the assessment of the potential for new developments, it seems very difficult to imagine that this process could take less than a decade, given that the initial exploration phases in similar regions of countries such as Canada and Norway have taken twice as long.

One final point also bears consideration, namely the unique environmental challenges presented by Arctic development. In a recent report Emmerson and Lahn (2012)<sup>12</sup> highlight the numerous problems that will be experienced by any company looking to develop Arctic resources, including geographic remoteness, low temperatures, electronic communications difficulties, issues of weather and climate change and the continuous threat of icing and icebergs. Specific data on the Kara Sea is provided by Rosneft on its web-site, highlighting that temperatures can fall to as low as -46 degrees centigrade in winter while the region is ice-bound for 270-300 days per annum with ice thickness of 1.2-1.6 metres. The problems that these challenges can present even to existing operators were highlighted by two tragedies during the development of the Hibernia field,<sup>13</sup> and although one would of course hope that such experiences would never be repeated, the precautions required to maintain safety in such a hostile environment are bound to delay any developments.

One final vital issue also highlighted by the Emmerson and Lahn report is that of potential pollution and ecosystem disturbance. The 2010 Deep Water Horizon disaster in the Gulf of Mexico clearly highlighted the environmental dangers of offshore exploration, but perhaps of more relevance is the Exxon Valdez oil spill in 1989, as it emphasized the fact that biodegradation of any oil spill in the cold waters of the Arctic is likely to be much slower than in warmer southern waters, and could be compounded by the presence of moving ice that could carry any pollutants much further than anticipated.<sup>14</sup> Rosneft and Exxon both highlighted in the announcement of their partnership that a new Arctic Research and Design Centre for Offshore projects will help to monitor and mitigate these risks,

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<sup>12</sup> Emmerson, C. & Lahn, G., "Arctic Opening: Opportunity and Risk in the High North", Chatham House, 2012

<sup>13</sup> A semi-submersible rigs capsized killing 84 crew in 1982 and a transport helicopter crashed in 2009 killing 17 oil workers and crew

<sup>14</sup> Emmerson and Lahn, p.39



and ENI and Statoil have made similar commitments to environmental and safety issues. Nevertheless the fact that significant knowledge gaps exist purely due to a general lack of Arctic offshore experience means that progress is likely to be slowed by these issues. Furthermore, the increasing activism of environmental lobbyists will also bring any potential issues into much greater public focus, causing reputational risks for the major IOCs that could also slow their progress towards swift field developments. This could particularly be the case in the Kara Sea, where the neighbouring Novaya Zemlya Island was designated as part of the Russian Arctic National Park in 2009. Any threat, actual or perceived, to its unique flora, fauna and animal populations could clearly cause an outcry that could undermine hydrocarbon developments.

## **Conclusions**

The increasing maturity of Russia's onshore fields, especially those in West Siberia, and the potential for the country's production to go into sharp decline over the next decade has prompted the Russian government to promote offshore development as a potential solution. President Putin has encouraged his state oil company to seek international partnership to bring in the requisite technical and management expertise as well as much needed capital to fund what will be very expensive projects. He has also ensured that the government will now provide a more benign tax regime that would enhance the commercial returns on any new field developments and bring Russia more into line with its international peer countries. The immediate consequence of this activity has been the formation of three joint venture partnerships between Rosneft and Exxon, ENI and Statoil respectively, with the IOCs finally seizing the chance to exploit their competitive advantages in a region with huge resource potential.

However, despite the undoubted benefits which these new partnerships can bring for all parties in terms of technical knowledge exchange, reciprocal asset deals, diversification of risk and potential upside from exploration success, it would appear doubtful whether the results of their activity can be anything other than a long-term solution to Russia's production issues. With a first exploration well not due before 2014, and with any further exploration and appraisal work set to take place during the period to 2020 and beyond, it seems almost inconceivable that the first significant oil production could occur before 2025/26 at the earliest, with 2030 a more likely date. Technical challenges in a relatively unexplored area, the harsh geographic environment, the need to mitigate significant environmental and safety risks and the overarching need to ensure that any developments will have a high chance of commercial success before tens, and potentially hundreds, of billions of dollars are spent, would all seem to suggest that a more conservative timetable is likely. As a result, any estimates of first oil in 2018-2020 would appear to be somewhat optimistic.



Therefore, if the forecasts of a potential Russian production decline by 2020 given recently by Vagit Alekperov, the CEO of LUKOIL, are credible then it would seem that an alternative solution to Russia's potential oil output issue will need to be found. Russia's offshore resources can provide a foundation for long-term production stability from 2030, but until then the Russian government would appear to need to focus on its available and easier to access onshore resources. Fiscal incentives for fields on the Gydan peninsula, in East Siberia and the Far East, and for unconventional resources such as heavy oil in West Siberia and European Russia might produce more rapid results, with both domestic and international companies having the potential to make vital contributions in this area under the appropriate conditions. To date this has not been encouraged, as not only has the tax regime undermined the development of new more difficult resources but also onshore fields have generally been the preserve of the Russian oil companies alone. However, now that the need for a more profit-based tax regime for new fields appears to have been acknowledged and a new partnership model has also become more acceptable, it may be possible to see both applied to mainland Russia to encourage domestic and international companies to increase investment in oil resources there, especially if it becomes clear that new offshore developments, although positive for the long term, are unlikely to be a short term cure for a potential Russian oil production decline.