



Production of oil and gas from the Norwegian continental shelf (NCS) is expected to rise over the next few years. This increase reflects contributions from discoveries under development as well as output growth from fields already on stream. Production from these sources will begin to decline from the mid-2020s, and resources which have still to be discovered will start making their mark. Several years pass between a discovery and bringing it on stream, so making new and large discoveries quickly is necessary for maintaining production at the same level from the mid-2020s.

The main job of the Norwegian Petroleum Directorate (NPD) is to contribute to securing the greatest possible value for society from oil and gas operations through efficient and prudent resource management, which takes account of health, safety, the environment and other users of the sea. A good factual and knowledge basis is a prerequisite for the government to play a decisive role in resource management.

In this report, the NPD presents an updated overview of the undiscovered petroleum resources on the NCS. It shows that roughly 55 per cent of expected oil and gas resources remain to be produced after more than 50 years of activity, and that just under half of these are still to be discovered.

The NPD's updated estimate for undiscovered resources is 4 000 million standard cubic metres of oil equivalent (scm oe). That represents an increase of almost 40 per cent from the previous figure in 2016. The big growth results from the NPD's mapping of resources northwards in the Barents Sea close to the boundary with the Russian sector. Estimated undiscovered resources in the open part of the Barents Sea, the North Sea and the Norwegian Sea are more or less unchanged. Almost two-thirds of the undiscovered resources lie in the Barents Sea, with the rest shared between the Norwegian and North Seas. The upside potential is greatest in the Barents Sea, where large areas remain to be explored.

These figures reveal that opportunities on the NCS are still substantial and can provide the basis for oil and gas production over many decades. The government provides a steady supply of exploration acreage through regular licensing rounds, contributing to important predictability for the sector. Significant interest

has been shown by the industry in the latest licensing rounds and, after a couple of years with lower exploration drilling, activity has started rising again. This is important for ensuring that the resource potential gets proven and produced.

Discoveries in recent years have been smaller than before. In areas with existing infrastructure, even very small finds can be tied back to existing fields and contribute to substantial value creation. The NPD's analyses show that exploration has been profitable in all parts of the NCS. Continuing to explore actively in both known and less familiar areas will therefore be important. A diverse range of players contributes to this.

Finding oil and gas deposits is becoming increasingly difficult. Technological advances have provided better data and improved tools, contributing to new understanding and making it possible to identify new play and prospect concepts. This trend will continue in coming years. Integration of broad and deep geoscientific expertise and digital technology will probably be the key to identifying new resources in coming years.

This report collates information and presents a number of analyses which will form part of the knowledge base for both government and industry. These analyses are intended to provide the basis for learning and for good exploration decisions, which can help to maintain exploration and the level of production in the future.

Deposits of minerals with rare earth elements are found on the seabed in many parts of the world, and interest in the commercial exploitation of such resources is dawning. On the NCS, seabed minerals are known to exist in the deep parts of the Norwegian Sea. The NPD is due to launch its own investigations in the summer of 2018. This might become a new chapter in the history of Norway's marine resources.

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