

Chapter 4: Natural Gas

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Key headlines

Natural gas demand was down 6.0 per cent compared to 2019, to 811 TWh, the lowest level seen since 2015 because of reduced activity across the economy during restrictions in place to curb the spread of Covid-19.

There were declines in gas demand for electricity generation, industry and services as large parts of the economy shutdown in line with government restrictions. Demand from industry fell to a new record low.

Domestic demand for gas marginally up from 2019. Despite the warmer weather in 2020, and the warmest year since 2014, domestic demand increased because of stay-at home orders.

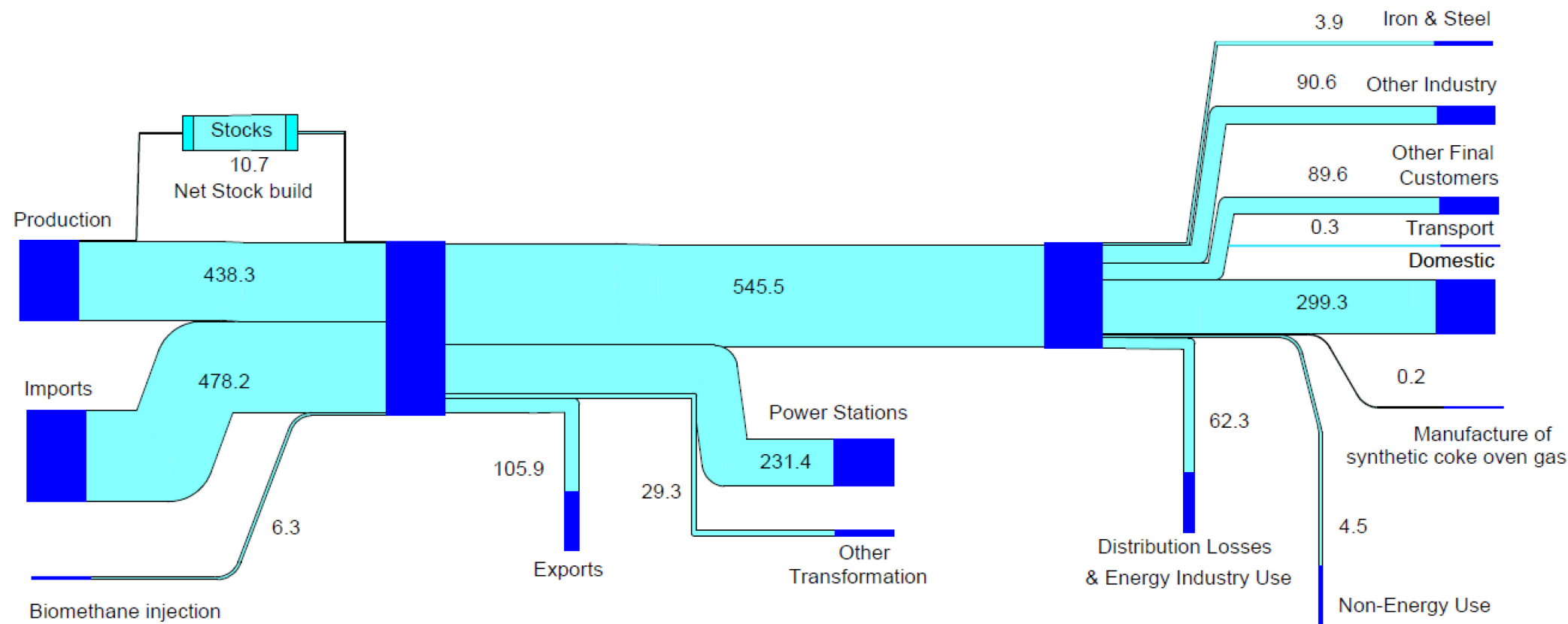
Net imports fell 12 per cent on 2019, in line with reduced demand. Despite this a growing Liquefied Natural Gas (LNG) market saw another record year for LNG imports, which reached the highest level since the peak in 2011. Global liquefaction capacity has increased consecutively for the last six years, and notably UK imports from the US were up by more than 70 per cent compared to 2019 as the US shale revolution continues to take hold.

Exports were up by almost a fifth on 2019 as the Bacton-Balgzand Line (BBL) was converted from an import pipeline to an interconnector allowing for trade in both directions. This conversion aims to support a UK oversupply in summer months as well as meet Dutch demand. As a result, there were record exports to the Netherlands in 2020.

Gross gas production was stable compared to 2019 despite a challenging year for maintenance. Gas production has been broadly stable for close to a decade and the UK remains the third largest natural gas producer in Europe.

The flow chart on the following page shows the flows of natural gas from production and imports through to consumption. It illustrates the flow of gas from the point at which it becomes available from indigenous production or imports (on the left) to the final use of gas (on the right), as well as volumes transformed into other forms of energy or exported. The widths of the bands are proportional to the size of the flow they represent.

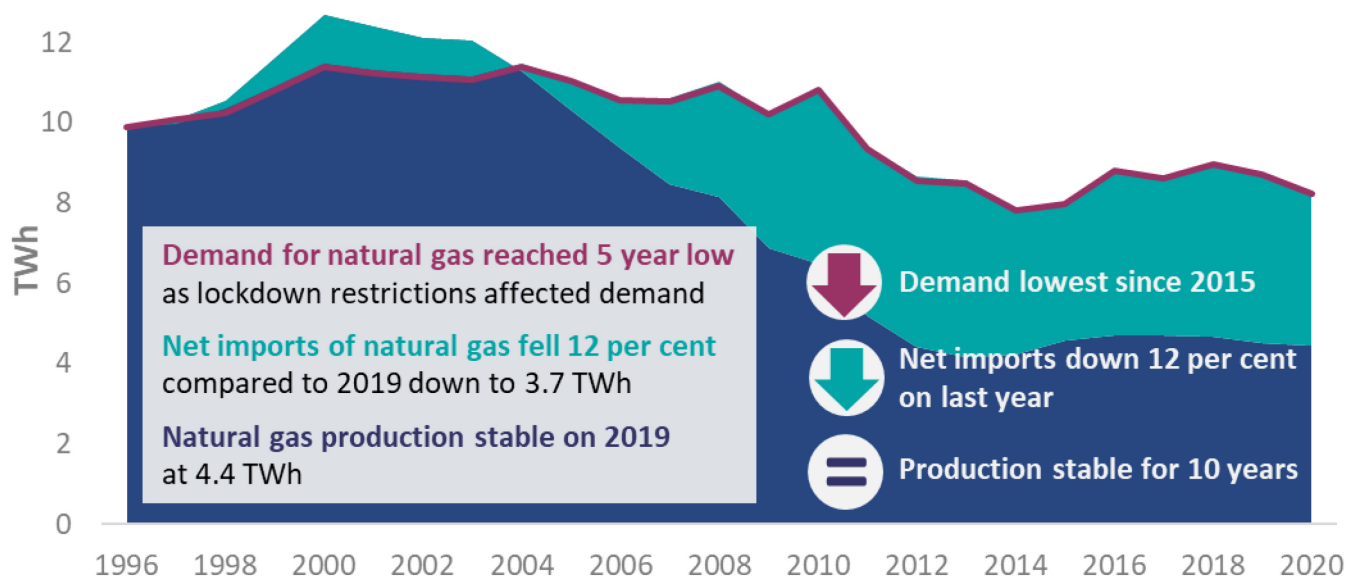
Natural Gas Flow Chart 2020 (TWh)



Note:

This flow chart is based on data that appear in Table 4.1, excluding colliery methane.

Chart 4.1 Supply and demand for natural gas, 1996-2020 ([DUKES Table 4.1](#))

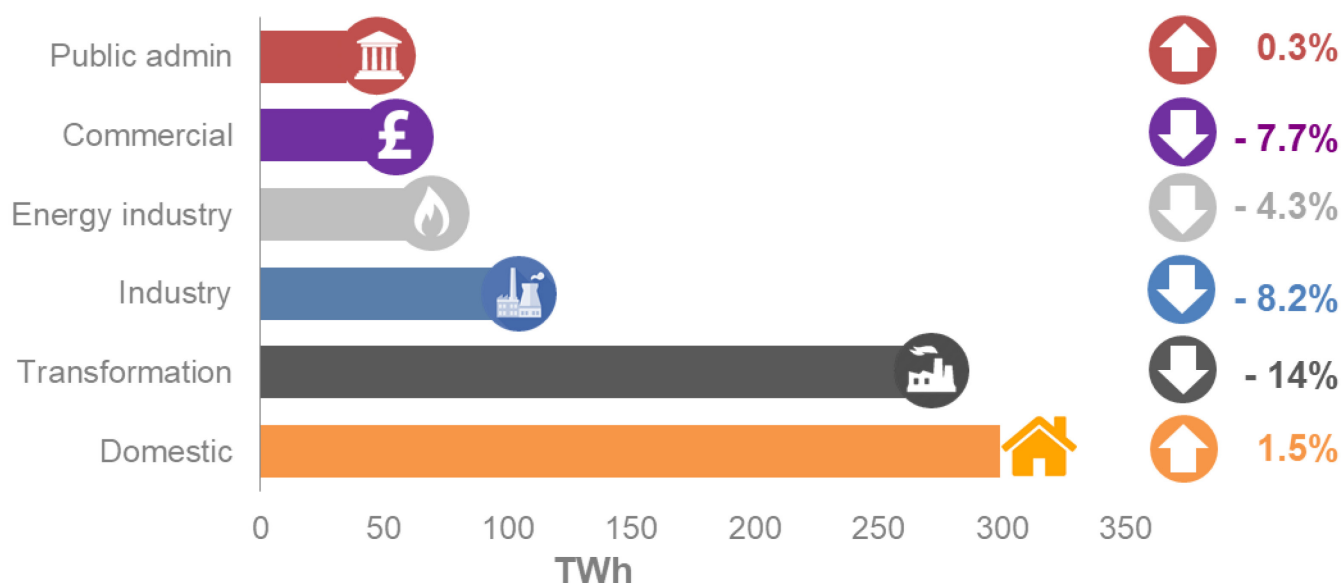


Natural Gas is an important part of the UK energy mix, accounting for 30 per cent of UK energy production in 2020, and 40 per cent of demand. **UK gas demand decreased 6.0 per cent in 2020 compared to 2019**, following several years of stable demand and was largely a result of restrictions in place to curb the Covid-19 pandemic. However, trends in demand varied by sector.

In 2020, UK gross gas production was 439 TWh, stable on 2019. UK gas production has been broadly stable for close to a decade following several years of decline since the peak in 2000. Despite this the UK remains a major producer of natural gas, sitting within the top 20 gas producing countries globally and the third largest in Europe. The Oil and Gas Authority produces analysis on oil and gas reserves which can be found [in the Oil and Gas reserves publication](#).

In 2020, indigenous production met more than half of demand with the remainder supplied via imports. Net imports fell by 12 per cent in 2020 compared to 2019 despite exports increasing 17 per cent as the Bacton to Balgzand Line (BBL) was converted to an interconnector allowing trade in both directions. Conversely imports fell to a 10-year low because demand was impacted by restrictions put in place to curb the spread of Covid-19.

Chart 4.2 Sectoral consumption of natural gas, 2019 to 2020 ([DUKES Table 4.1](#))



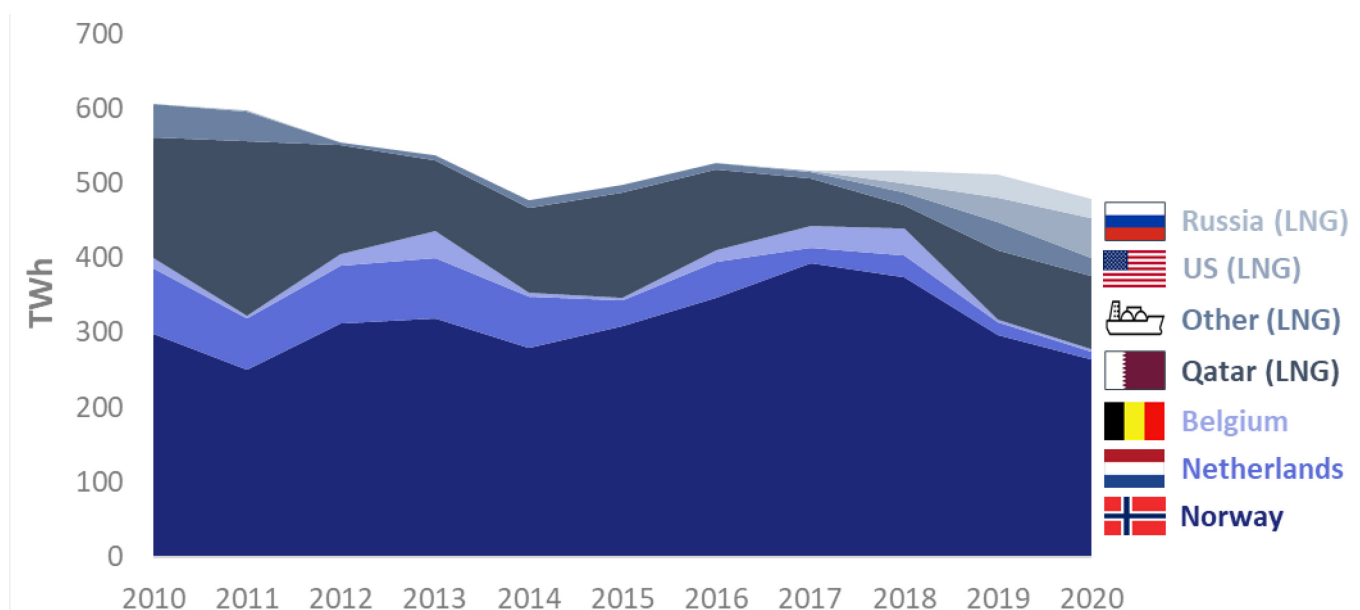
Domestic demand increased marginally, up 1.5 per cent in 2020 compared to 2019. This was despite warmer temperatures and a result of national restrictions in place to control the spread of Covid-19. Most domestic natural gas consumption is used for space and water heating as well as in appliances such as ovens and hobs. More people stayed at home changing their behaviour in line with national lockdowns and other restrictions. Overall, natural gas met two-thirds of total domestic energy demand in 2020.

In contrast, gas demand for electricity generation fell 15 per cent compared to 2019. This was due to a combination of reduced demand for electricity because of restrictions in place to curb the Covid-19 pandemic and from strong renewable generation reducing generation from fossil fuels (see [Chapter 5](#)).

Demand for gas by industry fell 8.3 per cent compared to 2019. At 95 TWh demand for gas by industry was the lowest on record in 2020 because industries slowed or ceased production in line with social distancing guidelines, particularly in the second quarter of the year, which reduced energy consumption across the sector.

Demand for natural gas by services fell 3.9 per cent in 2020 compared to 2019. Gas demand by the commercial sector was down 7.7 per cent as non-essential retail and hospitality venues were closed for large parts of the year. Conversely, gas demand by public administration was relatively stable in the face of warmer weather; despite school, university and office closures, hospitals remained open through periods of exceptional demand on their services.

Chart 4.3 Imports of natural gas, 2010-2020 ([DUKES Table 4.5](#))

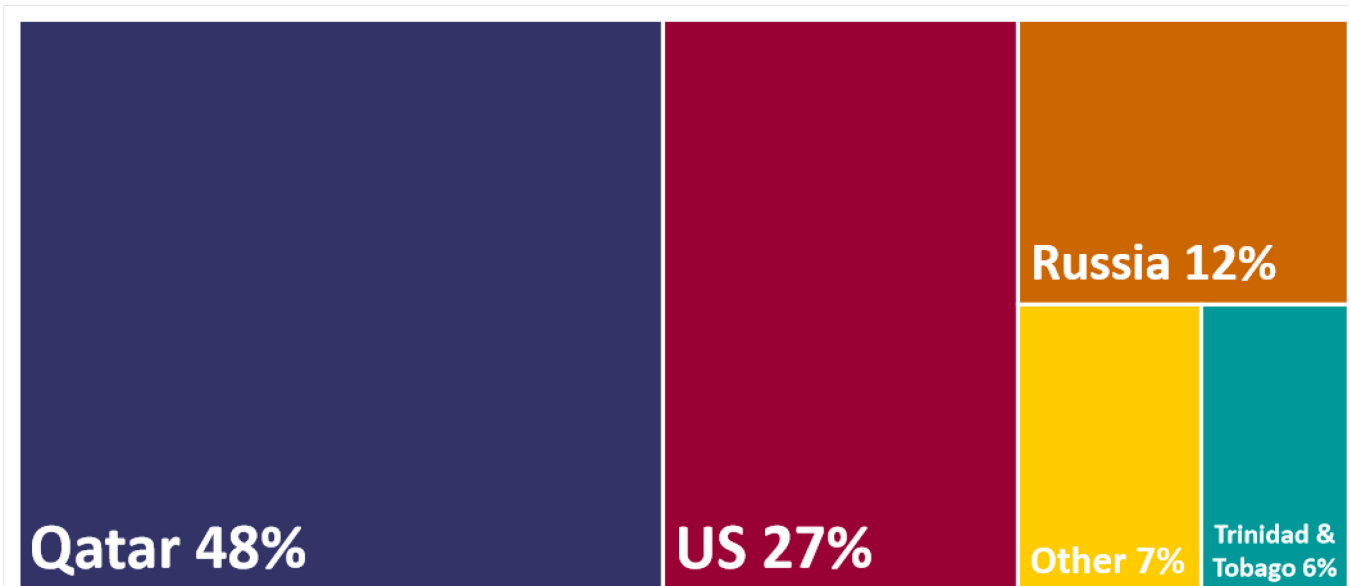


In 2020, imports were down 6.5 per cent on 2019. This was partly due to low demand. Imports arrive via pipeline; the UK imports natural gas via pipeline from Norway, Belgium and the Netherlands, or as liquefied natural gas (LNG) via ship.

Pipeline imports from Norway accounted for a third of total supply, the second largest source of natural gas following indigenous production. Imports of natural gas from Norway account for more than half of total imports. This is largely because of the UK's proximity to Norway and shared infrastructure in the North Sea. However, whilst substantial, imports of natural gas from Norway were down 11 per cent in 2020 compared to 2019 as imports of LNG displaced Norway's share to some extent.

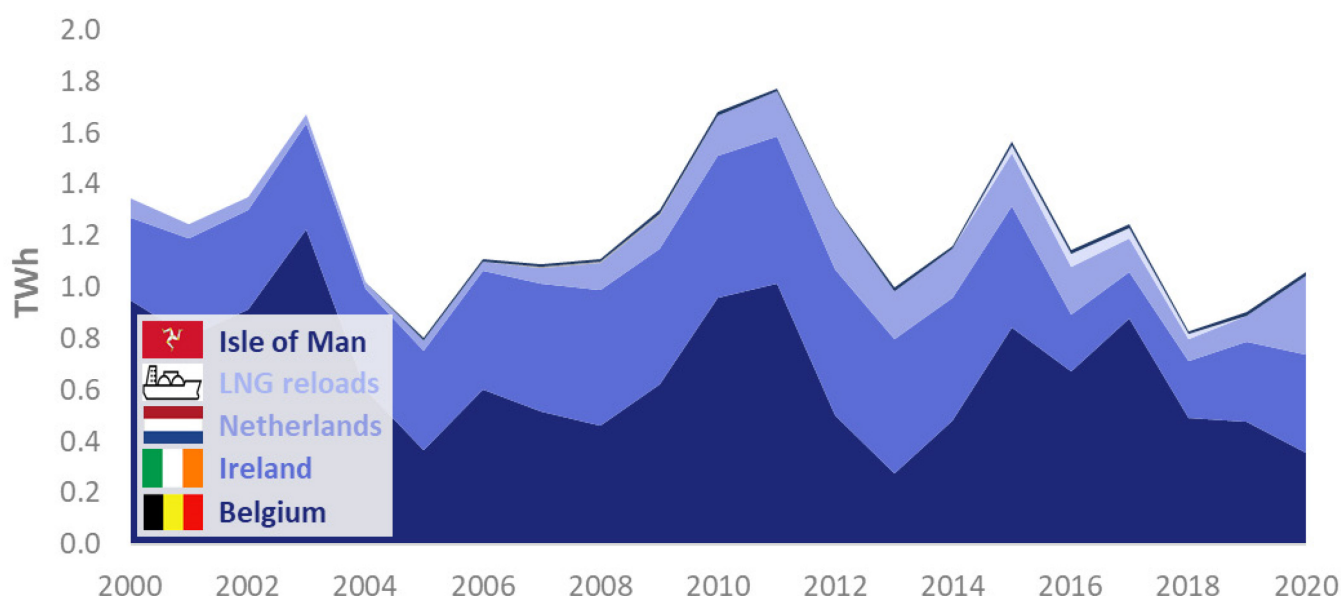
Imports of LNG increased again reaching near record highs. Despite low demand in 2020 market changes meant imports of LNG remained substantial. This follows record growth in 2019 when imports of LNG more than doubled as the UK played an important role in balancing an oversupplied market. Growth in 2020 was muted, up 2.9 per cent compared to 2019, because of substantial levels of gas in European storage followed by restrictions in response to the Covid-19 pandemic. For more information on the [supply of LNG see the special feature article](#).

Chart 4.4 UK LNG import sources by volume, 2020 ([DUKES Table 4.5](#))



LNG import sources have diversified, so improving UK security of supply. Historically, a large proportion of LNG imports have come from Qatar and this accounted for just under half of total LNG imports in 2020, compared to 98 per cent when they peaked in 2011. The UK imported LNG from a further nine sources; notably imports from the US increased by 72 per cent in 2020 compared to 2019. Increased import sources are attributable to growing global LNG liquefaction capacity and a rapidly growing commodity market.

Chart 4.5 Exports of natural gas, 2000-2020 ([DUKES Table 4.5](#))



*Minimal exports to Norway have been excluded from this chart.

Exports increased by almost a fifth in 2020 compared to 2019, largely due to record exports to the Netherlands following the conversion of the Bacton-Balgzand Line (BBL) from an import pipeline to an interconnector in 2019, allowing trade in either direction and with substantial exports beginning in spring 2020. This aims to manage UK oversupply in summer months following the closure of storage facilities and will also support Dutch security of supply as production at Groningen gas field, the largest in Europe, will halt in 2022.

Exports to the Republic of Ireland continue to grow, up 22 per cent in 2020 compared to 2019. This follows declining production at the Corrib gas field which accounts for most Irish indigenous production. Increasing exports to the Netherlands and Republic of Ireland outstrip a decline in exports to Belgium. Exports to Belgium continue to fall, down a quarter in 2020 compared to 2019, the second lowest level recorded. This decline is due to the termination of the Bacton-Zeebrugge interconnector contract.



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