

The European Gas Markets

Manfred Hafner · Simone Tagliapietra
Editors

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Challenges and Opportunities

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Foreword by Maroš Šefčovič, European Commission's Vice President in charge of the Energy Union

The Role of Gas in the Energy Union

As one of the flagship projects of the European Commission, the Energy Union is doing today what the European Coal and Steel Community (ECSC) did after the Second World War: leading the way and providing the framework for a long-term transformation of Europe for the better. Whereas the ECSC in the spirit of Robert Schuman and Jean Monnet made war between Germany and France materially impossible, Energy Union moves us away from centralised fossil-fuel-based systems towards decentralised, clean power production with consumers at the centre stage. Right from the launch of Energy Union in February 2015, we made it very clear that Europe has chosen its path, its objectives, and its future. And that future is clean. We reiterated this commitment in Paris, and now we are swiftly moving into implementing our vision. The latest major step in making Energy Union a reality was the presentation of the holistic Energy Union Package—Clean energy for all Europeans last December. And we are now making sure that this set of interrelated and mutually reinforcing legislation will be binding before the end of the mandate of this Commission.

In this great adventure, gas plays a crucial role. In the context of Energy Union, gas is not just a fossil fuel among others, notably as a transitional fuel given the intermittent nature of renewables. Gas can contribute to the decarbonisation of Europe and to the emergence of future electricity systems. The gas markets of tomorrow will impact on demand and supply for gas. This in turn effects on how we plan and build our interconnectors. And on how much and from where we'll be importing gas.

Within this overall framework, the EU strategy on liquefied natural gas (LNG) and gas storage adopted in February 2015 aims at improving security of supply and competitiveness through increased diversification, focusing in particular on the most vulnerable regions such south-east Europe, the Baltic region and the Iberian Peninsula.

Gas will continue to play a role in our energy mix during the transition phase to a decarbonised energy system. This strategy has been conceived with the implementation of the Paris Agreement in mind. Of course, we have to ensure secure and affordable gas supply to all EU consumers, in parallel to the transition to a more sustainable energy system. This is particularly important as the EU imports already more than half of the gas it consumes and remains vulnerable to external shocks.

In this context, regional cooperation is important to ensure an adequate and effective development of LNG and storage in Europe. It actively contributes to the completion of the internal gas market and facilitates the identification and development of the infrastructures necessary in terms of security of supply. Our high-level groups are leading the way in promoting such regional cooperation, for instance:

- Under the CESEC high-level group, 15 south-east European countries have committed to eliminate all barriers to full integration of their gas markets.
- The BEMIP group consisting of the Baltic States is already implementing an action plan to fully liberalise their markets.

Further improvements also take place through the regional plans proposed in the revision of the security of gas supply regulation. The regulation also focuses on how to make sure storage facilities can be

seamlessly accessed and used across borders under normal but also under more strained supply situations. Energy security is linked to competitiveness. They interplay and reinforce each other. By making sure that gas supplies come at fair and competitive prices and are readily available, we make sure that gas will play a key role in tomorrow's Energy Union.

Brussels
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Maroš Šefčovič

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Manfred Hafner
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Introduction

Natural gas represents a pivotal element of the European energy architecture. Covering about a quarter of the European total primary energy supply, it indeed represents the second largest fuel in the European energy mix after oil.

The European gas markets are nowadays rapidly changing due to political, commercial and geopolitical evolutions. The still-uncertain role of gas in the European energy mix after the COP-21 Paris Agreement, the evolution of the EU Energy Union, the EU-Russia gas relations after the Ukraine crisis, the new dynamics of global LNG market and the new supply potential for Europe emerging in areas such as the Eastern Mediterranean are just few examples of these ongoing dynamics.

In this shifting context, both new challenges and new opportunities are emerging for Europe. A clear understanding of these new realities is a fundamental prerequisite to ensure the adoption of the right decisions in both European private and public policy circles.

The aim of this book is to explore in detail these new challenges and opportunities for European gas markets, not only with the intention of providing a clear snapshot of the current situation and future outlook,

but also with the intention of presenting policy recommendations to the sector's key stakeholders.

In order to meet this ambition, this book gathers together some of the most prominent gas experts of Europe, coming not only from academia but also from industry and key public institutions. This reflects the idea that only a mix of different backgrounds and perspectives might provide a comprehensive analysis of the various factors—economics, politics and technology—interacting with the sector.

This book develops on 16 chapters, presented hereafter.

Chapter 1 explores the role that gas might play in making the EU decarbonisation path more balanced and secure up to 2030 and beyond. To do so, the chapter looks at the potential role of gas as a substitute for coal in power generation, and at the complementary role of gas as a balancing tool to manage the variability of wind and solar energy.

Chapter 2 analyses a set of new scenarios for energy markets in Europe to evaluate the role of gas across a range of assumptions on climate policy with the aim to identify whether current trend and policies are leading to an economically efficient and, at the same time, climate friendly, energy mix in Europe.

Chapter 3 provides an insight into the future of gas demand in Europe, arguing that even in the context of slow economic growth and decarbonisation of the energy sector, there is a potential for gas in the European energy mix, especially in the 2020s when lots of firm—coal and nuclear—capacity closes down.

Chapter 4 looks at the case of decarbonisation in Germany—Europe's central and largest gas market—to outline that only with a new proactive communication strategy, postulating effective and affordable climate protection through integration of gas and renewables, the gas industry can sustain the future role of gas in the EU decarbonisation path.

Chapter 5 provides an insight into the drivers of gas-fired power generation in the current electricity system of Europe, to explain its potential future role.

Chapter 6 looks at the financial and environmental case for gas as a transport fuel. It considers these advantages in the main transport

sectors of passenger cars, road haulage vehicles and marine shipping and the resulting levels of demand that might emerge.

Chapter 7 analyses the global LNG market outlook and its repercussions for Europe. It explains how Europe plays the role of a shock absorber in global LNG markets, and it argues that there will likely be limits on how much LNG can be absorbed, particularly if large volumes of surplus LNG are stranded at low prices.

Chapter 8 argues that five revolutions are currently reshaping the world's energy balance: US shale gas, US shale oil, renewable energy growth, energy efficiency growth and rapid evolution of energy storage. It then provides an insightful discussion of how these revolutions are also impacting global LNG markets, the way LNG is priced globally and the overall impact of these trends on Europe under both the economic and geopolitical perspectives.

Chapter 9 discusses Russia's gas strategy. It argues that in the recent past, the country has had to weather a perfect storm of economic, market, domestic political and foreign policy-related upheavals. These dramatic changes not only impact the state budget and the country's macroeconomic stability, but also its gas industry. The fundamental shift in all major components of the country's gas balance (stagnant domestic demand and exports, weak production and imports) and their impact on European gas supply are thus analysed in the chapter.

Chapter 10 offers an in-depth analysis of the latest developments of the Groningen gas field production future. The growing concern of north-western European gas importers, combined with the growing pressure of Dutch NGOs and political parties to end the Dutch gas adventure, presents the European gas market with a new security of supply issue in the future. The future of the Dutch gas roundabout is in doubt, while gas producers and society are in full confrontation. The Dutch disease, based on a government budget policy based on hydrocarbon revenues, is now being substituted for green policies on a confrontation course with the economy. On this basis, the chapter argues, a Dutch Disease 2.0 is being born.

Chapter 11 looks at the role of Norway as a gas supplier to Europe. It argues that Norway could well continue to play this role in a reliable manner in the future, but only if the EU will give incentives in the form of market opening, easy and inexpensive access to infrastructure and policy measures that welcome gas in the energy mix.

Chapter 12 analyses the challenges and opportunities related to the development of gas markets in north Africa. From Algeria's increased production and exports after a period of stagnation, to the confirmation of the potential of the Eastern Mediterranean, the chapter reviews the regional gas production and export outlook, also taking into consideration the political and security risks related to it.

Chapter 13 looks at the gas developments in the Levant Basin, outlining the two key challenges for the energy sector in the region: to satisfy increasing internal demand with affordable and reliable supplies, and to create conditions to efficiently export excess resources and to craft a sustainable energy mix. In this context, the chapter argues that strengthening the South–North corridor could contribute to the recovery of the Mediterranean and boost the security and the development of the whole region.

Chapter 14 discusses the evolution of the Southern Gas Corridor (SGC). It starts by detailing the progress achieved to date in implementing the project, and it then continues by discussing the system's ability to attract further potential input from a 'Next Wave' of offshore Azerbaijani gas-fields, Turkmenistan, Iran, northern Iraq, and the Eastern Mediterranean. Finally, the chapter addresses the issue of whether Russia might seek to utilise part of the Corridor to enable it to use its planned Turkish Stream project for at least some deliveries to Italy, and the question of whether unrest within Turkey might pose serious dangers to transit pipelines.

Chapter 15 illustrates the progressive transition in European gas price formation from dominance of oil-related pricing to a situation in 2015 where nearly two-thirds of gas in European wholesale markets was sold at hub prices. It argues that the main gas hubs in Europe are already well integrated, and in general correlation is high and continues to improve.

Chapter 16 examines, from an EU policy perspective, the current position and future prospects of gas in the European energy mix, the evolution of the EU internal gas market and, finally, the key challenges facing gas in the Energy Union—also in the light of the COP-21 Paris Agreement.

The aspiration of this book is to represent a blueprint for both private and public policy makers. However, it also seeks to be a useful guide for everyone interested in better understanding the dynamics of a complex and fascinating world such as one of the European gas markets.

Manfred Hafner
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