

The promise and the problems of developing the Arctic

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Environmentalists rail against it. Oil, gas and mining companies, shippers and some governments in the region insist on it happening. People who live there are in two minds about it all.

Resource development in the Arctic – whether it is oil and mining exploration or the expansion of shipping and other services – provokes widely differing emotions. The oil industry says with an estimated quarter of the world’s as yet undiscovered hydrocarbons likely to be in the Arctic region, the case for exploration is overwhelming. So also say the mining companies: whether it is uranium, iron ore, gold or rare earths, the Arctic has massive amounts of minerals the world urgently needs.

Shipping operators, particularly those in Russia, say routes through the Arctic seas represent a much shorter and ultimately cheaper way of shipping goods between the Americas, Europe and Asia. Governments in the region are busy staking claims to vast swathes of ice and ocean in the face of a regional race for resources.

The relatively small but widely diverse population living across what’s often referred to as “The High North” are well aware of both the positives and negatives of the rush for resources.

“Arctic peoples are caught in a bind” says Minik Rosing, a native Greenlander who is a professor of geology at the University of Copenhagen. “On one hand resource

development offers the chance of more personal wealth and political independence. But it also threatens to overwhelm us and change our environment and culture for ever.”

Environmentalists show no such ambivalence. The exploitation of fossil fuels has led to changes in climate and the melting of Arctic ice. Exploration companies are now rushing in to the region to exploit yet more fossil fuels, only adding to climate change problems. “It’s madness” says a campaigner at Greenpeace, the environmental NGO. “You don’t put out a fire with gasoline.”

Climate Change and the Arctic

There appears to be little doubt that the pace of Arctic warming is speeding up: According to the latest report of the Arctic Monitoring and Assessment Programme, a working group of the Arctic Council, the warming trend in the Arctic has been twice the global average since 1988. Arctic winter ice seasons are becoming shorter while sea ice in the Arctic summer has retreated to its lowest levels since satellite measurements began in 1979.

“The clarity of that trend is very striking” says Sebastian Gerland, a sea ice expert and one of the report’s contributors.

The report also found that the Greenland ice sheet – covering an area of more than 650,000 square miles – is melting at a very fast rate. While this could mean rising sea levels and be bad news for much of the planet, it does, on the face of it, seem to be good news for the exploration industry.

Oil and gas

In the most comprehensive estimate of Arctic hydrocarbon reserves to date, in 2008 the US Geological Survey (USGS) said there were likely to be 90bn barrels of undiscovered and recoverable oil across the region along with more than 1,650 trillion cubic feet of natural gas – enough respectively to meet three and 14 years of world demand at present levels of consumption. More than 80 per cent of the hydrocarbons are offshore in waters of less than 500 metres, making them, said the USGS, accessible to drilling.

Longer Arctic summers and less





sea ice means more time and opportunity for offshore drilling activities. Cairn, the Scottish based exploration business, is the only company so far to have reported evidence of hydrocarbon findings offshore in the more westerly Arctic region. In summer 2010 it found indications of hydrocarbons off Greenland, and the company has been drilling again in 2011. Other companies including Shell, ConocoPhillips and Statoil of Norway have also been given offshore drilling licenses by the Greenland government.

Elsewhere Shell, BP and other oil majors are busy applying for licenses to drill in offshore Alaska: Shell has submitted plans to the US authorities for drilling 10 exploration wells in the Chukchi and Beaufort seas in the summers of 2012 and 2013. In the Barents Sea off northern Norway – divided with Russia – Statoil has made what it says are commercial oil finds. A number of other international oil companies are now either already drilling or applying for licenses in the area.

Russia has been among the most bullish of the Arctic countries in wanting to press ahead with Arctic oil and gas exploration. With fields in western Siberia expected to contribute less to Moscow's oil revenues in future years, the big prize is considered to be oil and gas in Russia's far north – in the Kara and Barents seas. Moscow is making long term plans for exploration in the region. Eight floating nuclear power stations are at present under construction in St Petersburg: the plan is to position them along Russia's north coast in order to supply power to communities in the area and to onshore and offshore exploration activities.

Exploration obstacles

One of the main problems in the region relates to who owns what. When Artur Chilingarov, a veteran Russian polar explorer, placed a Russian flag on the sea bed beneath the North Pole in 2007, it caused considerable concern round the region. Though Vladimir Putin, Russia's prime minister, insists the Arctic should be a region "for cooperation and dialogue," Moscow claims sovereignty over vast tracts of the region's ocean bed. The US, Canada, Norway and Denmark – Copenhagen controls Greenland's foreign policy – also have competing claims in the region. Other countries and groupings – including China, India and the European Union – are trying to ensure their interests are safeguarded. Analysts point to evidence of a regional military build-up.

"For now, the disputes in the north have been dealt with peacefully" says Admiral James G Stavridis, NATO's supreme allied commander for Europe. "But climate change could alter the equilibrium over the coming years in the race of temptation for exploitation of more readily accessible natural resources."

There are also great technical challenges. Equipment is severely tested in such extreme conditions. There is a lack of infrastructure – and lengthy supply lines. Recent rises in oil and gas prices have cushioned the expense of operating in the Arctic but the need for environmental safeguards is increasing costs. In the aftermath of the Gulf oil disaster it's not just environmentalists who are concerned about how an oil spill, possibly beneath the ice, could be contained in Arctic waters. There is a great deal of official nervousness as well: Shell and other oil companies have had their license applications for drilling offshore Alaska repeatedly scrutinised by US authorities.

Though Russia is considered to have less stringent conditions governing Arctic resource exploitation, its exploration ambitions are limited by a lack of expertise, particularly in offshore drilling operations. Russian exploration companies are keen to link up with overseas groups, as in the case of the proposed partnership between Rosneft and ExxonMobil.

Climate change also poses considerable challenges to the exploration industry: weather patterns are likely to become more unpredictable. More icebergs calving off glaciers are likely to pose increasing dangers to oil and gas rigs operating in the region. They will also threaten both existing and new shipping lanes.

Meanwhile environmental groups are mounting an increasingly militant campaign against the whole idea of drilling in the Arctic. Cairn's operations off Greenland have been a frequent target of protesters. Local groups in Canada and Norway are voicing concerns that drilling will adversely impact fisheries and threaten livelihoods.

The Arctic does hold out great resource exploitation possibilities. It is one of the last great untapped areas on earth – but it is also one of the most fragile of environments. The Arctic and its complex weather systems is often referred to as the world's air conditioner, its waters and winds responsible for cooling down great swathes of land and ocean. Many exploration companies are learning that they have to tread carefully: if not, reputations and finances will suffer – and environmental disaster could follow. ■