

Chapter 4

Natural gas

Key points

- Overall UK natural gas production has been decreasing since 2000, and in 2010 was down 4 per cent on 2009. This was one of the smaller year-on-year decreases this millennium, though it should be set against a 14 per cent decrease the year before (Chart 4.1, paragraph 4.6); since 2000 gas production has been falling by an average of around 6 per cent a year.
- Imports of natural gas in 2010 were almost a third higher than in 2009, mainly because of lower production and higher demand (Table 4.1).
- LNG is increasingly important as a source of imports to supplement existing ones. In September 2010, imports from shipped LNG surpassed the gas imported via pipeline from Norway for the first time. In 2010 LNG imports accounted for 35 per cent UK's total commercial imports (Chart 4.3).
- The increased import infrastructure coupled with a relatively modest fall in UK production contributed to almost record levels of commercial exports, up 29 per cent and close to those seen in 2003. The total volume of traded gas in 2010 is at its highest level ever (paragraph 4.31).
- Total gas demand increased by 8.4 per cent in 2010, largely a reflection of the cold weather and higher demand from electricity generators compared to 2009 (Table 4.1).

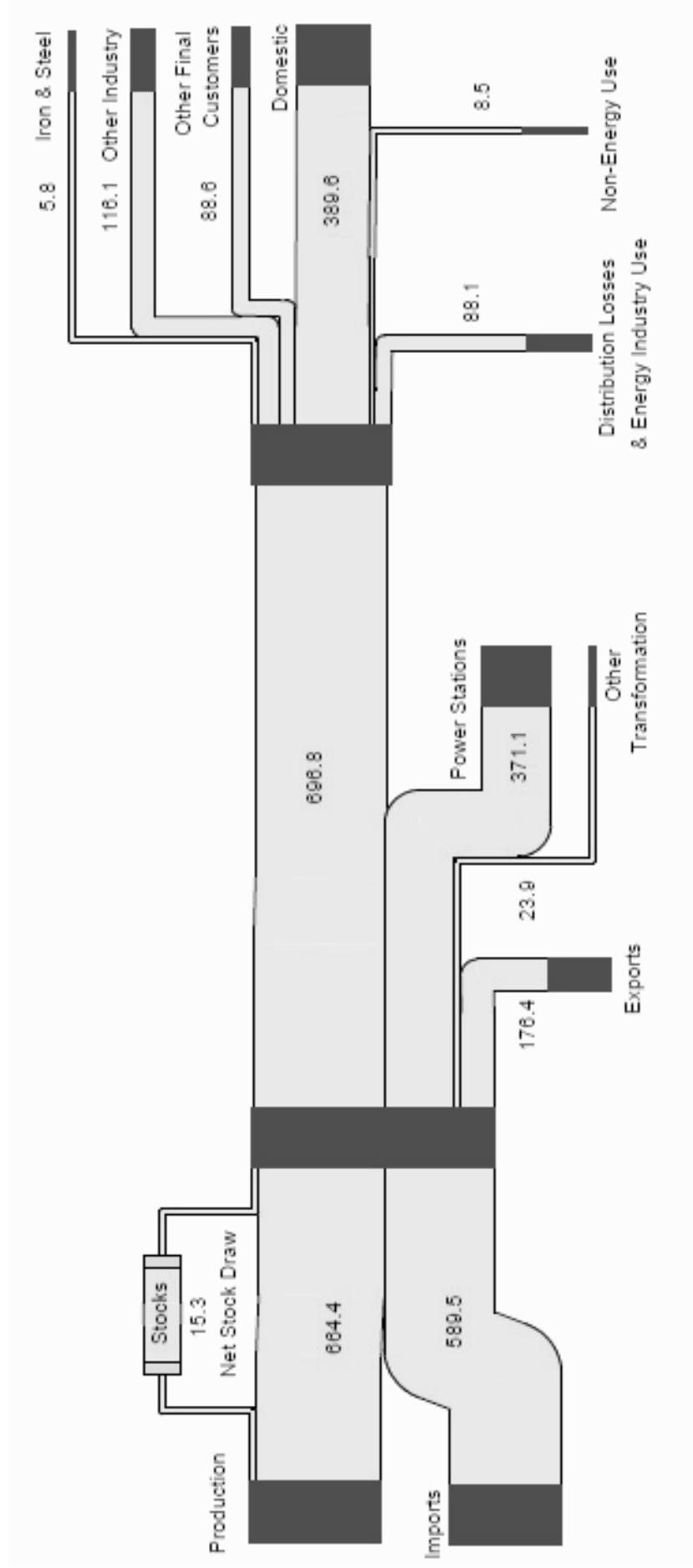
Introduction

4.1 This chapter presents six data tables on the production, transmission and consumption of natural gas and colliery methane, and two maps showing the gas transmission system in the UK and flows of gas in and around Europe (pages 106 & 107).

4.2 An energy flow chart for 2010, showing the flows of natural gas from production and imports through to consumption, is included overleaf, as a way of simplifying the figures that can be found in the commodity balance tables. It illustrates the flow of gas from the point at which it becomes available from home production or imports (on the left) to the eventual final use of gas (on the right) as well as the gas transformed into other forms of energy or exported.

4.3 Table 4.1 shows the commodity balances for natural gas and colliery methane, both separately and in aggregate. In Table 4.2, the two gases are aggregated and presented as a five year time-series, showing supply, transmission and consumption. The natural gas statistics includes bio-methane gas which is being currently being produced by a small number of companies to feed into the national grid. However, at this stage, volumes are small but as this increases we will look to present these in a separate column in Table 4.1. A more detailed examination of the various stages of natural gas from gross production through to consumption is given in Table 4.3. Table 4.4 details the UK's gas storage sites and interconnector pipelines, while Table 4.5 shows the UK's imports and exports of gas and Table 4.6 shows LNG imports by terminal. Long term trends commentary and a table on production and consumption of gas back to 1970 are to be found on DECC's energy statistics web site at: www.decc.gov.uk/en/content/cms/statistics/publications/dukes/dukes.aspx

Natural gas flow chart 2010 (TWh)



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

4.4 Petroleum gases are covered in Chapter 3. Gases manufactured in the coke making and iron and steel making processes (coke oven gas and blast furnace gas) appear in Chapter 2. Biogases (landfill gas and sewage gas) are part of Chapter 7. Details of net selling values of gas for the domestic, industrial and other sectors are to be found in Chapter 1.

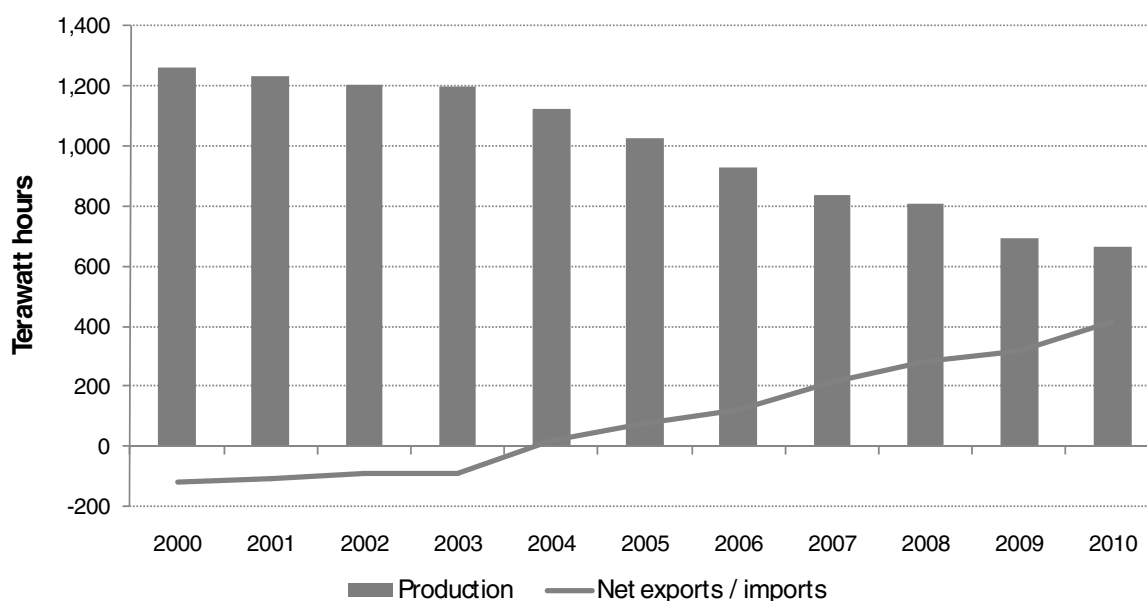
Commodity balances for gas (Tables 4.1 and 4.2)

4.5 Total supply of gas is made up of production, net trade and stock change.

4.6 UK Continental Shelf (UKCS) production of natural gas has been in decline since the turn of the decade and in 2010 (at 664,353 GWh) it was about half the level produced in 2000 (1,260,168 GWh). Since 2000, gas production has fallen off at a rate of about 6 per cent per year. However, the rate of decline varies each year, and in 2010 production was only 4 per cent lower than in 2009, partly as a result of a significant fall – over 14 per cent - in 2009 which resulted from extended maintenance work. The UK is still one of the largest gas producers in the EU, second only to the Netherlands, and remains within the top 20 producers globally, accounting for around 2 per cent of total global production.

4.7 The UK imports natural gas by pipelines from Norway, Belgium and the Netherlands and Liquefied Natural Gas (LNG) by ship. The UK has been a net importer of gas since 2004 with imports of gas in 2010 accounting for just under a half of the UK's gross (consumption *plus* exports) gas demand. In 2009 two new LNG terminals at Milford Haven (Dragon and South Hook) began commissioning gas and contributed to the 29 per cent increase in natural gas imports over 2009. The pattern of production and trade be seen in Chart 4.1.

**Chart 4.1: Natural gas production and net exports/imports
2000 to 2010**



4.8 After a decrease of 7.6 per cent in 2009, total gas demand increased by 8.4 per cent in 2010, from 1,008 TWh to 1,093 TWh, largely a reflection of the cold weather and higher demand from electricity generators. Demand is traditionally slightly less than supply because of the various measurement differences described in paragraphs 4.57 to 4.61. In 2010, demand was 0.7 TWh (under 0.1 per cent) less than supply.¹

¹ The term statistical difference is used to define the difference between total supply and total demand – see paragraph 4.57

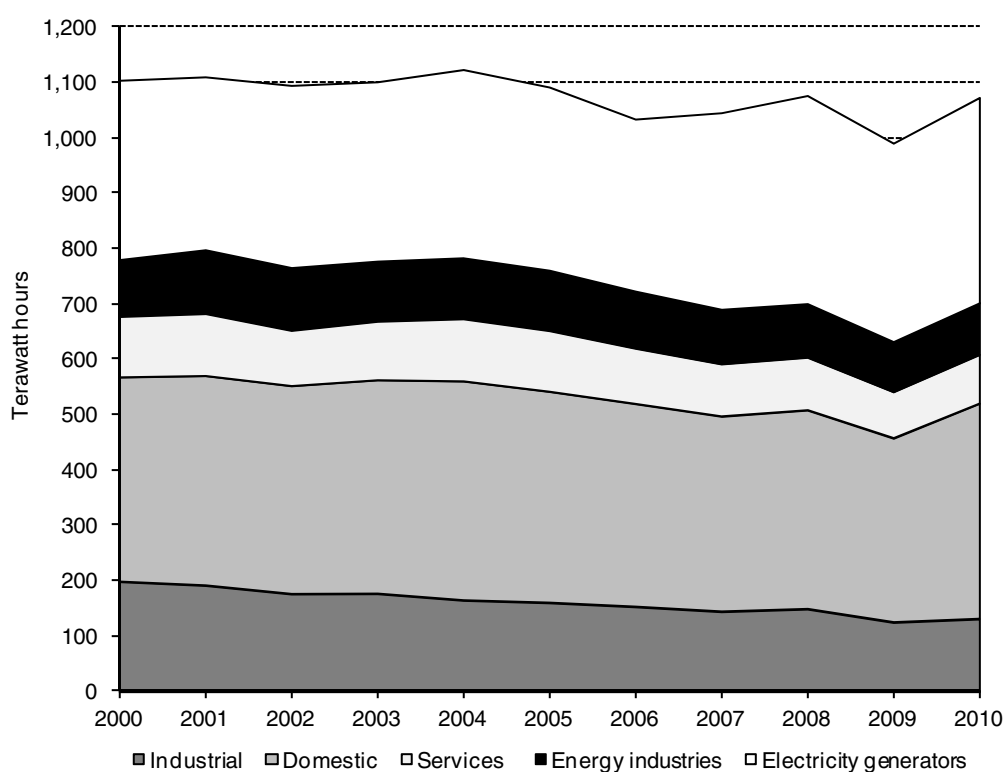
4.9 In 2010, 34 per cent of natural gas demand (371 TWh) was for electricity generation (transformation sector), 1.6 percentage points less than in 2009, although the actual volume was up 3.5 per cent on 2009. A further 6.4 per cent was consumed within the energy industries, while 1.7 per cent was accounted for by distribution losses within the gas network. (For an explanation of the items included under losses, see paragraph 4.16). Of the remaining 58 per cent, 2.2 per cent was transformed into heat for sale to a third party, and 11 per cent was accounted for by the industrial sector, with the chemicals industry (excluding natural gas for petrochemical feedstocks), food, mineral products and paper making industries being the largest consumers. The chemicals sector accounted for a fifth of the industrial consumption of natural gas.

4.10 Sales of gas to households (domestic sector) accounted for over a third of gas demand, while public administration (including schools and hospitals) consumed 3.5 per cent of total demand. The commercial, agriculture and miscellaneous sectors together took up 4.6 per cent. Non-energy use of gas accounted for the remaining 0.8 per cent. (See paragraph 4.50 for more details on non-energy use of gas.)

4.11 Chart 4.2 summarises the points above and shows that, gas consumption is split roughly equally in thirds between electricity generation and domestic use with the remaining third going to a combination of industry/services and energy industries. Most gas for electricity generation was used in Combined Cycle Gas Turbine (CCGT) stations. However, gas use for electricity generation has fluctuated with changes in the relative price of coal and gas. Price increases during 2005 and 2006 saw gas use for generation fall in both years. In 2007, however, gas use by generators rose by 14 per cent and by a further 5.9 per cent in 2008 to a record high of 376 TWh. Gas use for generation fell by 4.6 per cent in 2009 following a decrease in electricity demand, this was followed by an increase of 3.5 per cent in 2010.

4.12 Between 2000 and 2007, industrial use of gas has been on a downward trend apart from a small recovery in 2003. In 2008, however, consumption increased by 4.0 per cent, with most industrial sectors, notably excepting iron and steel, showing increases in demand. With the economic downturn, however, overall industrial demand fell by 16 per cent in 2009, from 139 TWh to 116 TWh, followed by a small growth in 2010 (4.8 per cent to 122 TWh). Use by the public administration sector was 3.5 per cent higher in 2010, at 38 TWh, while the commercial sector was up 8.4 per cent, at 32 TWh. Consumption in the energy industries other than electricity (and heat) generation increased but only by a small amount (0.6 per cent) to 69 TWh in 2010.

Chart 4.2: Consumption of natural gas 2000 to 2010



4.13 Gas use in the domestic sector is particularly dependent on winter temperatures. The average temperature in 2010 was 1.1 degrees celsius cooler than 2009, in particular, the fourth quarter of 2010 was a 2.5 degrees colder than the fourth quarter of 2009, with December being the coldest month with average temperatures below freezing. As a result domestic sector consumption increased by 17 per cent on 2009, up from 332 TWh to 390 TWh, with just a third of this being consumed in the fourth quarter of 2010.

4.14 Maximum daily demand for natural gas through the National Transmission System in winter 2009/2010 was a new record high of 5,798 GWh on 18th February 2011. This total maximum daily demand was 14 per cent higher than the 2009/2010 level, and 17 per cent higher than January 2003's previous record level.

4.15 It is estimated that sales of gas supplied on an interruptible basis accounted for around 13 per cent of total gas sales in 2010, 2.4 percentage points lower than in 2009.

UK continental shelf and onshore natural gas (Table 4.3)

4.16 Table 4.3 shows the flows for natural gas from production through transmission to consumption. The footnotes to the table give more information about each row. This table departs from the standard balance methodology and definitions in order to maintain the link with past data and with monthly data given on DECC's energy statistics web site (see paragraph 4.56). The relationship between total UK gas consumption shown in this table and total demand for gas given in the balance Table 4.1 is illustrated for 2010 as follows:

	GWh
Total UK consumption (Table 4.3)	1,008,705
<i>plus</i> Producers' own use	61,124
<i>plus</i> Operators' own use	<u>3,211</u>
<i>equals</i>	
"Consumption of natural gas"	1,073,040
<i>plus</i> Other losses and metering differences (upstream)	-
<i>plus</i> Downstream losses - leakage assessment	5,314
- own use gas	429
- theft	2,146
<i>plus</i> Metering differences (transmission)	<u>10,848</u>
<i>equals</i>	
Total demand for natural gas (Table 4.1)	1,091,777

4.17 The box below shows how, in 2010, the wastage, losses and metering differences figures in Table 4.3 are related to the losses row in the balance Table 4.1.

	GWh
Table 4.3	
Upstream gas industry:	
Other losses and metering differences	-
Downstream gas industry:	
Transmission system metering differences	10,848
Leakage assessment	5,314
Own use gas	429
Theft	<u>2,146</u>
Table 4.1	
Losses	18,737

4.18 The statistical difference row in Table 4.1 is made up of the following components in 2010:

Table 4.3	GWh
Statistical difference between gas available from upstream and gas input to downstream	68
<i>plus</i> Downstream gas industry:	
Distribution losses and metering differences	613
Table 4.1	
Statistical difference	682

4.19 The gas available at UK terminals has remained fairly constant during the last five years despite a reduction in UKCS production mainly due to the changes in exports and imports described in paragraph 4.7. Gas put into the UK transmission systems rose by 6.7 per cent between 2009 and 2010, while output of natural gas rose by 8.7 per cent. Output from the transmission system was higher than input due to stock changes. Part of the reason for the increase in demand in 2010 was the extremely cold weather at the beginning and end of the year.

4.20 For a discussion of the various statistical difference terms, losses and metering differences in this table, see paragraphs 4.57 to 4.61 in the technical notes and definitions section below.

4.21 Table 4.3 also includes two rows showing gas stocks and gas storage capacity at the end of the year. Storage data are not available before 2004. Stocks data for 2006 onwards have been sourced from the National Grid's weekly brief, and storage data from its 2010 Ten Year Statement.

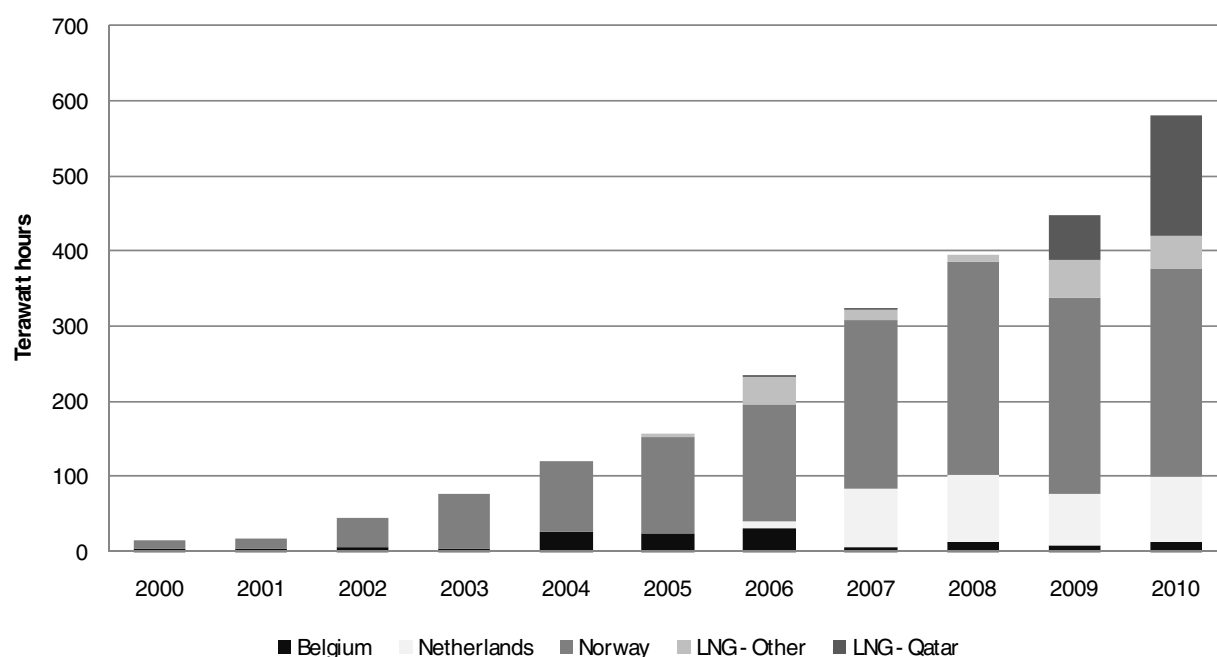
Gas storage sites and import/export pipelines (Table 4.4)

4.22 This table details current gas storage facilities in the UK as at 31 May 2011, and also the two operational pipelines that bring gas to the UK from continental Europe. Significant increases in storage capacity/deliverability are being planned or contemplated at existing or new sites, both onshore and offshore. National Grid's Gas Transportation Ten Year Statement (www.nationalgrid.com/uk/Gas/TYS/) includes public details of such projects in Great Britain.

Natural gas imports and exports (Tables 4.5 and 4.6)

4.23 These tables show how much gas was imported to, and exported from, the UK, via the interconnector pipelines and via ships to the UK's LNG terminals. Norwegian gross gas imports were 48 per cent of total gas imports compared 58 per cent in 2009. However, it should be noted that volume of Norwegian imports were higher than in 2009. In 2010, two thirds of gas exports were to continental Europe, with the remaining third to the Republic of Ireland.

4.24 Chart 4.3 shows the shares of natural gas imports by interconnector pipelines and LNG, while the flows of gas across Europe for 2009 are illustrated in Map 4.1. The chart indicates the growth in imports, but also the increasing importance of LNG to the UK.

Chart 4.3: Imports of Natural Gas 2000 to 2010

4.25 In July 2005, imports of LNG commenced at the Isle of Grain LNG import facility, the first time LNG had been imported to the UK since the early 1980s. In 2009 two new LNG terminals became operational at Milford Haven, South Hook and Dragon, and the second phase of the Isle of Grain expansion was completed at the Isle of Grain terminal. As a result, LNG's share of total gas imports rose from 25 per cent in 2009 to 35 per cent in 2010, and, in the month of September 2010, LNG imports exceeded pipeline imports for the first time.

4.26 The origins of LNG imports can be found in Table 4.5, and the total import volumes by each LNG terminal in Table 4.6. The LNG terminal imports are not shown by country of origin because of the commercial sensitivity of this information.

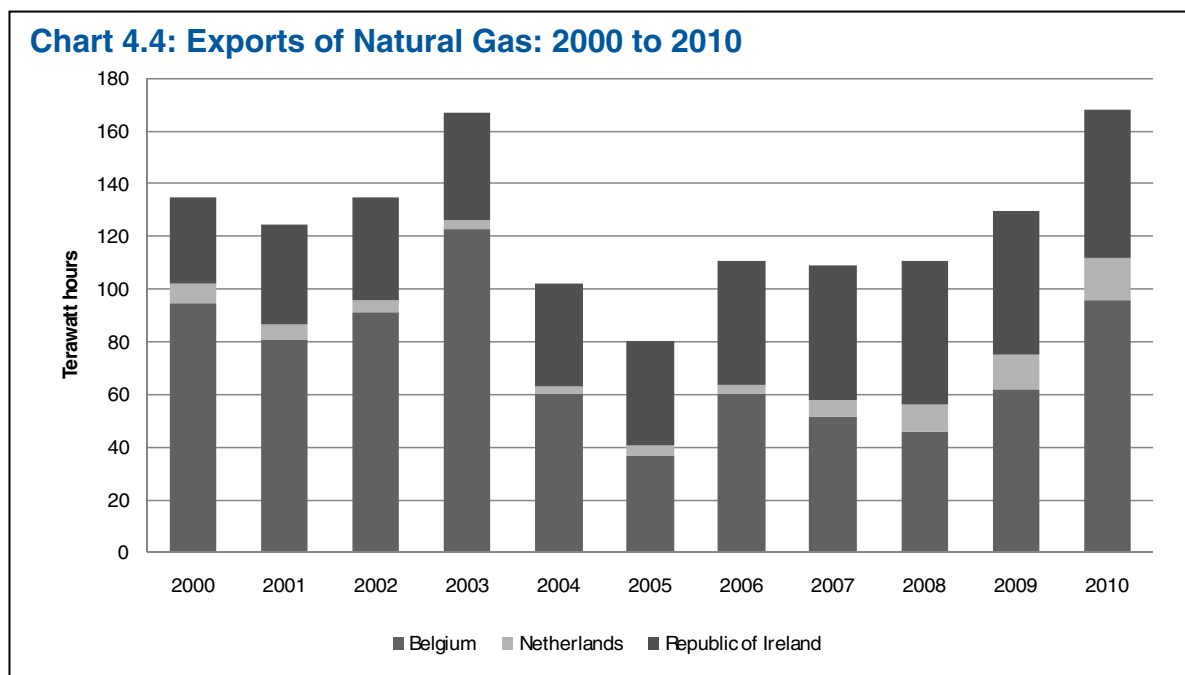
4.27 Despite the importance of LNG, pipeline imports, particularly from Norway, remain a critical component of the UK's energy mix. Imports of natural gas from the Norwegian sector of the North Sea began to decline in the late 1980s as output from the Frigg field tailed off. Frigg finally ceased production in October 2004. Whilst Frigg production was declining a spur line (Vesterled) from the Norwegian Heimdal field to the existing Frigg pipeline was laid and became operational in October 2001. Other developments since 2001 include:

- October 2006 – The southern part of the Langeled pipeline from Sleipner to the UK became operational.
- December 2006 – An interconnector from the Netherlands, the Balgzand-Bacton Line (BBL) begins importing gas to the UK.
- October 2007 – New pipeline from Statfjord B to the UK's FLAGS (Far North Liquids and Associated Gas System) begins delivering gas Norwegian gas to St Fergus in Scotland.
- November 2010 – The Norwegian Gjøa oil and gas field and its satellite Vega began delivering gas to St Fergus in Scotland via the FLAGS pipeline.

4.28 The interconnector linking the UK's transmission network with Belgium via a Bacton to Zeebrugge pipeline began operating in October 1998, allowing both imports from, and exports to, mainland Europe. Whilst the flow was initially to the continent, since 1998 there has been an increase in imports. However, with the increase in LNG imports, exports to Belgium in the summer months increased significantly in 2010 and in October 2010 recorded their highest ever daily export flow.

4.29 Exports to mainland Europe from the UK's share of the Markham field began in 1992 with Windermere's output being added in 1997, Minke, Grove and Chiswick in 2007 and Stamford in 2008. Gas from these field goes straight to Den Helder in the Netherlands. Exports to the Republic of Ireland started in 1995. (See Map 4.2).

4.30 The increased import infrastructure afforded by the new LNG terminals has ensured that UK exports remain robust, despite the decrease in the UK's production. Chart 4.4. shows significant recent increases in UK exports, with exports to Belgium increasing over 50 per cent on 2009, coupled with more modest increases in exports to the Netherlands and the Republic of Ireland. Additionally a small amount of gas is exported to the Norwegian Continental Shelf for injection into the Ula field reservoir, but this accounts for less than 0.1 per cent of total exports.



4.31 The total volumes of gas traded in 2010 are at their highest levels ever, at almost 750 GWh, some 400% higher than 2000. The scale of the increase is such that the total traded volumes in Quarter 4 of 2010 were broadly similar to the annual traded volumes in the middle part of the decade.

Sub-national gas data

4.32 Table 4A gives the number of consumers with a gas demand below 73,200 kWh per year in gas year 2009 and the total number of gas consumers. The table covers customers receiving gas from the national transmission system. The below 73,200 kWh category covers both domestic and small business customers, and it was this section of the market that was progressively opened up to competition between April 1996 and May 1998. It should be noted that the data are for gas year 2009, is approximately one year in arrears of the other data presented in this chapter, and exclude around 2,000 customers not allocated to a government office region.

4.33 In December 2010, DECC published in *Energy Trends* and on its sub-national energy statistics website (www.decc.gov.uk/en/content/cms/statistics/regional/regional.aspx) gas consumption data at both regional and local level. The local level data are at "LAU1" level (see article in December 2010 *Energy Trends* for definition) and the regional data at "NUTS1" level. Data for earlier years are presented on the web site but only 2009 data appear in the article. Domestic sector sales are shown separately from commercial and industrial sales, along with the numbers of consumers. DECC has produced electricity and gas consumption estimates since 2004 at Middle Layer Super Output Area (MLSOA) level and, for Scotland, intermediate geography zones. MLSOAs are a statistical geography developed by the Office for National Statistics (ONS) as part of the 2001 census. There are 7,193 MLSOAs (plus the Isles of Scilly) which are areas containing a minimum population of 5,000 or around 2,000 households. In addition to this in Scotland there are 1,235 intermediate geography zones which are designed to contain between 2,500 and 6,000 people. Consumption data at Lower Layer Super Output Area (LLSOA) is also available for 2008 and 2009 covering all 34,378 areas within England

and Wales, which contain a minimum population of 1,000 based on the 2001 census. Further details about the MLSOA and LLSOA data can be found on the sub-national energy statistics website www.decc.gov.uk/en/content/cms/statistics/regional/mlsoa_llsoa/mlsoa_llsoa.aspx.

Table 4A: Consumption by gas customers by region in 2009

Government Office Region	Consumption by customers below 73,200 kWh (2,500 therms) annual demand		Consumption by all customers (where regional classification is possible)	
	Number of consumers (thousands)	Gas sales 2009 (GWh)	Number of consumers (thousands)	Gas sales 2009 (GWh)
North West	2,824	44,105	2,859	70,000
South East	3,110	48,311	3,152	67,478
Greater London	2,982	44,939	3,027	67,387
Yorkshire and the Humber	2,074	32,690	2,100	54,822
Scotland	1,882	30,676	1,908	51,034
West Midlands	2,060	31,547	2,085	47,827
East of England	1,993	30,756	2,017	47,720
East Midlands	1,705	26,490	1,726	41,261
South West	1,762	24,048	1,783	35,473
North East	1,077	16,918	1,089	26,384
Wales	1,146	17,450	1,158	28,163
Great Britain ¹	22,621	348,034	22,910	539,617

Source: xoserve and the independent gas transporters

¹ Great Britain includes 7.1 thousand customers (2,096 GWh) that could not be allocated to a region as there was insufficient geographical information to be able to do so.

4.34 By December 2010, 12.4 million gas consumers (57 per cent) were no longer supplied by British Gas. Table 4B gives market penetration in more detail, by local distribution zone (LDZ). For all types of domestic customer, it is in the markets in Northern England and Wales that new suppliers have had most success. Since the market has opened up, British Gas had lost around 42 per cent of the credit market, 66 per cent of the direct debit market, and 54 per cent of the pre-payment market. At the end of May 2011, 34 suppliers were licensed to supply gas to domestic customers.

4.35 Competition in the domestic market remained broadly unchanged between 2007 and 2010, with the largest three suppliers accounting for 70 per cent of sales in 2010. In the industrial sector, after an increase in 2007, the market share of the three largest suppliers fell back to 57 per cent in 2008, before increasing by 2.7 percentage points in 2010. The commercial sector is more competitive, with the three largest suppliers accounting for 48 per cent of sales in 2010, 3.3 percentage points higher than in 2009.

Table 4B: Domestic gas market penetration (in terms of percentage of customers supplied) by local distribution zone and payment type, fourth quarter of 2010

Region	British Gas Trading			Non-British Gas		
	Credit	Direct Debit	Prepayment	Credit	Direct Debit	Prepayment
Northern	49	26	35	51	74	65
Southern	54	30	42	46	70	58
North East	57	32	37	43	68	63
Scotland	60	32	38	40	68	62
Eastern	55	33	46	45	67	54
East Midlands	56	33	51	44	67	49
Wales	52	33	29	48	67	71
South East	58	34	46	42	66	54
West Midlands	63	34	55	37	66	45
North West	62	36	56	38	64	44
South Western	60	36	44	40	64	56
North Thames	63	42	55	37	58	45
Great Britain	58	34	46	42	66	54

The gas supply industry in Great Britain

4.36 When British Gas was privatised in 1986, it was given a statutory monopoly over supplies of natural gas (methane) to premises taking less than 732,000 kWh (25,000 therms) a year. Under the Oil and Gas (Enterprise) Act 1982, contract customers taking more than this were able to buy their gas from other suppliers, but no other suppliers entered the market until 1990.

4.37 In 1991, the Office of Fair Trading (OFT) followed up an examination of the contract market, in 1988, by the Monopolies and Mergers Commission (MMC). It reviewed progress towards a competitive market, and found that the steps taken in 1988 had been ineffective in encouraging self-sustaining competition. British Gas undertook in March 1992: to allow competitors to take, by 1995, at least 60 per cent of the contract market above 732,000 kWh (25,000 therms) a year (subsequently redefined as 45 per cent of the market above 73,200 kWh (2,500 therms)); to release to competitors the gas necessary to achieve this; and to establish a separate transport and storage unit with regulated charges. In the 1992 Competition and Service (Utilities) Act, the Government also took powers to reduce or remove the tariff monopoly, and in July 1992 it lowered the tariff threshold to 73,200 kWh.

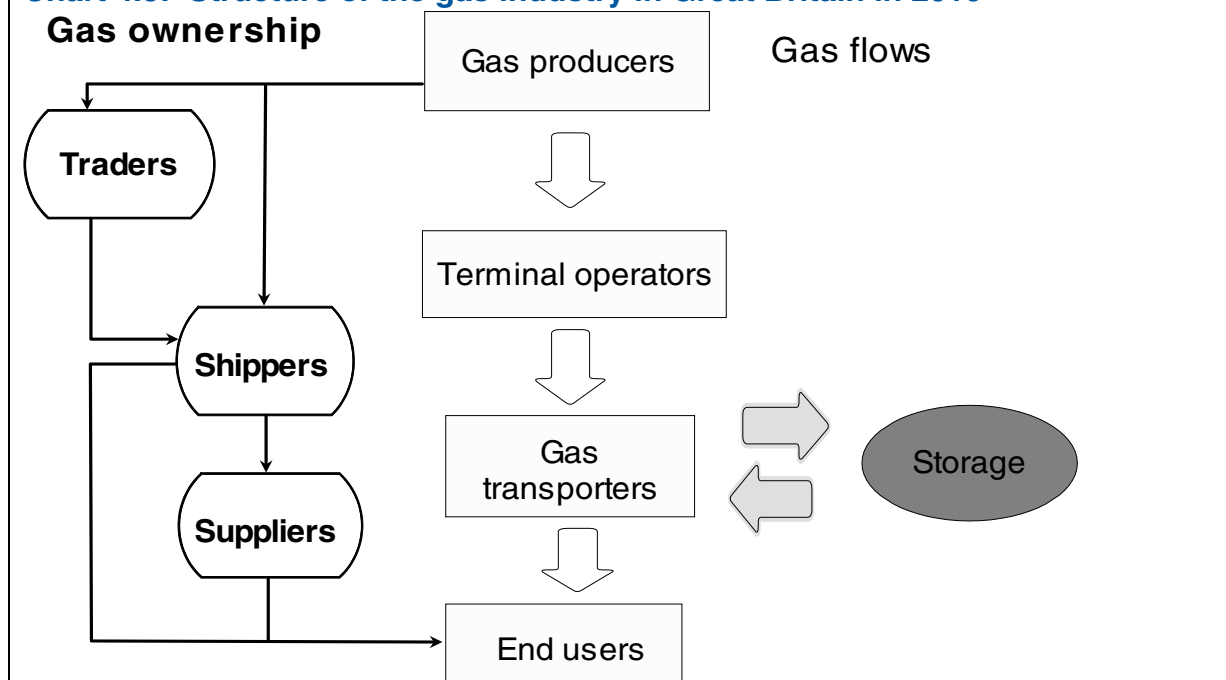
4.38 Difficulties in implementing the March 1992 undertakings led to further references to the MMC. As a result of the new recommendations made by the MMC earlier in 1993, the President of the Board of Trade decided in December 1993 to require full internal separation of British Gas's supply and transportation activities, but not divestment, and to accelerate removal of the tariff monopoly to April 1996, with a phased opening of the domestic market by the regulator over the following two years.

4.39 In November 1995, the Gas Bill received Royal Assent, clearing the way for the extension of competition into the domestic gas supply market on a phased basis between 1996 and 1998. This was carried out in stages between April 1996 and May 1998.

4.40 For the non-domestic market, about three-quarters (by volume) in Great Britain was opened to competition at the end of 1982 and the remainder in August 1992 (with the reduction in the tariff threshold). However, no other suppliers entered the market until 1990. After 1990, there was a rapid increase in the number of independent companies supplying gas, although from 1999 some consolidation started, and in recent years sales of gas have become more concentrated in the hands of the largest companies in the domestic, industrial and commercial sectors. This came about through larger companies absorbing smaller suppliers and through mergers between already significant suppliers.

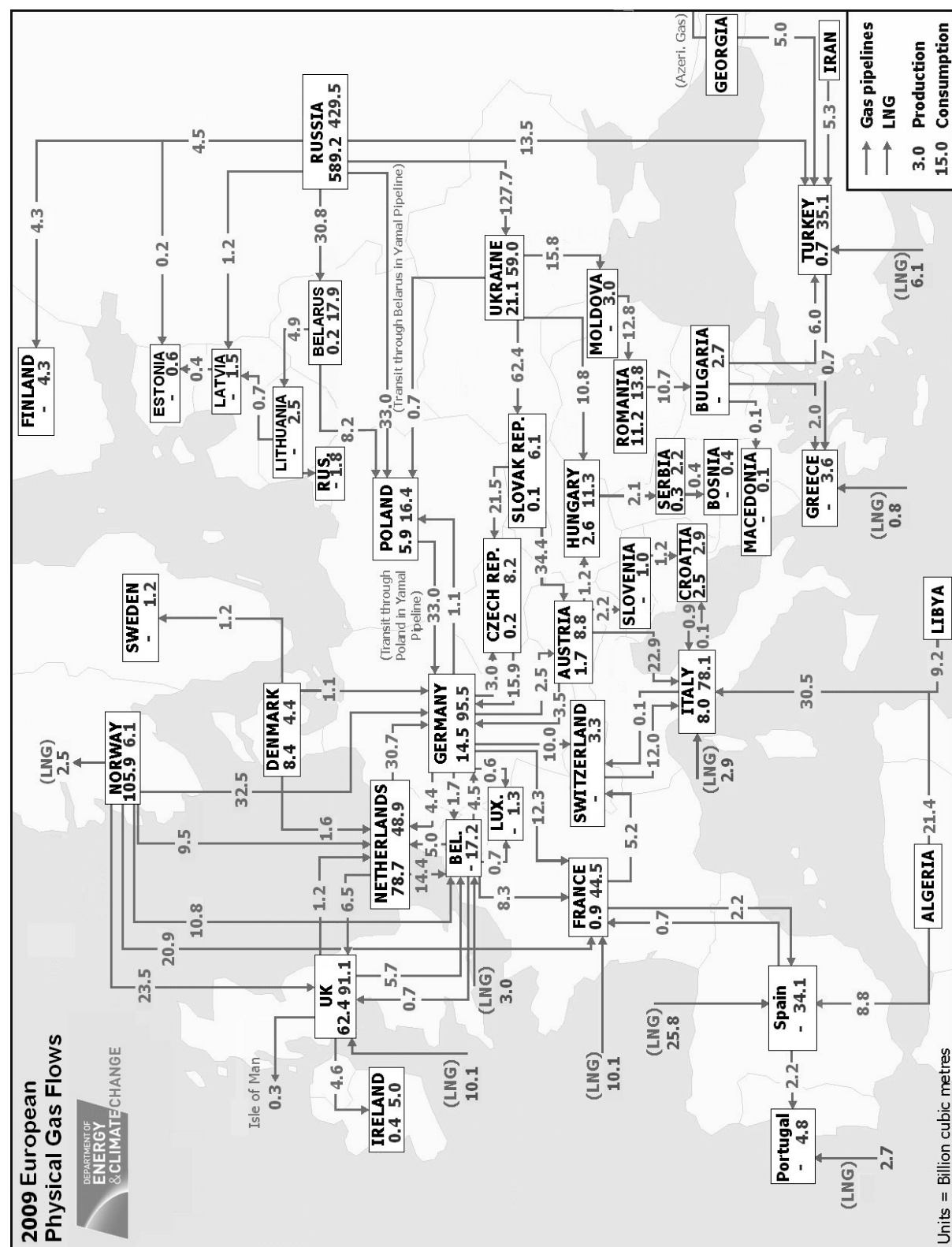
4.41 Following the 1995 Gas Act, the business of British Gas was fully separated into two corporate entities. The supply and shipping businesses were devolved to a subsidiary, British Gas Trading Limited, while the transportation business (Transco) remained within British Gas plc. In February 1997, Centrica plc was demerged from British Gas plc (which was itself renamed as BG plc) completing the division of the business into two independent entities. Centrica became the holding company for British Gas Trading, British Gas Services, the Retail Energy Centres and the company producing gas from the North and South Morecambe fields. BG plc comprised the gas transportation and storage business of Transco, along with British Gas's other exploration and production, international downstream, research and technology and property activities. In October 2000, BG plc demerged into two separately listed companies, of which Lattice Group plc was the holding company for Transco, while BG Group plc included the international and gas storage businesses. On 21 October 2002, Transco and the National Grid Company merged to form National Grid.

4.42 From 1 October 2001, under the Utilities Act, gas pipeline companies have been able to apply for their own national Gas Transporter Licences so that they can compete with Transco. In some areas, low pressure spur networks had already been developed by new transporters competing with Transco to bring gas supplies to new customers (mainly domestic). In addition, some very large loads (above 60 GWh) are serviced by pipelines operated independently, some by North Sea producers. The structure of the gas industry in Great Britain, as it stood at the end of 2010, is shown in Chart 4.5.

Chart 4.5: Structure of the gas industry in Great Britain in 2010**Northern Ireland**

4.43 Before 1997, Northern Ireland did not have a public natural gas supply. The construction of a natural gas pipeline from Portpatrick in Scotland to Northern Ireland was completed in 1996 and provided the means of establishing such a system. The initial market was Ballylumford power station, which was purchased by British Gas in 1992 and converted from oil to gas firing (with a heavy fuel oil back up). A second gas-fired power station was built at Coolkeeragh in 2005. The onshore line has been extended to serve wider industrial, commercial and domestic markets and this extension is continuing. In late 2007, the South-North gas pipeline was completed, to allow gas to be imported to Northern Ireland from the Republic of Ireland. In 2010, 67 per cent of all gas supplies in Northern Ireland were used to generate electricity.

Map 4.1: Gas European Transit System



Source: International Energy Agency and DECC

4.44 Gas data are less transparent at the wider European level given missing information on transit flows and incomplete trade information. The above map was produced using published International Energy Agency data to reconstruct the missing physical gas flow data and was prepared as part of DECC's contribution to a Eurostat project to improve gas data transparency and quality.

Map 4.2: The National Gas Transmission System 2010



Source: International Energy Agency and DECC

Technical notes and definitions

4.45 These notes and definitions are in addition to the technical notes and definitions covering all fuels and energy as a whole in Chapter 1, paragraphs 1.28 to 1.62. For notes on the commodity balances and definitions of the terms used in the row headings see Annex A, paragraphs A.7 to A.42. While the data in the printed and bound copy of this Digest cover only the most recent five years, these notes also cover data for earlier years that are available on the DECC energy statistics web site.

Definitions used for production and consumption

4.46 **Natural gas** production in Tables 4.1 and 4.2 relates to the output of indigenous methane at land terminals and gas separation plants (includes producers' and processors' own use). For further explanation, see Annex F on DECC's energy statistics web site under 'Production of gas' - www.decc.gov.uk/en/content/cms/statistics/publications/dukes/dukes.aspx. Output of the Norwegian share of the Frigg and Murchison fields is included under imports. A small quantity of onshore produced methane (other than colliery methane) is also included.

4.47 Table 4.3 shows production, transmission and consumption figures for UK continental shelf and onshore natural gas. Production includes waste and own use for drilling, production and pumping operations, but excludes gas flared. Gas available in the United Kingdom excludes waste, own use for drilling etc, stock change, and includes imports net of exports. Gas transmitted (input into inland transmission systems) is after stock change, own use, and losses at inland terminals. The amount consumed in the United Kingdom differs from the total gas transmitted by the gas supply industry because of losses in transmission, differences in temperature and pressure between the points at which the gas is measured, delays in reading meters and consumption in the works, offices, shops, etc of the undertakings. The figures include an adjustment to the quantities billed to consumers to allow for the estimated consumption remaining unread at the end of the year.

4.48 **Colliery methane** production is colliery methane piped to the surface and consumed at collieries or transmitted by pipeline to consumers. As the output of deep-mined coal declines so does the production of colliery methane, unless a use can be found for gas that was previously vented. The supply of methane from coal measures that are no longer being worked or from drilling into coal measures is licensed under the same legislation as used for offshore gas production.

4.49 **Transfers** of natural gas include natural gas use within the iron and steel industry for mixing with blast furnace gas to form a synthetic coke oven gas. For further details see paragraph 2.49 in Chapter 2.

4.50 **Non-energy gas:** Non-energy use is gas used as feedstock for petrochemical plants in the chemical industry as raw material for the production of ammonia (an essential intermediate chemical in the production of nitrogen fertilisers) and methanol. The contribution of liquefied petroleum gases (propane and butane) and other petroleum gases is shown in Tables 3.2 to 3.4 of Chapter 3. Firm data for natural gas are not available, but estimates for 2006 to 2010 are shown in Table 4.2 and estimates for 2008 to 2010 in Table 4.1. The estimates for the years up to 2009 have been obtained from AEA's work for the National Atmospheric Emissions Inventory; 2010 data are DECC extrapolations.

Sectors used for sales/consumption

4.51 For definitions of the various sectors used for sales and consumption analyses see Chapter 1 paragraphs 1.56 to 1.60 and Annex A, paragraphs A.31 to A.42. However, **miscellaneous** has a wider coverage than in the commodity balances of other fuels. This is because some gas supply companies are unable to provide a full breakdown of the services sector and the gas they supply to consumers is allocated to miscellaneous when there is no reliable basis for allocating it elsewhere. See also paragraph 4.54, below, for information on the source of the sectoral data for consumption of gas.

Data collection

4.52 Production figures are generally obtained from returns made under DECC's Petroleum Production Reporting System (PPRS) and from other sources. DECC obtain data on the transmission of natural gas from National Grid (who operate the National Transmission System) and from other pipeline operators. Data on consumption are based on returns from gas suppliers and UK Continental Shelf (UKCS) producers who supply gas directly to customers.

4.53 The production data are for the United Kingdom (including natural gas from the UKCS - offshore and onshore). The restoration of a public gas supply to parts of Northern Ireland in 1997 (see paragraph 4.43), means that all tables in this chapter, except Tables 4A and 4B, cover the UK.

4.54 DECC carry out an annual survey of gas suppliers to obtain details of gas sales to the various categories of consumer. Estimates are included for the suppliers with the smallest market share since the DECC inquiry covers only the largest suppliers (ie those with more than about a 0.5 per cent share of the UK market up to 1997 and those known to supply more than 1,750 GWh per year for 1998 onwards). For 2000 and subsequent years, gas consumption for the iron and steel sector is based on data provided by the Iron and Steel Statistics Bureau (ISSB) rather than gas suppliers since gas suppliers were over estimating their sales to this sector. The difference between the ISSB and gas suppliers figures has been re-allocated to other sectors. The data are validated using information on sectors from EU Emissions Trading Scheme (EU-ETS) sources.

Period covered

4.55 Figures generally relate to years ended 31 December. However, before 2004, data for natural gas for electricity generation relate to periods of 52 weeks as set out in Chapter 5, paragraphs 5.82 and 5.83.

Monthly and quarterly data

4.56 Monthly data on natural gas production and supply are available from DECC's energy statistics website www.decc.gov.uk/en/content/cms/statistics/source/gas/gas.aspx in monthly Table 4.2. A quarterly commodity balance for natural gas (which includes consumption data) is published in DECC's quarterly statistical bulletin *Energy Trends* and is also available from quarterly Table 4.1 on DECC's energy statistics web site. See Annex C for more information about *Energy Trends* and DECC's energy statistics web site.

Statistical and metering differences

4.57 In Table 4.3 there are several headings that refer to statistical or metering differences. These arise because measurement of gas flows, in volume and energy terms, takes place at several points along the supply chain. The main sub-headings in the table represent the instances in the supply chain where accurate reports are made of the gas flows at that particular key point in the supply process. It is possible to derive alternative estimates of the flow of gas at any particular point by taking the estimate for the previous point in the supply chain and then applying the known losses and gains in the subsequent part of the supply chain. The differences seen when the actual reported flow of gas at any point and the derived estimate are compared are separately identified in the table wherever possible, under the headings statistical or metering differences.

4.58 Losses and metering differences attributable to the information provided on the upstream gas industry are zero from 2001 onwards because these data are no longer reported in the revised Petroleum Production Reporting System. This simplified system for reporting the production of crude oil, NGLs and natural gas in the UK was implemented from 1 January 2001; it reduced the burden on the respondents and improved the quality of data reported on gas production.

4.59 The differences in the natural gas commodity balances arise from several factors:-

- Limitations in the accuracy of meters used at various points of the supply chain. While standards are in place on the accuracy of meters, there is a degree of error allowed which, when large flows of gas are being recorded, can become significant.
- Differences in the methods used to calculate the flow of gas in energy terms. For example, at the production end, rougher estimates of the calorific value of the gas produced are used which may be revised only periodically, rather than the more accurate and more frequent analyses carried out further down the supply chain. At the supply end, although the calorific value of gas shows day-to-day variations, for the purposes of recording the gas supplied to customers a single calorific value is used. Until 1997 this was the lowest of the range of calorific values for the actual gas being supplied within each LDZ, resulting in a "loss" of gas in energy terms. In 1997 there was a change to a "capped flow-weighted average" algorithm for calculating calorific values resulting in a reduction in the losses shown in the penultimate row of Table 4.3. This change in algorithm, along with improved meter validation and auditing procedures, also reduced the level of the "metering differences" row within the downstream part of Table 4.3.

- Differences in temperature and pressure between the various points at which gas is measured. Until February 1997 British Gas used “uncorrected therms” on their billing system for tariff customers when converting from a volume measure of the gas used to an energy measure. This made their supply figure too small by a factor of 2.2 per cent, equivalent to about 1 per cent of the wholesale market.
- Differences in the timing of reading meters. While National Transmission System meters are read daily, customers’ meters are read less frequently (perhaps only annually for some domestic customers) and profiling is used to estimate consumption. Profiling will tend to underestimate consumption in a strongly rising market.
- Other losses from the system, for example theft through meter tampering by consumers.

4.60 The headings in Table 4.3 show where, in the various stages of the supply process, it has been possible to identify these metering differences as having an effect. Usually they are aggregated with other net losses as the two factors cannot be separated. Whilst the factors listed above can give rise to either losses or gains, losses are more common. However, the negative downstream gas metering difference within the transmission system in 2003 was an anomaly that was investigated by National Grid during 2004. They concluded that this unaccounted for element of National Transmission System shrinkage was due to an exceptional run of monthly negative figures between February and June 2003 within what is usually a variable but mainly positive series. However, after a comprehensive investigation of this exceptional period no causal factors were identified. It is probable that the meter error or errors that caused this issue were corrected during the validation of metering.

4.61 Care should be exercised in interpreting the figures for individual industries in these commodity balance tables. As companies switch contracts between gas suppliers, it has not been possible to ensure consistent classification between and within industry sectors and across years. The breakdown of final consumption includes a substantial amount of estimated data. For 2010, the allocation of about 3 per cent of consumption is estimated.

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4.1 Commodity balances

Natural gas

GWh

	2008			2009			2010		
	Natural gas	Colliery methane	Total Natural gas	Natural gas	Colliery methane	Total Natural gas	Natural gas	Colliery methane	Total Natural gas
Supply									
Production	809,649	736r	810,385r	693,965	775r	694,740r	664,353	730	665,083
Other sources	-	-	-	-	-	-	-	-	-
Imports	407,054	-	407,054	455,789	-	455,789	589,497	-	589,497
Exports	-122,670	-	-122,670	-137,100	-	-137,100	-176,399	-	-176,399
Marine bunkers	-	-	-	-	-	-	-	-	-
Stock change (1)	-3,087	-	-3,087	-4,876	-	-4,876	+15,271	-	+15,271
Transfers (2)	-68	-	-68	-351r	-	-351r	-263	-	-263
Total supply	1,090,878	736r	1,091,614r	1,007,427r	775r	1,008,202r	1,092,459	730	1,093,189
Statistical difference (3)	+14r	-	+14r	+78r	-	+78r	+682	-	+682
Total demand	1,090,865r	736r	1,091,600r	1,007,349r	775r	1,008,124r	1,091,777	730	1,092,507
Transformation	401,630r	607r	402,236r	381,404r	657r	382,061r	395,007	618	395,625
Electricity generation	376,204r	607r	376,810	358,646r	657r	359,303r	371,118	618	371,736
Major power producers	344,454	-	344,454	328,249r	-	328,249r	342,150	-	342,150
Autogenerators	31,750r	607r	32,357	30,397r	657r	31,054r	28,968	618	29,586
Heat generation	25,426r	-	25,426r	22,758r	-	22,758r	23,890	-	23,890
Petroleum refineries	-	-	-	-	-	-	-	-	-
Coke manufacture	-	-	-	-	-	-	-	-	-
Blast furnaces	-	-	-	-	-	-	-	-	-
Patent fuel manufacture	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Energy industry use	72,185	95	72,280	68,976r	89	69,065r	69,375	87	69,462
Electricity generation	-	-	-	-	-	-	-	-	-
Oil and gas extraction	61,292	-	61,292	61,110	-	61,110	61,124	-	61,124
Petroleum refineries	4,971	-	4,971	3,916r	-	3,916r	4,255	-	4,255
Coal extraction	-	95	95	-	89	89	-	87	87
Coke manufacture	-	-	-	-	-	-	-	-	-
Blast furnaces	718	-	718	450	-	450	641	-	641
Patent fuel manufacture	-	-	-	-	-	-	-	-	-
Pumped storage	-	-	-	-	-	-	-	-	-
Other	5,204	-	5,204	3,499	-	3,499	3,355	-	3,355
Losses (4)	13,623r	-	13,623r	16,356r	-	16,356r	18,737	-	18,737
Final consumption	603,427r	34	603,461r	540,614r	29	540,643r	608,658	25	608,683
Industry	138,654r	34	138,688r	116,380r	29	116,409r	121,938	25	121,963
Unclassified	-	34	34	-	29	29	-	25	25
Iron and steel	6,920	-	6,920	5,037r	-	5,037r	5,826	-	5,826
Non-ferrous metals	2,989r	-	2,989r	2,486r	-	2,486r	2,622	-	2,622
Mineral products	18,363r	-	18,363r	15,148r	-	15,148r	15,773	-	15,773
Chemicals	31,182r	-	31,182r	25,646r	-	25,646r	26,423	-	26,423
Mechanical Engineering, etc	7,704r	-	7,704r	6,422r	-	6,422r	6,503	-	6,503
Electrical engineering, etc	3,895r	-	3,895r	3,267r	-	3,267r	3,395	-	3,395
Vehicles	8,613r	-	8,613r	7,251r	-	7,251r	7,576	-	7,576
Food, beverages, etc	24,361r	-	24,361r	20,990r	-	20,990r	22,628	-	22,628
Textiles, leather, etc	6,099r	-	6,099r	5,192r	-	5,192r	5,288	-	5,288
Paper, printing, etc	16,602r	-	16,602r	14,406r	-	14,406r	14,927	-	14,927
Other industries	9,475r	-	9,475r	8,407r	-	8,407r	8,786	-	8,786
Construction	2,452r	-	2,452r	2,127r	-	2,127r	2,190	-	2,190
Transport	-	-	-	-	-	-	-	-	-
Air	-	-	-	-	-	-	-	-	-
Rail	-	-	-	-	-	-	-	-	-
Road	-	-	-	-	-	-	-	-	-
National navigation	-	-	-	-	-	-	-	-	-
Pipelines	-	-	-	-	-	-	-	-	-
Other	455,190	-	455,190	416,234r	-	416,234r	478,220	-	478,220
Domestic	359,554	-	359,554	332,499r	-	332,499r	389,595	-	389,595
Public administration	42,565	-	42,565	37,084r	-	37,084r	38,390	-	38,390
Commercial	33,358	-	33,358	29,305r	-	29,305r	31,758	-	31,758
Agriculture	2,161	-	2,161	1,860r	-	1,860r	1,969	-	1,969
Miscellaneous	17,552	-	17,552	15,485r	-	15,485r	16,507	-	16,507
Non energy use	9,583r	-	9,583r	8,001r	-	8,001r	8,499	-	8,499

(1) Stock fall (+), stock rise (-).

(2) Natural gas used in the manufacture of synthetic coke oven gas.

(3) Total supply minus total demand.

(4) For an explanation of what is included under losses, see paragraphs 4.57 to 4.61.

4.2 Supply and consumption of natural gas and colliery methane⁽¹⁾

	GWh				
	2006	2007	2008	2009	2010
Supply					
Production	930,538	838,809	810,385r	694,740r	665,083
Imports	244,029	338,026	407,054	455,789	589,497
Exports	-120,591	-123,158	-122,670	-137,100	-176,399
Stock change (2)	-6,435	+5,480	-3,087	-4,876	+15,271
Transfers	-55	-78	-68	-351r	-263
Total supply	1,047,486	1,059,080	1,091,614r	1,008,202r	1,093,189
Statistical difference (3)	+148	+186	+14r	+78r	+682
Total demand	1,047,338	1,058,894	1,091,600r	1,008,124r	1,092,507
Transformation	333,431	379,518	402,236r	382,061r	395,625
Electricity generation	311,408	355,878	376,810	359,303r	371,736
Major power producers	278,149	319,836	344,454	328,249r	342,150
Autogenerators	33,259	36,042	32,357	31,054r	29,586
Heat generation	22,023	23,640	25,426r	22,758r	23,890
Other	-	-	-	-	-
Energy industry use	81,859	76,025	72,280	69,065r	69,462
Electricity generation	-	-	-	-	-
Oil and gas extraction	69,252	64,230	61,292	61,110	61,124
Petroleum refineries	5,161	5,206	4,971	3,916r	4,255
Coal extraction	112	91	95	89	87
Coke manufacture	-	-	-	-	-
Blast furnaces	611	719	718	450	641
Other	6,723	5,779	5,204	3,499	3,355
Losses (4)	12,014	12,078	13,623r	16,356r	18,737
Final consumption	620,035	591,274	603,461r	540,643	608,683
Industry	144,541	133,350	138,688r	116,409r	121,963
Unclassified	47	40	34	29	25
Iron and steel	8,391	7,323	6,920	5,037r	5,826
Non-ferrous metals	3,106	2,864	2,989r	2,486r	2,622
Mineral products	17,803	16,878	18,363r	15,148r	15,773
Chemicals	34,334	30,140	31,182r	25,646r	26,423
Mechanical engineering, etc	8,180	7,670	7,704r	6,422r	6,503
Electrical engineering, etc	3,922	3,736	3,895r	3,267r	3,395
Vehicles	9,470	8,532	8,613r	7,251r	7,576
Food, beverages, etc	23,714	22,973	24,361r	20,990r	22,628
Textiles, leather, etc	6,637	6,078	6,099r	5,192r	5,288
Paper, printing, etc	16,518	15,511	16,602r	14,406r	14,927
Other industries	9,864	9,229	9,475r	8,407r	8,786
Construction	2,555	2,378	2,452r	2,127r	2,190
Transport	-	-	-	-	-
Road	-	-	-	-	-
Other	467,582	447,695	455,190	416,234r	478,220
Domestic	366,928	352,868	359,554	332,499r	389,595
Public administration	45,803	42,444	42,565	37,084r	38,390
Commercial	34,273	33,098	33,358	29,305r	31,758
Agriculture	2,013	1,998	2,161	1,860r	1,969
Miscellaneous	18,564	17,286	17,552	15,485r	16,507
Non energy use	7,913	10,228	9,583r	8,001r	8,499

(1) Colliery methane figures included within these totals are as follows:

	2006	2007	2008	2009	2010
Total production	754	717	736r	775r	730
Electricity generation	595	586	607r	657r	618
Coal extraction	112	91	95	89	87
Unclassified industries	47	40	34	29	25
Total consumption	754	717	736r	775r	730

(2) Stock fall (+), stock rise (-).

(3) Total supply minus total demand.

(4) For an explanation of what is included under losses, see paragraphs 4.57 to 4.61.

4.3 UK continental shelf and onshore natural gas production and supply(1)

	GWh				
	2006	2007	2008	2009	2010
Upstream gas industry:					
Gross production (2)	929,784	838,092	809,649	693,965	664,353
Minus Producers' own use (3)	69,252	64,230	61,292	61,110	61,124
Exports	120,591	123,158	122,670	137,100	176,399
Plus Imports of gas	244,029	338,026	407,054	455,789	589,497
Gas available at terminals (4)	983,971	988,731	1,032,742	951,544	1,016,327
Minus Statistical difference (5)	147	45	213	-1,173	68
Downstream gas industry:					
Gas input into the national transmission system (6)	983,824	988,686	1,032,529	952,717	1,016,259
Minus Operators' own use (7)	5,831	4,698	4,265	2,810	3,211
Stock change (storage sites) (8)	6,435	-5,480	3,087	4,876	-15,271
Metering differences (5)	4,544	4,472	5,759	9,111	10,848
Gas output from the national transmission system (9)	967,014	984,996	1,019,418	935,920	1,017,471
Minus Leakage assessment (10)	5,032	5,123	5,297r	4,880r	5,314
Own use gas (11)	406	414	428r	394r	429
Theft (12)	2,032	2,069	2,139r	1,971r	2,146
Transfers (13)	52	78	68	354	263
Statistical difference and metering differences (5)	4	141	-199r	1,248r	613
Total UK consumption (14)	959,488	977,172	1,011,685r	927,073r	1,008,705
Stocks of gas (at end year)	41,914	36,434	39,521	44,397	29,126
Storage capacity (15)	48,126	48,126	47,530	47,310	47,310

(1) For details of where to find monthly updates of natural gas production and supply see paragraph 4.56.

(2) Includes waste and producers' own use, but excludes gas flared.

(3) Gas used for drilling, production and pumping operations.

(4) The volume of gas available at terminals for consumption in the UK as recorded by the terminal operators.

(5) Measurement of gas flows, in volume and energy terms, occurs at several points along the supply chain. As such, differences are seen between the actual recorded flow through any one point and estimates calculated for the flow of gas at that point. More detail on the reasons for these differences is given in the technical notes and definitions section of this chapter, paragraphs 4.57 to 4.61.

(6) Gas received as reported by the pipeline operators. The pipeline operators include National Grid, who run the national pipeline network, and other pipelines that take North Sea gas supplies direct to consumers.

(7) Gas consumed by pipeline operators in pumping operations and on their own sites.

(8) Stocks of gas held in specific storage sites, either as liquefied natural gas, pumped into salt cavities or stored by pumping the gas back into an offshore field. Stock rise (+), stock fall (-).

(9) Including public gas supply, direct supplies by North Sea producers, third party supplies and stock changes.

(10) This is a National Grid assessment of leakage through the local distribution system based on the National Leakage Reduction Monitoring Model.

(11) Equivalent to about 0.06 per cent of LDZ throughput, this is an assessment of the energy used to counter the effects of gas cooling on pressure reduction.

(12) Calculated by National Grid as 0.3 per cent of LDZ throughput, this is theft before the gas reaches customer meters.

(13) Transfers are the use within the iron and steel industry for the manufacture of synthetic coke oven gas.

(14) See paragraph 4.16 for an explanation of the relationship between these "Total UK consumption" figures and "Total demand" shown within the balance tables.

(15) Data compiled by DECC from individual storage site information. Converted from billion cubic metres to GWh assuming 11.02 kWh per cubic metre. See paragraph 4.21.

4.4 Gas storage sites and import/export pipelines in the United Kingdom at 31 May 2011

Owner	Site	Location	Capacity (Billion m ³)	Max flow rate (Million m ³ /day)	Type	Status (1)
Operational storage						
Centrica Storage Ltd	Rough	Southern North Sea	3.50	43	Depleted field	Long
National Grid	Avonmouth	Bristol	0.08	13	LNG	Short
	Glenmavis (2)	North Lanarkshire	0.05	8	LNG	Short
	Partington (2)	Manchester	0.05	14	LNG	Short
Scottish and Southern Energy	Hornsea	East Yorkshire	0.30	18	Salt cavern	Medium
Energy Merchants Gas Storage	Holehouse Farm	Cheshire	0.05	6	Salt cavern	Medium
Scottish Power	Hatfield Moor	South Yorkshire	0.10	2	Depleted field	Medium
Star Energy Ltd	Humbly Grove	Hampshire	0.30	7	Depleted field	Medium
Scottish and Southern Energy & Statoil	Aldbrough	East Yorkshire	0.10	10	Salt cavern	Medium

Pipeline	Owner	Between	Max flow rate (Million m ³ /day)
Operational pipelines			
Imports			
Bacton-Zeebrugge Interconnector	Interconnector (UK) Limited	Zeebrugge and Bacton	72
BBL Pipeline	BBL Company	Balgzand and Bacton	41
Vesterled Pipeline	Gassco	Heimdal Riser Platform and St Fergus	36
Tampen Link	Gassco	Links Statfjord to FLAGS (terminating at St Fergus)	18
Gjøa/Vega Pipeline	Gassco	Links Gjøa/Vega to FLAGS (terminating at St Fergus)	17
Langeled Pipeline	Norsk Hydro	Nyhamna and Easington	74
Exports			
Bacton-Zeebrugge Interconnector	Interconnector (UK) Limited	Bacton and Zeebrugge	55
UK- Irish Gas Interconnector	Bord Gais	Moffat and Ireland	30

(1) Long range, medium range or short range storage. Status is determined both by capacity size and injection, deliverability and storage re-cycling rates.

(2) LNG Storage (a trading division of National Grid Gas) announced in May 2010 that it would no longer be offering commercial storage services at Glenmavis and Partington after May 2011.

4.5 Natural gas imports and exports ⁽¹⁾

	GWh				
	2006	2007	2008	2009	2010
Imports from:					
Belgium (2)	30,505	6,471	12,174	7,945	13,568
The Netherlands (3)	9,135	76,602	90,563	69,529	87,120
Norway (4)	157,035	225,764	283,722	260,438	276,807
Liquefied Natural Gas (5)	37,576	14,903	8,912	110,579	203,789
of which:					
Algeria	20,718	6,605	3,113	19,392	11,524
Australia	-	-	-	812	-
Egypt	12,465	1,751	-	5,804	1,263
Nigeria	-	-	-	-	3,674
Norway	-	-	-	1,862	8,904
Qatar	779	2,693	-	61,159	159,984
Trinidad & Tobago	3,614	3,854	5,799	21,550	16,646
Yemen	-	-	-	-	1,794
Total Imports	234,251	323,740	395,371	448,491	581,284
Exports to:					
Belgium (2)	60,195	51,390	45,949	62,084	95,932
The Netherlands (6)	3,371	6,358	10,389	13,094	15,830
Norway (7)	-	153	389	266	158
Republic of Ireland (8)	47,247	50,972	54,260	54,357	56,266
Total Exports	110,813	108,873	110,987	129,801	168,186
Net Imports (9)	123,438	214,867	284,384	318,690	413,098

(1) This table is also shown as Table G.6 of the Internet Annex G to the Digest.

(2) Physical flows of gas through the Bacton-Zeebrugge Interconnector. In tables 4.1 to 4.3 the commercial flows of gas through the pipeline are used. Commercial flows are the amounts of gas that companies requested be supplied through the pipeline. Net imports are the same whichever measurement is used.

(3) Via the Bacton-Balgzand (BBL) pipeline. Commissioned in November 2006.

(4) Currently via the Langeled and Vesterled pipelines, the Tampen Link (from Statfjord to FLAGS) and Gjoa/Vega (to FLAGS).

(5) From various sources to the Isle of Grain and Gasport Teesside.

(6) Direct exports from the Grove, Chiswick, Markham, Minke, Stamford and Windermere offshore gas fields using the Dutch offshore gas pipeline infrastructure.

(7) With effect from September 2007, UK gas from the Blane field to the Norwegian Ula field for injection into the Ula reservoir.

(8) Includes gas to the Isle of Man for which separate figures are not available.

(9) A negative figure means the UK was a net exporter of gas.

4.6 Liquefied Natural Gas imports by terminal

	GWh				
	2006	2007	2008	2009	2010
LNG Imports via:					
Dragon (Milford Haven) (1)	-	-	-	10,034	19,097
Isle of Grain (Canvey Island) (2)	37,576	14,861	8,912	50,483	59,770
South Hook (Milford Haven) (3)	-	-	-	49,249	124,922
Teesside GasPort (Teesside) (4)	-	42	-	813	-
	37,576	14,903	8,912	110,579	203,789

(1) Dragon began importing LNG to the UK in August 2009.

(2) LNG imports at the Isle of Grain commenced in 1965 but ceased in the early 1980's when, with increasing supplies from the North Sea, imports were no longer required. UK natural gas production peaked in 2000 and as a result of falling production LNG imports at the Isle of Grain recommenced in 2005.

(3) South Hook began importing LNG to the UK in April 2009.

(4) Teesside GasPort was commissioned with a small amount of gas in February 2007.