BUSINESS OUTLOOK 2020:
Security of Supply
Our vision is to ensure the UK Continental Shelf becomes the most attractive mature oil and gas province in the world with which to do business.

Read all our industry reports at www.oilandgasuk.co.uk/publications
Summary

Oil and gas underpin the UK’s energy system and currently provide more than 75 per cent of our energy needs. Their relative contribution to the mix has increased over the last 20 years, even though energy demand has fallen over the period.

Amongst countless other uses, gas and oil remain crucial in providing electricity, heating our homes, powering our industries, businesses and hospitals and fuelling our transport systems and manufacturing processes. The way in which we use energy is evolving rapidly and it is apparent that the contribution that oil and gas make to our energy mix will remain significant for many years to come, even as we work to decarbonise our output and move to a net-zero future.

The UK oil and gas industry has been at the heart of the economy providing secure and affordable energy for more than 50 years, and, with the right stewardship, will continue to do so for decades to come. It currently supports hundreds of thousands of jobs, contributes billions of pounds to the UK economy and is using its skills and resources to drive the energy transition.

At a time when security of supply is all the more important, this is a contribution that should not be taken for granted. Production from the UKCS provides enough to meet 63 per cent of our oil and gas needs, or the equivalent of 46 per cent of our total energy needs. But the sector is currently facing one of its most difficult periods as it responds to the impact of the Coronavirus whilst seeking to maintain safe operations and provide secure supplies of energy - a challenge compounded by unprecedented challenges in both the oil and gas markets.

It is now more crucial than ever that the UK and Scottish governments continue to work closely with industry to ensure we navigate the current challenges, and are as well placed as possible to meet future demand and accelerate the development of the industrial capability to deliver a net-zero future. Any loss in capabilities across the energy supply chain will impede the UK’s ability to achieve these ambitions in the most efficient and effective way and risk losing the opportunity to be world leaders in net-zero management.

Even in such difficult times there can be a bright future ahead of us, if we take collective action now to seize the opportunities that the energy transition presents. OGUK will be writing further on this in the weeks to come.

Michael Tholen, Sustainability Director, OGUK
The UK’s Energy Landscape

The UK’s energy landscape has evolved significantly over the last two decades, with overall demand falling by 20 per cent whilst gross domestic product (GDP) has more than doubled. Throughout this period, the relative importance of oil and gas in meeting UK energy needs has increased, albeit total demand for oil and gas has fallen by 17 per cent. At the turn of the century, oil products and gas accounted for 74 per cent of the UK’s energy mix (33 per cent oil products and 41 per cent gas); by 2019 this had increased to 76 per cent (36 per cent oil products and 40 per cent gas).

The largest change in the energy mix has been driven by the reduction in the use of coal, with a fall from 16 per cent of energy to just 3 per cent last year, as part of efforts to reduce greenhouse gas (GHG) emissions which have fallen by almost 40 per cent since 2000. This has been offset by a significant increase in renewable energy use, which has increased from only around 1 per cent in 2000 to more than 13 per cent of the UK’s energy mix last year. The importance of the role of gas in providing flexibility within the market has become even greater as the use of coal has declined.

The UK’s energy mix will continue to evolve over time, now driven primarily by the legal requirement to achieve net-zero GHG emissions by 2050. Meeting this target will require fundamental changes across all areas of society, including energy. However, as acknowledged by the Committee on Climate Change (CCC),¹ oil and gas will have an important role in helping meet the UK’s energy needs during the transition to net zero and will continue to be a necessary part of the mix post-2050. At the same time, the way in which oil and gas are produced and used is also evolving rapidly. Roadmap 2035: A Blueprint for Net Zero ² outlines how the UK oil and gas industry can effectively contribute towards achieving net zero whilst continuing to help provide domestic energy security.

² www.roadmap2035.co.uk
Oil and gas are used in a number of ways across the whole of the UK, playing a vital role in producing a vast range of goods and materials, heating homes, generating electricity and fuelling transport.

**Gas**

Gas is the largest contributor to the UK’s electricity generation mix, anchoring the system and accounting for 39 per cent of the UK’s electricity in 2019 – double the level of the second-greatest source, wind (20 per cent). As well as providing the bulk of supply, gas supports the UK system with vital flexibility. This is important in meeting fluctuations in demand over and above the contribution of other sources, including renewables (primarily wind, which is intermittent due to the variability of correct weather conditions) and other non-renewables, such as nuclear.

In addition to meeting electricity needs, gas is crucial in heating homes and buildings across the country, with around 23 million homes (roughly 85 per cent of all households) dependent on gas heating,¹ and is crucial in many industrial and manufacturing processes.

There has been a marked change in demand patterns during the Covid-19 ‘lockdown’ period. Gas demand in the UK is reported to have fallen by 15 per cent as industrial output has been scaled back and electricity demand has decreased by 16 per cent. This period has seen an increase in renewable output (wind and solar) due to the weather conditions which has resulted in lower gas use for electricity. However, this fall is anticipated to be temporary and will return as industrial demand picks up and economic activity recovers over time.

**Oil**

Products derived from oil are used in a range of crucial applications across the UK economy, with the largest proportion being transport fuels (72 per cent). Around 97 per cent of transport fuels are derived from oil, with a lack of widespread and suitable alternatives currently in place. Almost one-fifth of oil consumption is related to non-energy purposes, such as manufacturing feedstock and in industrial processes.

¹ www.nationalgrid.com/heating-our-homes
Domestic Production – A Core Part of the UK’s Energy Security

Domestic oil and gas production in 2019 was enough to meet 63 per cent of UK oil and gas demand (51 per cent of gas demand and 74 per cent of oil products) and the equivalent of 46 per cent of total primary energy demand. These supplies helped provide important energy security (especially with regards to gas supply) as well as a range of wider economic benefits such as employment, taxation and contribution to the balance of payments and gross domestic product. Protecting the industry’s capabilities and ensuring continuity of operations during the unprecedented challenges that are currently being faced is crucial in maintaining these contributions now and securing them for the decades to come.

Gas Supply

In 2019, domestic gas production was enough to meet just over half of UK needs, with the rest met by imports. The largest source of these was Norway (57 per cent of imports and 34 per cent of total demand), with supplies from the Netherlands and Belgium via interconnectors meeting 4 per cent of imports (2 per cent of overall demand). Liquefied natural gas (LNG) shipments rose by more than 150 per cent in 2019, as global gas markets become increasingly interconnected, providing almost a quarter of UK gas demand last year – or 39 per cent of imports. The UK also exported the equivalent of 10 per cent of demand, mainly to the Republic of Ireland and to continental Europe.
Oil Supply
The global nature of the oil market means that the level of international trade of crude is much greater than that seen in the gas market. Although the UK produces more than 1.1 million barrels of oil per day (bpd) – less than 1 per cent of global production – almost 90 per cent of it is exported, with most of the UK’s oil supply being net imported. This also reflects that refineries and manufacturing processes are often tailored for specific crudes. Exports of crude oil form an important part of the UK’s balance of trade, accounting for 5.6 per cent of the total value of UK exports in 2019 at £21 billion; whereas imports of crude oil were the UK’s seventh-largest import cost at £19.4 billion last year (3.9 per cent of total imports), demonstrating the importance of strong domestic production.

In 2018 (latest available data), the largest proportion of UK crude oil imports were from Norway (47 per cent), followed by the US (15 per cent) and Nigeria (12 per cent). Around one-third of exports were to the Netherlands, followed by China (19 per cent) and Germany (12 per cent). Around 45 billion boe have been produced from the UK Continental Shelf (UKCS) over the last 50 years, with estimates from the Oil and Gas Authority (OGA) outlining that a further 10-20 billion boe could still be recovered from the basin.

Producing oil and gas from the UK Continental Shelf is complex and requires input from a vast number of companies across several specialised and highly technical processes, spanning both E&P and supply chain businesses as well as regulatory bodies and governments. An overview of some of the key processes are outlined on the following page.

All of these elements are a crucial part of the natural lifecycle of an oil and gas asset covering exploration and licensing, through to development and production and subsequently decommissioning. It is essential that each aspect is able to function in a sustainable and effective manner to support production from the industry today and to ensure that the capabilities remain in place to continue to provide secure energy for the country in the future. Many of these capabilities will also play an important role in the drive to net zero, making it all the more important that companies and resources remain anchored in the UK to ensure that these opportunities are not lost.

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How the Industry Works

- Business HQ
- Remote operations and support
- Supply chain and logistics
- Onshore terminals
- Fabrication yards

- Logistics and movement of goods/equipment
- Crew transfer (vessels and helicopters)
- Search and Rescue
- Emergency Response and Rescue Vessels (ERRVs)

- Survey vessels
- Seismic, pipeline, environmental surveys

- Tankers
- Floating storage and offload vessels (FSOs)

- Offshore construction and dive support vessels
- ROV and diver operations
- Pipelay vessels
- Well intervention vessels
- Subsea tiebacks, wells and infrastructure

- Platforms
- Rigs (Semi-submersible/Jack-up)
- FPSOs
- Accommodation and services (inc. floatels, cleaning, catering etc.)
- Drilling services
- Production services
- Wells services
- Pipelines
- Decommissioning
- Inspection, maintenance and repair (IMR)
The UK Oil and Gas Industry

The industry directly contributes **more than £15 bn** to UK total GVA*

- *Gross Value Added

**Domestic production** was enough to meet 63% of UK oil and gas demand – providing secure energy.

- 63%

**Gas demand** was 51% of oil demand fields.

- 51%

**Oil demand** was 74% of gas demand fields.

- 74%

Produced from almost 300 fields.

- 300

Around 50,000 people travel offshore each year working on around 150 manned assets. There are also a similar number of unmanned installations.

The industry supports jobs, many of them highly skilled, across the UK, from Shetland to Southampton.

- 30,600 Direct jobs
- 121,000 Indirect jobs
- 117,500 Induced jobs

OGUK’s 2019 Workforce Report showed the oil and gas sector supported almost 270,000 jobs in 2019.

**plus an extensive and capable supply chain**

Servicing the oil and gas industry at home and around the world, as well as supporting other energy industries.

- Exporting goods, services and skills around the world

The oil and gas supply chain spans a broad and diverse footprint of work.

OGUK
The UK’s world-leading supply chain is crucial in helping provide the country with safe and affordable energy today, whilst also supporting the industry around the world through exports of goods and services. It is crucial that supply chain resources remain anchored in the UK to meet future demand from the oil and gas industry, both here and in other basins, and to support the development of net-zero solutions and low-carbon energy sources.

*Hydrogen business models and supply chain requirements still being developed*
Maintaining Energy Security

It is crucial that the UK and Scottish Governments work closely with the industry to ensure that the short-term impact of Covid-19 on industry operations are minimised and that companies are able to withstand current extreme financial pressures and build towards a sustainable future.

The energy sector has been designated as a key sector, meaning that workers classed by companies as critical to operations can continue to travel to work to help sustain operations. It is also important that the industry is able to maintain offshore access for the safe and efficient movement of both workers and materials. This is crucial to continuing to supply energy and OGUK is working closely with member companies, regulators and government to maintain this.

OGUK has welcomed measures implemented by the UK and Scottish Governments to support the economy through the current challenges and is working to ensure that companies within the industry can benefit from this in the immediate period. OGUK is currently gathering feedback from member companies with the aim of developing a ‘sector resilience package’ which, through working with the government, will help support industry in the short term. Maintaining cash flow throughout this period is crucial in ensuring business continuity and companies across the industry are seeing this stretched and in some cases become unsustainable. Any lasting damage to the capabilities of the industry will harm the energy security of the UK now, and in the future, and also makes achieving net zero in the most effective way all the more difficult. The UK would also risk losing out on the international opportunity that arises from becoming a world leader in net-zero capabilities.

Looking longer term, as the industry and economy recover from the disruption caused by Coronavirus, it will be crucial that the investment and regulatory conditions are correct to encourage investment in net-zero technologies. OGUK is working closely with the UK Government on a sector deal which would support the industry in achieving the aims of Roadmap 2035 and net zero by 2050.

The UK’s Oil and Gas Industry Supply Chain

- Exporting goods, services and skills around the world
- The oil and gas supply chain spans a broad and diverse footprint of work
- Servicing the oil and gas industry at home and around the world, as well as supporting other energy industries

OGUK's 2019 Workforce Report showed the oil and gas sector supported almost 270,000 jobs in 2019. The industry directly contributes more than £15bn to UK total GVA.

Gas demand was enough to meet 63% of UK oil and gas demand – providing secure energy.
Securing Our Energy Future

In 2019, the UK government legislated that the UK will achieve net zero GHG emissions by 2050, while the Scottish government intends for Scotland to achieve this by 2045. Net-zero emissions does not mean that the UK will no longer emit GHGs, but they will need to be reduced dramatically, with any remaining emissions from difficult-to-decarbonise sectors being offset or mitigated through means such as carbon capture use and storage (CCUS). As the first major economy to commit to net zero, these are world-leading ambitions. The UK oil and gas industry is fully supportive of this and will play a vital role in reshaping the future energy mix to achieve a net zero outcome. This will be achieved through reducing the emissions from the extraction and processing of oil and gas and then addressing the emissions from the use of oil and gas, alongside supporting the development of alternative, low-carbon energy sources.

The scenarios outlined by the CCC recognise that oil and gas will continue to form an important part of the UK’s energy landscape in 2050 and beyond. Both will still be required to provide energy supplies of around 65 million tonnes of oil equivalent (mtoe) in 2050 – just under half of total use in 2019 – and the skills, resources and capabilities in the industry can be used to help support and advance emerging industries such as offshore wind, CCUS and hydrogen. The industry will recover from the challenges currently being faced and the support of government will help ensure that the sectors capabilities are protected, ensuring that they remain in place to support these emerging industries in the future.

Roadmap 2035: A Blueprint for Net Zero,6 outlines how the industry can effectively contribute towards achieving net zero whilst continuing to help provide energy security for the UK. It contains 60 actions across five key themes:

- Helping meet UK energy needs
- Supporting net zero
- Developing people & skills
- Growing the economy and exports
- Driving technology & innovation

Whilst the industry is under huge pressures given the current business environment, it has not and will not give up on its longer-term climate change commitments. Achieving the aims of Roadmap 2035 will help secure the contribution of the industry to UK energy security and the wider economy today, deliver the energy solutions of the future and ensure that it is as well placed as it can be to help drive the UK towards net zero and realise the opportunities that this presents.

6 www.roadmap2035.co.uk
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