

## Section 4 - Gas

### Key results show:

The most notable development this quarter relates to UK production of natural gas, which was 11 per cent down on the same quarter last year. This is the first fall seen since Q2 2016 and was driven by lower production in August 2017, the fifth lowest volume on record following a shutdown of terminals due to maintenance (**Chart 4.1**). Within this, production of associated gas was 13 per cent lower whilst dry gas production was 5.3 per cent lower (**Chart 4.2**).

Whilst overall trade levels have remained relatively stable, there are some significant changes in component elements. In particular, pipeline imports are up by just under 50 per cent (**Chart 4.4**). In contrast, imports of LNG decreased by nearly three-quarters (**Chart 4.4**). As a result, LNG imports accounted for less than 20 per cent of total imports compared with 40 per cent during Q3 2016. The decreases in LNG imports were driven by a contraction in LNG supplies from Qatar to the UK, due in part to high LNG demand from other countries.

Similarly exports have remained relatively flat, up just 1.9 per cent on last year, but once again the component elements have shifted substantially. Exports to the Republic of Ireland rose by 73 per cent on Q3 2016 due to the disruption of domestic gas supply in Ireland caused by a technical breach at Corrib. In contrast exports to the Netherlands fell by 45 per cent following the temporary shutdown of some fields which export directly to the Netherlands (**Chart 4.4**).

Demand for natural gas in Q3 2017 increased by 1.2 per cent compared to last year to 144 TWh (**Chart 4.6**).

Demand for electricity generation fell for the second quarter in a row in Q3 2017, down 6.7 per cent in comparison to the same quarter last year. This is in contrast to a recent period of sustained growth in demand, but – as shown in Chapter 5 - increased output from renewable energy displaced demand for gas (**Chart 4.6**).

In contrast final consumption was up 11 per cent, with domestic use and other final users up 15 per cent each, driven by reduced demand in Q3 2016 due to warmer temperatures in September last year (**Chart 4.6**).

Contacts for further information:

#### **Benjamin Lucking**

Upstream gas

Oil and Gas Statistics Team

Tel. 020 7215 5010

E-mail: [Benjamin.Lucking@beis.gov.uk](mailto:Benjamin.Lucking@beis.gov.uk)

#### **James Halliwell**

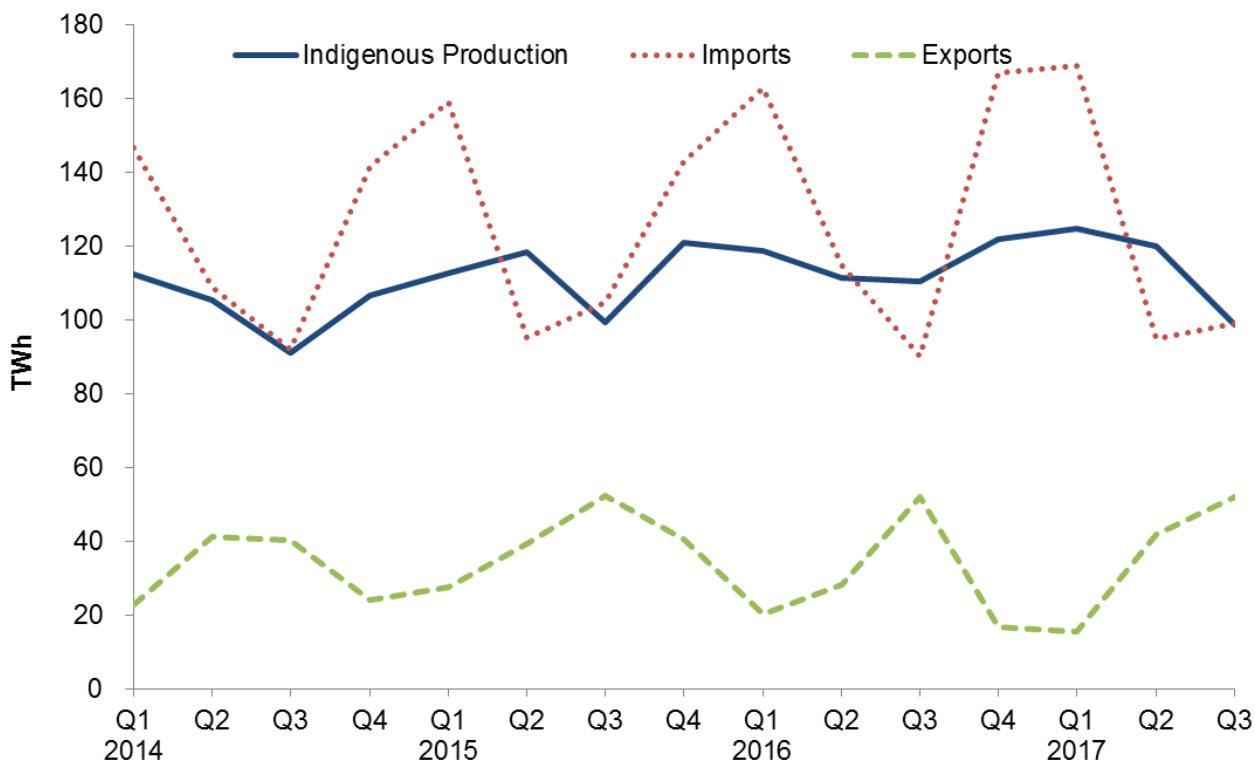
Downstream gas

Oil and Gas Statistics Team

Tel. 0300 068 8121

E-mail: [James.Halliwell@beis.gov.uk](mailto:James.Halliwell@beis.gov.uk)

**Chart 4.1 Production and imports and exports of natural gas (Table 4.1)**

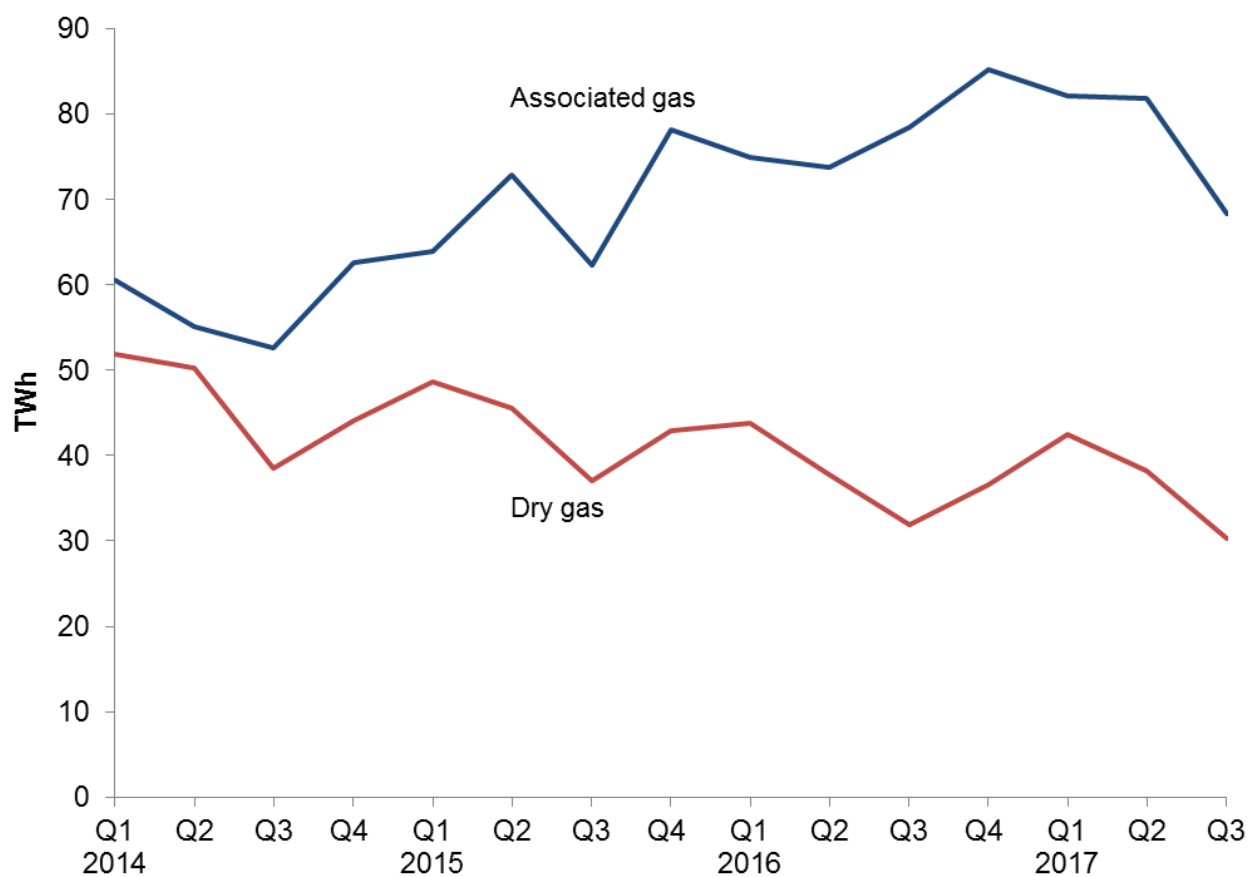


Gross production of natural gas was down by 11 per cent in Q3 2017, the first fall seen since Q2 2016 and around 40 per cent of the average quarterly production in 2000 when gas production peaked. This decrease was driven by lower production in August 2017, the fifth lowest volume on record following a shutdown of terminals due to maintenance.

The UK imports natural gas primarily from Norway (predominantly via the Langeled, Tampen Link and Gjoa/Vega pipelines). Smaller volumes are imported from Belgium (via the UK-Belgium Interconnector) and the Netherlands (via the Balgzand to Bacton line). See Map 4.1 for an illustration of trade flows.

Imports in Q3 2017 were up 9.9 per cent on the same quarter in 2016, with a 49 per cent increase in pipeline imports.

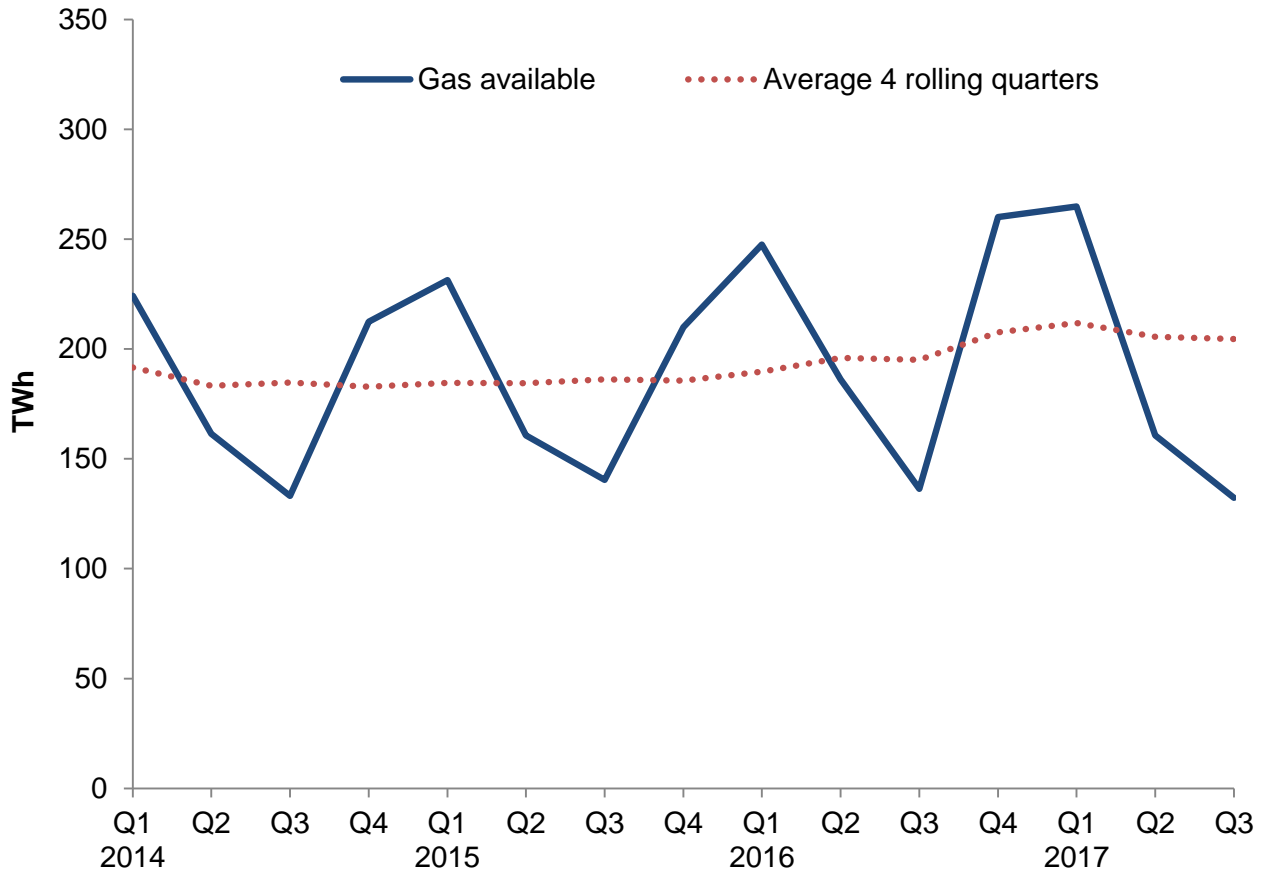
The UK exports natural gas primarily to Belgium (60 per cent of total exports in 2016) and Ireland (20 per cent of total exports in 2016). Exports rose by 1.9 per cent in Q3 2017 in comparison to the same quarter in 2016. Although a small total increase,

**Chart 4.2 Production of dry gas and associated gas (not shown in published tables)**

Production of associated gas (natural gas produced from oil fields) in Q3 2017 was down 13 per cent compared to the same quarter last year, from 78 to 68 TWh. Similarly dry gas production (natural gas composed mainly of methane) fell by 5.3 per cent in Q3 2017 on last year.

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**Chart 4.3 Gas availability (Table 4.2)**

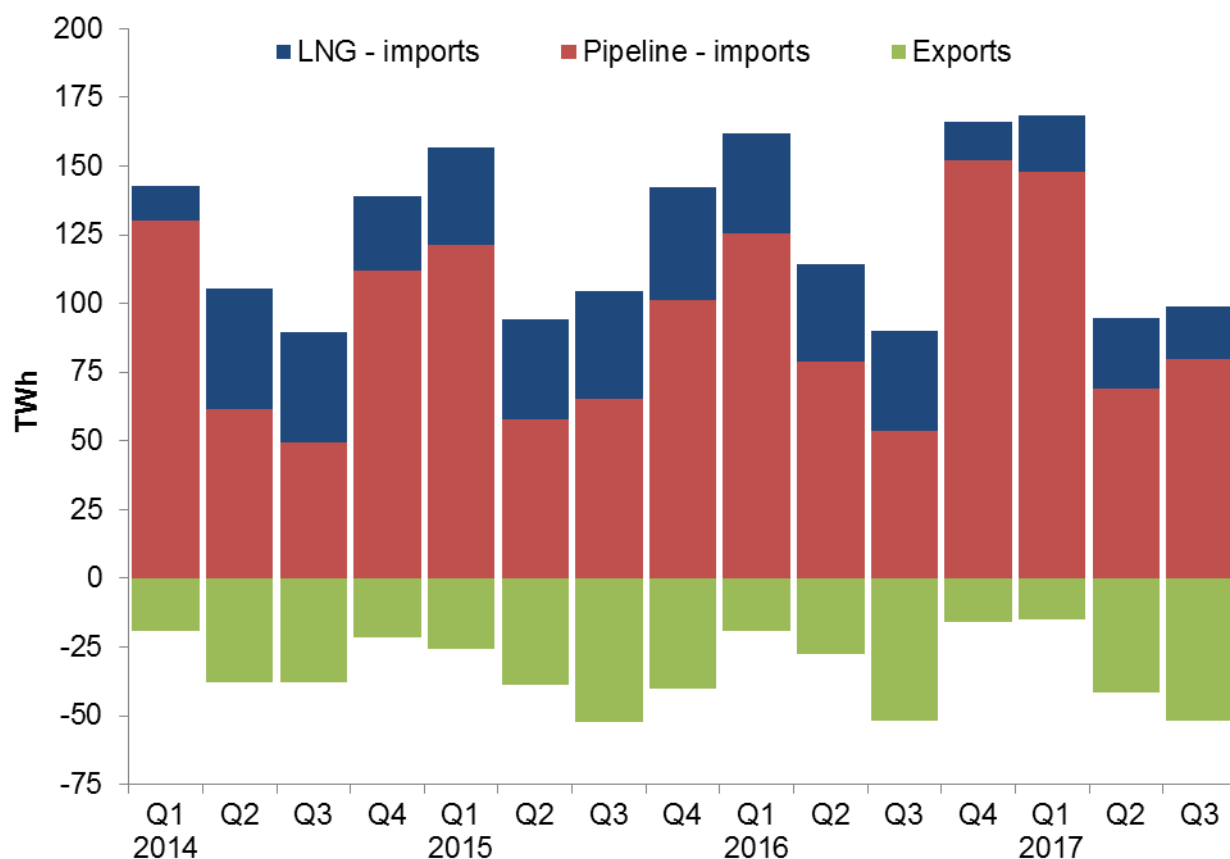


Gas available at terminals is roughly equal to gross gas production minus producers own use, plus net imports.

Gas availability is seasonal, mirroring gas demand, and peaks during Q1 and Q4 each year. Gas availability in Q3 2017 decreased by 3.0 per cent compared to Q3 2016 to 132 TWh, and was driven by the decrease in UK production.

The long-term picture shows that the average availability over four rolling quarters had remained fairly constant since the start of 2012 before increasing slightly since the start of 2015.

**Chart 4.4 Import and exports (Table 4.3 and Table 4.4)**



Net imports during Q3 2017 were up by one-fifth in comparison to the same quarter in 2016. This increase has been driven by the higher import figure, a result of a higher demand and a lower stock draw in Q3 2017.

As noted in Chart 4.1, the UK imports natural gas primarily from Norway (predominantly via the Langeled, Tampen Link and Gjoa/Vega pipelines). Smaller volumes are imported from Belgium (via the UK-Belgium Interconnector) and the Netherlands (via the Balgzand to Bacton line).

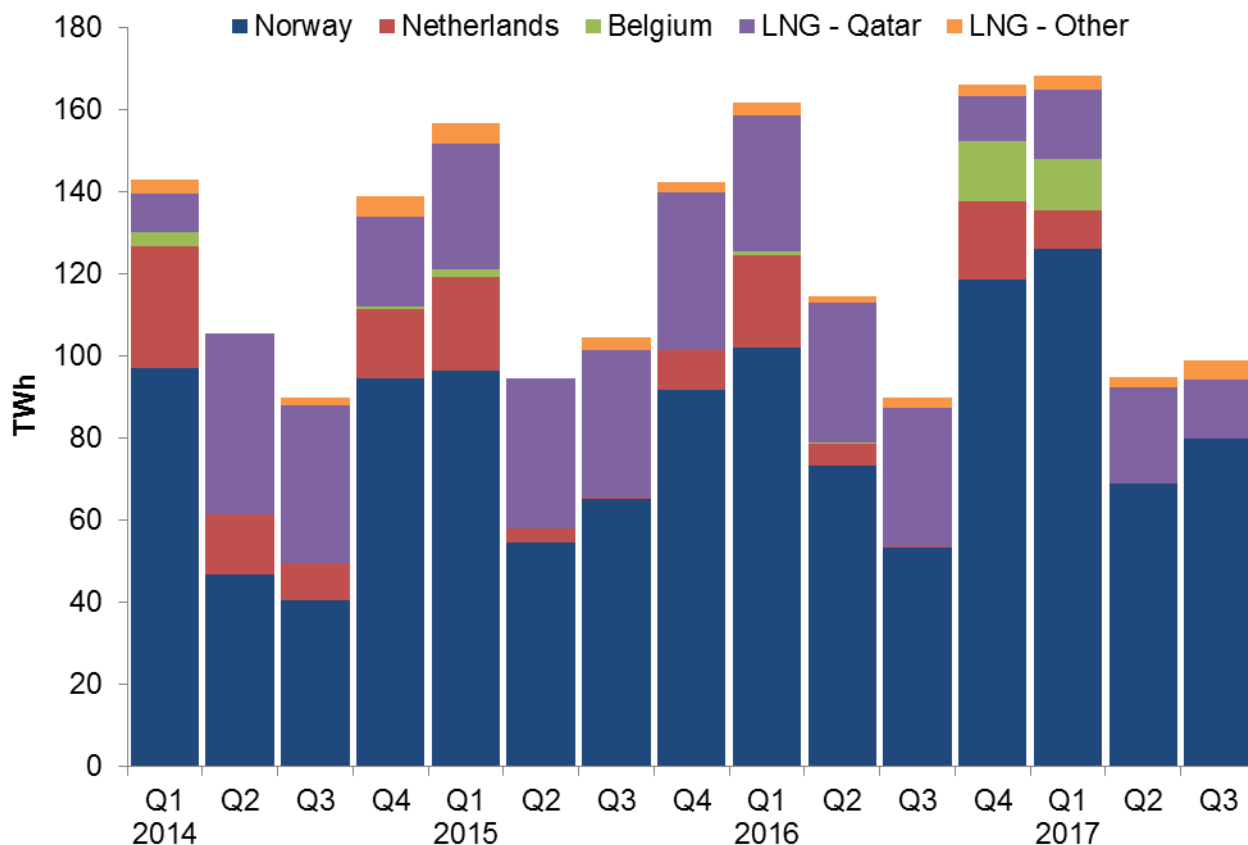
Whilst imports were only up 9.9 per cent, there were some significant changes to the component elements of imports. Pipeline imports are up by just under 50 per cent, with pipeline imports from Norway up by one-half. In contrast, imports of LNG decreased by three-quarters. As a result, LNG imports only accounted for less than 20 per cent of total imports, compared with 40 per cent during Q3 2016. The decreases in LNG imports were driven by a contraction in LNG supplies from Qatar to the UK, due in part to high LNG demand from other countries.

Similarly exports have remained relatively flat, up just 1.9 per cent on last year, but once again the component elements have shifted substantially. Exports to the Republic of Ireland rose 73.4 per cent on Q3 2016 due to the disruption of domestic gas supply in Ireland caused by a technical breach at Corrib. In contrast exports to the Netherlands fell by 45 per cent, following the temporary shutdown of some fields which export directly to the Netherlands.

Whilst the UK has the capacity to export LNG through reloading cargoes, for the second consecutive quarter there have been no LNG exports'

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**Chart 4.5 Imports by origin (Table 4.4)**

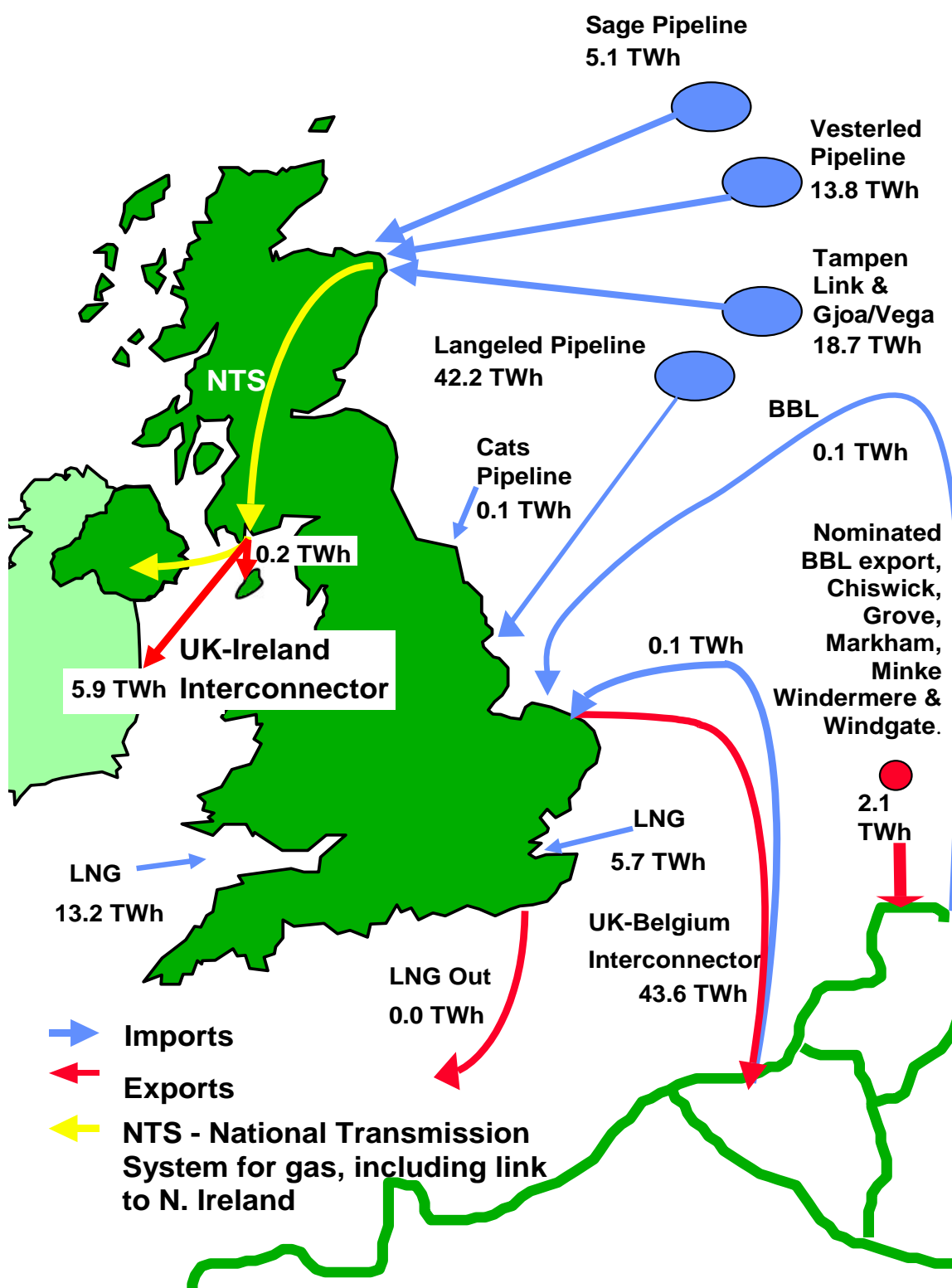


The main development in Q3 2017 is the overall increase in the amount of imports into the UK, driven by a 49 per cent increase in pipeline imports. Norway imports remain the principal source of UK gas imports (at over three-quarters of total imports in Q3 2017 compared to half in 2010) and has seen a 50 per cent increase.

In contrast in Q3 2017 LNG imports decreased by 48 per cent, with LNG's share of total imports decreasing to 19 per cent in comparison to 41 per cent in Q3 2016. The majority of LNG imports are sourced from Qatar - around three-quarters in Q3 2017 (down from roughly 90 per cent in Q3 2016), with the volume of imports from Qatar down by 57 per cent. This decrease was due to high LNG demand from other countries and a reduction in the UK's gas storage capacity.

A complete country breakdown for physical pipeline and LNG imports is provided in Energy Trends Table 4.4 - *Supplementary information on the origin of UK gas imports*.

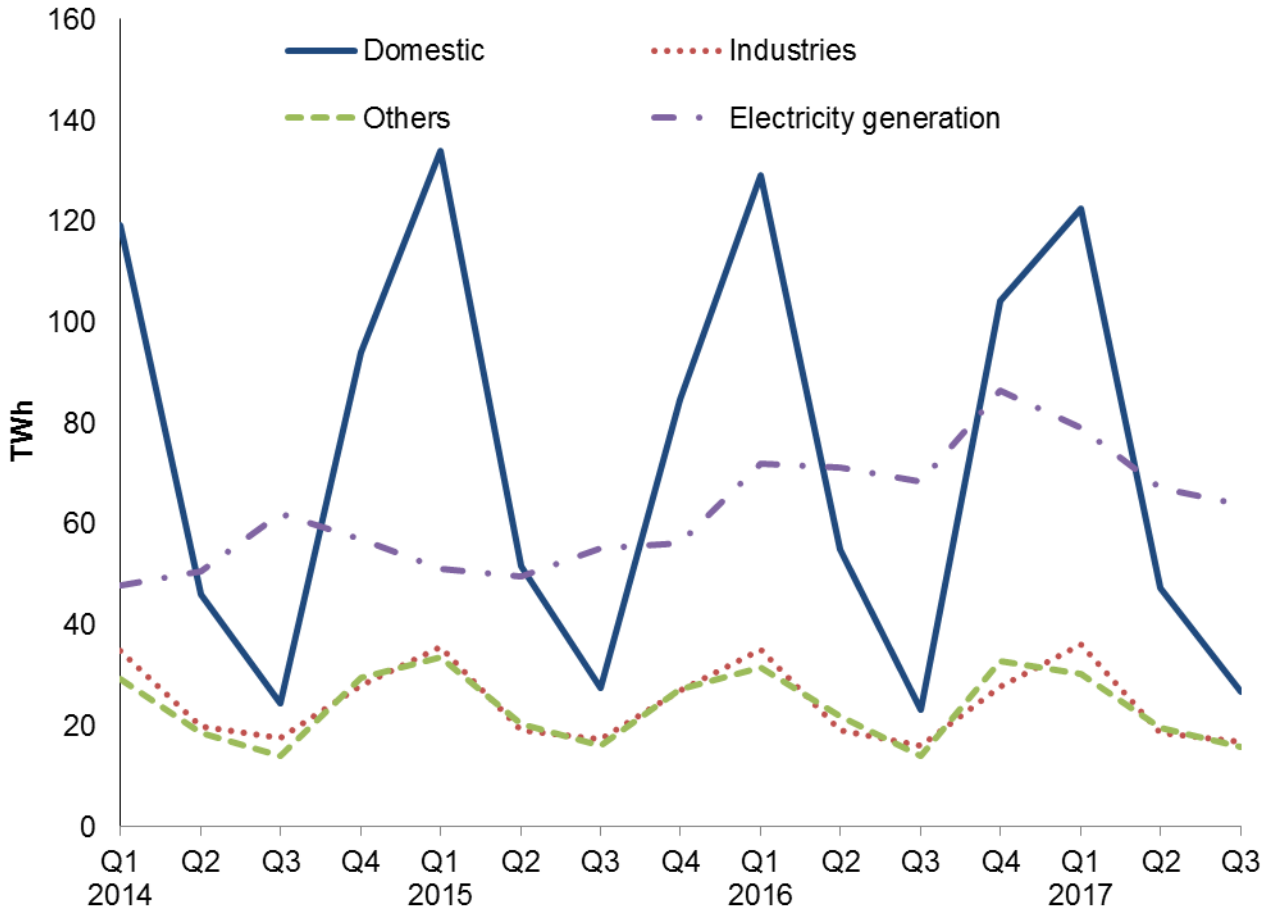
Map 4.1: UK imports and exports of gas Q3 2017\*



\*Please note that imports and exports in this map uses nominated flows through the UK-Belgium Interconnector and BBL pipeline as in Table 4.1. The figures here will differ from those in ET Table 4.3 which uses actual physical flows through the Interconnector.

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**Chart 4.6 UK demand for natural gas (Table 4.1)**



UK demand for natural gas in Q3 2017 is up 1.2 per cent in comparison Q3 2016 to 144 TWh.

Demand for electricity generation fell for the second quarter in a row in Q3 2017, down 6.7 per cent in comparison to the same quarter last year. This is in contrast to a recent period of sustained growth in demand, but – as shown in Chapter 5 - increased output from renewable energy displaced demand for gas.

In contrast final consumption was up 11 per cent, with domestic use and other final users up 15 per cent each, driven by reduced demand in Q3 2016 due to warmer temperatures in September last year.



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Table 4.1. Natural gas supply and consumption

	GWh												
	2015	2016	per cent change	2015 3rd quarter	2015 4th quarter	2016 1st quarter	2016 2nd quarter	2016 3rd quarter	2016 4th quarter	2017 1st quarter	2017 2nd quarter	2017 3rd quarter p	per cent change <sup>1</sup>
<b>SUPPLY</b>													
Indigenous production	451,437	462,307	+2.4	99,296	121,031	118,637	111,542	110,387	121,740	124,671r	120,097r	98,597	-10.7
Imports	501,563	534,740	+6.6	104,648	142,788	162,960	114,908	89,950	166,923	168,861r	94,995	98,857	+9.9
of which LNG	152,406	122,310	-19.7	39,207	41,001	36,505	35,591	36,351	13,863	20,477	26,008	18,876	-48.1
Exports	159,517	116,862	-26.7	52,184	40,459	20,163	27,979	51,985	16,735	15,417	41,758	52,959	+1.9
Stock change <sup>2</sup>	3,515	16,242		-15,919	-4,024	31,688	-9,551	-6,797	901	13,185	1,597	-1,028	-84.9
Transfers <sup>3</sup>	559	1,575		182	190	238	345	457	535	562	631	676	
<b>Total supply</b>	<b>797,558</b>	<b>898,002</b>	<b>+12.6</b>	<b>136,023</b>	<b>219,526</b>	<b>293,361</b>	<b>189,265</b>	<b>142,013</b>	<b>273,363</b>	<b>291,862r</b>	<b>175,561r</b>	<b>144,143</b>	<b>+1.5</b>
Statistical difference	779	1,476		-135	443	626	859	24	-34	-517r	706r	412	
<b>Total demand</b>	<b>796,779</b>	<b>896,527</b>	<b>+12.5</b>	<b>136,158</b>	<b>219,083</b>	<b>292,735</b>	<b>188,406</b>	<b>141,988</b>	<b>273,397</b>	<b>292,380r</b>	<b>174,855r</b>	<b>143,731</b>	<b>+1.2</b>
<b>TRANSFORMATION</b>	<b>237,682</b>	<b>323,763</b>	<b>+36.2</b>	<b>60,220</b>	<b>62,975</b>	<b>79,870</b>	<b>77,013</b>	<b>73,250</b>	<b>93,629</b>	<b>87,064r</b>	<b>72,868r</b>	<b>68,686</b>	<b>-6.2</b>
Electricity generation	212,289	297,643	+40.2	55,277	56,289	71,854	71,180	68,295	86,314	79,048r	67,036r	63,731	-6.7
Heat generation <sup>4</sup>	25,393	26,120	+2.9	4,942	6,687	8,016	5,833	4,955	7,315	8,016	5,833	4,955	-
Energy industry use	58,645	57,773	-1.5	13,115	15,326	16,014	14,096	13,913	13,749	15,625r	15,233r	14,562	+4.7
Losses	6,469	5,396	-16.6	1,833	2,082	1,154	1,393	1,636	1,212	1,088r	1,145r	1,299	-20.6
<b>FINAL CONSUMPTION</b>	<b>493,983</b>	<b>509,596</b>	<b>+3.2</b>	<b>60,990</b>	<b>138,699</b>	<b>195,697</b>	<b>95,903</b>	<b>53,189</b>	<b>164,806</b>	<b>188,603r</b>	<b>85,608r</b>	<b>59,184</b>	<b>+11.3</b>
Iron & steel	5,374	4,155	-22.7	1,253	1,118	1,161	990	973	1,032	1,212	1,024	899	-7.6
Other industries	93,825	93,842	-	16,140	25,793	34,033	18,017	15,166	26,625	34,819r	17,613r	15,814	+4.3
Domestic	297,582	311,375	+4.6	27,617	84,549	129,040	55,039	23,098	104,197	122,394r	47,394r	26,626	+15.3
Other final users	91,935	95,115	+3.5	14,664	25,923	30,186	20,580	12,674	31,676	28,900r	18,300r	14,568	+14.9
Non energy use <sup>4</sup>	5,267	5,109	-3.0	1,317	1,317	1,277	1,277	1,277	1,277	1,277	1,277	1,277	-

1. Percentage change between the most recent quarter and the same quarter a year earlier.

2. Stock change + = stock draw, - = stock build.

3. Natural gas used in the manufacture of synthetic coke oven gas and biomethane injections into the grid from installations certified under the Renewable Heat Incentive (RHI).

4. For heat generation and non energy use, the 2017 figures currently shown are the 2016 figures carried forward - these will be updated in June 2018.