Department for
Business, Energy
& Industrial Strategy

STATUTORY SECURITY OF SUPPLY REPORT 2019

Statutory Security of Supply Report 2019

Presented to Parliament pursuant to Section 172 of the Energy Act 2004 as amended by Section 80 of the Energy Act 2011

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Contents

Introduction

1. This report discharges the government's and Ofgem's respective obligations under section 172 of the Energy Act 2004 as amended by section 80 of the Energy Act 2011, including the government's obligation to report annually to Parliament on the availability of electricity and gas for meeting the reasonable demands of consumers in Great Britain (GB).

2. The technical data presented here has been produced from analysis conducted by the Department for Business, Energy & Industrial Strategy (BEIS), Ofgem and National Grid. The statistics relied on in this document are for GB only where possible. However, in some cases where it is not possible to split the GB data out from the United Kingdom (UK) data, UK statistics have been used. Where this is the case, they have been referred to as UK in the accompanying text.

Brexit

3. The government recognises the importance to businesses and households of having access to an affordable, secure and sustainable supply of energy. The UK's exit from the EU will not alter the fact that our energy system is resilient and secure and drawn from a number of sources. GB has one of the most reliable energy systems in the world and we remain confident in maintaining our secure energy supply.

4. In GB, the government has been working closely with National Grid and Ofgem to ensure measures are in place to deliver continuity of supply in all scenarios. BEIS has delivered a package of secondary legislation under the powers of the EU Withdrawal Act which will amend domestic and retained direct EU law to ensure it functions effectively after exit day even without a withdrawal agreement. These changes will maximise continuity and confidence in the regulatory framework for energy after Brexit.

Electricity

5. GB's electricity system has delivered secure supplies to date. The government is committed to moving away from coal and increasing the share of renewables in electricity generation. We are investing in new energy infrastructure and new renewables which will all provide for our domestic energy demand.

6. The government's reliability standard for security of electricity supply is expressed as a Loss of Load Expectation (LOLE) of three hours per year. LOLE represents the number of hours per year in which supply is expected on average to be lower than demand under normal operation of the system. It is important to note that the LOLE metric is not a measure of the expected number of hours in which customers may be disconnected,

but represents periods where the system operator may be expected to employ mitigation actions available to it.[1]

7. National Grid Electricity System Operator's (ESO) Winter Outlook Report for 2019/20 forecasts a capacity margin of 7.8 GW, equivalent to 12.9%, with a LOLE of <0.1 hours/year. This margin is on an underlying demand basis, which aligns with how the ESO calculates the Capacity Market (CM) target capacity recommendations in its annual Electricity Capacity Report.

8. This margin takes account of the 46.4 GW of capacity which was successful in the four-year-ahead (T-4) CM auction four years ago for delivery in 2019/20, and the 3.6 GW of capacity which was successful in the one-year ahead (T-1) auction for the same delivery year, as well as plant which have indicated they will stay open without a capacity agreement. It is expected to deliver a high level of security this winter.

9. A Capacity Market Notice (CMN) is a tool available to the ESO to ensure that capacity is available when needed. The CMN is a signal to capacity providers with agreements that the risk of a system stress event in the electricity network is higher than under normal circumstances. It is not a call to bring forward more capacity, but a notice that providers – especially those with capacity agreements – should be alert to the possibility of system notices being issued and be ready to respond as required.

10. CMNs are issued automatically – four hours ahead of a potential system stress event – when forecast margins reach a pre-determined level. Last winter (2018/19) it was not necessary for the ESO to issue any CMNs.

Capacity Market

11. The CM is intended to ensure security of GB's electricity supply at least cost to consumers, by providing all forms of capacity with the right incentives to be on the system and to deliver electricity when needed through a competitive auction process. The CM ensures there is sufficient reliable capacity available during periods of electricity system stress, for example during cold, still periods where demand is high and wind generation is low.

12. The CM works by allowing eligible capacity providers to bid into a competitive auction to provide capacity when the electricity system needs it. Capacity providers who made a successful bid in the auction receive a steady payment to ensure enough capacity is in place to meet demand at times of system stress. These capacity payments incentivise the necessary investment to maintain and refurbish existing capacity, and to finance new capacity where necessary. Capacity providers face penalties if they fail to provide electricity, or a temporary demand reduction, when requested to during a system stress event.

13. The CM is required to be technology neutral, which means that it does not seek to procure allocated volumes of capacity from different types of technology. All types of

[1] Use of LOLE is a probabilistic approach – the actual amount will vary depending on the circumstances in a particular year, e.g. how cold the winter is; the number of plants experiencing unplanned outages; the power output from wind generation at peak demand; and, all the other factors which affect the balance of electricity supply and demand.

capacity are able to participate – except for capacity providers in receipt of support from other specific policy measures – that can demonstrate sufficient technical performance to contribute to security of supply.

State aid

14. In July 2014, the European Commission found the GB CM scheme to be compatible with EU State aid rules and granted it State aid approval. A challenge to that decision was brought by Tempus Energy.

15. On 15 November 2018, the General Court of the Court of Justice of the European Union (CJEU) annulled the Commission's 2014 decision on procedural grounds. This meant that the CM entered a 'standstill' which prevented the government from holding capacity auctions and making capacity payments under existing agreements until the scheme gained reapproval.

16. In February 2019, the Commission conducted an in-depth investigation to gather more information on certain elements of the CM and to reassess the compatibility of the scheme with EU State aid rules. The government cooperated with the Commission to ensure they had everything necessary to re-consider the case for approval of the CM scheme as quickly as possible.

17. On 24 October 2019, the Commission announced their decision that the CM was compatible with EU State aid guidelines.[2] The Commission's State aid decision also noted that the government has committed to implementing a number of improvements to the CM's design to reflect recent market and regulatory developments, including those identified through the statutory five-year-review of the effectiveness of the CM.

Five-year Review

18. The government published its first Five-year Review of the CM in July 2019, following a Call for Evidence held in August 2018 and publication of a summary of responses in March 2019.[3][4] Overall, the review found that the scheme has been working well and performance against objectives has been good. We therefore do not intend to make any major changes to the CM at this stage, but we intend to continue to make incremental changes based on the evidence of the scheme's operation, feedback from stakeholders, and to honour the commitments noted in the Commission's State aid decision.

19. Ofgem published its five-year review of the CM[5] on 16th April 2019 and consulted on a number of amendments to the CM rules with the objective of reducing the complexity and burden of prequalification, participation and reporting, as well as facilitating a more open and liquid secondary trading market for capacity agreements. This resulted in a number of minor changes to the CM Rules as well as identifying areas requiring further development and consultation including the rules change process, secondary trading

[2] https://europa.eu/rapid/press-release_IP-19-6152_en.htm
[3] https://www.gov.uk/government/publications/capacity-market-5-year-review-2014-to-2019
[4] https://www.gov.uk/government/consultations/capacity-market-and-emissions-performance-standard-review-call-for-evidence
[5] https://www.ofgem.gov.uk/publications-and-updates/five-year-review-capacity-market-rules-first-policy-consultation

and additional rule changes association with prequalification for which a forward plan was published.[6]

Auctions

20. Auctions are held one (T-1) and four (T-4) years ahead of the year capacity must be delivered, giving investors certainty over part of the future revenues they will receive. Existing generating capacity competes against new build, Demand Side Response (DSR) and interconnectors, with the auction procuring whatever mix of capacity provides best value for consumers.

21. A replacement T-1 auction for delivery in 2019/20 concluded on 12 June 2019, and the results were published on 24 June 2019.[7] The planned T-4 auction for delivery in 2022/23 was postponed due to the effect of the standstill period. Changes were made to the Electricity Capacity Regulations 2014 ("the Regulations")[8] and the Capacity Market Rules ("the Rules")[9] ahead of the 2019 prequalification window which introduced the required changes to enable a T-3 auction to be run in early 2020 to replace the postponed T-4 auction for delivery in 2022/23. Figure 1 lists the planned auctions for 2020.

Figure 1: List of capacity auctions to be held in 2020

Auction	Delivery year	Auction date
Three year ahead Capacity Auction (T-3)	2022/23	30-31 January 2020
Year ahead Capacity Auction (T-1)	2020/21	6-7 February 2020
Four year ahead Capacity Auction (T-4)	2023/24	5-6 March 2020

Capacity Market Delivery Year 2018/19

22. 2018/19 was the second full CM delivery year. The year ahead Capacity Auction (T-1) that concluded in January 2018 secured 5.79 GW of capacity for delivery in 2018/19.

23. National Grid's margin forecast as set out in the 2018/19 Winter Outlook publication was 11.7% on an underlying demand basis.[10] There were no system stress events during the winter period from November 2018 to end February 2019.

[6] https://www.ofgem.gov.uk/publications-and-updates/report-our-five-year-review-capacity-market-rules-and-forward-work-plan
[7] https://www.emrdeliverybody.com/CM/T12019Live.aspx
[8] https://www.legislation.gov.uk/ukdsi/2019/9780111187500/contents
[9] https://www.gov.uk/government/publications/capacity-market-rules
[10] https://www.nationalgrideso.com/document/127551/download

Capacity Market Payments

24. The Electricity Settlements Company records show that £175.6m was paid out to CM agreement holders during the 2018/19 financial year.[11][12]

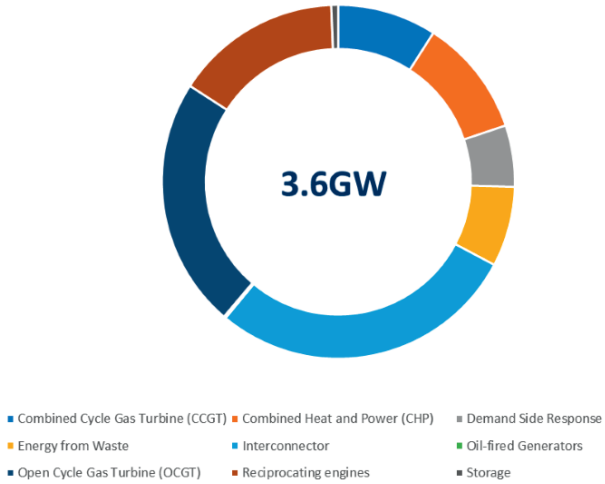
25. The General Court judgment resulted in a standstill period from 15 November 2018 until the Commission's State aid decision on 24 October 2019 during which capacity payments were suspended. Back payments for payments suspended during this period are due to be made in January 2020.

Replacement T1 Auction for Delivery Year 2019/20

26. A replacement T-1 auction for delivery in 2019/20, which topped up the capacity secured through the earlier T-4 auction, was held on 12 June 2019, and the final results were published on 24 June 2019.[13] This auction replaced the T-1 auction originally scheduled for early 2019, which was cancelled following the General Court judgment. Conditional Capacity Agreements were awarded in the replacement T-1 auction as payments under those agreements were conditional on a positive State aid decision by the European Commission. Those conditional Capacity Agreements became full Capacity Agreements on 24 October 2019 upon the Secretary of State's notification of the State aid decision to the Delivery Body and Settlement Body. The £0.77 clearing price was the lowest to date for a T-1 capacity auction, securing 3.6 GW of capacity. The total forecast cost of capacity awarded in this auction is £2.8M (in 2019 prices).

27. Figure 2 shows the breakdown of conditional Capacity Agreements awarded by technology type in terms of capacity (MW).

Figure 2: Conditional capacity agreements awarded by technology type (MW)



Source: National Grid Auction Results

[11] https://www.lowcarboncontracts.uk/sites/default/files/2019-07/ESC Annual Report and Accounts 2018-2019_0.pdf

[12] Due to the standstill period beginning on 15 November 2018, the figure quoted refers to CM payments made between April 2018 and November 2018. The CM went into standstill prior to the end of the financial year 2018/19.

[13] https://www.emrdeliverybody.com/Capacity%20Markets%20Document%20Library/T-1%202018%20Final%20Results%20Report%20(DY%2019-20).pdf

Prequalification appeal decisions for Cancelled T-4 Auction for delivery year 2022/23 and Replacement T-1 Auction for delivery year 2019/20

28. To participate in a capacity auction, capacity must first prequalify; a process managed by the CM Delivery Body. All unsuccessful applicants for prequalification have the opportunity to have the decision reviewed as part of a two-tier appeal process – initially by the CM Delivery Body, National Grid ESO (Tier One) and subsequently by Ofgem (Tier Two).

29. The Tier Two appeals process covered the T-4 auction for delivery year 2022/23 (which was later cancelled) and for the Replacement T-1 auction for delivery year 2019/20. Ofgem received 69 appeals from prequalification applicants. Ofgem grouped analogous appeals into 21 thematic areas. Ofgem upheld the Delivery Body's prequalification decisions in 16 thematic areas. Ofgem overturned the Delivery Body's prequalification decisions in five thematic areas and directed the Delivery Body to prequalify the eight affected prequalification applicants.

Changes to Capacity Market Rules and Regulations

30. After consultation, a series of changes were made to the CM during 2019. Firstly, new regulations were made to enable the CM to operate during the standstill period to the extent possible given the General Court judgment. The Electricity Capacity Market (No. 1) Regulations 2019 came into force on 9th April 2019. Secondly, regulations were made to provide clarity on how the scheme would operate should the Commission give State aid approval for the scheme. The Electricity Capacity Market (No. 2) Regulations 2019 came into force on 19th July 2019. Five sets of amendments to the CM Rules[14] were also made during 2019 in support of these objectives and regulations.

Panel of Technical Experts

31. The Panel of Technical Experts (PTE) is an independent advisory group which is appointed by government to advise on technical aspects of Electricity Market Reform. The role of the panel is a technical function and their remit does not include policy commentary, advising the government on its objectives for the CM, or wider policy issues. They have a focus on providing scrutiny of the analysis in National Grid ESO's annual Electricity Capacity Report (ECR). The PTE produce an annual report providing advice on the ECR, and to assist the Secretary of State for Business, Energy and Industrial Strategy to set the parameters for the CM auctions. The most recent report was published in July 2019.[15]

32. This year the government appointed a new PTE. The following members have agreed to sit on the panel, and their biographies are available online:[16]

- Professor Derek Bunn (Chair)

[14] https://www.gov.uk/government/publications/capacity-market-rules
[15] https://www.gov.uk/government/publications/national-grid-electricity-capacity-report-2019-findings-of-the-panel-of-technical-experts
[16] https://www.gov.uk/government/groups/electricity-market-reform-panel-of-technical-experts

- Dr Guy Doyle
- Ms Lisa Waters
- Professor Nick Jenkins
- Professor Frank Kelly CBE FRS

33. The appointments are for three years and their contracts will end in 2022.

34. In their roles as part of the PTE, members do not represent their organisations and are obliged to inform BEIS of their interests and conflicts of interests. The PTE's Terms of Reference are publicly available.[17]

Electricity Balancing Significant Code Review

35. Under the current electricity market arrangements in GB, if a market participant generates or consumes more or less electricity than they have contracted for, they are exposed to the 'imbalance price', or 'cash-out' price, for the difference. The first phase of Ofgem's Electricity Balancing Significant Code Review (EBSCR) reforms to cash-out arrangements came into effect in winter 2015/16. This created a number of changes in the cash-out price calculations, the objective of which was to improve the price signals for the market to balance, and thereby improve balancing efficiency and security of supply.

36. The second phase of the reform came into effect in winter 2018/19. Prior to November 2018, the cash-out price was set according to the average of the most expensive 50 MWh (PAR 50) of relevant balancing actions taken by the system operator. Since November 2018, the price reference has been set by just the last 1 MWh (PAR 1). In addition to sharpening the cash-out price, it increased the Value of Lost Load for imbalance from £3k/MWh to £6k/MWh.

37. The sharper cash-out price makes the balancing market price higher and more volatile in periods of scarcity, and it incentivises market participants to match their supply and demand more exactly. With the exception of March 2018, when half hourly prices rose to £990/MWh given very cold weather and exceptionally high gas prices, the cash out price has remained within relatively narrow bounds, generally below £150/MWh since November 2018.

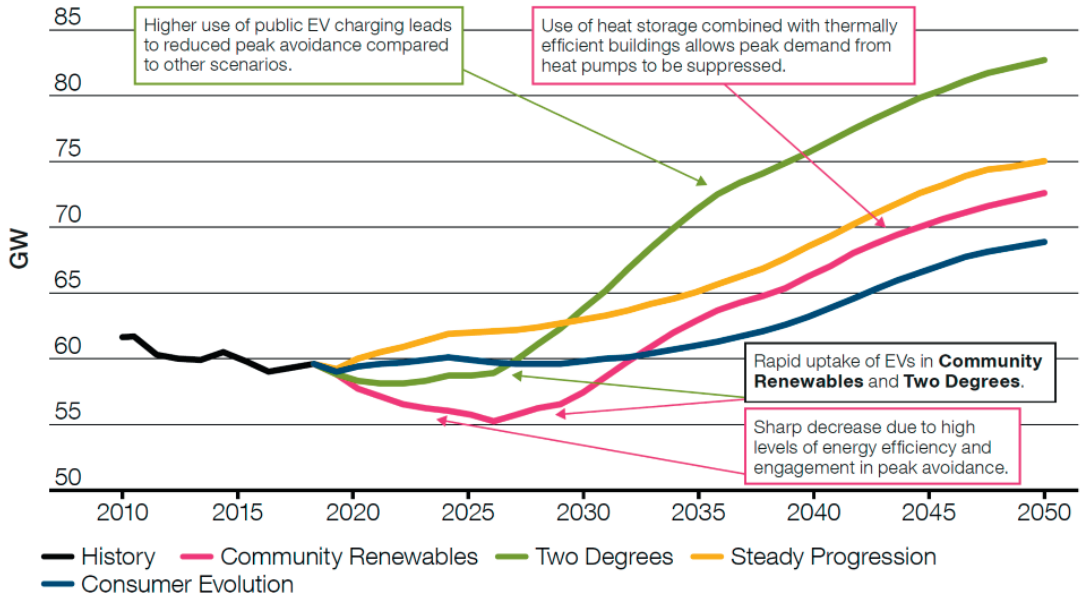
38. In conjunction with the CM introduction, EBSCR reform has the potential to strengthen the provision of security of supply by the wholesale market – for instance, by incentivising suppliers to strike demand-side reduction contracts rather than risk facing the cash-out price on their imbalances. The introduction of EBSCR and the CM also contributes to reducing the cost of balancing the system, and strengthens market signals for investment in flexible generation or technology.

[17] https://www.gov.uk/government/groups/electricity-market-reform-panel-of-technical-experts

Demand

39. Figure 3 shows historic and forecast trends of underlying peak electricity demand from National Grid ESO. This includes demand met by generation which is connected to the transmission network as well as embedded generation (generation that is connected directly to the distribution network) above 1 MW.

Figure 3 – Electricity peak demand (including losses)



Source: National Grid Future Energy Scenarios 2019

40. National Grid ESO has published four scenarios for electricity demand for the next 30 years of the energy system as part of its UK Future Energy Scenarios (FES) project. The 2019 FES found that reaching net zero carbon emissions by 2050 is achievable.

41. In the Community Renewables scenario, local energy schemes flourish, consumers are engaged and improving energy efficiency is a priority. In Two Degrees, large-scale solutions are delivered and consumers are supported to choose alternative heat and transport options to meet the 2050 target. In Steady Progression, the pace of the low-carbon transition continues at a similar rate to today but then slows towards 2050. In Consumer Evolution, there is a shift towards local generation and increased consumer engagement, largely from the 2040s.

Demand Side Response

42. The Transitional Auctions held in the CM in 2014 and 2015 were focused on encouraging DSR and distributed generation providers to offer more capacity in the CM. DSR has been effective in subsequent CM auctions, with increasing amounts of DSR winning capacity agreements for delivery years.

43. Figure 4 shows increasing amounts of DSR winning capacity agreements for the delivery years.

Figure 4

Delivery year (all auctions)	2017/18 Capacity (MW)	2018/19 Capacity (MW)	2019/20 Capacity (MW)	2020/21 Capacity (MW)	2021/22 Capacity (MW)
DSR	521	616	654	1390	1207

44. The precise volume of DSR currently used in GB remains unknown because DSR arrangements between businesses can be organised independently of network owners. It is also not always clear what proportion of DSR is achieved by using on-site back up generation versus turning demand down/off. However, findings from the evaluation of the first TA estimated that 10-15% of delivered capacity was turn-down DSR.[18]

Supply

Present Capacity

45. National Grid ESO's 2019 Winter Outlook Report assumes a total of approximately 111.6 GW of GB generation capacity (including wind and solar) to be available this winter (2019/20).

Electricity Storage

46. Electricity storage enables us to use energy more flexibly and decarbonise our energy system more cost effectively. For example, it can offer supply or demand to the electricity system within seconds to minutes, and is widely used by National Grid, alongside other technologies, to balance and maintain the integrity of the electricity system. It can also support the integration of intermittent renewables and defer or avoid the need for costly network upgrades and new generation capacity.

47. According to National Grid ESO there is currently around 4 GW of electricity storage capacity in GB, with 3 GW from pumped hydro and 1 GW from battery storage.[19] An additional 1 GW of battery capacity has been contracted to come online by 2021 through the 2016 and 2017 T-4 Capacity Market Auctions, with a subset of these also obtaining Enhanced Frequency Response ancillary service contracts with National Grid.

48. Lithium ion battery storage is currently where the highest growth in storage deployment is being seen. However, there is potential for other storage technologies to deploy in future, such as those using different battery chemistries, new-build pumped hydro or compressed air and liquid air energy storage. The government is supporting these newer technologies through innovation funding. For example, the Storage at Scale competition launched in January 2019 committed up to £20 million from 2019 to 2021

[18] https://www.gov.uk/government/publications/evaluation-of-the-transitional-arrangements-phase-1
[19] https://www.emrdeliverybody.com/CM/Registers.aspx

to support large-scale, long-duration demonstrations of innovative energy storage technologies.

49. With an increasing number of electric vehicles on UK roads, the potential for their batteries to be used as mobile storage through the use of vehicle-to-grid (V2G) technology is increasing. In January 2018, the government awarded £30 million to several wide-ranging V2G projects, including feasibility studies, research and development programmes, and demonstration projects involving over 2,700 V2G-ready vehicles in real world situations. These projects have placed the UK as a world leader in V2G technology research.

Electricity Networks

Current network reliability

50. The networks, both transmission and distribution, remain reliable but along with the rest of the electricity system, continue to require investment to ensure they continue to facilitate the transition to a low carbon system. Ofgem's price control settlements through its RIIO (Revenue = Incentives + Innovation + Outputs) model are ensuring this investment takes place and drives further efficiency savings. The historic overall reliability of supply has been high, with overall reliability for the transmission network at 99.999967% for financial year 2018/19.[20]

51. Following the power disruption event of 9 August 2019, the Secretary of State for BEIS commissioned the Energy Emergencies Executive Committee (E3C) to undertake a comprehensive review in order to identify lessons and recommendations for the prevention and management of future power disruption events, as well as the resilience of other sectors to power cuts. The initial findings from National Grid Electricity System Operator's (ESO) Technical Report of 6 September[21] show that the incident is thought to have been caused by a lightning strike to an overhead transmission line and the near simultaneous loss of a number of generators at approximately the same time. As such, the issue was related to network operation, rather than the capacity of the energy system at the time.

52. Offshore Transmission Owners face statutory obligations and regulatory incentives to create an operating environment designed to reduce unsupplied electricity. They are incentivised to maintain availability of their offshore transmission systems. This ensures offshore generators are able to export energy with minimal disruption. For the financial year 2018/19, the annual availability of offshore networks was 99.50%.[22]

53. As part of the price control process, Ofgem sets target and incentive rates for the number of customer interruptions and customer minutes lost for each Distribution Network Operator (DNO). The 'Interruptions Incentive Scheme' (IIS) incentivises DNOs to invest in and operate their networks to manage and reduce the frequency and

[20] National Electricity Transmission System Performance Report, www.nationalgrideso.com/document/153121/download
[21] https://www.nationalgrideso.com/information-about-great-britains-energy-system-and-electricity-system-operator-eso
[22] www.nationalgrideso.com/document/153121/download

duration of power cuts experienced by their customers, whilst maintaining focus on minimising network costs and securing optimal value for consumers.

54. The standards encourage DNOs to meet certain expected levels of service and to provide payments to end customers in the event of individual standards not being met. They cover a range of activities, including restoring supply during an unplanned interruption and providing notice periods for planned interruptions.

Future developments of electricity networks

55. The 2013 to 2021 transmission price control (RIIO-T1) started on 1 April 2013. Ofgem has approved funding of up to £22.50bn for expanding, replacing and maintaining the GB transmission network for RIIO-T1.

56. In addition, the transmission owners provide quarterly updates on their major projects to BEIS and Ofgem.[23] The latest update shows that 2.20 GW of network capacity is under construction for delivery by Q3 2020, with 9.55 GW delivered since February 2012.

57. As part of the first price control for the 14 regional electricity DNOs under the RIIO process, Ofgem has approved overall funding of £24.6bn across GB for the period 1 April 2015 to 31 March 2023. This represents a major investment in the distribution network.

Interconnection

58. GB currently has 5 GW of nameplate electricity interconnector capacity with mainland Europe and the Irish electricity market. This consists of a 2 GW link to France (IFA), a 500 MW link between Wales and Ireland (East-West), a 1 GW interconnector with the Netherlands (BritNed), a nominally rated 500 MW link between Scotland and Northern Ireland (Moyle)[24] and a 1 GW interconnector with Belgium (Nemo Link) which commissioned in January 2019.

59. There is a significant pipeline of further interconnectors at various stages of development – if all the projects that have applied to Ofgem for regulatory approval come forward, they would bring our total interconnection capacity to nearly 18 GW. Many of these projects are being brought forward under Ofgem's cap and floor regulatory regime, which was put in place in 2014 to encourage investment in projects that will benefit consumers by providing a minimum return for project developers (the floor) whilst ensuring that consumers benefit from excess revenues accruing to developers by limiting the maximum return (the cap).

60. There are four projects under construction, which will add 4.8 GW of capacity:

- ElecLink – 1 GW to France (via the Channel Tunnel), scheduled for completion in 2020;
- IFA2 – 1 GW to France, scheduled for completion in 2020;

[23] Major Projects Status Update for Electricity Transmission, September 2019, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/835209/Major_Projects_Update__September_2019.pdf

[24] Moyle's transmission entry capacity is currently limited to 80 MW in Scotland, but will rise in future to 500 MW by 2022/23, with export capacity at 450 MW.

- NSL – 1.4 GW to Norway, scheduled for completion in 2021; and
- VikingLink – 1.4 GW to Denmark, construction contracts were awarded in July 2019, scheduled for completion in 2023.

Market Functioning – Liquidity in the GB wholesale power market

61. Energy market firms buy and sell their electricity in the wholesale market. The wholesale market allows participants to trade a range of products that enable them to meet their obligation to supply energy whilst also enabling them to mitigate risk. The degree of access to these products relates to the liquidity of the market: low levels of market liquidity can be indicative of an uncompetitive market.

62. Poor liquidity in the wholesale market can prevent consumers from fully realising the benefits that competition can deliver in terms of downward pressure on bills, better service and greater choice. It can also obscure or weaken price signals, inhibiting long term investment decisions in new generating plants with negative consequences for security of electricity supply.

63. Following concerns by Ofgem and industry about the lack of liquidity in the wholesale electricity market, Ofgem activated the 'Secure and Promote' licence condition on 31 March 2014, with the aim of ensuring that all parties can access the wholesale market effectively and that robust reference prices are available from the wholesale market.

64. Ofgem has been monitoring liquidity in the power market since 2014. Its liquidity monitoring shows mixed results. Some indicators improved following the introduction of the policy. For example, there was an increase in the volume of contracts traded since the policy began – a total of 1087 TWh of wholesale electricity was traded in GB during 2018, up 13% from 2014. Of note, the volume of longer dated peakload products increased, which made hedging easier for participants. Further, bid-offer spreads on mandated products decreased, from 0.50% in 2014 to 0.45% on average in 2018. This gave market participants confidence that they could buy and sell without significant transaction costs.

65. However, some indicators were inconsistent, for example churn[25] averaged 3.8 from 2014 to Q2 2019 but rose to 4.7 in 2016 and then fell to 3.7 in 2017. Churn followed a very slight upward trend since 2014 but there was not a kick-start since the policy began. Similarly, total over-the-counter trading fell in 2018 to 897 TWh, down from 916 TWh in 2017 and 1238 TWh in 2016. This reflected an increase in OTC trading in 2016 in particular that was driven by increased price volatility, rather than by structural change. Yet churn is just one measure of liquidity, and we note that independent suppliers told us they found it easier to access the products they needed.

66. On 18 November 2019, Ofgem suspended the Secure and Promote Market Making Obligation (MMO). The Secure and Promote Supplier Market Access Rules and Reporting Requirements remain in effect. This followed the release of RWE from the Licence Condition on 30 October 2019 which reduced the number of obligated parties from three to two.[26] In 2014, the obligation was placed on six parties (Centrica, EDF Energy, E.ON, RWE Npower, ScottishPower and SSE) with a subsequent series of

[25] Churn is the number of times electricity which is generated in the market is subsequently traded.
[26] https://www.ofgem.gov.uk/system/files/docs/2019/10/rwe_schedule_b_decision_2.pdf

corporate restructurings and divestments leading to a steady decline in the number of obligated parties.[27] Following consideration of responses to an open letter,[28] Ofgem suspended the MMO on account of evidence of increased and disproportionate costs for the two remaining parties, even in the absence of volatility, and evidence that the policy had become less effective in meeting its objectives, specifically in enabling the development of robust reference prices along the curve.[29]

67. During suspension, Ofgem is continuing to monitor market liquidity with a view to assessing the impact on liquidity and the need for intervention and will continue to develop alternatives to the MMO in the event further intervention is deemed to be in consumers' interests.

[27] Corporate restructurings and divestments led to four of the original six companies (Centrica, E.ON, ScottishPower and RWE) no longer being considered to be vertically integrated which affected their ability to meet the requirements of the Licence Condition.
[28] https://www.ofgem.gov.uk/publications-and-updates/secure-and-promote-october-2019-update
[29] https://www.ofgem.gov.uk/publications-and-updates/decision-suspend-secure-and-promote-market-making-obligation-effect-18-november-2019

Gas

Introduction

1. GB's gas system has delivered securely to date and is expected to continue to function well, with a diverse range of supply sources and sufficient delivery capacity to more than meet demand. The UK Continental Shelf (UKCS) remains a major source of gas in the GB market, with the remainder imported from a variety of sources, including pipelines from Norway, interconnection with the Continent through the IUK and BBL pipelines and some of the largest liquified natural gas (LNG) import infrastructure in Europe. There are a range of future supply outlooks, but all show sufficient gas available from the combination of domestic, regional and global markets.

2. Gas is a central part of the GB energy system and gas security is of importance to all parts of society and the economy, both directly (i.e. through its use as a fuel source for domestic heating and cooking, and for various industrial uses) and indirectly (i.e. because of its role in electricity generation). Past analysis by BEIS (including that undertaken for the 2017 Strategic Assessment of Gas Security of Supply[30] and the 2018 National Risk Assessment[31]) and by Ofgem has provided valuable insight into the nature of the risks to our gas security, building an evidence base that UK gas supply infrastructure is resilient to all but the most extreme and unlikely combinations of severe infrastructure and supply shocks. Nonetheless there is always future uncertainty – for gas this includes wider energy system changes required to deliver low carbon energy in line with our net zero ambition, increasing import dependency and the future mix of sources of gas (both domestic and international).

Supply

3. The UK benefits from a diverse range of gas supply sources, including domestic production, pipeline imports from Norway and mainland Europe, and LNG from global markets. GB's gas supply infrastructure can sustain a 1-in-20 peak day demand as required under National Grid's Gas Transporters Licence. This is defined as the amount of infrastructure (pipes and compressors etc.) needed to transport the gas that would be required by customers in the coldest day of winter, in the coldest winter we can expect in a 20-year period.

4. To date, the GB gas system has reliably delivered a secure supply. Security of supply reports by Ofgem and by BEIS[32] have concluded that the GB market is generally secure.

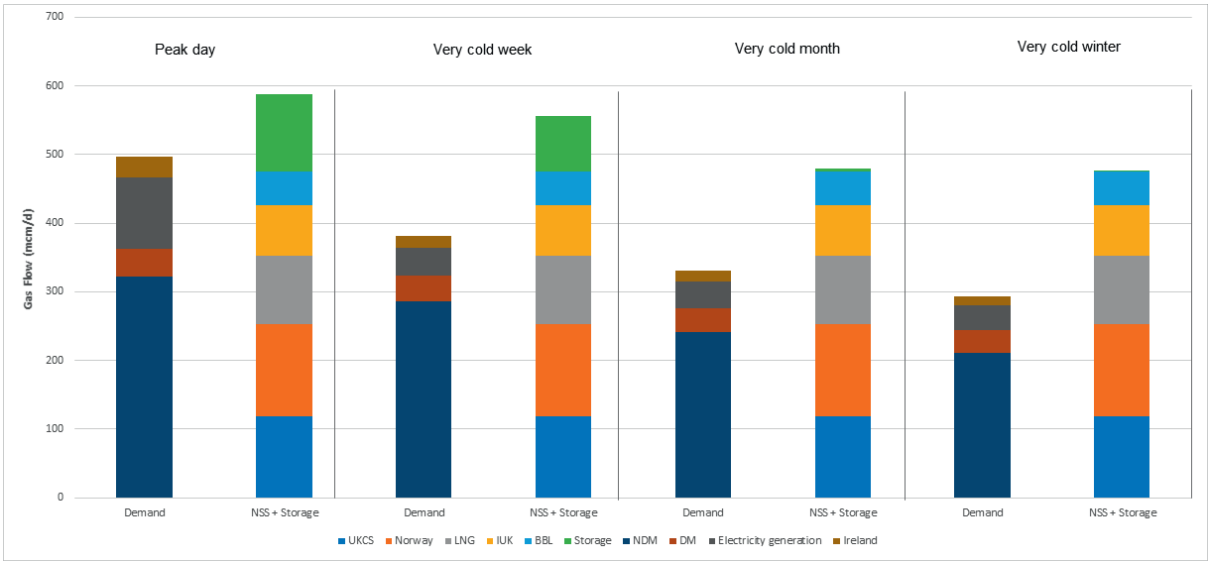
[30] Gas Security of Supply: Strategic Assessment and Review, BEIS, 2017
[31] UK National Risk Assessment on Security of Gas Supply, BEIS, 2018, https://www.gov.uk/government/publications/uk-national-risk-assessment-on-security-of-gas-supply-2018
[32] By DECC:
- The Impact of Gas Market Interventions on Energy Security (for DECC by Redpoint, July 2013)
- Gas Security of Supply Report (Ofgem requested by DECC, November 2012)
- GB Gas Security of Supply and Options for Improvement (for DECC by Pöyry, March 2010).

5. Most recently, BEIS's strategic assessment of gas security of supply, published on 12 October 2017,[33] noted that GB will have enough import capacity to deliver under high demand and the resilience to cope with severe shocks to the system.

6. The UK's N-1 calculation (whether peak demand could still be met if the single largest piece of infrastructure fails) forms part of the UK's National Risk Assessment, which is carried out biennially and was most recently undertaken in October 2018.[34] This calculated that the UK exceeded the target of 100% with a score of 120%, meaning the UK has more infrastructure than is required to meet demand (including exports to the Republic of Ireland) on the coldest day in 20 winters, even if the single largest piece of infrastructure (an LNG pipeline) fails. The N-1 calculation is a numerical, point-in-time assessment using maximum technical capacity of supply and storage infrastructure.

7. Figure 5 below shows forecasted demand and supply in peak day, cold week, cold month and cold winter scenarios over the coming winter. In all forecasted scenarios, demand can be met.

Figure 5 – Supply and Demand in Cold Scenarios

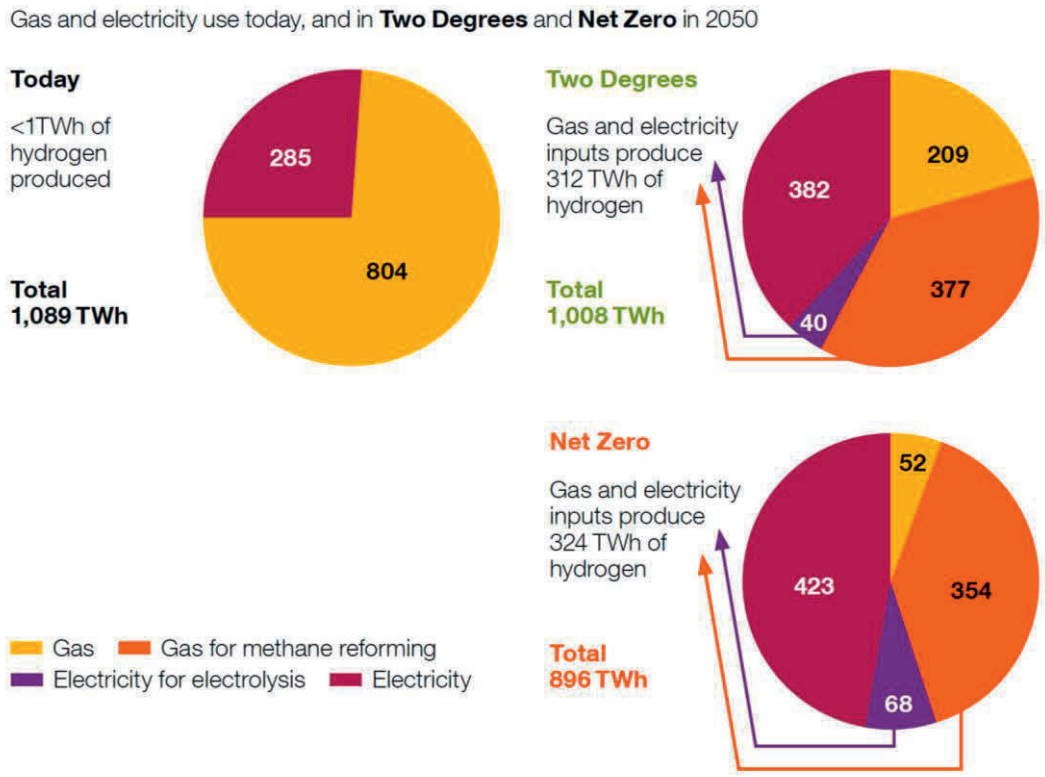


Source: BEIS internal analysis based on National Grid's Winter Outlook 2019 Report[35]

8. National Grid's Future Energy Scenarios (FES) provide a range of possible scenarios of how the energy system may develop to 2050. National Grid's 'Net Zero Sensitivity Analysis' models the impacts on the FES needed to reach net zero. Figure 6 below shows how, despite the use of unabated natural gas declining dramatically in a possible net zero pathway, there remains a significant continued role for abated natural gas for the electricity generation and the production of hydrogen through methane reformation with carbon capture and storage.

[33] https://www.gov.uk/government/publications/gas-security-of-supply-strategic-assessment-and-review
[34] UK National Risk Assessment on Security of Gas Supply, BEIS, 2018, https://www.gov.uk/government/publications/uk-national-risk-assessment-on-security-of-gas-supply-2018
[35] National Grid's Winter Outlook 2019 defines Isle of Grain LNG facility as having a deliverability of 19mcm/d at times of full system usage, not its nameplate 59mcm/d capacity. This lower figure is used here, with the higher figure used for the purposes of the N-1 calculation, as per the methodology set out in the EU Security of Supply Regulation (2017/1938).

Figure 6 – Gas and electricity use today and in 2050



Source: National Grid Future Energy Scenarios 2019

Import capacity and outlook

9. The UK has a diverse range of sources of gas supply, including domestic production, pipeline imports from Norway (predominantly via the SAGE, FLAGS and Vesterled pipelines) and mainland Europe (Belgium via the IUK interconnector; and the Netherlands via the Balgzand-Bacton Line interconnector), LNG from global markets to terminals at Milford Haven (South Hook and Dragon) and the Isle of Grain, and storage (which is not strictly speaking a 'source' of gas, but is an important source of supply flexibility).

10. Currently, the UK has import deliverability[36] of ~56 billion cubic metres per year (bcm/y) from Norway, ~43 bcm/y from capacity connected to the Continent, and ~49 bcm/y from LNG import terminals.[37] Capacity is not itself a measure of utilisation. To date, GB has always secured the gas required; and BEIS, Ofgem and National Grid analysis has all concluded that it will remain well positioned to do so. National Grid's FES notes that there are a wide range of possible supply patterns but that the gas market provides enough gas from Europe and beyond to make up the difference between GB's indigenous supply and demand. A key factor in GB's ability to secure the necessary gas it is an appropriately incentivised, flexible and accessible market. This is discussed under Market Functioning below.

[36] Nameplate deliverability figures may differ from actual operational deliverability.
[37] National Grid, Gas Ten Year Statement, 2018

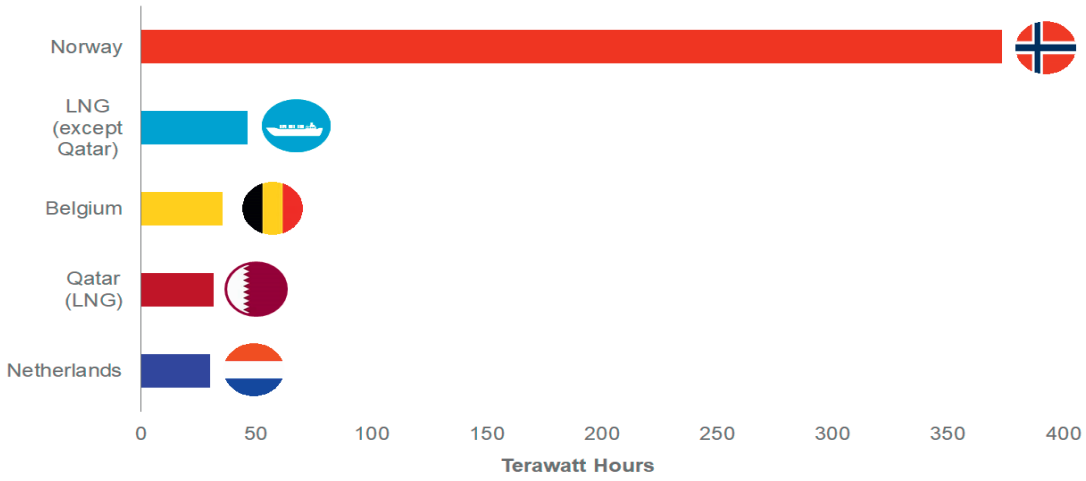
11. As United Kingdom Continental Shelf (UKCS) production declines, imports will play an increasing role in meeting UK gas demand. However, UKCS production still remains the main source of UK gas supply, meeting 51% of gas demand last year.[38]

12. Following the longer-term trend of a decline in production, net imports were up 11% in 2018. Although gross imports remained stable on the year before, there was a large decrease in exports leading to the increase in net imports. Contributing to stable total imports were pipeline imports which only dropped by 1%.[39] This was despite a 5.1% decrease in imports from Norway following the temporary closure of the Forties pipeline system at the end of 2017.

13. 2018 also saw a 6.4% increase in imports of LNG, accounting for 15% of total imports. This was driven by a sharp increase in the last quarter of the year, caused by increased LNG export capacity from countries such as the US as well as low demand in Asia. In turn, this has reduced prices making LNG more attractive to import. However, despite this increase, LNG imports are just over a quarter of peak levels seen in 2011.

14. Norway remains the principal source of UK gas imports (Figure 7), meeting nearly three quarters of the UK import volumes over the year. The UK's LNG supply is becoming more diversified as a wider range of new LNG supply sources come online. In 2018 the UK received LNG from 10 different countries including Qatar, the USA, and Trinidad and Tobago, among others. Though the majority of UK LNG receipts are still from Qatar, imports from Qatar decreased from around 11% of total UK gas supply in 2016, to near 3% in 2018.

Figure 7 – Gas imports by country 2018



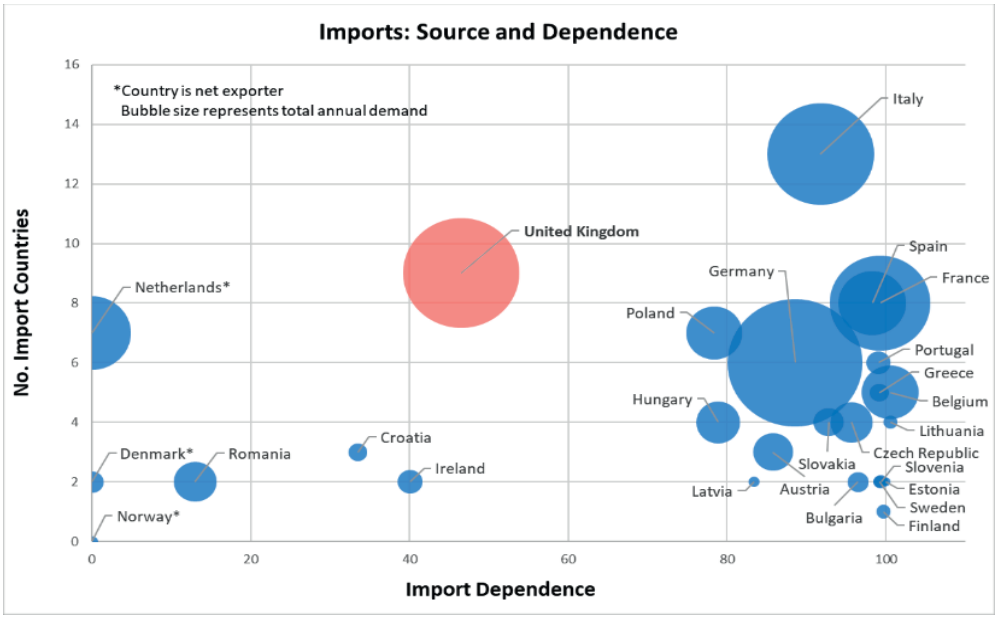
Source: Digest of United Kingdom Energy Statistics, 2019

15. Of EU Member States, only Italy benefits from a more diverse range of import sources than the UK, as shown below in Figure 8. Alongside the flexibility and resilience provided by this diversity of import supply, the UK also benefits from significant levels of production, strengthening the resilience of the system.

[38] Digest of UK Energy Statistics (DUKES): https://www.gov.uk/government/statistics/natural-gas-chapter-4-digest-of-united-kingdom-energy-statistics-dukes

[39] This figure includes pipeline imports via the IUK and BBL interconnectors.

Figure 8 – Import source and dependence, EU Member States



Source: BEIS internal analysis based on 2017 Eurostat data

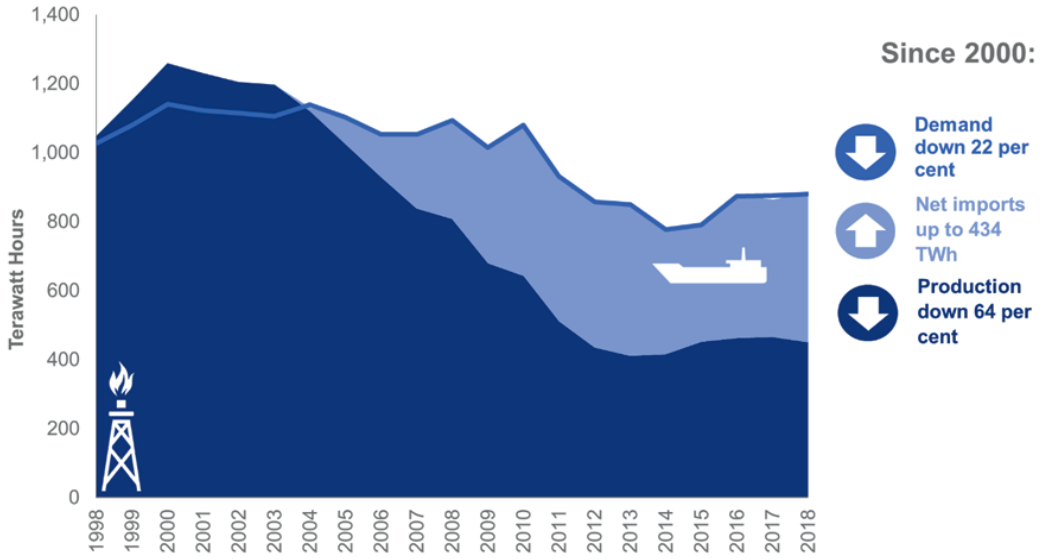
Production

16. Domestic UK Continental Shelf (UKCS, also referred to as North Sea gas) is a key source of gas for the UK, accounting for 38% of gas supplies in winter 2018/19[40] and for 47% of gas supplies in 2018 overall.[41] 2018 marks the first annual decrease in the production of natural gas in four years. At 450 TWh (40.9 bcm), production in 2018 decreased by 3.3% compared with 2017. The main driver of this was the closure of the Theddlethorpe gas terminal in August 2018, as well as robust production in the previous year from the drawing down of reserves at the Rough Facility – a former long-term storage site.

17. Reductions in production in 2018 follow the longer-term trend of decline since the turn of the century, standing at one-third of the peak recorded in 2000 (Figure 9). Despite this, the UK remains one of the two major gas-producing nations within the EU, alongside the Netherlands, and domestic production met just over half of UK demand (including exports) in 2018.

[40] National Grid, 2019 Winter Review, Table 5.2
[41] BEIS, Digest of UK Energy Statistics, 2019

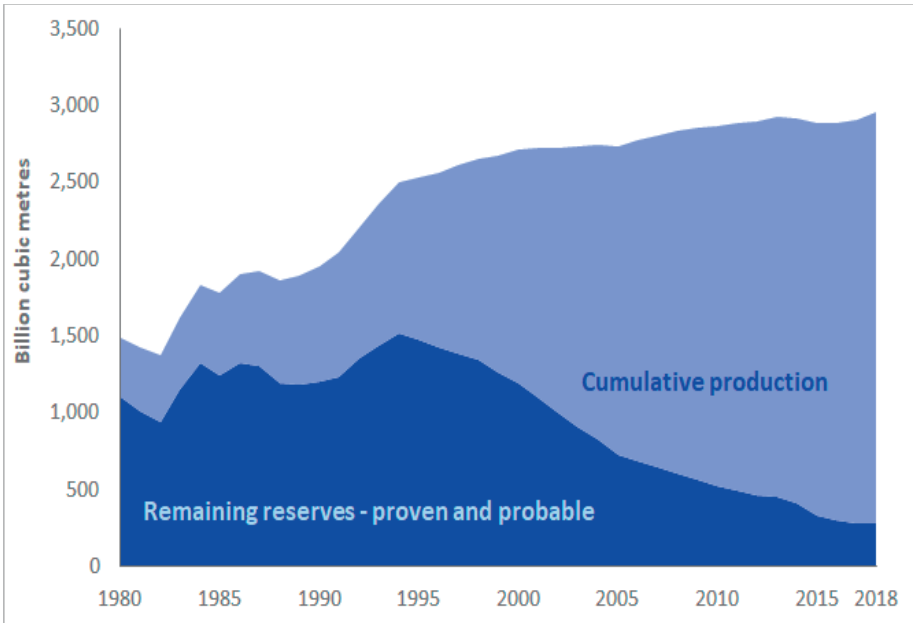
Figure 9 – Changes in UK gas production and demand, 1998 – 2018



Source: Digest of UK Energy Statistics, 2019

18. The Oil and Gas Authority estimates that there are 279 billion cubic metres of proven and probable (2P) gas reserves, of which 181 billion cubic metres are proven reserves. There has been a steady decline in 2P reserves since 1994 (Figure 10), initially associated with a higher rate of production. At the end of 2018 cumulative production plus 2P reserves was 2,951 billion cubic metres. The apparent decline in reserves in 2015 was due to reclassification of some reserves that had not yet been sanctioned – these will be included in future as and when sanctioned.

Figure 10 – Gas reserves and cumulative production, 1980-2018

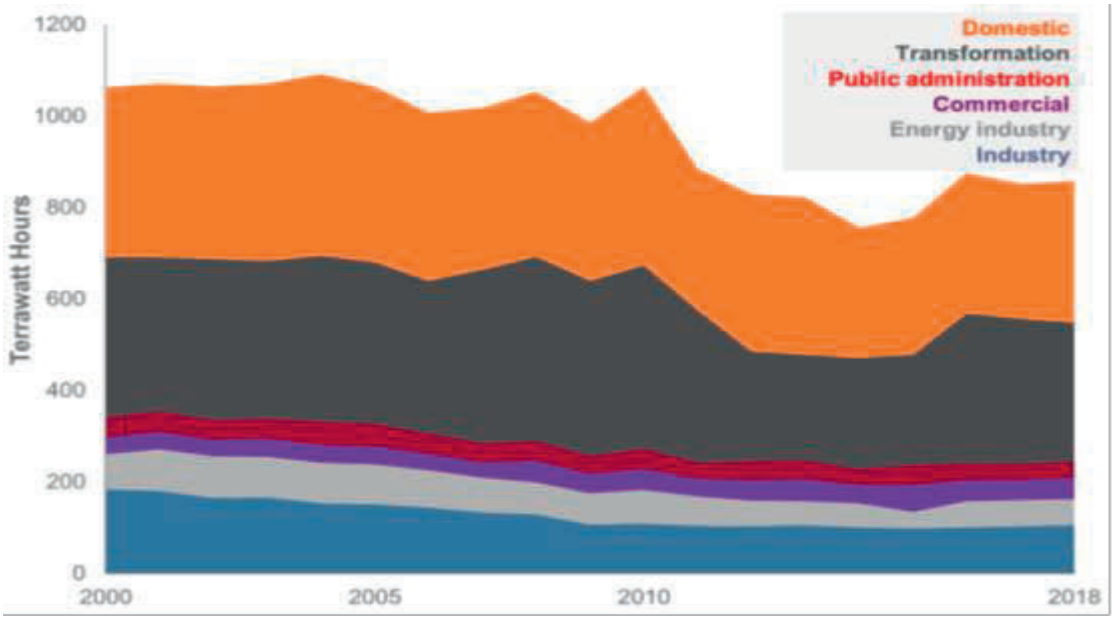


Source: Digest of UK Energy Statistics, 2019

Demand

19. Whilst gas remains a critical part of the UK's energy system, the long-term trend for gas demand is downwards: demand in 2018 was more than a fifth lower than in 2000 (Figure 11). Most notably, industrial demand has shrunk over this period, down to just over 40% of what it was in 2000. Similarly, demand for power generation was down (just over a tenth) and domestic demand has also shrunk by 16%, despite a rising population and growing number of homes. Increased efficiencies in heat use, including greater levels of home insulation, are in part responsible for this. Despite the overall downwards trend since the mid-2000s, there are notable peaks that correspond with weather variations, which generate a greater demand for space heating in homes and offices.

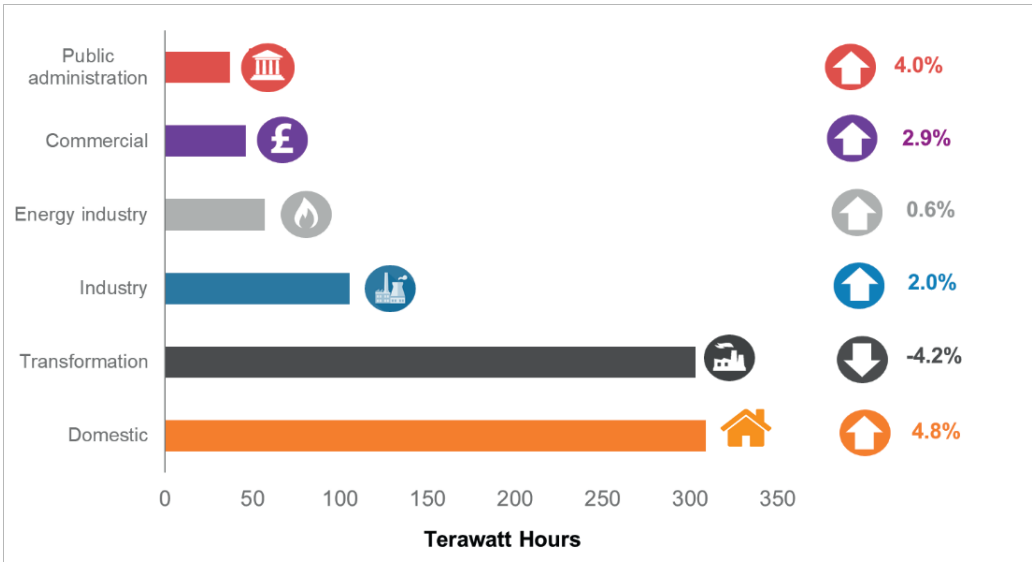
Figure 11 – Changes in gas demand over time, 2000 – 2018



Source: Digest of UK Energy Statistics, 2019

20. Gas demand in 2018 increased by 0.9% compared to 2017 to 881 TWh (80 bcm). The principal cause was a 3.8% increase in final gas consumption caused by colder temperatures at the beginning of 2018, which underpinned a 4.8% increase in domestic consumption. However, gas demand for transformation continued to fall by 4.2% (Figure 12). This includes gas used for electricity generation, which decreased by 4.4% largely due to of the continued increase in output from renewable electricity sources.

Figure 12 – Changes in annual gas demand by sector, 2018



Source: Digest of UK Energy Statistics, 2019

Demand side response

21. The conclusions of Ofgem's Gas Significant Code Review (SCR)[42] placed an obligation on National Grid to develop a centralised DSR mechanism to encourage greater demand-side participation from industrial and commercial users. National Grid's proposed DSR methodology was approved by Ofgem and went live in October 2016.

22. This service allows large gas consumers to offer, via a centralised platform, to reduce the amount of gas they use during times of system stress in exchange for a payment. To date, this platform has only been deployed once, in March 2018 after the issuing of a Gas Deficit Warning (now known as a Gas Balancing Notification following approval of Unified Network Code Modification No. 675 in July 2019). At that time, no DSR offers were placed on the centralised platform and no involuntary demand-side measures were taken by National Grid.

Storage

23. Storage itself does not produce gas but allows gas from other sources (whether domestic or imported) to be held until times of high demand.

24. Storage takes in gas when it is low priced (usually at times of oversupply such as in the summer) and returns it to the system when prices are high (usually during peak demand). Some storage operates over short timescales (days/weeks) while other facilities exploit longer term seasonal differences. GB storage does not operate as a 'strategic reserve' of gas – providing a large volume of gas to be used in case of an emergency but otherwise not used. Instead, the value of storage lies in its ability to operate flexibly in response to relatively short-term price signals.

[42] https://www.ofgem.gov.uk/publications-and-updates/gas-security-supply-significant-code-review-conclusions

25. The economics of storage relies on the variations in gas price over time (the spreads). For long range storage, this is summer-winter (seasonal) spreads and for short range storage it is a combination of seasonal and shorter-term spreads. Seasonal volatility in the gas market has declined, which can be explained by the diversity of supply sources and capacity of infrastructure, both in the UK and across Europe. In particular, seasonal spreads have declined significantly, impacting the economics of storage facilities in the UK. The withdrawal from operation of Hole House in 2018 is not considered to undermine security of supply. Nonetheless, we will continue to monitor the value of long-term storage as the dynamics of the gas market continue to evolve.

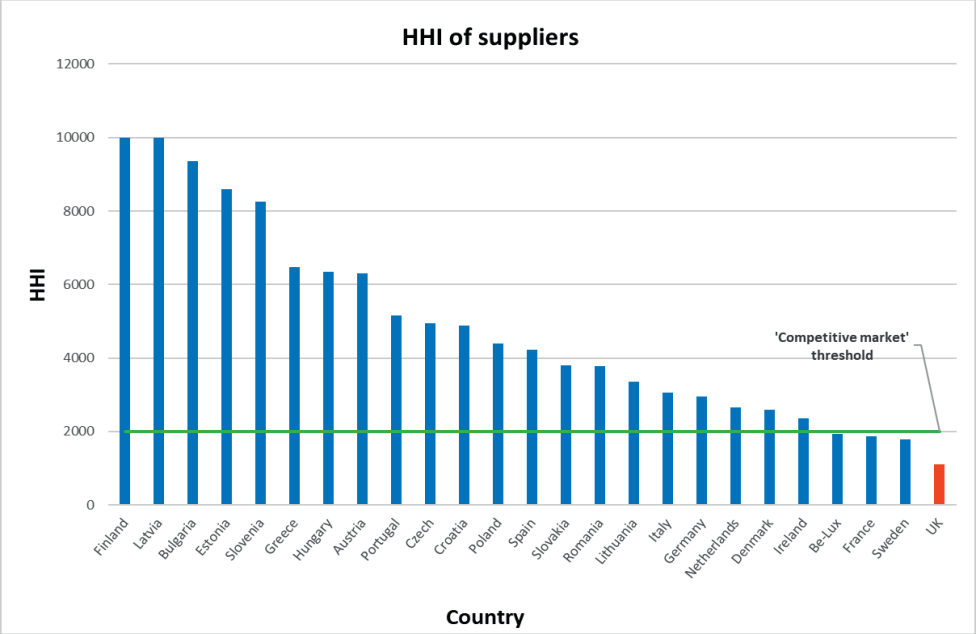
Market Functioning

26. The UK gas market is one of the most liquid and developed markets in the world. The National Balancing Point (NBP) is by far one of Europe's largest traded gas markets, with only the Netherlands' comparable in size. In 2018, total traded volumes were approximately 1,591 bcm in the GB market.[43] There is a diverse range of products and platforms available for those looking to trade at the NBP. This includes a wide range of forward and spot contracts with significant trading volumes throughout.

27. Market concentration is at healthy levels, indicating competition between participants. This is reflected in the large number and diversity of gas producers. The six largest gas suppliers accounted for 55% of the market in 2018/19 compared to 52% in 2017/18.[44] For the wholesale gas market, the Herfindahl-Hirschman Index (HHI) of market concentration remained low at 754 in 2018.[45] The continued net entry and expansion of new domestic suppliers has driven the UK's domestic retail market HHI to the lowest in the EU (Figure 13). Typically, the Competition and Markets Authority regards markets with an HHI below 1000 as unconcentrated, markets with an HHI between 1,000 and 2,000 as concentrated, and markets with an HHI above 2000 as highly concentrated.[46] This suggests that gas suppliers are unlikely to be able to exercise unilateral market power to increase the price of wholesale gas and consumer bills.

[43] Ofgem, Wholesale Market Data 2019, https://www.ofgem.gov.uk/publications-and-updates/state-energy-market-2019
[44] Ofgem, State of the Energy Market 2019, https://www.ofgem.gov.uk/publications-and-updates/state-energy-market-2019
[45] Ofgem, State of the Energy Market 2019, https://www.ofgem.gov.uk/publications-and-updates/state-energy-market-2019
[46] Ofgem, State of the Energy Market 2019, https://www.ofgem.gov.uk/publications-and-updates/state-energy-market-2019

Figure 13 – HHI of Suppliers, EU Member States excluding Malta and Cyprus



Source: ACER, Market Monitoring Report, 2019[47]

28. This liquidity is evidenced by high "churn rates" at the NBP, i.e. the number of times a unit of gas is traded between extraction and consumption (one indicator of liquidity). GB continues to perform well on this indicator, with annual average churn of 20 in 2018;[48] a number in excess of 10 is taken by industry commentators to indicate gas hub maturity. High liquidity benefits security of supply as it provides gas producers with effective markets where they can bring gas, and also the means by which gas consumers can indicate their willingness to buy.

Network Reliability

29. The UK gas transmission network achieved 99.989% reliability in 2018/19.[49] An interruption is classed as a significant event on the National Transmission System (NTS) that causes a cessation of flow relating to the loss of firm or Off-Peak Capacity at an NTS Exit Point where commercial tools have not been used. There was one incident at Didcot power station which meant that flows were restricted over three gas days.

30. The distribution network that carries gas directly to consumers is equally robust, with a reliability rating of 99.998% for 2017/18 across gas distribution network operators, the most recent year for which data are available.[50]

[47] ACER, Market Monitoring Report 2016, https://acer.europa.eu/en/Electricity/Market%20monitoring/Pages/Current-edition.aspx
[48] Ofgem, Wholesale Market Indicators, Gas Trading Volumes and Monthly Churn Ratio by Platform (GB), https://www.ofgem.gov.uk/data-portal/all-charts/policy-area/gas-wholesale-markets
[49] National Grid Annual Report and Accounts 2018/19 https://investors.nationalgrid.com/news-and-reports/reports/2018-19/plc
[50] Ofgem, RIIO Gas Distribution Annual Report 2017-18, https://www.ofgem.gov.uk/publications-and-updates/riio-gas-distribution-annual-report-2017-18

Oil

Introduction and Summary

31. This section sets out a summary of key facts and figures on UK oil demand and supply, production and imports. Oil currently meets over a third of primary energy demand and is the main energy source for transport, meeting virtually all the UK's needs. Other uses include industrial processes, domestic heating and as feedstock for petrochemical, industrial and construction products and processes. Over 34% of the UK's total energy production in 2018 comprised of crude oils extracted from the UKCS, although production remains at approximately one-third of the peak in 1999.[51] The sector plays a key underpinning role for the whole of the UK economy as well as offering significant direct benefits socially, economically and in terms of resilience.

32. The UK's oil supply chain continues to deliver security of supply and is expected to continue to function well, with sufficient capacity to meet demand, as well as respond to supply shocks. The UK is well placed in the global oil markets (crude and product), trading extensively in all oil types and with significant import and export infrastructure at coastal locations able to source fuels from around the globe, notably from the Amsterdam-Rotterdam-Antwerp oil hub.

33. Analysis by BEIS has provided valuable insight into the risks of specific point failures in our downstream oil supply infrastructure. The evidence shows that the UK fuel supply is resilient to most shocks where the market can adapt as it has done historically. However, for the case of very short-term disruptions, BEIS has identified some measures that are able to increase our fuel resilience, most notably through an ability to lease additional truck and trailers to the supply chain, which we have held since late 2016. BEIS consulted on further measures to improve the sector's resilience in late 2017 and published its response to the consultation in April 2018.[52] BEIS is committed to maintaining an ongoing relationship.

Primary Oil Supply and Demand

34. All data are sourced from the Digest of UK Energy Statistics[53] unless otherwise specified.

35. Demand for primary oils decreased by 2.6% in 2018 following a period of extensive refinery maintenance early in the year.

36. Production of crude oil and natural gas liquids increased by 8.9% compared to 2017 because new projects came online in late 2017 and in 2018, boosting production through 2018. This represents the highest level of indigenous production since 2011.

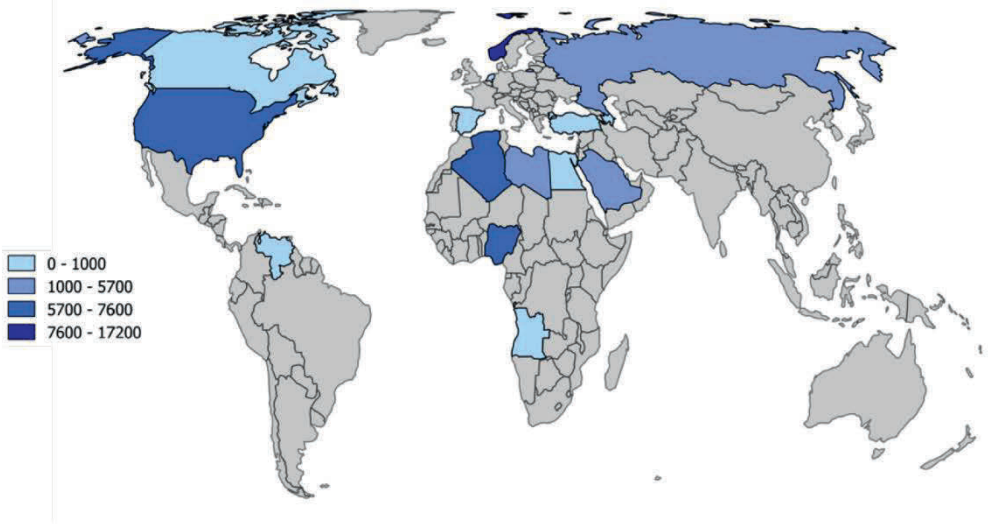
[51] https://www.gov.uk/government/statistics/uk-energy-in-brief-2019
[52] https://www.gov.uk/government/consultations/downstream-oil-supply-resilience
[53] Digest of UK Energy Statistics, 2019: https://www.gov.uk/government/statistics/petroleum-chapter-3-digest-of-united-kingdom-energy-statistics-dukes

37. While production of crude oil would have been sufficient to meet 87% of UK refinery demand in 2018, there has been an increase in the diversity of sources coming into the UK. This has reduced the impact of a disruption to any one source of supply on the UK. In 2018, a record low of 5.7 million tonnes (less than 10%) of demand was met by indigenous crude.

38. The UK trades extensively in primary oils globally, exporting to meet demand for Brent crude from refineries in the Middle East and importing from Norway and increasingly from the US. In 2018 the UK imported 52.4 million tonnes of primary oils, down slightly on 2017.

39. Figure 14 shows the diversity of sources of crude imports in 2018. For further information, see the article Diversity of supply for oil and oil products in OECD countries, 2017.[54]

Figure 14 – Source of UK crude oil imports 2018 (thousand tonnes)[55]



Source: Digest of UK Energy Statistics 2019

40. Due to its proximity to the UK and the similar composition of their crude supplies, Norway has historically been the primary source of UK imports. However, whereas 62% of crude imports were from Norway in 2016, this had fallen to 39% in 2018. OPEC supplies comprised 29% of the UK's 2018 crude imports. Following the removal of the crude export ban at the end of 2015, imports from the US have been continuously growing. In 2018, a record 8 million tonnes were from the US, growing sharply over the last 3 years.

41. Exports are also significant. In 2018 the highest exports since 2008 was recorded when exports increased by 16% to reach over 40 million tonnes. Production from new projects was predominantly exported, and attractive price spreads led to strong demand for Brent in Asia. The combined effect of increased exports and stable imports resulted in a dramatic reduction in net imports of primary oils by nearly a half in 2018.

[54] Energy Trends Diversity of Oil supply: https://www.gov.uk/government/publications/energy-trends-september-2018-special-feature-article-diversity-of-supply-for-oil-and-oil-products-in-oecd-countries-in-2017
[55] Digest of UK Energy Statistics (DUKES): https://www.gov.uk/government/statistics/petroleum-chapter-3-digest-of-united-kingdom-energy-statistics-dukes

When compared to the 2017 figure of 14.9 million tonnes, 2018 reduced sharply to 7.8 million tonnes.

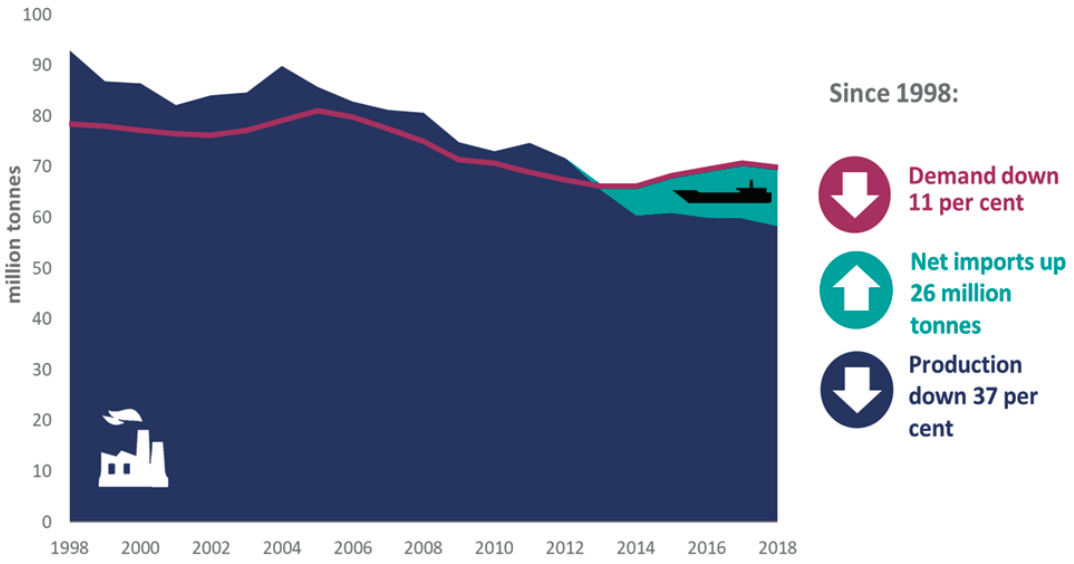
42. The Oil and Gas Authority estimates there are 507 million tonnes of proven and probable oil reserves at the end of 2018. Of this amount, 360 million tonnes are proven reserves.

Refined Product Demand and Supply

43. UK refineries have continued to rationalise and optimise their operations and refinery production remains at just 63% of peak levels in 1998. A 2.7% decrease in production in 2018 can be attributed to a period of extensive refinery maintenance early in the year. However, the UK remains one of the largest producers of oil products in the EU and produced 55 million tonnes in 2018 (roughly 80% of total demand).

44. Refinery production is not matched to demand on a product basis meaning that the UK also trades widely in oil products. Figure 15 shows how the UK is increasingly reliant on imports to meet demand for oil products. Net imports increased to 13 million tonnes in 2018 from 11.5 million tonnes in 2017. The market will continue to drive changes in the supply sector and the government recognises the benefit of ensuring that a mix of domestic refining and imports remains viable in the UK, so far as market conditions allow.

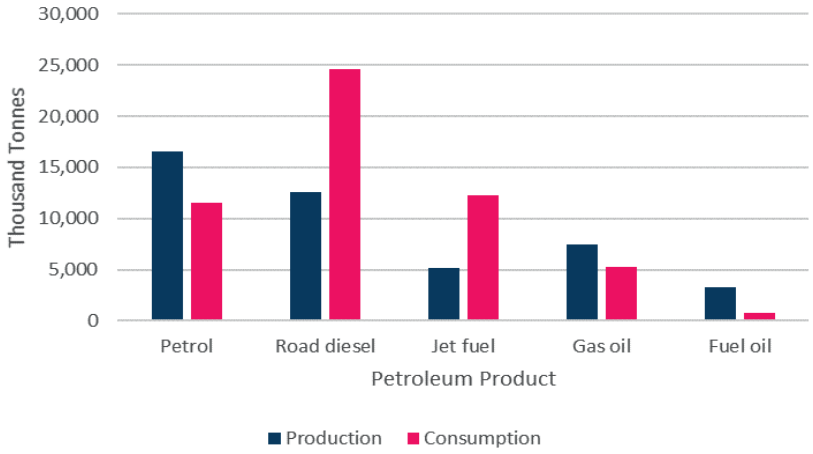
Figure 15 – UK Petroleum product demand, production and imports



Source: Digest of UK Energy Statistics, 2019

45. The UK is one of the largest importers of jet fuel and road diesel in the OECD, and one of the largest exporters of petrol. Figure 16 shows how production of petrol outstrips demand, whereas only half of diesel and around 40% of jet fuel demand can be met with domestic production.

Figure 16 – Production and consumption of key petroleum products 2018



Source: Digest of UK Energy Statistics, 2019

46. In 2018 imports remained relatively stable at 35.2 million tonnes, which was predominantly road diesel and jet fuel to meet transport needs. Nearly half of product exports are petrol because of the surplus from UK refineries. Major destinations of petrol exports include the US and the Netherlands, which acts as a trading hub.[56] In 2018 exports fell slightly by 3.9% to 22.2 million tonnes.

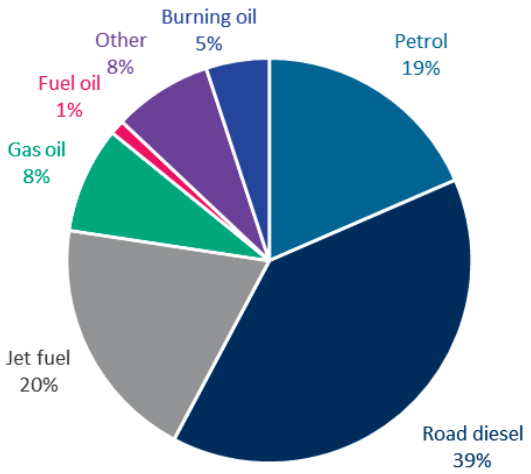
47. The first reduction in demand for oil products since 2014 was seen in a 1.2% decrease in 2018. Over 70% of total demand is for transport (Figure 17), and transport fuels decreased by 0.7%. Demand from the petrochemical industry, which consists of 10% of total demand also decreased by 0.8%.

[56] DUKES Table 3.10: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/821888/DUKES_3.10.xls

Figure 17 – Demand for oil products

Petroleum Product	Quantity (million tonnes)
Petrol	11.6
Road Diesel	24.6
Jet Fuel	12.3
Burning Oil	3.2
Gas Oil	5.3
Fuel Oil	0.7
Other	4.9

Figure 18 – UK oil demand by petroleum product type, 2018[57]



Source: UK Energy in Brief 2019

[57] UK Energy in Brief, https://www.gov.uk/government/collections/uk-energy-in-brief

Resilience

1. The UK remains well supplied by a combination of domestic refining and imported fuels and there were no significant disruptions to the end supply of oil products and fuels during 2018-19.

Emergency Oil Stocks

2. The UK holds emergency stocks of oil to respond to major disruptions to the global oil market as part of its membership of the European Union and International Energy Agency. In order to meet its international obligations, the UK directs oil companies that are substantial suppliers of oil products to the UK to hold stocks that can be released in an emergency. At the end of 2018, the UK held over 14 million tonnes of stocks. Of this total, 11 million tonnes were held for emergency purposes, broadly equivalent to around 61 days of consumption. These stocks are held both in the UK and overseas under contractual arrangements that allow stocks to be repatriated to the UK if necessary.

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