



The Prospects and Challenges for Arctic Oil Development

Executive Summary

James Henderson and Julia Loe

Approximately 22% of the world's undiscovered technically recoverable oil and gas resources are located in the Arctic, according to a 2008 survey by the USGS. More than three-quarters of these resources are to be found offshore in the territories of the five littoral states of the Arctic Sea – namely, the US, Canada, Russia, Norway and Greenland, of which the first four are already major petroleum-producing countries.¹ As climate change is reducing both ice thickness and extent,² these resources are becoming increasingly reachable, opening up new opportunities for industrial development and transport to world markets – for example, through the Northern Sea Route.

However, despite the shift in global temperatures, Arctic offshore production will be far more expensive than production in most other petroleum regions owing to the harsh climatic conditions. This means that multi-billion barrel discoveries will have to be made and oil-price expectations will need to be high if expensive developments are to go ahead. Technological breakthroughs may be needed in several areas, while political support and extensive cooperation between Arctic states will be prerequisites for success. At the same time, environmental risks and popular opposition to oil and gas activity in the Arctic could undermine hydrocarbon development, especially as it is clear that the environmental challenges for search-and-rescue and oil-spill preparedness will be significant.

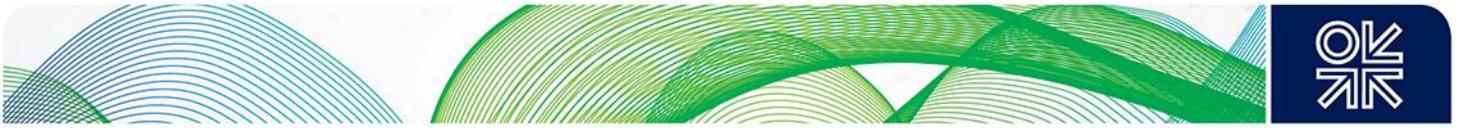
This report examines all of these issues in a review of the key countries where Arctic exploration has been taking place. It concludes that activity in the US will continue to be undermined by environmental concerns, in particular in the light of the recent problems encountered by Shell. Similar concerns will affect activity in Canada, and in both countries the opportunities provided by unconventional onshore developments are likely to prove more attractive than high cost and more challenging Arctic projects. Meanwhile Greenland has been hampered by a lack of exploration success to date, and it would seem that any hope of oil production in the next twenty years is very remote.

It would therefore appear that Norway and Russia will be the major driving forces behind any medium term Arctic development. Norway in particular sees the Barents Sea as a source of future growth as its other offshore regions reach maturity, and recent licensing rounds suggest that there is broad industry interest in the area. Meanwhile Russia has made Arctic development a key commercial and political priority. Co-operation between the two countries is a greater possibility after the ending of disagreements over the border line in the Barents Sea, and Russia has also made partnership a major theme across the Arctic Seas as Rosneft has joined forces with a number of IOCs to fund significant exploration activity. However, the sanctions imposed by the US and EU in light of the Ukraine crisis have clearly undermined the prospects of near term developments, with ExxonMobil being forced to pull out of its JV despite initial exploration success. As a result, it may be some time before further progress can be made.

Overall, the report concludes that, even without the political impact of sanctions, significant oil production from the Arctic is unlikely before 2030. Given the technical, operational, environmental and

¹ USGS (2008).

² BBC, 'Arctic sea ice reaches record low, NASA says', 27 August 2014.



commercial issues, as well as the need for partnership that is being undermined by current geo-political problems, even meeting this target will be a challenge. As a result, the prospects for Arctic oil development seem to be receding, other than in Norway where the need to develop a new offshore resource base is most urgent.

About the Authors

James Henderson is Senior Research Fellow at the Oxford Institute for Energy Studies.

Julia S. P. Loe is Senior Consultant at Menon Business Economics, Norway.