1. Introduction

In 2018, Russia's production of natural gas reached its highest ever level, 725 billion cubic metres, while its exports also reached a new record as Russian gas accounted for around 36 per cent of consumption in the EU. In addition, Russian LNG (liquefied natural gas) became a significant global force, with all this growth grounded in an indisputably vast resource base that can provide a foundation for further expansion.

Both the scale and the trends are impressive. However, despite this positive picture there are uncertainties about further developments as economic and political conditions are changing – internationally, but also within Russia. The purpose of this book is to analyse how the Russian gas sector has reacted to, and been involved in, these changes and to discuss the implications for Russia's role as a global supplier of gas in the future. Is there evidence to suggest that Gazprom and Russia have been able to adapt to changing circumstances and what does this suggest for the future of Russian gas exports? Is the expansion likely to be maintained? Will Russia continue to prioritize the European market, or will it set new global objectives? Might the changing international environment catalyse institutional change inside Russia? If so, what may be the key domestic drivers – company dynamics or policy development?

The world's energy economy is undergoing fundamental change. Gas trade is increasingly globalized, with interconnections between hitherto disparate markets. Asian markets used to be separate from Europe, with a substantial price difference. Now there are spillovers from one to the other as the rapid growth in sales of liquefied natural gas worldwide has made it possible to redirect cargoes on short notice to go wherever the price is higher. The shale gas revolution, which has rapidly turned the United States into the world's largest gas producer, has had a knock-on effect on prices and trading patterns globally. In Europe, terms of gas sales are shifting from long-term contracts with prices pegged to oil, to short-term and spot sales without any oil link. All this is clearly a significant challenge to Russia as its historical modus operandi has become increasingly out of date. Furthermore, regulatory developments in Europe have contradicted Russia's expressed goal of integrating its business downstream and accessing final consumers. Even more fundamentally, in many countries policies for decarbonization are creating uncertainty about the role of natural gas in the energy balance over the long term. As a result of all these issues, gas producers like Russia have been left in a more precarious position and it has become a consumer's market.

The Russian gas industry is a vast structure and can be studied from many angles – economic, political, technical, historical and cultural. Even our narrower focus on corporate and state policies and conditions for change can be analysed from several perspectives, as reflected in titles published over recent years. Hedlund (2014) underscores the importance of historical legacies and institutional inertia as constraints to change. This history includes not only the long Soviet period when the foundations of the industry were established, but also the chaotic 1990s when key players learnt significant lessons, not least about the merits of a market economy. On this basis Hedlund puts forward his main argument that major liberalization attempts have only 'represented a temporary interlude in a long-term tradition of state control over resources, and of economic policy that rests on resource extraction as a means to support the country's capacity for military defence'. Kryukov and Moe (2013) draw attention to the limitations set by the gas industry's infrastructure as well as its institutional structure on the potential to design reform based on market economies. Loe (2019) puts the spotlight on the internal motivations in Gazprom and holds that reluctance to change is also related to internal norms developed over many decades, more specifically that its role as social guarantor permeates its understanding of the domestic market. Gaddy and Ickes (2013, 2015) place the oil and gas industry and especially Gazprom at the centre of a vast rent management system characteristic of Russia in the first decades of this century. Resource rents are transferred from the gas industry to other sectors, industries and individuals not only by way of low prices but also through overpricing of inputs as well as non-transparent business relations. Whereas their concern is the entire Russian economy, their analysis has important implications for the gas sector itself, showing how non-gas actors have a fundamental interest in upholding the current institutions of the gas industry.

Many of the studies that analyse Russian gas exports highlight political motivations as a key issue, contending that gas exports can be regarded as a political tool for the Russian government. Indeed, Russian leaders helped to emphasize this view when they embraced the label of Energy Superpower for their country, and there can be no doubt that gas exports have played a key role in Vladimir Putin's vision of Russia reasserting itself on the international scene. Russia's leading politicians take an important role in gas negotiations, underlining their strategic significance. Hill and Gaddy (2015) underline the very close relations between Putin and

Gazprom. Högselius (2013) also highlights the implications for international politics, explaining how Europe has become dependent on Russian gas. He asserts, however, that the role of Soviet and Russian gas as an energy weapon has been exaggerated, and that the Soviet motivation was primarily hard currency earnings plus a decision by the gas ministry to use exports to expand the domestic gas sector.

Our vantage point differs from most of these studies, since we look at Russian gas primarily from an energy-economy angle. This means simply that, as a starting point, we look at the gas industry as a provider of energy, and at gas policies as a means to regulate the gas sector. We ask whether the industry can fulfil its role adequately, and question what influence state policies will have. Nevertheless, to fully understand and explain developments in the Russian gas sector, the broader insights from all the studies mentioned above, and others, are important.

In particular, the volume edited by Henderson and Pirani (2014), which was completed just as the crisis in Ukraine broke out in 2014, is the most comprehensive analysis of the Russian gas sector published in English. It examines in detail the supply and demand for Russian gas, the relations to former Soviet republics and the significance of exports to Europe, and it remains a point of reference. The present book picks up the story after 2014, when political and economic circumstances in Europe changed and developments in global markets provided a new context for Russian gas, although we do include references to earlier events when necessary to explain developments. Our aim is to highlight key issues, providing sufficient empirical data without overwhelming the reader with excessive detail.

OVERVIEW OF THE BOOK STRUCTURE

The Russian gas industry has its origin in the Soviet centrally planned economy. More than other industries – like oil – the structure of the gas industry, as a monopoly with strong central control, has been kept largely intact, even if the formal organization at the heart of it has been changed from ministry to company. This inertia has been linked to the technical configuration of the industry, a tightly integrated system of production from giant gas fields and a trunk pipeline system for long-distance transmission, which did not easily lend itself to break-up and competition.

In Chapter 2 we set the domestic context for our later discussion of the global impact of Russian gas, underlining the fact that in the first two decades of the post-Soviet era the Russian gas industry was totally dominated by Gazprom, which had inherited all the physical assets of the Soviet gas industry. Even as it was organized as a joint stock company its commercial freedom was circumscribed. It was forced to undertake the functions of a public agency and was obliged to supply the population at all times and at regulated prices well below cost. To sustain this arrangement the company needed income from exports and was therefore granted a monopoly for gas sales overseas and the right to control a large share of the export revenues.

Since domestic sales were commercially unattractive, Gazprom welcomed the appearance of other companies who wanted to sell associated gas from oil production or from smaller fields, and who found this commercially interesting despite the low, regulated sales price to consumers. However, the arrival of third parties has caused a significant shift in the balance of the Russian gas industry, which is no longer synonymous with Gazprom. By 2018 the 'independent' gas producers accounted for around 32 per cent of Russian gas production overall and covered 42 per cent of deliveries to domestic consumers.

Whereas the early relationship between Gazprom and the other gas producers was harmonious, the main 'independents' Novatek and Rosneft, which like Gazprom have strong links to the Kremlin, have now mounted a serious challenge to Gazprom's dominance in the Russian gas sector, including both domestic supplies and access to exports. Further developments will depend on the resources, strategies and interests of the major companies, with high-profile leaders like Igor Sechin, Leonid Mikhelson and Alexey Miller playing an important role, but will also be greatly influenced by government policy. However, the government is facing multiple dilemmas as it not only wants to secure stable deliveries to Russian consumers, including to disadvantaged regions and consumer groups, but at the same time is also concerned about the efficiency of gas production and the challenge of encouraging investment in pipelines and new gas fields, while also wanting to maximize Russian export revenues. It is not obvious which gas sector structure is optimal to achieve all these objectives, and the solution is further complicated by vested interests and broader political considerations.

In Chapter 3 we address the key issue of the gas price, which has been regulated (for Gazprom) throughout the post-Soviet period but which may become more market-based if third-party actors become more involved in the sector. Indeed, various attempts have been made over the past two decades to establish a more market-related pricing mechanism, and the current effort revolves around the St Petersburg International Mercantile Exchange. This raises two important questions which are posed in Chapter 3: Can a gas exchange become a point of reference for the gas price inside Russia and be a driver for liberalization in the domestic market; and, if successful domestically, will it impact sales of gas to Europe?

International gas markets have themselves undergone radical change over recent years, not least in Europe, creating challenges but also opportunities for Russia thanks to its enormous and relatively low-cost resource base. This is the topic of Chapter 4. The introduction of a single market for energy in Europe has forced all gas suppliers to adapt their marketing and supply strategies. Gazprom has been the most affected, due to the size of its sales and the geographical spread of its customer base. The EU has been able to use its new regulations, captured mainly in the Third Energy Package, to exert some control over the impact which Gazprom can have in Europe. But how has Russia responded to changes in market conditions and what does this say about Russia's potential impact on the further development of the European gas market?

In recent years the European gas market has also become more politicized, due to general concerns over security of supply and also to a more specific desire by Western countries to support Ukraine in its continuing conflict with Russia. The EU is keen to halt or at least constrain the development of new Russian export pipelines that could substantially increase its export potential and make transit countries such as Poland and Ukraine more vulnerable. Chapter 5 discusses what effect these policies are having on Russian ambitions and how political constraints could affect the position of Russian gas in Europe over the short, medium and long term.

As a response to negative attitudes towards Russian gas in Europe, President Putin has declared that Russia also should look elsewhere for markets. A 'pivot to Asia' has been an often-stated objective, but attempts to negotiate with China in particular were inconclusive for many years. Following the start of the Ukraine crisis in 2014 the negotiations took on new urgency and a very substantial gas contract was signed, including the construction of a pipeline, the Power of Siberia, described in Chapter 6. However, although the relationship between an energy hungry China and an energy rich Russia looks very promising, Russian and Chinese priorities for further pipeline connections are not necessarily aligned. An additional complicating factor on the Russian side is uncertainty over which company should lead a growing partnership with China: Gazprom – the traditional monopoly pipeline gas exporter, Rosneft which has developed strong relations with China and argues for access to the Power of Siberia, or Novatek which has made Chinese companies key partners and customers for its Arctic LNG ventures. The outcome of this dispute could have ramifications for the organization of the whole gas sector in Russia, as the country's success in Asia could be determined by its willingness to adapt the governance structure of its gas industry.

Russia's 'pivot to Asia' is also connected to its move into the LNG business, the theme of Chapter 7. The commercial and political logic for such a move has been strong for some time, as Gazprom was keen to exploit new markets that could not be accessed by its pipes and assert itself as a global gas major with a broad and flexible portfolio of supply options. From a political standpoint, the opportunity to expand geostrategic relations with a broader array of countries based on greater commercial relations was also clear. However, Russia's LNG strategy has taken a surprising turn, with underperformance by Gazprom leading to the emergence of a new LNG champion – Novatek. This has resulted in a risk of conflict between LNG and pipeline exports, with the Russian government continuing to support LNG projects, particularly in the Arctic, but also wary of undermining the status quo too significantly in case short-term export revenues are put at risk. Chapter 7 considers the outlook for Russia as an LNG power, who the key players are likely to be and how a balance can be found with pipeline sales.

In Chapter 8 we conclude with an overview of the key themes in the book. Internationally there are opportunities as well as risks associated with Russia's further development as a global gas player. At the same time it is quite clear that Russian policies in international markets cannot be separated from the organization of the gas sector inside Russia. Gas remains a crucial energy source domestically. Preservation of stability as well as improvement of the efficiency of the domestic sector are of utmost importance. In addition, vested interests and key individuals will have a major influence over decisions concerning the governance of the gas sector in Russia and its interaction with the global market. Managing the contrasting priorities, balancing the varied interests and creating an optimal balance of corporate actors will be significant challenges that will have both a domestic and international impact. In the following chapter, we begin with a discussion of the domestic context in order to lay the foundation for a broader discussion of the globalization of Russian gas.