

Chapter 5

Russia and the Development of Arctic Energy Resources in the Context of Domestic Policy and International Markets

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Strategic developments in the Arctic are intimately connected with resource development, particularly the extraction of hydrocarbons.¹ Some see a push for massive oil and gas extraction as a driver for Arctic economies, because this holds the promise of employment and wealth to local communities. Others fear that increased petroleum activities will cause pollution and the destruction of natural habitats and traditional lifestyles with profits channelled out of the region and a growing risk of international conflicts. Both positive and negative scenarios build on the assumption of an increasing role of the energy industries in the Arctic. The purpose of this chapter is to assess the outlook for oil and gas activity in the Arctic broadly, by exploring what is the scope for such activity and which parts of the Arctic are likely to see most of it.

The chapter starts with an examination of recent predictions made regarding Arctic energy and then places the region into the current context of global energy supply and demand, before looking at the conditions for future Arctic energy development in the various circumpolar nations. The main focus is on Russia, the largest Arctic state by far and with the largest share of Arctic energy resources. We look at the drivers and interests behind Arctic energy development and discuss the relative importance of economic and political factors.

Expectations and Realities

The interest in Arctic energy resources really took off around 2007–2008. The Arctic caught the imagination of oil companies and politicians, as well as the media. Interest was spurred by the publication of resource estimates indicating a huge potential. Very important in this respect was the appraisal published by the United States Geological

Map 1. Resource Basins in the Arctic Circle Region



Source: Energy Information, U.S. Department of Energy, <https://www.eia.gov/todayinenergy/detail.php?id=4650>

Survey. It reported that the Arctic contained 12.3 percent of the world's undiscovered oil resources and 32.1 percent of its undiscovered gas resources.² Around the same time, the melting of sea ice was becoming evident. First reported in the 2004 Arctic Climate Impact Assessment (ACIA), three years later, data revealed, the Arctic suffered record ice loss.³ One implication of the smaller and thinner ice sheet was that there were better conditions for offshore exploration. This was great news for the energy markets, which at that moment feared a looming oil scarcity as the international oil industry appeared to lack access and investment opportunities in traditional producing regions.⁴ As a result, the Arctic now looked set to become very important in global petroleum supplies. Almost all the major international oil companies and many smaller oil firms showed an interest in leases and licenses across the Circumpolar North. Alaska, Canada, Greenland and Norway were at the forefront, but even Russia offered some opportunities.

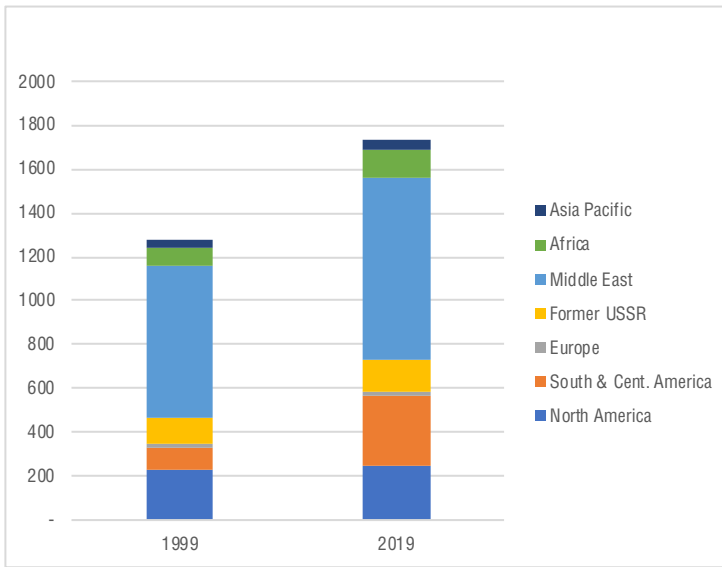
The economic interest in exploiting Arctic resources was coupled with a perception that large parts of the region lay outside national jurisdiction. In the media and several academic publications, the Arctic was portrayed as a 'last frontier'—open for conquering by powerful states in a military battle much like the traditional colonial wars in the scramble for Africa.⁵ The term "resource race" was often invoked. But competitive language also reached high politics. The planting of the Russian flag on the seafloor at the North Pole in 2007, and subsequent bombastic statements by Russian policymakers about the Arctic belonging to Russia met with condemnation from Western countries. In October 2008, the European Parliament stated that it "remains particularly concerned over the ongoing race for natural resources in the Arctic, which may lead to security threats for the EU and overall international instability."⁶ The stakes were clearly ratcheted up.

To this day, the idea of competition among Arctic states for territory and resources remains strong,⁷ and more recent tensions between the United States, Russia and China would seem to support this perception. However, looking more closely at the assumptions behind and predictions of such a resource race in the Arctic and indeed at the role of Arctic energy, we can see that most of those have turned out to be wrong.

First, the resource estimates were misinterpreted. They were estimates of as yet undiscovered and therefore merely potential resources, not of actual reserves. Besides, the estimates did not consider exploration costs, and furthermore they included significant onshore resources, particularly in Russia.

Second, the much-anticipated supply crisis did not materialize. Instead, global exploration over the past twenty years led to new discoveries or re-appraisals of existing hydrocarbon fields. Thus, the world's total supply, based on ample, proven reserves of hydrocarbons, is much improved.

A very important factor is the development of unconventional (shale) oil and gas resources, particularly in the United States since 2008. Indeed, the rapid increase in shale oil and gas production has upended global markets and helped keep prices down. Due to their characteristics, these resources become proven reserves only once they are exploited; and thus they make up a relatively small share of global proven

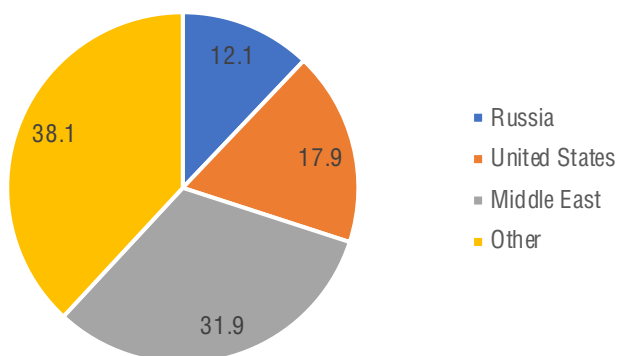
Figure 1. Proved Oil Reserves—billion barrels

Source: *BP Statistical Review of World Energy 2020*.

supplies. But the estimated potential is immense. In 2013 the Energy Information Administration of the U.S. Department of Energy suggested that shale oil probably presented 10 percent of global technically recoverable oil resources and 32 percent of gas. The corresponding figures for the United States alone were 26 percent and 27 percent.⁸

The increase in global undiscovered petroleum resources, including shale, obviously diminishes the relative importance of fossil fuels from the Arctic. And as regards accessible reserves, the fact remains that the Middle East continues to be in the lead, holding some 48.1 percent of the world's proven reserves.⁹ In other words, in the Middle East there are a lot of oil discoveries, which will be cheap to pump. In the Arctic, and especially offshore, the probability of significant resources is high. But first costly exploration is needed to even make the actual discoveries.

Meanwhile, uncertainty is growing about future demand, as climate policies push technological advances away from hydrocarbon use. Prior to the COVID-19 crisis, the International Energy Agency estimated

Figure 2. Global Oil Production 2019 (percent)

Source: *BP Statistical Review of World Energy 2020*.

that global oil demand would level off in the 2030s. Until then China's consumption was expected to keep world consumption growing.¹⁰ With the pandemic, however, global energy demand is expected to fall in the near term.

Third, the risk of conflict due to jurisdictional disputes was widely exaggerated. Existing disputes are either small and irrelevant for petroleum or under control. Nevertheless, tensions emanating from outside the region can have an impact on the conditions for and interest in long term Arctic investment. For example, the Western sanctions regime against Russia since 2014 has specifically targeted Arctic offshore activities.

An obvious insight is that Arctic developments cannot be seen in isolation from major global trends, both on the supply and demand side. There is no doubt that expansion of Arctic petroleum activities looks less urgent today, and that the outlook is bleaker from a commercial point of view—mostly because of developments outside the Arctic. Still, the heavy reliance on the Middle East is still seen as problematic for some countries—though not for the United States, which has become largely self-sufficient, when imports from Canada are included.

An ambition to diversify supplies away from the Middle East could possibly make some consumer countries wanting to pay a premium for

energy from elsewhere. But how much? With low world market prices, the cost challenge in the Arctic is more evident than ever before—with the cutbacks in exploration from 2014 especially hitting Arctic projects.

Whereas reduced significance and attractiveness of Arctic energy resources is true as a general statement, there are diverse dynamics at play in the respective Arctic coastal states, since the region is climatically, socially and politically heterogeneous. There are particular projects or sub-regions where the logic referred to above does not apply, or where it applies with less strength. Some companies may be in a better financial situation than others and less inclined to cuts in exploration. Some may put a premium on acquiring new reserves, even if they are expensive. Some projects may now be too late to stop even if the commercial assumptions have changed. Moreover, the national interests of the Arctic countries differ. Their varying dependence on Arctic resource development is likely to be a determinative factor when it comes to decisions regarding framework conditions and incentives offered to the industry.

Domestic Arctic Oil and Gas Policies

Among Arctic countries with petroleum resources, varying economic and political factors determine the future of oil and gas exploration and production. The economic aspect mainly reflects the *relative* importance of potential Arctic production. In the United States, Arctic oil and gas activities play only a marginal role in the overall economy. In Norway and Russia, however, Arctic resource extraction is considered a necessity to sustain the level of activity in the oil and gas industry.

In the political realm, various systemic factors seem to be highly important. For example, both the United States and Canada are federal states. In the former, the relationship between the State of Alaska and the Federal government directly affects prospects for oil and gas development in the Arctic. Alaskan representatives strongly favor increased oil and gas activity, given the riches that it brings. By contrast, for a long period the federal government prioritized environmental concerns over economic possibilities. Legally, control of onshore resources is divided between the State of Alaska and the federal government (National Petroleum Reserve in Alaska (NPRA) and Arctic National

Wildlife Refuge (ANWR)), whereas the outer continental shelf is under federal jurisdiction. Earlier, disagreement between Washington and Juneau put a brake on petroleum development; and towards the end of the Obama administration a moratorium was imposed on offshore exploration. Under U.S. President Donald Trump, Washington has reverted to favoring petroleum development, seeking to lift the offshore ban and open the ANWR.¹¹ Whereas the legal obstacles to reopen the continental shelf have been more formidable than the Trump administration expected, there is no doubt that the political wind has shifted.¹² Of course, it could shift again.

In Canada things are different. Canada's federal ownership of offshore resources, combined with an ongoing devolution of authority to the territories in the north, has probably acted as a brake on offshore development. But the immediate cause of a moratorium on exploration was the high priority placed on the environment by the federal government.

In Greenland there is significant political momentum behind offshore development because petroleum revenues are seen by many as an economic prerequisite to gain full independence from Denmark. So far, however, exploration results have been disappointing.

Although various Norwegian governments have been careful with regard to the Barents Sea, they have been more enthusiastic about development than regional representatives and groups in the north. Recently, regional backing for petroleum development has increased, as long as it promises tangible local benefits in terms of jobs. Simultaneously, environmentally-based resistance is getting stronger at the national level.¹³

Finally, let's turn to the Arctic's largest littoral state: Russia, whose political system is characterized by high centralization and limited popular participation in decision-making processes. Political developments in Russia therefore are integral for the future trajectory of its Arctic exploration and production. And in this way, Russian internal politics are likely to go far to determine the actual fate of Arctic energy resources.

In 2008 Russia adopted a law that gave two state dominated companies, Rosneft (oil) and Gazprom (natural gas), a *de facto* monopoly over its Arctic offshore ventures, all the while keeping the scope for

foreign participation limited. Both companies have strong links to the state, not least via personal connections. And they are regarded as vital instruments in Russia's pursuit of broader ambitions in the Arctic. In this vein, they receive tax concessions and preferential treatment to incentivize investments and activities in the Arctic. Both companies have failed to deliver expected results, however, which has led to repeated calls for a liberalization of the exploration market, so that other private Russian companies could participate. Prospects here seem limited, since the most promising areas have already been licensed to the two state-dominated giants. In any case, development of oil and gas resources in the Russian Arctic will not be subject to open democratic political processes with participation by affected groups. Decisions will be made almost exclusively based on the priorities of central authorities and the dominant oil firms.

These observations indicate that, with the exception of Russia, there is more potential for political conflict within each Arctic petroleum state than between them. Indeed, it is safe to conclude that Arctic development, particularly offshore, is controversial in several countries and that political uncertainty, which may translate into regulatory risk, must be taken into account by all commercial actors.

Politics and Markets

Framework conditions offered by host governments can definitely hinder development. Conversely, they can only do so much to encourage Arctic petroleum development. For investments to occur, commercial calculations by the companies must show a considerable surplus. The Deepwater Horizon catastrophe in the Gulf of Mexico in 2010 triggered new regulations for U.S. offshore activity, increasing the costs also in the Arctic and highlighting the environmental risks. And even before prices plummeted in 2014, some companies had already had second thoughts about the commercial potential of the Arctic offshore.¹⁴ But the major change took place after 2014. Whereas the lower oil price put pressure on costs, significantly lowering the break-even points in many projects, the general picture today is that many Arctic prospects look uneconomical. This is because the cost of U.S. shale oil production, which is very price sensitive and flexible, is likely to put a ceiling on the oil price. In the longer term, climate-change-motivated

substitution of oil and gas for non-fossil energy sources might do the same. Considering that Arctic projects, especially offshore, have very long lead times—some 15 years to develop and then having to produce for some 20-30 years to recoup investments—they are risky ventures. Who knows what the oil price—and the world—will look like by 2035 or 2050?

Summing up, for good reasons the industry is reluctant to commit to major long-term investments in Arctic energy development, particularly offshore, but also in remotely-located onshore projects. The question is then if there are places where the state is willing to share in the risk and the cost to encourage such huge projects. Norway, for example, has a taxation system which significantly reduces the exploration risk and is intended to encourage investment.¹⁵ Nevertheless, companies cannot be pushed into uneconomical ventures. There is only one country where state policies and state control converge to make large-scale Arctic offshore oil development conceivable under the currently gloomy market outlook: Russia. In this vein, Russia arguably constitutes the most important singular factor when considering Arctic energy production.

Russia

In the 1990s, Russian oil production crept gradually northwards; development of Arctic fields started in the Nenets autonomous district in the northern part of European Russia, west of the Ural Mountains. Production from these fields is transported by pipeline to a sea terminal in the shallow Pechora Sea off the coast at Varandey. In 2009 a major Arctic oil project came on stream: the Vankor project in the northern part of Krasnoyarsk Kray. It lies to the east of the massive gas extraction sites in Yamal-Nenets autonomous district. Vankor's oil goes south via a pipeline connecting the field with the trunk pipeline network, but it is possible that a line northwards will be constructed to send the oil out via the Northern Sea Route, since increasing the use of the route is a high priority for Russian authorities.¹⁶ In the southern part of the Yamal Peninsula, Gazprom's oil subsidiary Gazprom Neft developed the Novy Port oil project, which produces annually some 5.5 million tons. Regular shipments with shuttle tankers from there to Murmansk started in 2016.¹⁷

It is noteworthy that the development of the gas fields in the northwestern corner of Siberia—the Yamal-Nenets autonomous district—goes back all the way to the early 1980s. And to this day, the region continues to supply approximately 90 percent of Russian gas. Most of the output takes place north of the Arctic Circle, but onshore. The biggest producing field, Bovanenkovskoye, operated by Gazprom, can be found on the Yamal peninsula; it has an annual output of some 90 BCM (3.2 trillion cubic feet).

Because of the rich onshore resource base, offshore development was for a long time a marginal activity, despite exploration indicating huge offshore resources. Consequently, so far only one Arctic offshore oil field has been developed: Prirazlomnoye in the Pechora Sea. An important driver for this project was employment of the naval shipyards in Severodvinsk in Arkhangelsk province. In other words, its development was hardly part of license-holder Gazprom's specific ambitions to go offshore.¹⁸ In fact development of the project became a heavy financial burden and the involvement of other partners turned out to be impossible.¹⁹ Production started in 2013; at full capacity in 2023 annual output is expected to reach 5.5 million tons.²⁰

After state-dominated Rosneft had maneuvered itself into a protected and privileged position in the Arctic offshore, it did very little. From a company perspective this was rational, since it had many opportunities onshore to pursue, had little offshore competence, and could save its offshore licenses for later. The government, however, wanted Arctic offshore development for political reasons. In addition, the Russian Ministry of Natural Resources was becoming concerned about the state of onshore resources. There were ample resources, but new discoveries were much smaller than before, often geologically more complicated, and tended to be located far from existing infrastructure. This all amounted to increasing costs. It also reflected a resource picture that did not fit the Russian industry structure, where large vertically integrated companies are totally dominant. Russia may have the world's largest unconventional oil potential, but the conditions and outlook for their exploitation is much poorer than in the United States.²¹

Arctic offshore geological surveys indicated potentially very big fields, which could be exploited with economy of scale by giant diversified Russian oil companies. Why did this not happen? Rosneft itself was

not strongly affected by the emerging problems onshore, but it chose to be inert. And this inertia showed that the authorities—by granting the company a virtual oil monopoly offshore—limited their choice of instruments. Rosneft (and Gazprom for gas) was publicly rebuked for inactivity. Given the dependence on the government, it had to respond. Since it lacked offshore competence, it wisely decided to involve foreign partners. As a result, by January 2011 it entered into a comprehensive deal with BP that included exploration of three offshore blocks in the Kara Sea and a program for general cooperation in the Arctic to jointly develop Arctic resources. However, the deal fell through because of a legal dispute between BP and its existing Russian partner, TNK. After that, Rosneft turned to Exxon Mobil, with whom they already cooperated around Sakhalin island in the Far East. This deal, signed in August 2011 was extended in several steps.²² It first involved the blocs in the Kara Sea; in 2013, bigger areas in the Kara Sea and in the Laptev and East Siberian Sea were added, altogether covering some 760,000 square kilometers.²³

In parallel Rosneft signed agreements with Italy's Eni and Norway's Statoil that covered the Russian part of the formerly disputed area with Norway in the Barents Sea, where the boundary had been drawn in 2010.²⁴ The foreign companies were given a minority (33 percent) share in joint ventures set up to develop the licenses. They were required to cover almost all the initial exploration costs, amounting to billions of dollars. For Rosneft, this looked like a very good arrangement, because it shifted the risky part of the venture to its foreign partners and avoided large up-front expenditures. The eagerness of the foreign companies, in turn, reflected the prevailing optimism of continued high oil prices and a determination to become part of the expected Russian offshore oil bonanza.

Concrete activities started with seismic surveys in the Kara Sea carried out in 2012–13, and ExxonMobil, on behalf of the joint venture with Rosneft, undertook first exploratory drilling in August–September 2014 at the Universitetskaya structure, 250 km from the coastline, with the whole operation costing some \$700 million.²⁵ Rosneft announced that it had been successful and that a sizeable discovery of both oil and gas had been made.²⁶

But the project came to an abrupt halt. Because of the sanctions imposed on Russia following its annexation of Crimea and unrest in Ukraine in 2014, by September of the same year ExxonMobil was required to abandon the drilling campaign in the Kara Sea before the scheduled end of season.²⁷ Equally, the cooperation with Statoil and Eni, which had not yet properly started in situ, was more or less frozen.

The ambitious Russian Arctic offshore strategy stalled, and in the process its dependence on Western oil companies was exposed. The fall in the oil price, which came soon after the sanctions regime, also changed the perceptions of the longer-term outlook in many international oil companies. In 2018 ExxonMobil decided to pull out of its alliance with Rosneft, citing expanded sanctions against Russia.²⁸ It is reasonable to think that a negative assessment of the long-term outlook also played an important role. The high costs of developing deep offshore in the Arctic could not be justified by the expected lower market price for oil. In addition, the political risk for foreign companies in Russia will not go away even if sanctions are lifted. In the meantime, Rosneft has been able to continue seismic surveying, and some projects close to shore look realizable. The company officially maintains its belief in the future of Arctic offshore development.

Russia's Arctic offshore gas activities already stopped in 2012 when the partners in the giant Shtokman field in the Barents Sea (Gazprom, Statoil and the French company Total) decided to effectively abandon the project. Only five years earlier this project had been regarded as the first step in a series of gas developments, making Arctic offshore gas a key supply source. The two Western companies had been willing to accept less attractive conditions as they had hoped to get ahead in what had been deemed a new era of gas development. The main explanation for the demise of Shtokman—and further Arctic offshore gas projects—was soaring American shale gas production, which turned gas markets upside down and threatened (from the Russian perspective) to keep gas prices low for the foreseeable future.²⁹

Nevertheless, very significant new onshore gas developments have been taking place in the Russian Arctic. The logistical solution to get this gas to market, however, remains connected to the Northern coast and seas.

LNG from the Arctic

The Yamal LNG project is located half way up the eastern shores of the Yamal Peninsula within the Arctic Circle, with the shipping lane along the peninsula frozen for many months of the year and with the extreme cold and barren conditions on land increasing the cost of the large amount of new infrastructure that is required in this remote region. The project was developed by Novatek, a private company with very good contacts to the Kremlin through one of its principal owners, Gennady Timchenko, a close friend of Putin. Total, with long experience from LNG projects worldwide, as early as 2011 bought itself in with a 20 percent stake in the project, offering crucial knowhow for the development of the technical concept.

China National Petroleum Corporation (CNPC) acquired 20 percent in 2013—before the Ukrainian crisis and Western sanctions. This meant that the project would have access to the fastest growing gas market in the world and it was also an important geopolitical sign of Russia's diversification of its markets. The Russians were very keen to get CNPC involved and offered long-term tax concessions. Moscow was also ready to fund the construction of port facilities in Sabetta.³⁰ The strong Russian government support coupled with the technical competence of Total made investment in the project lucrative and low risk for the Chinese company. Indeed, the risk for CNPC was minimal compared to the conditions offered to western companies in the earlier offshore ventures.

In September 2015, a Chinese state investment fund bought a further 9.9 percent. At that point East-West tensions and sanctions had made the project vulnerable, because Novatek was included in the list of companies sanctioned by the United States.³¹ Consequently, Russia tightened relations with China and the Yamal LNG project's development was secured by further Chinese financing arrangements. Chinese supplies and equipment also became important for completion of the project. Whereas initially it was Russia that had been eager to bring in a Chinese company, the project gradually became, in fact, a cornerstone in China's political aspirations in the Arctic. Apart from offering diversification of supplies, the evolution of this project shows that China has become both a relevant and sometimes necessary partner in Arctic development.

Significantly, the Yamal LNG project was successfully completed—on budget (\$27 billion) and on time (in December 2017), and the first shipments of gas began soon thereafter. Thus, Yamal LNG has provided tangible evidence that large-scale energy projects in the Russian Arctic can be carried out successfully. In 2019 the project produced 18.4 million tons—exceeding the plant’s original design capacity by 11 percent.

This success story has naturally attracted foreign and domestic attention. And in this vein, Russian President Putin has provided significant support for Novatek’s wider ambitions: to expand further towards the Gydan Peninsula (on the opposite side of the Ob/Taz Bay from the Yamal Peninsula), where the company owns more licenses. The first of these projects—Arctic LNG 2—has been given the same tax status as Yamal LNG. This new project is set to be developed with Total, two Chinese companies and a Japanese consortium as minority partners. The kick-off of Arctic LNG 2 by the fourth quarter of 2023 looks realistic. Moreover, the company has announced its longer-term aim to increase its output capacities from the region to 70 million tons by 2030. This expansion drive is underpinned by the resource base in the region, and although market conditions (in other words the demand for LNG) will be a key factor, it is absolutely possible that the output goal for 2030 can be reached. This would make the Russian Arctic one of the major LNG producing centers in the world, catapulting it into the same league with the world’s leading LNG exporters, Qatar, Australia, and the United States.

Production costs at Russia’s Arctic LNG projects are very moderate; low temperatures help the liquefaction process. Transportation expenditures, in contrast, are substantial. State financing of new nuclear icebreakers is a prerequisite for the projects. Reinvigorating the Northern Sea Route (NSR) under Russian control has in itself become a central goal for the Russian government. Indeed, it is seen as key for manifestation of Russian interests in the Arctic, but also as a necessity to exploit natural resources in Russia’s Arctic Zone. And here, LNG development is both a beneficiary of the political prioritization and a contributor to financing development of the sea route by paying some of the costs for icebreaking.

LNG from Yamal is primarily destined for Asian markets. The business plan was from the outset to send custom built ice-breaking LNG carriers westwards to Europe for reloading into conventional carriers in the ‘winter season’ (December to June) and eastwards to the Pacific in the ‘summer season’ (July to November), when the sea-ice cover is thin. Recently, however, a new logistical scheme has been launched by Novatek, with large volumes of LNG being sent East to Asian markets year-round—via a trans-shipment facility to be built on the southeastern coast of the Kamchatka Peninsula in Bechevinskaya Bay.³² This will require construction of additional nuclear icebreakers, and the government has already committed to heavy investments.

Export of LNG is not an independent factor driving demand for icebreaker services. Icebreaking supply and demand are interdependent. Increasing political interest in new icebreakers combined with support to the ailing Russian ship-building industry translate into direct and indirect subsidies. For a commercial company like Novatek, this makes the eastern route more attractive than if it had to bear the full cost itself. Its plans to send LNG eastwards, in turn, reinforced the government’s argument for new icebreakers. However, one implication of this interrelationship is that the business plan will be in jeopardy if state finances deteriorate to a level where the icebreaker program has to be postponed. Likewise, if the demand for Russian LNG drops to less than expected, or if the price in Europe is better than in Asia, Novatek’s need for icebreaking assistance rapidly declines, undermining the financing of the government’s icebreaker program.

The official goal is to transport 80 million tons of cargo along the Northern Sea Route by 2024 (it was about 30 million tons in 2019). This figure, proclaimed by Putin in 2018, is taken very seriously by Russian officials. Most of the cargo will be LNG, but Russian development plans in the Arctic also include other fossil fuels and minerals: oil, coal and various metals. Oil companies that depend on Arctic navigation include Gazprom Neft, which sends some 8.5 million tons from its Novy Port field to Murmansk annually with its own fleet of six ice-breaking shuttle tankers.³³ Another one, Neftegazholding, has significant assets on the Taymyr peninsula and a project is underway planned to reach an output level of 26 million tons. Extensions may increase output to 50 million tons.³⁴ To reach such levels, enormous investments are needed. The institutional weight would increase considerably with the realiza-

tion of an “Arctic cluster” through a joint venture with Rosneft—Vostok Oil.³⁵ Other companies, Lukoil and Gazprom Neft, are also contemplating new projects in the region with maritime logistics, making them potential stakeholders in the Northern Sea Route.

However, apart from the Novy Port oil project on Yamal peninsula, and shipments of metals from Norilsk, these projects are uncertain or only in a planning phase. Question marks remain about the future production of some 20-30 million tons in order to reach Putin’s target.

How Realistic are Russian Ambitions?

There are obvious similarities with former Soviet (even Stalinist) policy to develop remote areas of the country for political reasons. The centrally planned economy of the USSR had a huge potential to transfer and concentrate resources in areas with high political priority, notwithstanding market considerations. The costs were high, but not transparent.³⁶

Pursuing similar policies today is harder, as the economy is more transparent—though definitely not fully transparent. Since the Russian economy has stagnated, particularly after 2014, critics have pointed out that the policy is costly and that the Russian state economy has its limitations. For long this did not have much effect on Arctic ambitions. With the impact of the COVID-19 pandemic further complicating Russia’s economic outlook, however, it is likely that some Arctic plans will have to be revisited.

LNG has become the centerpiece of Russia’s Arctic development in recent years. The results of the LNG offensive spearheaded by Novatek are so far impressive. The development is, however, not entirely uncontroversial inside Russia, since LNG exports have been shown to compete with traditional Russian pipeline gas in some markets, something that has produced negative reactions from Gazprom, the monopolist pipeline gas exporter. But Novatek has strong support from the political leadership, which has concluded that Russia can and should become a major player in LNG trade, one of the most dynamic sectors in international energy markets. The envisaged LNG development would make the Arctic an important supply source for energy, not only

in volume terms but also because of the potential for arbitration between Atlantic and Pacific markets.

LNG also offers a flexibility which pipeline exports lack and it is much less prone to politicization since the relationship between producer and consumer usually is indirect, via trading companies.³⁷ Nevertheless, there is a geopolitical element, too. With U.S LNG exports soaring, America is challenging Russia in its traditional European markets, as well as in the new markets in Asia.

The Russian government's priority of the Arctic and its willingness to subsidize development must be understood beyond the narrow context of energy policy, and even economic policies. In the words of Marlene Laruelle: "Since the mid-2000s, the Arctic region has been transformed into a flagship demonstration of Russia's statehood."³⁸ National interests and security are often invoked as arguments for government support to resource development projects. And in the case of Russia, what is at stake is global status.

Development of Russia's Arctic Zone clearly is a key political ambition for the Kremlin, and given the centralized system, the government can support developments, also with economic means and concessions in a direction it wants. But it cannot totally disregard economic factors. As has been shown before, some ambitions had to be totally scrapped (Arctic offshore gas), some have become highly uncertain and will be scaled down radically (Arctic offshore oil), and some are pending and dependent on special concessions (several Arctic onshore oil and other mineral projects). Among new projects, only LNG seems to be a clear and truly viable commercial proposition. But even those projects need favorable exogenous and endogenous conditions.

Energy From the Arctic: Looking Ahead

Predictions of Arctic energy from just a few years back turned out to be wrong. Today's assessments point in a different direction, with a modest role for the Arctic in energy affairs. But could we be wrong again?

The basic tenet of this chapter is that economic factors will strongly limit the attractiveness of Arctic energy resources, as the balance

between supply and demand for energy is likely to hold prices for oil and gas below a level needed to make most large-scale Arctic offshore projects profitable. Still, and this must be repeated, significant energy flows will come from the Arctic to world markets in the years to come. And in this regard Russia's Arctic LNG development is the most dynamic element. What's more, there are also substantial onshore oil and pipeline gas projects operating in the Russian Arctic that will remain operational, and indeed will be expanded, in the coming years. In Alaska, too, although onshore production keeps on falling to a low level, this could resume, if—as the Trump administration wanted—resources in the Arctic National Wildlife Refuge are developed. The Norwegian Arctic shelf is the most developed shelf in the Arctic, and is set to produce oil and gas for decades even if only the four projects already in production or decided are implemented.

The large concentrations of Arctic offshore oil are expected north of Alaska and in the Russian Kara Sea. Potential production from these areas formed the basis for predictions of that Arctic's major role in global supplies. Yet, as laid out, the above development has become doubtful because of the presently low oil price and uncertainties over future prices. Whereas the global supply potential and the global demand outlook today seem to point us to a negative evaluation of the prospect for these resources, this could change if supply from important other sources is severely constrained. One scenario would be that upheaval in the Middle East curtails supplies from that region for the longer term. In that case, the oil price would go up and could make expensive Arctic projects more relevant. In Russia the official expectation, as expressed in the Energy Strategy document adopted in June 2020, is that the oil price soon will be on the rise again, because of insufficient exploration and investment in new production capacity globally.³⁹ And this, Moscow believes, will make costly offshore projects profitable.

The other major argument put forth here is that development of Russia's Arctic resources has a strong political element. This means that projects can be realized, irrespective of their unprofitability on a pure market basis with normal taxation rules, because they are in effect pursued by state development policy, if not to say financed by outright subsidy. The ability of Russia to conduct such policies depends on the strength of its economy. But, and here is the bind, since oil and gas form the backbone of the economy, there are limits to how much

support the hydrocarbon sector can be given. An ominous parallel is the crisis in Soviet oil production in the 1980s. Then resources were transferred from other sectors to prop up output. When it comes to big offshore projects today the constraint for Russia is not only framework conditions, it is experience and know-how.

A more recent factor in the assessment of future Arctic energy development is China. With a still rapidly growing, energy-thirsty economy, the country is obviously interested in security of supply not only in the present (which is quite good), but also in the longer term. Without resource rights in the Arctic offshore, China must pursue its interests through Arctic coastal states, in practice Russia.

China has become an indispensable partner in Russia's LNG development. After 2014 there were widespread expectations in Russia that Chinese investment would flow in and get other projects going, also offshore. In this respect Beijing has disappointed the Russians. The reason is that even if Chinese oil companies ultimately are state-owned, they calculate their investments very much the same way as Western companies, and often find conditions in Russia unattractive and the risk too high. Chinese companies have become involved in some exploration efforts with Russian partners, but for larger offshore projects they would have liked to cooperate with big Western oil companies—an option currently unavailable due to the post-2014 sanctions regime. Chinese and Russian companies still lack the competence to do it alone. And both recognize the huge setback that a major oil spill in a joint-venture project would entail.

Under present market conditions, initiating projects in the deep Arctic offshore does not make much sense in any case. But should conditions change and make the Arctic seas attractive, it is conceivable that Chinese companies quite soon will master the challenges and become major partners and investors for Russia in off-shore exploration and extraction.

The relationship between China and Russia is, nevertheless, rather delicate. The broader issue of the balance between the two countries and its effects on world order looms in the background. In the words of a Russian observer:

The development of the Arctic places the task before Russia to preserve this region as a national resource base and transport artery, therefore Russian long-term relations with China regarding economic development of the Arctic should be built with consideration of national interests, on a compromise between cooperation and competition. The search for a rational balance in this question is an important task for Russia in the 21st century, which still has to be solved.⁴⁰

So while Russia is keen on Chinese monies, technological know-how and markets, in the Arctic strategically Russia intends to stay top dog.

Energy production without a doubt will continue to be an important activity in the Arctic even if it is unlikely to ever play a key role in global energy supply. The direct consequences of future energy extraction and transportation—good or bad, local and regional—will be determined not only by the scope of activities but also very much by the specific conditions and regulations in the respective production areas. These must be analyzed and assessed individually.

Notes

1. The paper includes elements from D.H. Claes and A. Moe, “Arctic Off-shore Petroleum: Resources and Political Fundamentals” and D.H. Claes, A. Moe and S. Rottem, “Arctic Hydrocarbon Development: State Interests and Policies,” in Svein Vigeland Rottem and Ida Folkestad Soltvedt, eds., *Arctic Governance: Energy, Living Marine Resources and Shipping* (London: I.B. Tauris, 2018); J. Henderson and A. Moe, *The Globalization of Russian Gas - Political and Commercial Catalysts* (Cheltenham UK: Edward Elgar, 2019).

2. “Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle,” USGS Fact Sheet 2008–3049 (Washington DC: United States Geological Survey, 2008), <http://pubs.usgs.gov/fs/2008/3049/fs2008-3049.pdf>.

3. “Record Arctic Sea Ice Loss in 2007,” NASA Earth Observatory, <https://earthobservatory.nasa.gov/images/8074/record-arctic-sea-ice-loss-in-2007>.

4. See e.g. “The End of Oil is Closer Than You Think,” *The Guardian*, April 21, 2005.

5. A much-cited account is given in Scott G. Borgerson, “The Arctic Melt-down: The Economic and Security Implications of Global Warming,” *Foreign Affairs* 87, 2 (2008), pp. 63–77.

6. European Parliament, “Resolution of 9 October 2008 on Arctic Governance,” *P6_TA(2008)0474*, <https://www.europarl.europa.eu/sides/getDoc.do?type=TA&reference=P6-TA-2008-0474&language=EN>.

7. Agnia Grigas, *The New Geopolitics of Natural Gas* (Harvard University Press, 2017) p. 134.

8. “Shale Oil and Shale Gas Resources are Globally Abundant,” U.S. Energy Information Administration, January 2, 2014, <https://www.eia.gov/today-in-energy/detail.php?id=14431>.

9. *BP Statistical Review of World Energy 2020*.

10. “Global Oil Demand to hit a Plateau Around 2030 IEA Predicts,” *Bloomberg*, November 13, 2019, <https://www.bloomberg.com/news/articles/2019-11-13/global-oil-demand-to-hit-a-plateau-around-2030-iea-predicts>.

11. “Analysis of Projected Crude Oil Production in the Arctic National Wildlife Refuge,” Energy Information Administration, U.S. Department of Energy, 2018, <https://www.eia.gov/outlooks/aeo/pdf/ANWR.pdf>.

12. “Judges Weigh Trump’s Bid to Reopen Parts of Arctic to Drilling,” *Bloomberg Law*, June 6, 2020, <https://news.bloomberglaw.com/enviro>

ment-and-energy/judges-weigh-trumps-bid-to-reopen-parts-of-arctic-to-drilling.

13. Guri Bang & Bård Lahn, "From Oil as Welfare to Oil as Risk? Norwegian Petroleum Resource Governance and Climate Policy," *Climate Policy*, 2019. DOI: 10.1080/14693062.2019.1692774.

14. "Total Warns against Oil Drilling in Arctic", *Financial Times*, September 25, 2012, <https://www.ft.com/content/350be724-070a-11e2-92ef-00144feabdc0>.

15. Daria Shapovalova & Kathrin Stephen, "No Race for the Arctic? Examination of Interconnections Between Legal Regimes for Offshore Petroleum Licensing and Level of Industry Activity," *Energy Policy* 129 (June 2019), pp. 907-17, <https://doi.org/10.1016/j.enpol.2019.01.045>.

16. "State Oil Company Might Redirect Millions of Tons to Arctic Coast", *Barents Observer*, February 28, 2019, <https://thebarentsobserver.com/en/arctic-industry-and-energy/2019/02/state-oil-company-might-redirect-millions-tons-arctic-coast>.

17. "The Novy Port Project," Gazprom Neft, n.d. <https://www.gazprom-neft.com/company/major-projects/new-port/index.php>.

18. Arild Moe and Anne-Kristin Jørgensen, "Offshore Mineral Development in the Russian Barents Sea", *Post-Soviet Geography and Economics* 41, 2 (2000), pp. 98-133.

19. Arild Moe, "Russian and Norwegian Petroleum Strategies in the Barents Sea," *Arctic Review on Law and Politics* 1, 2 (2010), pp. 225-248.

20. "Prirazlomnoye," Gazprom n.d. <https://www.gazprom.ru/projects/prirazlomnoye/>.

21. Valeriy Kryukov and Arild Moe, "Does Russian Unconventional Oil have a Future?" *Energy Policy* 119 (August 2018), pp. 41-50, <https://doi.org/10.1016/j.enpol.2018.04.021>.

22. Indra Overland, Jacob M. Godzimirski, Lars Petter Lunden and Daniel Fjærtoft, "Rosneft's Offshore Partnerships: The Re-opening of the Russian Petroleum Frontier?" *Polar Record*, 48, 3 (2012), pp. 140-153.

23. "Rosneft and ExxonMobil Advance Strategic Cooperation," Press release from ExxonMobil, June 21, 2013.

24. Arild Moe, Daniel Fjærtoft and Indra Overland, "Space and Timing: 'Why was the Barents Sea Delimitation Dispute Resolved in 2010?'" *Polar Geography* 34, 3 (2011), pp. 145-62.

25. “Exxon Halts Arctic Oil Well Drilling on Sanctions—Bloomberg”, *Reuters*, Sept. 19, 2014, <https://www.reuters.com/article/exxon-mobil-arctic/exxon-halts-arctic-oil-well-drilling-on-sanctions-bloomberg-idUSL3N0RJ-6DV20140918> (accessed November 1, 2017).

26. “Rosneft Discovered a New Hydrocarbon Field in the Kara Sea”, Press release from Rosneft, September 27, 2014, <https://www.rosneft.com/press/releases/item/153736/>.

27. “ExxonMobil Statement on Treasury Department Sanctions on Russia,” Press release from ExxonMobil, September 19, 2014.

28. “ExxonMobil Pulling Out of Arctic Projects with Rosneft,” *Oil & Gas Journal*, March 1, 2018.

29. James Henderson and Arild Moe, “Gazprom’s LNG Offensive: A Demonstration of Monopoly Strength or Impetus for Russian Gas Sector Reform?” *Post-Communist Economies* 28, 3 (2016), pp. 281-299.

30. Lunden, Lars Petter, and Daniel Fjaertoft, *Government Support to Upstream Oil & Gas in Russia: How Subsidies Influence the Yamal LNG and Prirazlomnoe Projects* (Geneva: International Institute for Sustainable Development, 2014), <https://www.iisd.org/library/government-support-upstream-oil-gas-russia-how-subsidies-influence-yamal-lng-and>.

31. See U.S. Department of the Treasury website: <http://www.treasury.gov/resource-center/sanctions/OFAC-Enforcement/Pages/20140716.aspx>.

32. “Glavosexpertiza completes review of Kamchatka LNG transshipment facility,” *LNG World News*, February 10, 2020, <https://www.offshore-energy.biz/glavosexpertiza-completes-review-of-kamchatka-lng-transshipment-facility/>.

33. “The Novy Port Project,” *Gazprom Neft* n.d. <https://www.gazprom-neft.com/company/major-projects/new-port/>.

34. “Нефтегазхолдинг приступил к промышленному освоению Пайяхского месторождения,” [Neftegazholding proceeded with industrial development of the Payyakhskoe field] *Neftegaz.RU*, June 14, 2019. <https://neftegaz.ru/news/drill/454079-neftegazholding-pristupil-k-promyshlennomu-osvoenie-payyakhskogo-mestorozhdeniya/>.

35. “Арктический кластер Таймыра.” [Tajmyr’s Arctic cluster] *Geoenergetika.ru*, Aug. 2, 2019, <http://geoenergetics.ru/2019/08/02/arkticheskij-klaster-tajmyra/>.

36. These policies and the repercussions in today’s Russia are analyzed in Clifford Gaddy and Fiona Hill, *The Siberian Curse* (Washington DC: Brookings Institution Press, 2003).

37. The role of LNG in Russia's gas policy is analysed in J. Henderson and A. Moe, *The Globalization of Russian Gas - Political and Commercial Catalysts* (Cheltenham UK: Edward Elgar, 2019).

38. Marlene Laruelle, *Russian Nationalism - Imaginaries, Doctrines, and Political Battlefields* (Oxon UK: Routledge, 2019), p. 47.

39. «Энергетическая стратегия Российской Федерации на период до 2035 года» [Energy strategy of the Russian Federation for the period until 2035], Adopted by the Government of the Russian Federation, June 9, 2020. <https://minenergo.gov.ru/node/18038>.

40. Sergey Leonov, “Активизация политики Китая в Арктике: предпосылки, проблемы, перспективы” [Activation of China's policy in the Arctic: Background, problems, prospects]. *Regionalistika* 6, 5 (2019).