Department of Energy & Climate Change

A National Statistics Publication

ENERGY TRENDS

JUNE 2013

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Energy Trends is prepared by the Energy Statistics Team in DECC.

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This is a National Statistics publication

The United Kingdom Statistics Authority has designated these statistics as National Statistics, in accordance with the Statistics and Registration Service Act 2007 and signifying compliance with the UK Statistics Authority: Code of Practice for Official Statistics.

Designation can be broadly interpreted to mean that the statistics:

- meet identified user needs
- are well explained and readily accessible
- are produced according to sound methods, and
- are managed impartially and objectively in the public interest

Once statistics have been designated as National Statistics it is a statutory requirement that the Code of Practice shall continue to be observed.

Explanatory notes are to be found inside the back cover

Contents

Contents continued

The cover illustration used for Energy Trends and other DECC energy statistics publications is from a photograph by David Askew. It was a winning entry in the DTI News Photographic Competition in 2002.

Introduction

Energy Trends and Quarterly Energy Prices are produced by the Department of Energy and Climate Change (DECC) on a quarterly basis. Both periodicals are published concurrently in June, September, December and March. The June editions cover the first quarter of the current year.

Energy Trends includes information on energy as a whole and by individual fuels. The text and charts provide an analysis of the data in the tables. The tables are mainly in commodity balance format, as used in the annual Digest of UK Energy Statistics. The 2012 edition of the Digest was published on 26 July 2012. Printed and bound copies of the 2012 Digest can be obtained from The Stationery Office and an electronic version is available on the DECC section of the gov.uk website at:
www.gov.uk/government/organisations/department-of-energy-climate-change/series/digest-of-uk-energy-statistics-dukes

The balance format shows the flow of a commodity from its sources of supply, through to its final use. The articles provide in-depth information on current issues within the energy sector.

The text and tables included in this publication represent a snapshot of the information available at the time of publication. However, the data collection systems operated by DECC, which produce this information, are in constant operation. New data are continually received and revisions to historic data made. To ensure that those who use the statistics have access to the most up-to-date information, revised data will be made available as soon as possible, via the electronic versions of these tables. The electronic versions are available free of charge from the DECC section of the gov.uk website. In addition to quarterly tables, the main monthly tables that were published in the period up to May 2001 when Energy Trends was produced monthly, continue to be updated and are also available on the DECC section of the gov.uk website. Both sets of tables can be accessed at:
www.gov.uk/government/organisations/department-of-energy-climate-change/about/statistics

Annual data for 2012 included within this edition is on a provisional basis. New data are continually received and revisions to previous data made. Finalised figures for 2012 will be published on the 25 July 2013 in the annual Digest of UK Energy Statistics.

Energy Trends does not contain information on Foreign Trade, Weather (temperature, wind speed, sun hours and rainfall) and Prices. Foreign Trade and Weather tables are, however, available on the DECC section of the gov.uk website at:
www.gov.uk/government/organisations/department-of-energy-climate-change/about/statistics.
Information on Prices can be found in the Quarterly Energy Prices publication and on the DECC section of the gov.uk website at:
www.gov.uk/government/organisations/department-of-energy-climate-change/series/quarterly-energy-prices

Please note that the old DECC website moved to the new gov.uk website (www.gov.uk/) on 23 January 2013. All previous links should redirect to the new website; however, if users experience any difficulty in locating Energy Trends publications or tables on the new website they should contact either Kevin Harris (details below) or the DECC Energy Statistics contacts shown for each section or article within the publication.

If you have any comments on Energy Trends or Quarterly Energy Prices publications please send them to:

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The main points for the first quarter of 2013:

- Total energy production was 10½ per cent lower than in the first quarter of 2012. This decline in output is due to falls in petroleum and gas production as a result of maintenance activity on a number of fields; nuclear output was up and there was strong growth in renewables.

- Oil production fell by 15 per cent when compared with the first quarter of 2012, but was up on quarter four 2012.

- Natural gas production was 14½ per cent lower than the first quarter of 2012. Gas imports increased by 7½ per cent, with pipeline imports up by 32 per cent but shipped imports of LNG down by 58½ per cent.

- Coal production in the first quarter of 2013 was 7 per cent lower than the first quarter of 2012. Coal imports were 15 per cent higher whilst generators' demand for coal was down by 1½ per cent.

- Total primary energy consumption for energy uses rose by 4½ per cent. However, when adjusted to take account of weather differences between the first quarter of 2012 and the first quarter of 2013, primary energy consumption fell by 4 per cent.

- Temperatures in the quarter were on average 2.7 degrees colder than a year earlier, with March the coldest month of the quarter, 5.5 degrees colder than a year earlier. March 2013 was the coldest March for over 50 years.

- Final energy consumption was provisionally 6 per cent higher than in the first quarter of 2012, within which domestic consumption rose by 18 per cent reflecting the colder weather. On a temperature adjusted basis, final energy consumption was down 1½ per cent.

- Total deliveries of the key transport fuels were down 4½ per cent when compared to the same period last year. In particular, sales of motor spirit decreased by 10 per cent, which reflects increased demand in March 2012 in anticipation of a potential tanker drivers' strike.

- Electricity generated in the first quarter of 2013 rose by ½ per cent, from 101.1 TWh a year earlier to 101.8 TWh.

- Shares of generation between fuels were broadly unchanged in the first quarter of 2013 compared to a year earlier. Of electricity generated in the first quarter of 2013, coal accounted for 41 per cent, whilst gas accounted for 26 per cent (its lowest first quarter share in the last fifteen years, due to high gas prices). Nuclear generation accounted for 18 per cent of total electricity generated in the first quarter of 2013, an increase from the 17 per cent share in the first quarter of 2012.

- Renewables' share of electricity generation increased to 12 per cent from the 11 per cent share in the first quarter of 2012. Hydro generation decreased by 32 per cent on the first quarter of 2012 as a result of lower rainfall compared to the same quarter last year. Over the same period, wind generation increased by 29 per cent, of which offshore wind generation rose by 68 per cent due to much increased capacity. Overall hydro, wind and solar PV generation was up 10 per cent. Generation from bio-energy was up by just 3.5 per cent, with co-firing down by 80 per cent and plant biomass up 69 per cent.

- In the first quarter of 2013, 138 MW of capacity joined the Feed in Tariff scheme, increasing the total to 1,792 MW, approximately 10 per cent of all renewable installed capacity.

Section 1 - Total Energy

Key results show:

Total energy production was 10.4 per cent lower than in the first quarter of 2012. (**Charts 1.1 & 1.2**)

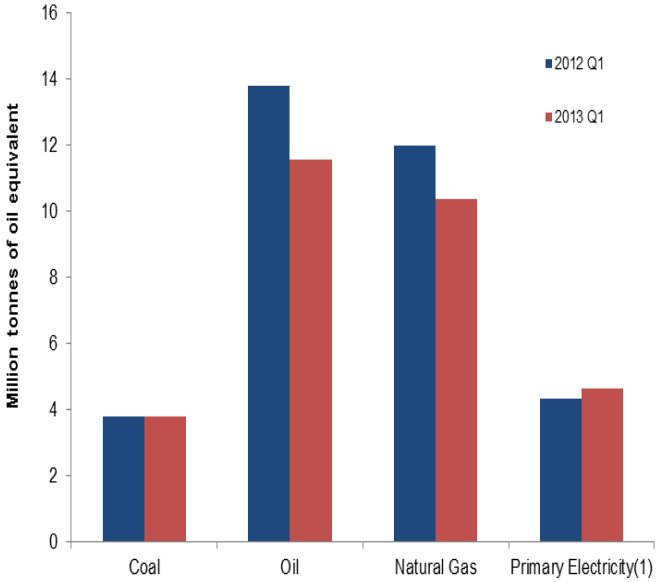
Total primary energy consumption for energy uses rose by 4.3 per cent. However, when adjusted to take account of weather differences between the first quarter of 2012 and the first quarter of 2013, primary energy consumption is estimated to have fallen by 4.0 per cent. (**Chart 1.3**)

Final energy consumption rose by 6.1 per cent compared to the first quarter of 2012 reflecting the colder weather in the quarter. Domestic consumption rose by 18.2 per cent, other final users' consumption rose by 6.9 per cent, industrial consumption rose by 2.9 per cent, whilst transport consumption fell by 5.1 per cent. (**Chart 1.4**)

Net import dependency was 44.3 per cent, up 5.1 percentage points from the first quarter of 2012. This rise was due to increases in imports of both coal and gas. (**Chart 1.6**)

Fossil fuel dependency was 88.3 per cent in the first quarter of 2013. (**Chart 1.7**)

Chart 1.1 Production of indigenous primary fuels



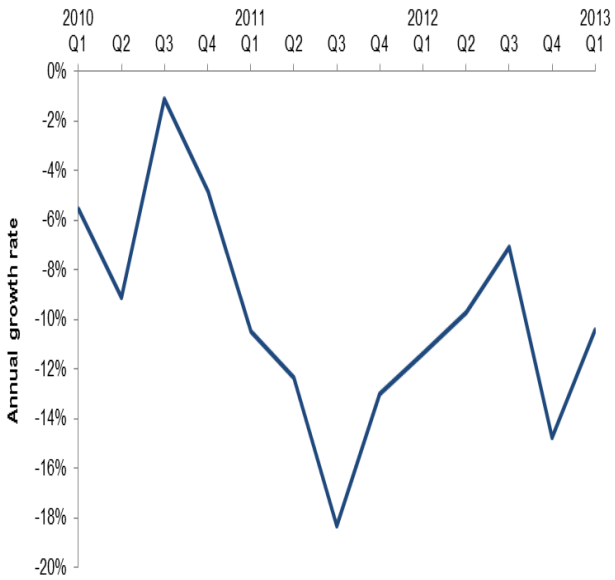
Total production in the first quarter of 2013 stood at 30.4 million tonnes of oil equivalent, 10.4 per cent lower than in the first quarter of 2012.

Production of natural and other gases fell by 13.5 per cent and production of oil by 16.1 per cent compared to the first quarter of 2012. These falls were due to continued maintenance activity on a number of fields, and were also affected by the suspension of production from the large Schiehallion oil field.

Primary electricity output in the first quarter of 2013 was 7.4 per cent higher than in the first quarter of 2012, within which nuclear electricity output was 6.3 per cent higher due to increased availability after outages. Output from wind and natural flow hydro was 13.6 per cent higher than the same period in 2012, due to the continued increase in wind capacity, which was up 36.2 per cent on the same period a year earlier.

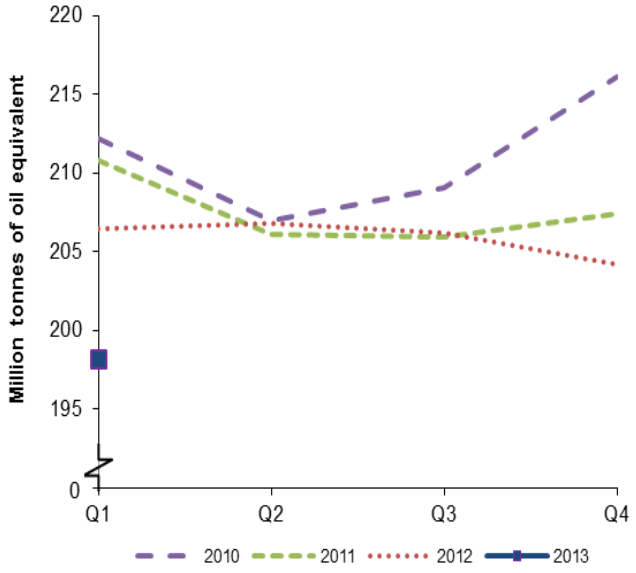
(1) Nuclear and wind & natural flow hydro electricity.

Chart 1.2 UK production (annual growth rate)



In the first quarter of 2013, the annual growth rate of UK production was -10.4 per cent. This was mainly the result of the falls in oil and gas.

Chart 1.3 Total inland consumption (primary fuel input basis)[(1)]



(1) Seasonally adjusted and temperature corrected annual rates

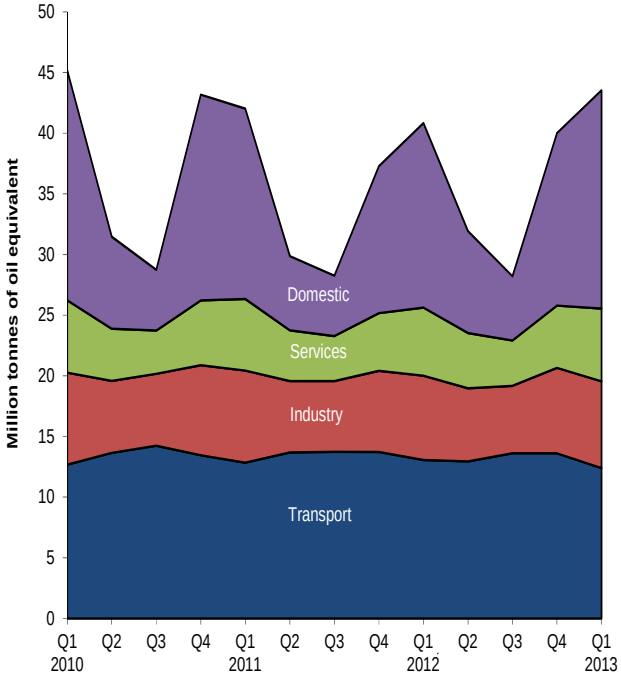
Total inland consumption on a primary fuel input basis (temperature corrected, seasonally adjusted annualised rate), was 198.2 million tonnes of oil equivalent in the first quarter of 2013, 4.0 per cent lower than in the first quarter of 2012. This sharp fall is mainly due to the temperature adjustment of the coal data, which has been running at high levels through the last year. On an unadjusted basis inland consumption was up 4.3 per cent, due to the colder weather in the quarter; the average temperature in the first quarter of 2013 was 2.7 degree Celsius colder than the same period a year earlier.

Between the first quarter of 2012 and the first quarter of 2013 (on a seasonally adjusted and temperature corrected basis) coal and other solid fuel consumption fell by 9.8 per cent.

Also on a seasonally adjusted and temperature corrected basis, oil consumption fell by 6.6 per cent between the first quarter of 2012 and the first quarter of 2013.

On the same basis, natural gas consumption fell by 1.1 per cent between the first quarter of 2012 and the first quarter of 2013. Unadjusted demand was up 12.4 per cent, with increased domestic demand due to the colder weather.

Chart 1.4 Final energy consumption by user



Total final energy consumption rose by 6.1 per cent between the first quarter of 2012 and the first quarter of 2013.

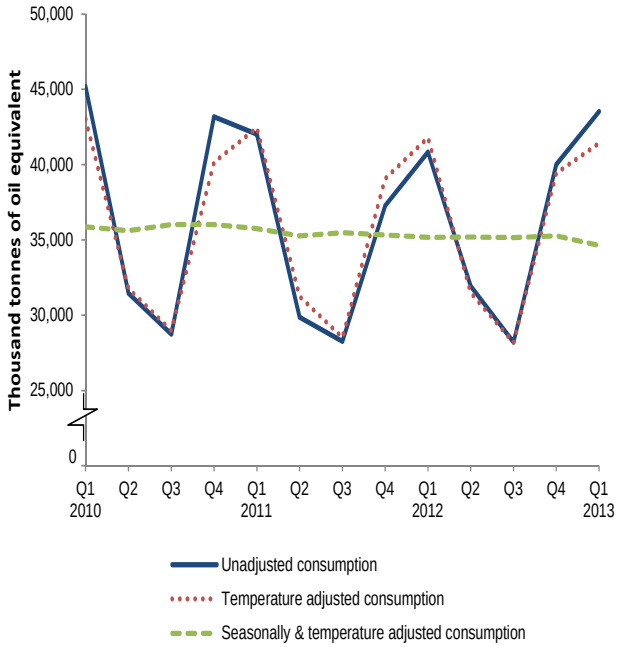
Domestic sector energy consumption rose by 18.2 per cent, reflecting the colder weather compared to a year earlier.

Service sector energy consumption rose by 6.9 per cent.

Industrial sector energy consumption rose by 2.9 per cent.

Transport sector energy consumption fell by 5.1 per cent.

Chart 1.5 Seasonally adjusted and temperature corrected final energy consumption

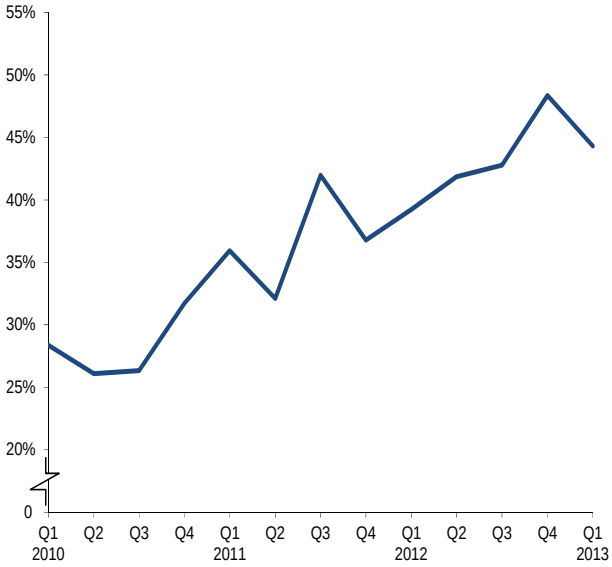


Total unadjusted final energy consumption (excluding non-energy use) rose by 6.6 per cent between the first quarter of 2012 and the first quarter of 2013.

On a seasonally and temperature adjusted basis final energy consumption (excluding non-energy use) fell by 1.5 per cent between the first quarter of 2012 and the first quarter of 2013.

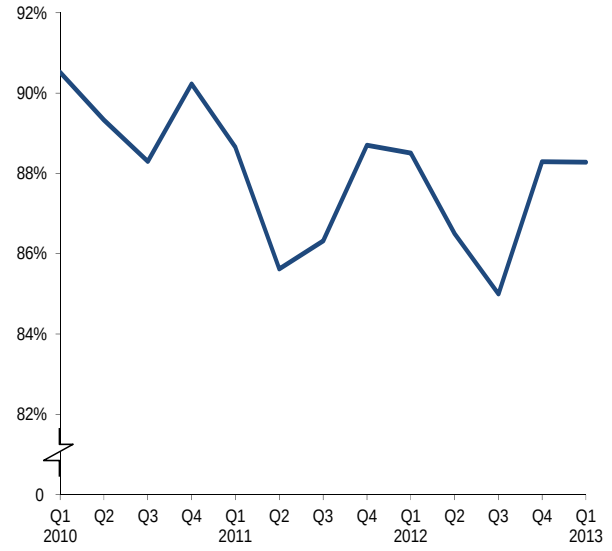
Consumption data by fuel and sector is available in the table ET 1.3c on the DECC section of the gov.uk website at:
www.gov.uk/government/publications/total-energy-section-1-energy-trends

Chart 1.6 Net import dependency



In the first quarter of 2013 net import dependency was 44.3 per cent, up 5.1 percentage points from the first quarter of 2012. This rise was due to increases in imports of both coal and gas and a fall in exports of petroleum products.

Chart 1.7 Fossil fuel dependency



In the first quarter of 2013 fossil fuel dependency was 88.3 per cent, down 0.2 percentage points from the first quarter of 2012.

Relevant tables

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1 TOTAL ENERGY

TABLE 1.1. Indigenous production of primary fuels

Million tonnes of oil equivalent

						Primary electricity	
		Total	Coal[1]	Petroleum[2]	Natural gas[3]	Nuclear	Wind and natural flow hydro[4]
2010		157.9	14.7	69.0	59.1	13.9	1.19
2011		136.8r	15.2r	56.9	47.3r	15.6	1.84
2012 p		121.9r	14.8r	48.8	40.9r	15.2r	2.24r
Per cent change		*-10.9*	*-2.4*	*-14.3*	*-13.4*	*-2.7*	*+21.6*
2012	Quarter 1	33.9r	3.8r	13.8	12.0	3.7r	0.62r
	Quarter 2	31.6r	3.9	12.9	10.4	4.0r	0.43r
	Quarter 3	27.1r	3.5r	10.7	8.5	3.9r	0.51
	Quarter 4	29.3r	3.6r	11.4	10.1	3.6r	0.69r
2013	Quarter 1 p	30.4	3.8	11.6r	10.4r	3.9r	0.70
Per cent change[5]		*-10.4*	*-0.1*	*-16.1*	*-13.5*	*+6.3*	*+13.6*

1. Includes solid renewable sources (wood, straw and waste), a small amount of renewable primary heat sources (solar, geothermal etc), liquid biofuels and an estimate for slurry.
2. Crude oil, offshore and land, plus condensates and petroleum gases derived at onshore treatment plants.
3. Includes colliery methane, landfill gas and sewage gas. Excludes gas flared or re-injected.
4. Includes generation by solar PV.
5. Percentage change in the first quarter of 2013 compared with a year earlier.

1 TOTAL ENERGY

TABLE 1.2 Inland energy consumption: primary fuel input basis

Million tonnes of oil equivalent

						Primary electricity							Primary electricity		
					Natural		Wind and natural	Net				Natural		Wind and natural	Net
		Total	Coal[1]	Petroleum[2]	gas[3]	Nuclear	flow hydro[4]	imports	Total	Coal	Petroleum	gas	Nuclear	flow hydro	imports
		Unadjusted[5]							*Seasonally adjusted and temperature corrected*[6,7] *(annualised rates)*						
2010		216.8r	37.2r	69.0r	95.3	13.9	1.19	0.23	211.1r	35.7r	69.0r	91.0r	13.9	1.19	0.23
2011		202.1r	37.7r	67.1r	79.3r	15.6	1.84	0.53	207.5r	39.5r	67.1r	82.9r	15.6	1.84	0.53
2012 p		206.0r	46.5r	65.9r	75.1r	15.2r	2.24r	1.04	205.9r	46.4r	65.9r	75.1r	15.2r	2.24r	1.04
Per cent change		*+1.9*	*+23.4*	*-1.8*	*-5.3*	*-2.7*	*+21.6*	*+93.6*	*-0.8*	*+17.5*	*-1.8*	*-9.4*	*-2.7*	*+21.6*	*+93.6*
2012	Quarter 1	58.7r	13.3	16.5r	24.4	3.7r	0.62r	0.17	206.5r	46.9r	65.9r	77.0r	13.7r	2.20r	0.68
	Quarter 2	47.8r	10.4r	16.2r	16.4	4.0r	0.43r	0.27	206.8r	46.8r	64.8r	76.4r	15.5r	2.17r	1.10
	Quarter 3	42.9r	9.9	16.5r	11.8	3.9r	0.51	0.35	206.2r	47.8r	66.0r	72.3r	16.4r	2.39r	1.40
	Quarter 4	56.6r	13.0	16.7r	22.4	3.6r	0.69r	0.24	204.2r	44.3r	66.9r	74.7r	15.2r	2.21r	0.96
2013	Quarter 1 p	61.2r	13.4r	15.4r	27.5r	3.9r	0.70	0.27	198.2r	42.3r	61.6r	76.1r	14.6r	2.51r	1.07
Per cent change[8]		*+4.3*	*+1.1*	*-6.6*	*+12.4*	*+6.3*	*+13.6*	*+57.2*	*-4.0*	*-9.8*	*-6.6*	*-1.1*	*+5.9*	*+14.2*	*+57.2*

1. Includes solid renewable sources (wood, straw and waste), a small amount of renewable primary heat sources (solar, geothermal, etc.), liquid biofuels and net foreign trade and stock changes in other solid fuels.
2. Inland deliveries for energy use, plus refinery fuel and losses, minus the differences between deliveries and actual consumption at power stations.
3. Includes gas used during production, colliery methane, landfill gas and sewage gas. Excludes gas flared or re-injected and non-energy use of gas.
4. Includes generation by solar PV. Excludes generation from pumped storage stations.
5. Not seasonally adjusted or temperature corrected.
6. Coal and natural gas are temperature corrected; petroleum and primary electricity are not temperature corrected.
7. For details of temperature correction see the June and September 2011 editions of Energy Trends; Seasonal and temperature adjustment factors were reassessed in September 2011 www.gov.uk/government/organisations/department-of-energy-climate-change/series/energy-trends
8. Percentage change in the first quarter of 2013 compared with a year earlier.

1 TOTAL ENERGY

Table 1.3a Supply and use of fuels

Thousand tonnes of oil equivalent

	2011	2012 p	*per cent change*	2011 1st quarter	2011 2nd quarter	2011 3rd quarter	2011 4th quarter	2012 1st quarter	2012 2nd quarter	2012 3rd quarter	2012 4th quarter	2013 1st quarter p	*per cent change*[1]
SUPPLY													
Indigenous production	136,828r	121,945r	*-10.9*	38,317r	34,943r	29,144r	34,424r	33,914r	31,521r	27,087r	29,423r	30,238	*-10.8*
Imports	162,525r	173,768r	*+6.9*	42,619r	37,416r	39,165r	43,326r	45,227r	42,579r	39,657r	46,305r	47,609	*+5.3*
Exports	-84,127	-80,272r	*-4.6*	-19,775	-21,936	-20,003	-22,413r	-21,113r	-21,373r	-20,189r	-17,597r	-19,028	*-9.9*
Marine bunkers	-3,804r	-3,317r	*-12.8*	-957r	-923r	-1,065r	-859r	-817r	-807r	-864r	-829r	-696	*-14.8*
Stock change[2]	-919	+1,557r		+2,414	-2,221	-2,636	+1,524	+3,430r	-2,076r	-1,035	+1,238r	+5,682	
Primary supply	210,503r	213,681r	*+1.5*	62,618r	47,279r	44,605r	56,001r	60,642r	49,844r	44,656r	58,539r	63,805	*+5.2*
Statistical difference[3]	-707r	-281r		-125r	-270r	-322r	+10r	-28r	+5r	-134r	-124r	+343	
Primary demand	211,209r	213,962r	*+1.3*	62,743r	47,549r	44,926r	55,992r	60,670r	49,839r	44,791r	58,663r	63,462	*+4.6*
Transfers[4]	-22r	-46r		-4r	-2r	-8r	-8r	-13r	-15r	-9r	-9r	-2	
TRANSFORMATION	-48,054r	-48,733r	*+1.4*	-13,861r	-11,019r	-10,625r	-12,549r	-13,149r	-11,546r	-11,029r	-13,009r	-13,654	*+3.8*
Electricity generation	-44,632r	-45,447r	*+1.8*	-12,848r	-10,177r	-9,857r	-11,749r	-12,466r	-10,642r	-10,204r	-12,136r	-12,790	*+2.6*
Heat generation	-1,103r	-1,069r	*-3.1*	-353r	-235r	-216r	-298r	-296r	-257r	-203r	-313r	-309	*+4.5*
Petroleum refineries	-237r	-26r	*-89.1*	-125r	-53r	-58r	-1r	36r	-25r	-12r	-25r	68	*+88.7*
Coke manufacture	-333	-282	*-15.4*	-84	-94	-73	-83	-60	-73	-89	-59	-95	*+57.6*
Blast furnaces	-1,739	-1,883	*+8.3*	-445	-461	-429	-404	-343	-544	-519	-477	-545	*+59.0*
Patent fuel manufacture	-10	-26	*(+)*	-5	1	7	-13	-21	-5	-1	1	17	*(-)*
Energy industry use	13,531r	13,063r	*-3.5*	3,570r	3,440r	3,216r	3,305r	3,542r	3,387r	3,121r	3,012r	3,221	*-9.1*
Losses	3,728r	3,545	*-4.9*	1,092r	888r	825r	922r	1,030r	873	729	913	1,047	*+1.6*
FINAL CONSUMPTION	145,875r	148,576r	*+1.9*	44,208r	32,204r	30,257r	39,205r	42,928r	34,022r	29,909r	41,717r	45,530	*+6.1*
Iron & steel	1,294r	1,481r	*+14.4*	362r	314r	306r	313r	365r	382r	350r	384r	408	*+11.7*
Other industries	24,694r	24,098r	*-2.4*	7,223r	5,577r	5,523r	6,371r	6,585r	5,651r	5,204r	6,658r	6,742	*+2.4*
Transport	54,006r	53,249r	*-1.4*	12,849r	13,684r	13,745r	13,729r	13,064r	12,945r	13,623r	13,618r	12,401	*-5.1*
Domestic	38,891r	43,108r	*+10.8*	15,691r	6,116r	4,976r	12,109r	15,205r	8,402r	5,287r	14,214r	17,977	*+18.2*
Other Final Users	18,541r	19,034r	*+2.7*	5,898r	4,179r	3,707r	4,757r	5,611r	4,554r	3,738r	5,131r	5,998	*+6.9*
Non energy use	8,447r	7,605r	*-10.0*	2,185r	2,334r	2,002r	1,926r	2,099r	2,087r	1,707r	1,713r	2,004	*-4.5*
DEPENDENCY[5]													
Net import dependency	36.6% r	43.1% r		35.9% r	32.1% r	42.0% r	36.8%	39.2% r	41.9% r	42.8% r	48.4% r	44.3%	
Fossil fuel dependency	87.5%	87.3% r		88.7% r	85.6%	86.3% r	88.7%	88.5% r	86.5% r	85.0% r	88.3% r	88.3%	
Low carbon share	12.5%	12.7% r		11.3% r	14.4%	13.7% r	11.3%	11.5% r	13.5% r	15.0% r	11.7% r	11.7%	

1. Percentage change in the first quarter of 2013 compared with a year earlier.
2. Stock fall (+), stock rise (-).
3. Primary supply minus primary demand.
4. Annual transfers should ideally be zero. For manufactured fuels differences occur in the rescreening of coke to breeze. For oil and petroleum products differences arise due to small variations in the calorific values used.
5. See article in the December 2010 edition of Energy Trends at: http://webarchive.nationalarchives.gov.uk/20130109092117/http://www.decc.gov.uk/en/content/cms/statistics/publications/trends/trends.aspx

1 TOTAL ENERGY

Table 1.3b Supply and use of fuels

Thousand tonnes of oil equivalent

	2012 Quarter 1									2013 Quarter 1 p								
	Coal	Manufactured fuels[4]	Primary oil	Petroleum Products	Natural gas[5]	Bioenergy & waste[6]	Primary electricity	Electricity	Heat sold	Coal	Manufactured fuels[4]	Primary oil	Petroleum Products	Natural gas[5]	Bioenergy & waste[6]	Primary electricity	Electricity	Heat sold
SUPPLY																		
Indigenous production	2,583	-	13,801	-	11,414	1,783	4,334	-	-	2,406	-	11,568	-	9,753	1,858	4,653	-	-
Imports	6,790	7	17,042	6,058	14,520	538	-	273	-	7,793	76	15,926	7,321	15,626	580	-	288	-
Exports	-88	-231	-9,376	-8,107	-3,114	-95	-	-102	-	-107	-26	-9,495	-7,394	-1,870	-117	-	-20	-
Marine bunkers	-	-	-	-817	-	-	-	-	-	-	-	-	-696	-	-	-	-	-
Stock change[1]	+2,491	-47	-215	+40	+1,161	-	-	-	-	+1,649	+60	+486	+15	+3,472	-	-	-	-
Primary supply	11,775	-272	21,253	-2,826	23,981	2,225	4,334	171	-	11,741	109	18,485	-754	26,981	2,321	4,653	269	-
Statistical difference[2]	+83	-1	-22	-46	-60	-	-	+19	-	+98	-	-	-13	+185	-	-	+33	-
Primary demand	11,692	-271	21,275	-2,780	24,041	2,227	4,334	152	-	11,643	+113	18,441	-741	26,796	2,321	4,653	236	-
Transfers[3]	-	+1	-774	+761	-1	-	-619	+619	-	-	+3	-585	+583	-3	-	-703	+703	-
TRANSFORMATION	-11,250	686	-20,501	20,303	-5,596	-1,436	-3,715	7,920	440	-11,172	401	-17,856	17,731	-5,656	-1,494	-3,949	7,902	440
Electricity generation	-9,964	-74	-	-217	-5,020	-1,396	-3,715	7,920	-	-9,835	-198	-	-175	-5,080	-1,455	-3,949	7,902	-
Heat generation	-90	-13	-	-18	-576	-39	-	-	440	-103	-13	-	-18	-576	-39	-	-	440
Petroleum refineries	-	-	-20,501	20,537	-	-	-	-	-	-	-	-17,856	17,924	-	-	-	-	-
Coke manufacture	-992	932	-	-	-	-	-	-	-	-951	857	-	-	-	-	-	-	-
Blast furnaces	-152	-190	-	-	-	-	-	-	-	-232	-313	-	-	-	-	-	-	-
Patent fuel manufacture	-52	31	-	-	-	-	-	-	-	-51	68	-	-	-	-	-	-	-
Energy industry use	1	153	-	1,459	1,281	-	-	603	46	1	172	-	1,198	1,240	-	-	565	46
Losses	-	15	-	-	320	-	-	695	-	-	40	-	-	316	-	-	691	-
FINAL CONSUMPTION	441	248	-	16,825	16,843	791	-	7,393	387	470	304	-	16,375	19,581	827	-	7,586	387
Iron & steel	9	164	-	1	116	-	-	75	-	9	195	-	1	125	-	-	78	-
Other industries	302	44	-	1,065	2,785	148	-	2,049	192	292	48	-	1,117	2,816	150	-	2,126	192
Transport	3	-	-	12,674	-	299	-	88	-	3	-	-	12,098	-	212	-	88	-
Domestic	121	40	-	816	11,078	254	-	2,873	23	160	61	-	992	13,461	340	-	2,939	23
Other final users	6	-	-	297	2,737	90	-	2,309	171	7	-	-	290	3,051	124	-	2,354	171
Non energy use	-	-	-	1,971	128	-	-	-	-	-	-	-	1,876	128	-	-	-	-

1. Stock fall (+), stock rise (-).
2. Primary supply minus primary demand.
3. Annual transfers should ideally be zero. For manufactured fuels differences occur in the rescreening of coke to breeze. For oil and petroleum products differences arise due to small variations in the calorific values used.
4. Includes all manufactured solid fuels, benzole, tars, coke oven gas and blast furnace gas.
5. Inludes colliery methane.
6. Includes geothermal, solar heat and biofuels for transport; wind and wave electricity included in primary electricity figures.

Section 2 - Solid Fuels and Derived Gases

Key results show:

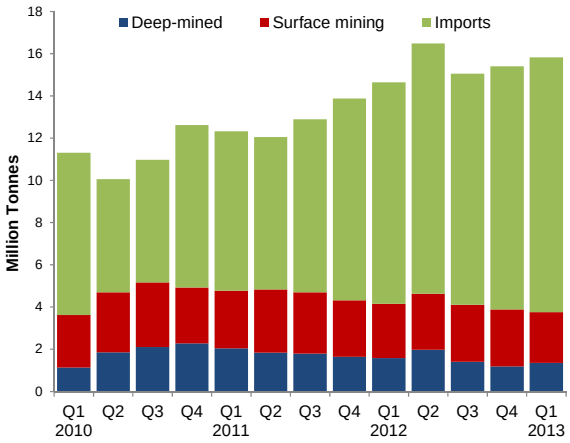
Overall production was down 6.9 per cent (-0.3 million tonnes) compared to quarter 1 2012 with deep-mined output down 14.6 per cent (-0.2 million tonnes) and surface mining output down by 2.2 per cent (-0.1 million tonnes). **(Chart 2.1)**

Coal imports were up 15.0 per cent (+1.6 million tonnes) on levels shown in quarter 1 2012. **(Charts 2.1 and 2.2)**

The demand for coal by electricity generators in the first quarter of 2013, was 1.3 per cent (-0.2 million tonnes) lower than demand in the first quarter of 2012 but still remained at their recent high levels **(Chart 2.3)**

Total stock levels were down 12.0 per cent (-1.5 million tonnes) to 10.7 million tonnes compared to quarter 1 2012 and were down by 2.4 million tonnes on quarter 4 2012. **(Chart 2.4)**

Chart 2.1 Coal supply



Provisional figures for the first quarter of 2013 show that coal production (including an estimate for slurry) at 3.9 million tonnes was 6.9 per cent lower than the first quarter 2012. The decrease was a result of the mothballing of Maltby Colliery and the closure of Daw Mill Colliery as a result of a fire during February 2013, forcing the mine to close the following month.

Imports of coal in the first quarter of 2013 were 15.0 per cent higher than in the first quarter of 2012 at 12.1 million tonnes.

In quarter 1 2013, net imports (11.9 million tonnes) made up 65.1 per cent of coal supply, 8.6 percentage points higher compared to the first quarter of 2012 (56.5 per cent).

Table 2A Coal imports by origin

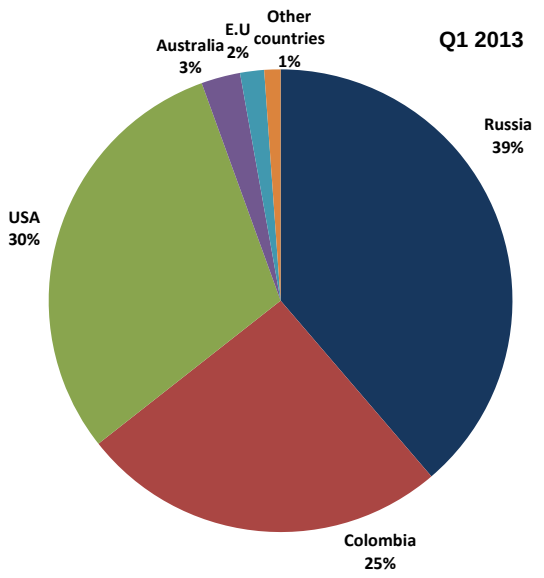
Thousand Tonnes

	2011	2012	2012 Q1	2013 Q1 p
European Union	1,155	698	288	190
Russia	12,332	18,288	4,396	4,375
Colombia	8,010	11,919	3,199	2,900
USA	6,334	10,474	1,660	3,399
Australia	3,380	2,253	685	308
Other Countries	1,316	1,164	267	427
Total imports	32,527	44,796	10,494	11,599

Steam coal, largely for the power stations market, accounted for 90.5 per cent of coal imported in the first quarter of 2013. Steam coal imports increased by 11.4 per cent in quarter 1 2013, when compared to the same period a year earlier, with imports from the USA more than doubling over the period.

Coking coal imports increased by 1.0 per cent to 1.1 million tonnes.

Chart 2.2 Total coal imports by origin

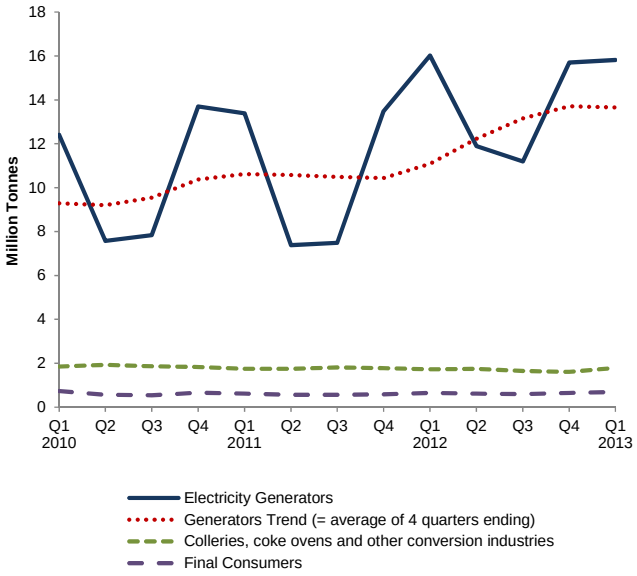


All but 4.9 per cent of UK steam coal imports came from just three countries: Russia (39.4 per cent), Colombia (27.6 per cent) and the USA (28.1 per cent).

Russian and Colombian steam coal imports decreased by 5.8 per cent (-0.3 million tonnes) and 9.4 per cent (-0.3 million tonnes), respectively, from quarter 1 2012.

Steam coal imports originating from the USA in quarter 1 2013 more than doubled in comparison to the same quarter in 2012 to 2.9 million tonnes.

Chart 2.3 Coal consumption

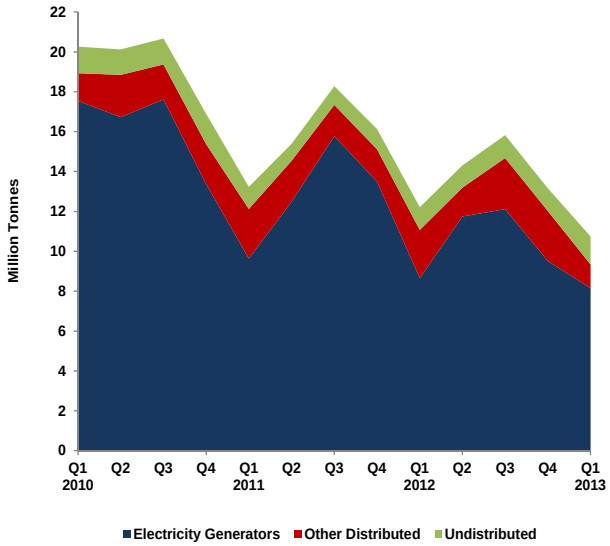


Total demand for coal in the first quarter of 2013, at 18.3 million tonnes, was 0.5 per cent lower than in the first quarter of 2012. Consumption by electricity generators was down by 1.3 per cent to 15.8 million tonnes.

Electricity generators accounted for 86.5 per cent of total coal use in the first quarter of 2013; compared with 87.1 per cent a year earlier.

Sales to industrial users decreased by 3.2 per cent in quarter 1 2013 while sales to final consumers (as measured by disposals to final consumers) increased by 30.8 per cent to 0.2 million tonnes during quarter 1 2013.

Chart 2.4 Coal stocks



Coal stocks showed a seasonal fall of 2.4 million tonnes during the first quarter of 2013 and stood at 10.7 million tonnes, 1.5 million tonnes lower than at the end of March 2012, and at the lowest level since the end of quarter 1 2005.

The level of coal stocks at power stations at the end of the first quarter of 2013 was 8.2 million tonnes, 0.5 million tonnes lower than at the end of March 2012.

Stocks held by coke ovens were at a record low of 0.6 million tonnes at the quarter 1 2013, this was 0.6 million tonnes lower than stock levels at the end of quarter 1 2012 (1.1 million tonnes).

Stocks held by producers (undistributed stocks) during the first quarter of 2013 to stand at 1.4 million tonnes, 0.3 million tonnes higher than at the end of March 2012.

Relevant tables

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2 SOLID FUEL AND DERIVED GASES

Table 2.1 Supply and consumption of coal

Thousand tonnes

	2011	2012 p	per cent change	2011 1st quarter	2011 2nd quarter	2011 3rd quarter	2011 4th quarter	2012 1st quarter	2012 2nd quarter	2012 3rd quarter	2012 4th quarter	2013 1st quarter p	per cent change [1]
SUPPLY													
Indigenous production	18,627	16,788	*-9.9*	4,773	4,835	4,699	4,321	4,155	4,636	4,109	3,888	3,869	*-6.9*
Deep mined	7,312	6,153	*-15.9*	2,039	1,838	1,793	1,642	1,585	1,978	1,406	1,184	1,353	*-14.6*
Surface mining [2]	10,580	10,185	*-3.7*	2,550	2,805	2,713	2,511	2,458	2,540	2,585	2,602	2,404	*-2.2*
Other sources	735	450	*-38.8*	184	192	192	167	113	118	118	102	113	-
Imports [3]	32,527	44,796	*+37.7*	7,556	7,215	8,199	9,557	10,494	11,851	10,943	11,508	12,068	*+15.0*
Exports [4]	491	480	*-2.2*	133	117	107	135	117	131	99	134	142	*+21.5*
Stock change [5]	+836	+2,879		+3,619	-2,173	-2,888	+2,279	+3,830	-2,101	-1,516	+2,665	+2,521	
Total supply	51,500	63,983	*+24.2*	15,815	9,760	9,902	16,022	18,363	14,256	13,437	17,927	18,316	*-0.3*
Statistical difference	-14	-59		-63	-23	-4	+75	-27	-4	+2	-29	+20	
Total demand	51,514	64,042	*+24.3*	15,879	9,783	9,906	15,946	18,390	14,260	13,436	17,956	18,295	*-0.5*
TRANSFORMATION	49,057	61,524	*+25.4*	15,214	9,198	9,323	15,323	17,742	13,641	12,837	17,304	17,608	*-0.8*
Electricity generation	41,857	54,818	*+31.0*	13,440	7,412	7,481	13,523	16,025	11,901	11,192	15,700	15,820	*-1.3*
Heat generation [6]	477	477	-	145	106	99	127	145	106	99	127	166	*+14.8*
Coke manufacture	5,398	4,941	*-8.5*	1,279	1,353	1,428	1,338	1,300	1,301	1,215	1,125	1,246	*-4.1*
Blast furnaces	995	981	*-1.4*	257	246	245	247	199	253	255	274	304	*+52.5*
Patent fuel manufacture	331	307	*-7.3*	93	81	69	87	73	79	75	80	71	*-2.5*
Energy industry use	4	4		1	1	1	1	1	1	1	1	1	
FINAL CONSUMPTION	2,453	2,514	*+2.5*	664	584	582	623	647	618	598r	652	686	*+6.1*
Iron & steel	53	71		13	13	13	14	12	13	24	22	12	*-2.0*
Other industries	1,629	1,711	*+5.0*	431	400	393	404	458	431	399	422	443	*-3.3*
Domestic	717	682	*-4.8*	209	161	159	188	164	162	161	195	217	*+32.6*
Other final users	55	51	*-7.9*	11	10	17	16	13	12	14	12	14	*+7.9*
Stocks at end of period													
Distributed stocks	15,113	12,019	*-20.5*	12,186	14,447	17,332	15,113	11,072	13,188	14,672	12,019	9,340	*-15.6*
Of which:													
Major power producers [7]	13,496	9,511	*-29.5*	9,646	12,484	15,776	13,496	8,656	11,749	12,117	9,511	8,152	*-5.8*
Coke ovens	1,355	1,003	*-26.0*	1,187	1,112	1,324	1,355	1,127	1,018	977	1,003	563	*(-)*
Undistributed stocks	926	1,141	*+23.2*	1,071	983	986	926	1,136	1,122	1,154	1,141	1,405	*+23.6*
Total stocks [8]	16,039	13,160	*-18.0*	13,257	15,430	18,318	16,039	12,209	14,310	15,826	13,160	10,745	*-12.0*

1. Percentage change in the first quarter of 2013 compared with a year earlier.

2. The term 'surface mining' has now replaced opencast production. Opencast production is a surface mining technique.

3. For a detailed breakdown of UK Imports by country and grade of coal refer to Table 2.4 Coal imports (internet table only).

4. Trade is counted as an export under three conditions, when it is recorded as an import and is subsequently exported; it enters the UK port with the intention of being imported but due to a change of ownership at the port it is exported without having cleared the port; and when items leave the warehouse and are exported. Trade is not classified as exports when it is resting at a UK port and the UK is not the intended final destination.

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

6. Heat generation is based on an annual figure and is then split over a quarterly period. The 2012 heat generation will not be published until the end of July 2013. Therefore, the 2011 figure is used as an estimate for 2012.

7. This includes stocks held at ports.

8. For some quarters, closing stocks may not be consistent with stock changes, due to additional stock adjustments

2 SOLID FUEL AND DERIVED GASES

Table 2.2 Supply and consumption of coke oven coke, coke breeze and other manufactured solid fuels

Thousand tonnes

	2011	2012 p	*per cent change*	2011 1st quarter	2011 2nd quarter	2011 3rd quarter	2011 4th quarter	2012 1st quarter	2012 2nd quarter	2012 3rd quarter	2012 4th quarter	2013 1st quarter p	*per cent change* [3]
SUPPLY													
Indigenous production	4,342	3,973	*-8.5*	1,029	1,075	1,174	1,064	1,040	1,056	959	918	1,017	*-2.2*
Coke Oven Coke	4,021	3,694	*-8.1*	943	991	1,094	993	993	983	884	835	922	*-7.1*
Coke Breeze	31	31	*-2.3*	8	8	8	8	8	8	8	8	8	*+2.2*
Other MSF	289	248	*-14.4*	78	76	73	63	40	66	67	75	87	*(+)*
Imports	47	205	*(+)*	23	2	3	18	10	17	22	156	106	*(+)*
Exports	499	542	*+8.6*	135	58	112	195	325	143	37	37	36	*(-)*
Stock change[1]	-540	+102		-68	-129	-233	-110	-67	+150	+48	-29	+85	
Transfers	-	-		-	-	-	-	-	-	-	-	-	
Total supply	3,350	3,738	*+11.6*	850	890	833	777	658	1,080	992	1,008	1,172	*+78.1*
Statistical difference	-4	4		-6	3	0	-1	-0	-0	2	3	-1	
Total demand	3,354	3,733	*+11.3*	856	888	833	778	658	1,080	989	1,006	1,173	*+78.2*
TRANSFORMATION	2,645	2,996	*+13.3*	673	712	660	601	521	882	828	765	854	*+63.7*
Coke manufacture	-	-		-	-	-	-	-	-	-	-	-	
Blast furnaces	2,645	2,996	*+13.3*	673	712	660	601	521	882	828	765	854	*+63.7*
Energy industry use	-	-		-	-	-	-	-	-	-	-	-	
FINAL CONSUMPTION	709	737	*+4.1*	183	175	173	177	137	198	161	241	319	*(+)*
Iron & steel	395	432	*+9.3*	96	107	99	94	80	122	91	140	227	*(+)*
Other industries	35	45	*+29.8*	9	6	10	11	5	13	12	15	14	*(+)*
Domestic	278	260	*-6.6*	78	63	65	73	52	64	58	86	78	*+50.6*
Stocks at end of period[2]	872	587	*+11.6*	734	755	773	872	930	793	695	587	507	*-45.5*

1. Stock fall (+), stock rise (-).
2. For some quarters, closing stocks may not be consistent with stock changes, due to additional stock adjustments
3. Percentage change in the first quarter of 2013 compared with a year earlier.

2 SOLID FUEL AND DERIVED GASES

Table 2.3 Supply and consumption of coke oven gas, blast furnace gas, benzole and tars

GWh

	2011	2012 p	*per cent change*	2011 1st quarter	2011 2nd quarter	2011 3rd quarter	2011 4th quarter	2012 1st quarter	2012 2nd quarter	2012 3rd quarter	2012 4th quarter	2013 1st quarter p	*per cent change*[1]
SUPPLY													
Indigenous production	21,007	21,376	*+1.8*	5,183	5,368	5,360	5,096	4,662	5,730	5,458	5,526	5,697	*+22.2*
Coke oven gas	8,847	8,226	*-7.0*	2,103	2,239	2,296	2,209	2,149	2,105	2,021	1,950	1,880	*-12.5*
Blast furnace gas	10,503	11,615	*+10.6*	2,677	2,717	2,645	2,464	2,101	3,224	3,080	3,209	3,429	*+63.2*
Benzole & tars	1,657	1,535	*-7.4*	403	412	419	422	411	400	357	367	388	*-5.7*
Transfers	60	55	*-8.3*	32	10	11	7	11	4	14	26	29	*(+)*
Total supply	21,067	21,431	*+1.7*	5,215	5,378	5,371	5,103	4,674	5,734	5,472	5,551	5,726	*+22.5*
Statistical difference	-131	-1		-38	-33	-32	-28	-2	+0	+1	-1	-31	
Total demand	21,199	21,432	*+1.1*	5,253	5,411	5,403	5,131	4,675	5,733	5,471	5,553	5,757	*+23.1*
TRANSFORMATION	8,038	6,062	*-24.6*	2,007	2,103	2,024	1,905	1,007	1,692	1,672	1,691	2,447	*(+)*
Electricity generation	7,441	5,465	*-26.6*	1,857	1,953	1,875	1,756	858	1,543	1,523	1,541	2,297	*(+)*
Heat generation[2]	598	598	-	149	149	149	149	149	149	149	149	149	-
Energy industry use	7,671	8,101	*+5.6*	1,901	1,927	1,967	1,875	1,774	2,126	2,104	2,097	2,002	*+12.9*
Losses	1,751	999	*-43.0*	416	477	443	414	178	319	213	289	471	*(+)*
FINAL CONSUMPTION	3,739	6,270	*+67.7*	929	904	969	937	1,717	1,596	1,481	1,476	838	*(-)*
Iron & steel	1,883	4,538	*(+)*	479	439	502	462	1,254	1,145	1,077	1,062	393	*(-)*
Other industries	1,857	1,732	*-6.7*	451	465	466	474	463	451	404	414	445	*-3.9*

1. Percentage change in the first quarter of 2013 compared with a year earlier.

2. For Heat generation, the 2012 figures currently shown are the 2011 figures carried forward - these will be updated in July 2013.

Section 3 - Oil and Oil Products

Key results show:

Total indigenous UK production of crude oil and Natural Gas Liquids (NGL) in Q1 2013 was 16.1 per cent lower than a year ago. A key driver was the suspension of production at the Schiehallion oil field which is due to remain closed for three to four years. Production increased on Q4 2012 as production on the Buzzard field came back on stream. **(Chart 3.1)**

Refinery production in Q1 2013 was down 12.9 per cent compared with the same quarter a year earlier. This is due in the main to the closure of the Coryton refinery in Essex. Production in Q1 2013 increased by around 16 per cent on Q4 2012 as maintenance during Q4 2012 in some refineries came to an end. (**Chart 3.2**)

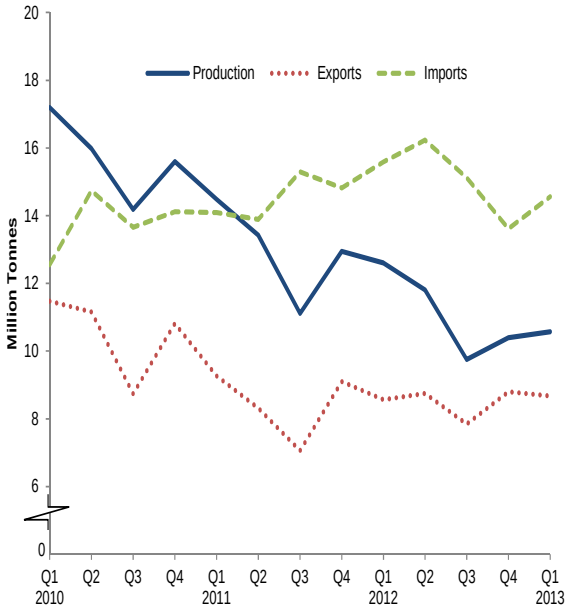
Imports of petroleum products increased by 21.3 per cent compared with Q1 2012 and exports of petroleum products decreased by 8.9 per cent. Despite this, the UK was a net exporter of petroleum products in Q1 2013 albeit by a small amount – some 0.04 million tonnes. This follows a period at the end of 2012 where the UK was a net importer of petroleum products due to low indigenous production levels. **(Chart 3.2)**

Net imports of primary oils (crude oil, NGLs and process oils) in Q1 2013 decreased to 5.9 million tonnes (down 16.2 per cent) due to lower refinery demand. This met 35.9 per cent of UK's refinery demand. **(Chart 3.3)**

In Q1 2013 total deliveries of key transport fuels decreased by 4.5 per cent compared with Q1 2012. Motor Spirit deliveries decreased by 9.8 per cent and aviation fuel was down by 7.7 per cent, while DERV deliveries increased by only 0.6 per cent. This large reduction in road deliveries is mainly due to the threatened tankers drivers' strike in March 2012 which resulted in higher than normal demand. (**Chart 3.5)**

Overall stocks of crude oil and petroleum products were up by 1.9 per cent at end of the Q1 2013 compared to a year earlier (0.3 million tonnes). **(Chart 3.7)**

Chart 3.1 Production and trade of crude oil and NGLs



Indigenous crude oil production was lower by 15.2 per cent in Q1 2013 compared with the same quarter a year ago. Production of Natural Gas Liquids (NGLs) also decreased by 29.4 per cent. A key driver for the fall in production was the suspension of production from the Schiehallion oil field in February whilst a new Floating Production, Storage and Offloading platform (FPSO) is developed. Oil production over the last year has been impacted by maintenance and other production issues but bounced back slightly when compared to Q4 2012.

In Q1 2013, imports of crude oil and NGL's were 8.5 per cent lower compared with the same period a year ago. Exports of crude oil and NGL's increased by 6.0 per cent in the latest three months.

Imports of feedstocks increased by 11.7 per cent in Q1 2013, whilst exports decreased by over a third - a reflection of lower refinery production.

In overall terms, net imports of primary oils (crude, NGL's and feedstocks) was 5.9 million tonnes in Q1 2013 compared with 7.0 million tonnes in the same quarter in 2012.

Chart 3.2 Production and trade of petroleum products

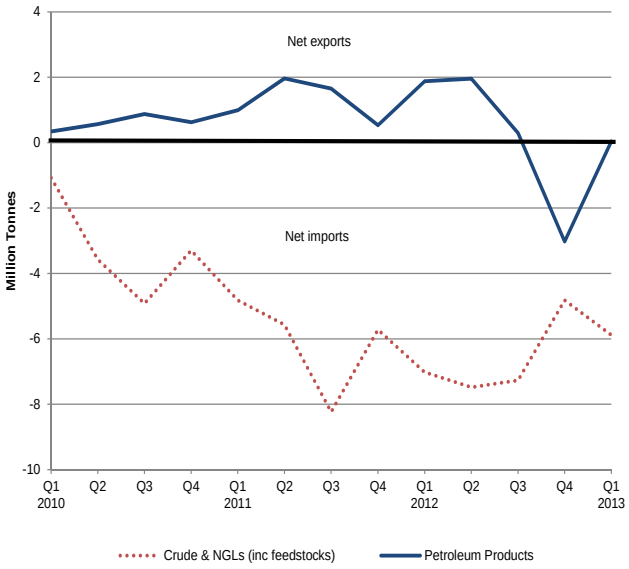
Indigenous production of petroleum products in Q1 2013 was lower by 12.9 per cent compared with the same quarter in 2012. The closure of the Coryton refinery in July 2012 is a contributory factor. Production in Q1 2013 increased by around 16 per cent on Q4 2012 as maintenance during Q4 2012 in some refineries came to an end.

In order to meet the shortfall in production, imports of petroleum products increased by 21.3 per cent in Q1 2013 compared with the same quarter in 2012. Exports decreased by 8.9 per cent in the quarter, which is again indicative of lower production.

Within this, imports of key transport fuels increased significantly. Motor spirit and DERV increased by 33.5 and 32.8 per cent respectively and ATF Kerosene by 19.1 per cent.

In overall terms, UK was marginally a net exporter (0.04 million tonnes) of petroleum products in the Q1 2013 This follows a period at the end of 2012 when the UK was a net importer of petroleum products due to low indigenous production.

Chart 3.3 Overall trade of crude oil and NGLs, and petroleum products

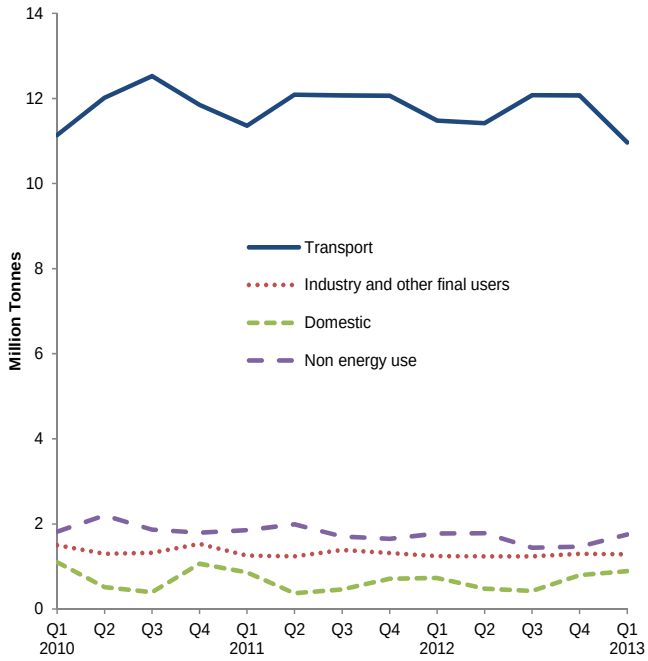


In Q1 2013, net imports of primary oils (crude, NGL's and feedstocks) decreased to 5.9 million tonnes compared with 7.0 million tonnes in Q1 2012, a decrease of 16.2 per cent. This is again indicative of lower refinery production of petroleum products.

The UK's overall net import dependence for primary oils (crude, NGL's and feedstocks) was 35.9 per cent in Q1 2013, similar to that of Q1 2012. Crude oil import dependence has been on an increasing trend as the production from the UK Continental Shelf continues to decline.

In Q1 2013 the UK returned to being a net exporter of petroleum products, but only by 0.04 million tonnes. This was significantly lower than Q1 2012 when it was a net exporter by 1.9 million tonnes. This follows a period at the end of 2012 where the UK was a net importer of petroleum products for the first time since 2008 by 3.0 million tonnes. This was the largest quarterly net margin recorded with our new reporting system (quarterly data on the new system is available from 1998).

Chart 3.4 Final consumption of oil



In Q1 2013, final consumption of petroleum products was lower by 2.2 per cent compared with Q1 2012. Within this:

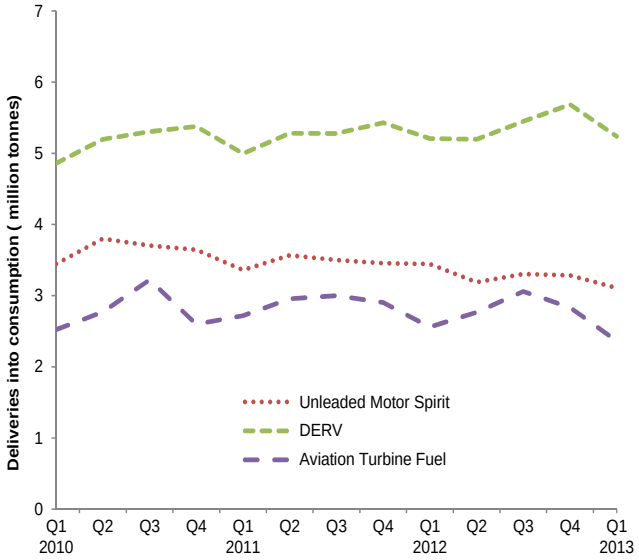
Transport, which accounts for about three-quarters of UK final consumption, was lower by 4.5 per cent. (See chart 3.5 for more detail). This decrease is against the higher than average deliveries in March 2012 that resulted from a threatened tanker drivers' strike which prompted panic buying in transport fuels.

Final consumption within the Industry and other final users sector increased by 3.5 per cent in Q1 2013 compared to 2012.

Domestic consumption of oil was significantly higher by 21.7 per cent - oil is mostly used for heating and average temperatures were around 2.7 degrees colder in Q1 2013 than Q1 2012.

Demand for oil for non-energy use was slightly lower by 1.5 per cent in the latest quarter.

Chart 3.5 Demand for key transport fuels



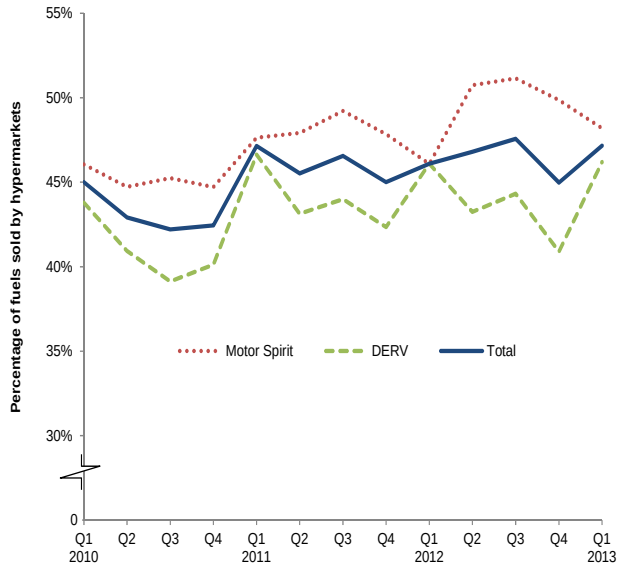
In Q1 2013, total deliveries of key hydrocarbon transport fuels were lower by 4.5 per cent. Within this:

Motor spirit deliveries were 9.8 per cent lower compared with the same quarter in 2012. This is caused in part by the higher deliveries in March 2012 that resulted from panic buying in response to a threatened strike by tanker drivers.

As a consequence of the higher demand in Q1 2012, DERV demand only increased by 0.6 per cent in Q1 2013, lower than the longer growth term trend of 1.5 per cent a year.

Demand for aviation fuels decreased by 7.7 per cent. Whilst passenger numbers remain robust, indications were that increasing fuel efficiency and some rationalisation of routes (including greater numbers of passengers per plane and route sharing between airline operators) have contributed to this decrease.

Chart 3.6 Hypermarket share of road fuel sales

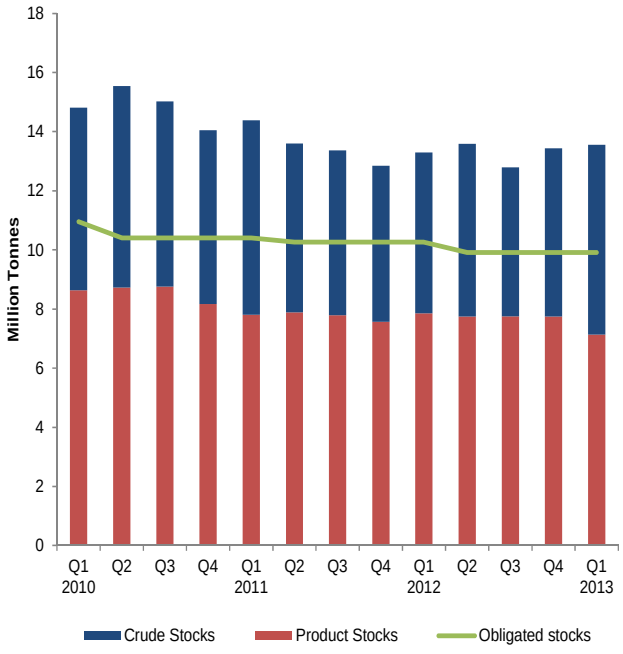


In Q1 2013, total retail shares of both motor spirit and diesel decreased by 4.8 per cent compared to Q1 2012. Of which, the total volume sold through hypermarket outlets decreased by 2.6 per cent and sales from refiners and other traders decreased by 6.7 per cent.

In Q1 2013, hypermarkets outlets accounted for 47.2 per cent of total retail sales, an increase from 46.1 per cent on same quarter in 2012.

Hypermarket sales of motor spirit were down by 5.7 per cent and sales from refiners and other traders decreased by 13.4 per cent. DERV sales however were 0.7 per cent higher for hypermarkets and 0.3 per cent higher for refiners and other retailers.

Chart 3.7 UK oil stocks



At the end of Q1 2013, total stocks for all oil products were higher by 1.9 per cent (0.3 million tonnes) compared with Q1 2012.

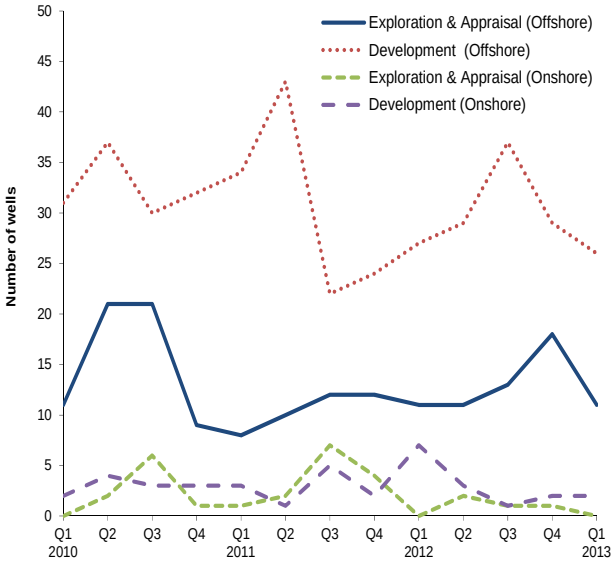
Total stocks of crude and process oils were 17.8 per cent (1.0 million tonnes) higher at the end of Q1 2013 compared with the same quarter a year earlier. This was the result of a large increase in crude stocks held abroad for the UK (under bilateral agreements). From 2013 onwards, EU Directive 2009/119/EC came into effect and this has led to changes in how UK companies manage their stock-holding. The increase in crude stocks held abroad was at the expense of a decrease in product stocks held under similar agreements.

Stocks of petroleum products at the end of March 2013 were lower by 9.1 per cent (0.7 million tonnes). As mentioned above, this was mainly the result of a large decrease in petroleum products held abroad for the UK under bilateral agreements, down by a quarter in March compared with a year earlier.

Chart 3.7 combines stocks of products with the product equivalent of stocks of crude oil to give an overall level of UK stocks of key products.

At the end of the Q1 2013, the UK had stocks equal to around 84 days of consumption.

Chart 3.8 Drilling activity on the UKCS



There were 11 exploration and appraisal wells started offshore in the first quarter of 2013, the same number as in the corresponding quarter of 2012.

There were 26 development wells drilled offshore in the first quarter of 2013, compared to 27 in the corresponding quarter of 2012.

There were no exploration and appraisal wells started onshore in the first quarter of 2013; there were no exploration and appraisal wells started onshore in the first quarter of 2012 either.

There were 2 development wells drilled onshore in the first quarter of 2013, compared to 7 in the corresponding quarter of 2012.

Relevant tables

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3 OIL AND OIL PRODUCTS

Table 3.1 Supply and use of crude oil, natural gas liquids and feedstocks[1]

Thousand tonnes

	2011	2012 p	*per cent change*	2011 1st quarter	2011 2nd quarter	2011 3rd quarter	2011 4th quarter	2012 1st quarter	2012 2nd quarter	2012 3rd quarter	2012 4th quarter	2013 1st quarter p	*per cent change*[8]
SUPPLY													
Indigenous production[2]	51,972	44,561r	*-14.3*	14,485	13,423	11,117	12,949	12,604r	11,812r	9,751r	10,394r	10,573	*-16.1*
Crude oil	48,571	42,052r	*-13.4*	13,504	12,528	10,445	12,095	11,764	11,111	9,361	9,816r	9,980	*-15.2*
NGLs[3]	3,401	2,508r	*-26.3*	981	895	672	854	840r	701r	390r	578r	593	*-29.4*
Imports[4]	58,092	60,559r	*+4.2*	14,089r	13,888r	15,296r	14,820r	15,591r	16,229r	15,120r	13,619r	14,564	*-6.6*
Crude oil & NGLs	50,954	55,340r	*+8.6*	12,110r	12,196r	13,298	13,349r	14,090r	14,629r	13,823	12,798	12,888	*-8.5*
Feedstocks	7,139	5,218r	*-26.9*	1,978r	1,692r	1,998	1,470r	1,501r	1,599r	1,297r	821	1,676	*+11.7*
Exports[4]	33,745	33,961r	*+0.6*	9,265	8,319	7,059	9,101	8,569r	8,746	7,848	8,798	8,678	*+1.3*
Crude Oil & NGLs	29,836	29,939r	*+0.3*	8,303	7,376	5,988	8,170	7,620r	7,782	6,815	7,722	8,078	*+6.0*
Feedstocks	3,908	4,021	*+2.9*	963	943	1,071	931	949	964	1,033	1,076	599	*-36.8*
Stock change[5]	+611	-486r		-654	+815	+365	+85	-197	-223	+673	-740r	+443	
Transfers[6]	-2,122	-1,934r		-542r	-589r	-540	-451r	-655r	-582r	-306	-391r	-494	
Total supply	74,809	68,738r	*-8.1*	18,113r	19,218r	19,178r	18,301r	18,773r	18,490r	17,390r	14,085r	16,408	*-12.6*
Statistical difference[7]	-271	-124r		-94	-84	-219	+125	-11r	+102r	-114r	-101r	+51	
Total demand	75,080	68,862r	*-8.3*	18,206r	19,302r	19,397r	18,176r	18,784r	18,388r	17,504	14,186r	16,357	*-12.9*
TRANSFORMATION	75,080	68,862r	*-8.3*	18,206r	19,302r	19,397r	18,176r	18,784r	18,388r	17,504	14,186r	16,357	*-12.9*
Petroleum refineries	75,080	68,862r	*-8.3*	18,206r	19,302r	19,397r	18,176r	18,784r	18,388r	17,504	14,186r	16,357	*-12.9*

1. As there is no use made of primary oils and feedstocks by industries other than the oil and gas extraction and petroleum refining industries, other industry headings have not been included in this table. As such, this table is a summary of the activity of what is known as the Upstream oil industry.
2. Includes offshore and onshore production.
3. Natural Gas Liquids (NGLs) are condensate and petroleum gases derived at onshore treatment plants.
4. Foreign trade as recorded by the Petroleum Industry which may differ from the figures published by HM Revenue and Customs in the Overseas Trade Statistics. Data are subject to further revision as revised information on imports and exports becomes available.
5. Stock fall (+), stock rise (-). Stocks include stocks held at refineries, at oil terminals and also those held in tanks and partially loaded vessels at offshore facilities.
6. Mostly direct disposals to petrochemical plants.
7. Total supply minus total demand.
8. Percentage change in the first quarter of 2013 compared with a year earlier.

3 OIL AND OIL PRODUCTS

Table 3.2 Supply and use of petroleum products

Thousand tonnes

	2011	2012 p	*per cent change*	2011 1st quarter	2011 2nd quarter	2011 3rd quarter	2011 4th quarter	2012 1st quarter	2012 2nd quarter	2012 3rd quarter	2012 4th quarter	2013 1st quarter p	*per cent change* [1]
SUPPLY													
Indigenous production [2]	76,848r	70,572r	*-8.2*	18,630r	19,832r	19,802r	18,585r	19,358r	18,854r	17,785r	14,575r	16,860	*-12.9*
Imports [3]	22,656r	25,978r	*+14.7*	5,621r	5,400r	5,301r	6,334r	5,541r	5,533r	6,579r	8,325r	6,720	*+21.3*
Exports [3]	27,800	27,083	*-2.6*	6,613	7,364	6,957	6,867	7,419	7,486	6,874	5,304	6,756	*-8.9*
Marine bunkers	3,602r	3,126r	*-13.2*	906r	874r	1,006r	817r	770r	761r	814r	781r	652	*-15.3*
Stock change [4]	+188	+128r		+224	+183	-21	-199	+25r	+209	-102	-5r	+28	
Transfers [5]	-19r	+53r		-28r	-17r	+40r	-15r	+47r	+50r	-17r	-27r	-17	
Total supply	68,270	66,522r	*-2.6*	16,928r	17,160r	17,159r	17,023r	16,783r	16,399r	16,557r	16,783r	16,184	*-3.6*
Statistical difference [6]	-20r	-109r		+82r	-25r	+47r	-125r	-47r	-28r	-9r	-25r	-13	
Total demand	68,291r	66,631r	*-2.4*	16,846r	17,185r	17,112r	17,147r	16,830r	16,427r	16,567r	16,808r	16,196	*-3.8*
TRANSFORMATION	792r	807r	*+1.8*	243r	169r	180r	200r	231r	197r	162r	217r	181	*-21.6*
Electricity generation	722r	739r	*+2.4*	225r	151r	163r	183r	214r	180r	145r	200r	164	*-23.4*
Heat generation	71r	68r	*-4.3*	18r	18r	18r	18r	17r	17r	17r	17r	17	-
Blast furnaces	-	-		-	-	-	-	-	-	-	-	-	
Energy industry use	5,119r	4,863r	*-5.0*	1,276r	1,330r	1,308r	1,204r	1,371r	1,311r	1,221r	960r	1,127	*-17.8*
Petrolem Refineries	4,586r	4,255r	*-7.2*	1,142r	1,197r	1,175r	1,071r	1,219r	1,159r	1,069r	808r	975	*-20.0*
Blast Furnaces	-	-		-	-	-	-	-	-	-	-	-	
Others	533r	608r	*+14.1*	133r	133r	133r	133r	152r	152r	152r	152r	152	-
FINAL CONSUMPTION	62,380r	60,961r	*-2.3*	15,328r	15,686r	15,623r	15,743r	15,228r	14,918r	15,184r	15,631r	14,888	*-2.2*
Iron & steel	4r	5r	*+19.7*	0r	0r	1r	2r	1r	1r	1r	1r	1	*-29.7*
Other industries	3,943r	3,853r	*-2.3*	972r	922r	1,087r	963r	968r	955r	929r	1,001r	1,018	*+5.2*
Transport	47,573r	47,039r	*-1.1*	11,356r	12,085r	12,070r	12,062r	11,476r	11,415r	12,078r	12,070r	10,961	*-4.5*
Domestic	2,401r	2,433r	*+1.3*	859r	370r	460r	712r	733r	480r	425r	795r	892	*+21.7*
Other final users	1,253r	1,165r	*-7.0*	284r	317r	299r	352r	273r	284r	310r	298r	266	*-2.4*
Non energy use	7,206r	6,465r	*-10.3*	1,856r	1,992	1,706	1,651r	1,777r	1,782r	1,441r	1,465r	1,750	*-1.5*

1. Percentage change in the first quarter of 2013 compared with a year earlier.
2. Includes refinery production and petroleum gases extracted as products during the production of oil and gas.
3. Foreign trade as recorded by the Petroleum Industry which may differ from the figures published by HM Revenue and Customs in the Overseas Trade Statistics. Data are subject for further revision as revised information on imports and exports becomes available.
4. Stock fall (+), stock rise (-).
5. Mainly transfers from product to feedstock.
6. Total supply minus total demand.

3 OIL AND OIL PRODUCTS

Table 3.3 Supply and use of petroleum products - annual data

Thousand tonnes

	2011									2012 p								
	Total Petroleum Products	Motor spirit	DERV [9]	Gas oil [1]	Aviation turbine fuel	Fuel oils	Petroleum gases [2]	Burning oil	Other products [3]	Total Petroleum Products	Motor spirit	DERV [9]	Gas oil [1]	Aviation turbine fuel	Fuel oils	Petroleum gases [2]	Burning oil	Other products [3]
SUPPLY																		
Indigenous production [4]	76,848r	19,856	16,801	8,683	6,411	7,907	7,465r	2,377	7,348	70,572r	17,627r	15,772r	8,941	5,775	7,164r	6,666r	2,268	6,360r
Imports [5]	22,656r	3,259r	7,736r	1,245r	6,881	808	189r	618	1,920	25,978r	4,184r	9,541r	1,186r	7,127r	660r	293r	702r	2,284r
Exports [5]	27,800	9,363	3,127	4,667	1,210	5,140	820	173	3,299	27,083	8,561	3,377	4,270	1,320	5,300	1,147	112	2,996
Marine bunkers	3,602r	-	-	1,566r	-	2,036r	-	-	-	3,126r	-	-	1,644r	-	1,483r	-	-	0
Stock change [6]	+188	+39	+83	+43	-28	-15	-11	-2	80	+128	+26	-133	+7	+96	+90r	+9	+40	-6
Transfers [7]	-19r	+91r	-498r	+444r	-491r	-12r	+52r	+441r	-45r	+53r	-54	-268	+217r	-479r	-14r	+23r	+446r	+182r
Total supply	68,270r	13,881r	20,994r	4,182r	11,562r	1,513r	6,874r	3,260r	6,004r	66,522r	13,222r	21,535r	4,437r	11,199r	1,117r	5,844r	3,343r	5,824r
Statistical difference [8]	-20r	-13r	+3r	-1r	-11r	-5r	+10r	-28r	+26r	-109r	-8r	-3r	-61r	-22r	+8r	+4r	+14r	-42r
Total demand	68,291r	13,895	20,991	4,183r	11,574	1,518r	6,865r	3,288	5,978r	66,631r	13,231r	21,538r	4,498r	11,221	1,109r	5,840r	3,329r	5,866r
TRANSFORMATION	792r	-	-	62r	-	380r	301r	-	48	807r	-	-	60r	-	388r	248r	-	111r
Electricity generation	722r	-	-	57r	-	328r	289r	-	48	739r	-	-	55r	-	335r	238r	-	111r
Heat generation	71r	-	-	6r	-	52r	13r	-	-	68r	-	-	5r	-	53r	10r	-	-
Petroleum refineries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coke manufacture	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Blast furnaces	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Patent fuel manufacture	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Energy industry use	5,119r	-	-	533r	-	476r	2,584r	-	1,526r	4,863r	-	-	608r	-	348r	2,301r	-	1,606r
FINAL CONSUMPTION	62,380r	13,895	20,991	3,588r	11,574	662r	3,979r	3,288	4,403r	60,961r	13,231r	21,538r	3,830r	11,221r	373r	3,291r	3,329r	4,150r
Iron & steel	4r	-	-	-	-	4r	-	-	-	5r	-	-	-	-	2r	-	-	-
Other industries	3,943r	-	-	1,542r	-	292r	795r	1,314	-	3,853r	-	-	1,839r	-	93r	588r	1,332r	-
Transport	47,573r	13,895	20,991	793r	11,574	201r	98	-	21r	47,039r	13,231r	21,538r	768r	11,221r	173r	93	-	17r
Domestic	2,401r	-	-	142r	-	-	286	1,973	-	2,433r	-	-	140r	-	-	297	1,996r	-
Other final users	1,253r	-	-	986r	-	165r	101	-	-	1,165r	-	-	953r	-	105r	108	-	-
Non energy use	7,206r	-	-	125	-	-	2,699	-	4,383r	6,465r	-	-	130	-	-	2,203r	-	4,132r

1. Includes: Middle distillate feedstock destined for use in the petrochemical industry and marine diesel oil
2. Includes ethane, propane, butane and other petroleum gases.
3. Includes naphtha, industrial and white spirits, lubricants, bitumen, petroleum waxes, petroleum coke and other oil products.
4. Includes refinery production and petroleum gases extracted as products during the production of oil and gas.
5. Foreign trade as recorded by the Petroleum Industry which may differ from the figures published by HM Revenue and Customs in the Overseas Trade Statistics. Data are subject to further revision as revised information on imports and exports becomes available.
6. Stock fall (+), stock rise (-).
7. Mainly transfers from product to feedstock.
8. Total supply minus total demand.
9. See page 15 of the March 2011 edition of Energy Trends for a note concerning changes to this table.

3 OIL AND OIL PRODUCTS

Table 3.4 Supply and use of petroleum products - latest quarter

Thousand tonnes

	2012 1st quarter									2013 1st quarter p								
	Total Petroleum Products	Motor spirit	DERV[9]	Gas oil[1]	Aviation turbine fuel	Fuel oils	Petroleum gases[2]	Burning oil	Other products[3]	Total Petroleum Products	Motor spirit	DERV[9]	Gas oil[1]	Aviation turbine fuel	Fuel oils	Petroleum gases[2]	Burning oil	Other products[3]
SUPPLY																		
Indigenous Production[4]	19,358r	4,954	4,239r	2,429	1,493	1,840r	1,966	670	1,766	16,860	4,375	3,679	1,774	1,043	1,627	1,635	914	1,814
Imports[5]	5,541r	1,060r	1,741r	402r	1,322	201r	57	226	532r	6,720	1,415	2,313	117	1,574	164	98	214	825
Exports[5]	7,419	2,570	716	1,284	338	1,294	280	36	900	6,756	2,350	798	662	245	1,190	336	130	1,046
Marine bunkers	770r	-	-	406r	-	364r	-	-	-	652	-	-	427	-	224	-	-	-
Stock change[6]	+25r	+14	-8	-58	+172	-108r	-1	+22	-8	+28	-346	+82	+108	+112	+11	-20	+98	-17
Transfers[7]	+47r	-11r	-47	+36r	-96	+12r	+5	+87	+63r	-17	+16	-36	+50	-102	+1	-	+76	-22
Total supply	16,783r	3,446r	5,208r	1,120r	2,552	288r	1,746	969	1,454r	16,184	3,110	5,239	960	2,382	390	1,377	1,172	1,554
Statistical difference[8]	-47r	-0r	-1r	-6	-8	+1r	-1	-11	-21	-13	+0	+1	-45	+19	+35	-1	-15	-9
Total demand	16,830r	3,447	5,209	1,126	2,560	286r	1,747	980	1,474r	16,196	3,109	5,239	1,005	2,363	354	1,378	1,186	1,562
TRANSFORMATION	231r	-	-	17r	-	102r	62	-	-	181	-	-	17	-	87	62	-	15
Electricity generation	214r	-	-	16	-	89r	60	-	-	164	-	-	15	-	74	60	-	15
Heat generation	17r	-	-	1	-	13r	2	-	-	17	-	-	1	-	13	2	-	-
Petroleum refineries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coke manufacture	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Blast furnaces	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Patent fuel manufacture	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Energy industry use	1,371r	-	-	152r	-	93r	729	-	396r	1,127	-	-	152	-	89	557	-	328
FINAL CONSUMPTION	15,228r	3,447	5,209	957r	2,560	91r	956	980	1,028r	14,888	3,109	5,239	836	2,363	178	759	1,186	1,219
Iron & steel	1	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-
Other industries	968r	-	-	459r	-	22r	95	392	-	1,018	-	-	353	-	97	88	475	-
Transport	11,476r	3,447	5,209	198r	2,560	36r	23	-	3	10,961	3,109	5,239	188	2,363	36	23	-	3
Domestic	733	-	-	45	-	-	100	588	-	892	-	-	62	-	-	118	712	-
Other final users	273r	-	-	209	-	32r	32	-	-	266	-	-	188	-	43	36	-	-
Non energy use	1,777r	-	-	45r	-	-	707	-	1,025r	1,750	-	-	45	-	-	494	-	1,211

1. Includes middle distillate feedstock destined for use in the petrochemical industry and marine diesel
2. Includes ethane, propane, butane and other petroleum gases.
3. Includes naphtha, industrial and white spirits, lubricants, bitumen, petroleum waxes, petroleum coke and other oil products.
4. Includes refinery production and petroleum gases extracted as products during the production of oil and gas.
5. Foreign trade as recorded by the Petroleum Industry which may differ from the figures published by HM Revenue and Customs in the Overseas Trade Statistics. Data are subject to further revision as revised information on imports and exports becomes available.
6. Stock fall (+), stock rise (-).
7. Mainly transfers from product to feedstock.
8. Total supply minus total demand.
9. See page 15 of the March 2011 edition of Energy Trends for a note concerning changes to this table.

3 OIL AND OIL PRODUCTS

Table 3.5 Demand for key petroleum products[1]

Thousand tonnes

	2011	2012 p	*per cent change*	2011 1st quarter	2011 2nd quarter	2011 3rd quarter	2011 4th quarter	2012 1st quarter	2012 2nd quarter	2012 3rd quarter	2012 4th quarter	2013 1st quarter p	*per cent change [2]*
MOTOR SPIRIT													
Total sales	13,895	13,231	*-4.8*	3,363	3,571	3,502	3,458	3,447	3,191	3,305	3,288	3,109	*-9.8*
By seller:													
Retail sales: [3]	13,430	12,803	*-4.7*	3,269	3,443	3,379	3,340	3,360	3,077	3,190	3,175	3,029	*-9.8*
hypermarkets [4]	6,468r	6,325r	*-2.2*	1,557r	1,650r	1,663r	1,598r	1,549r	1,561r	1,631r	1,583r	1,460	*-5.7*
refiners/other traders	6,962r	6,478r	*-7.0*	1,712r	1,793r	1,716r	1,742r	1,812r	1,516r	1,558r	1,592r	1,569	*-13.4*
Commercial sales [5]	465	428	*-8.0*	95	129	123	119	86	114	115	112	80	*-7.3*
By grade:													
4-Star/Leaded/LRP [6]	12	10	*-13.4*	2	3	3	3	2	3	2	3	2	*-4.5*
Super Premium Unleaded	560r	438r	*-21.8*	114	122	128	196	107	106	117	108	102	*-5.1*
Premium Unleaded/ULSP [7]	13,324	12,783	*-4.1*	3,247	3,446	3,371	3,260	3,337	3,083	3,186	3,177	3,006	*-9.9*
GAS DIESEL OIL													
Total sales	25,174r	26,036r	*+3.4*	5,969r	6,301r	6,403r	6,502r	6,335r	6,325r	6,638r	6,738r	6,248	*-1.4*
DERV fuel	20,991	21,538r	*+2.6*	4,999	5,282	5,280	5,431	5,209	5,196	5,447	5,685r	5,239	*+0.6*
Retail sales: [3]	13,549r	13,965r	*+3.1*	2,998	3,459	3,522	3,570	3,225	3,410	3,541	3,789r	3,240	*+0.5*
hypermarkets [4]	5,950r	6,079r	*+2.2*	1,398r	1,492r	1,549r	1,511r	1,486r	1,475r	1,569r	1,549r	1,497	*+0.7*
refiners/other traders	7,598r	7,886r	*+3.8*	1,600r	1,968r	1,972r	2,058r	1,738r	1,936r	1,971r	2,240r	1,743	*+0.3*
Commercial sales [5]	7,442	7,573	*+1.8*	2,001	1,822	1,758	1,861	1,984	1,786	1,907	1,896	1,999	*+0.7*
Other gas diesel oil [8]	4,183r	4,498r	*+7.5*	970r	1,020r	1,123r	1,071r	1,126r	1,129r	1,191r	1,052r	1,009	*-10.4*
AVIATION FUELS													
Total sales	11,594	11,238r	*-3.1*	2,722	2,960	3,005	2,907	2,564	2,771r	3,064	2,839r	2,365	*-7.7*
Aviation spirit	21	17	*-16.0*	4	6	6	4	3	5	5	4	3	*-21.0*
Aviation turbine fuel	11,574	11,221r	*-3.1*	2,718	2,954	2,999	2,902	2,560	2,766r	3,059	2,835r	2,363	*-7.7*
FUEL OIL													
Total Sales	1,042r	761r	*-27.0*	254r	268r	270r	250r	193r	179r	167r	222r	265	*+37.2*
Light	501r	393r	*-21.6*	94r	144r	126r	137r	59r	102r	89r	143r	144	*(+)*
Medium	117r	118r	*+1.1*	34r	26r	34r	24r	33r	21r	30r	35r	33	*+1.5*
Heavy	424r	249r	*-41.2*	126	99	110	89	102	56r	48r	44r	88	*-13.8*

1. Monthly data for inland deliveries of oil products are available - See DECC website: www.gov.uk/government/organisations/department-of-energy-climate-change/series/oil-statistics
2. Percentage change in the first quarter of 2013 compared with a year earlier.
3. Retail sales are those deliveries made to garages etc. mainly for resale to final consumers.
4. Data for sales by hypermarket companies are collected by a separate reporting system, but are consistent with the main data collected from companies.
5. Commercial sales are those deliveries made direct to a consumer for use in their own business, e.g. to bus and coach depots.
6. Sales of leaded petrol ceased from 31st December 1999, with Lead Replacement Petrol being introduced as a replacement fuel.
7. ULSP is Ultra Low Sulphur Petrol introduced during the second half of 2000 and first half of 2001 as a replacement for ordinary Premium grade unleaded petrol.
8. This includes gas diesel oil used for other purposes such as heating and middle distillate feedstock destined for use in the petrochemical industry.

3 OIL AND OIL PRODUCTS

Table 3.6 Stocks of petroleum[1] at end of period

Thousand tonnes

		Crude oil and refinery process oil					Petroleum products							Total stocks		
		Refineries[2]	Terminals[3]	Offshore[4]	Net bilaterals of Crude and Process oil [5]	Total[5]	Motor Spirit[6]	Kerosene[7]	Gas/Diesel Oil[8]	Fuel oils	Other products[8]	Net bilaterals of products [5]	Total products	Total Net bilaterals [5]	Total Stocks in UK[10]	Total stocks
2008		4,616	1,092	664	415	6,787	1,021	1,323	2,304	709	953	2,104	8,414	2,519	12,683	15,201
2009		3,848	1,136	682	367	6,033	817	1,633	2,124	690	1,182	2,728	9,173	3,095	12,112	15,206
2010		4,110	1,049	520	210	5,889	797	1,397	1,946	544	917	2,563	8,164	2,773	11,280	14,053
2011		3,889	694	540	151	5,274	696	1,454	1,949	525	845	2,100	7,569	2,251	10,592	12,843
2012 p		3,829	1,194	473	195	5,690	605	1,427	1,940	491	841	2,441	7,743	2,636	10,798	13,434
Per cent change		*-1.6*	*+72.0*	*-12.3*	*+29.1*	*+7.9*	*-13.2*	*-1.8*	*-0.5*	*-6.5*	*-0.5*	*+16.2*	*+2.3*	*+17.1*	*+1.9*	*+4.6*
2011	1st quarter	4,402	1,509	553	115	6,580	759	1,371	1,804	540	815	2,516	7,806	2,631	11,754	14,386
	2nd quarter	3,959	1,093	505	150	5,707	750	1,183	1,769	547	806	2,834	7,888	2,984	10,611	13,596
	3rd quarter	3,917	818	627	212	5,574	805	1,116	1,836	538	848	2,647	7,789	2,859	10,503	13,362
	4th quarter	3,889	694	540	151	5,274	696	1,454	1,949	525	845	2,100	7,569	2,251	10,592	12,843
2012	1st quarter	4,006	861	488	90	5,445	731	1,357	1,934	699	853	2,277	7,851	2,367	10,930	13,296
	2nd quarter	3,825	1,248	522	247	5,843	750	1,171	1,958	595	843	2,431	7,747	2,678	10,912	13,590
	3rd quarter	3,344	988	456	245	5,033	692	1,193	1,954	539	929	2,448	7,756	2,693	10,096	12,788
	4th quarter	3,829	1,194	473	195	5,690	605	1,427	1,940	491	841	2,441	7,743	2,636	10,798	13,434
2013	1st quarter p	3,500	940	412	1,565	6,417	1,073	1,115	1,782	477	963	1,727	7,136	3,291	10,262	13,553
Per cent change [11]		*-12.6*	*+9.3*	*-15.6*	*(+)*	*+17.8*	*+46.8*	*-17.9*	*-7.8*	*-31.8*	*+12.8*	*-24.2*	*-9.1*	*+39.1*	*-6.1*	*+1.9*

1. Stocks held at refineries, terminals and power stations. Stocks in the wholesale distribution system and certain stocks at offshore fields (UK Continental Shelf [UKCS]), and others held under approved bilateral agreeme are also included.
2. Stocks of crude oil, NGLs and process oil at UK refineries.
3. Stocks of crude oil and NGLs at UKCS pipeline terminals.
4. Stocks of crude oil in tanks and partially loaded tankers at offshore fields (UKCS).
5. The difference between stocks held abroad for UK use under approved bilateral agreements and the equivalent stocks held in the UK for foreign use. From 2013 onwards, EU Directive 2009/119/EC came into effect and this has lead to changes in how UK companies manage their stock-holding. The increase in crude stocks held abroad was at the expense of a decrease in product stocks held under similar agreements.
6.Motor spirit and aviation spirit.
7. Aviation turbine fuel and burning oil.
8. Gas oil, DERV fuel, middle distillate feedstock (mdf) and marine diesel oil.
9. Ethane, propane, butane, other petroleum gases, naphtha (ldf), industrial and white spirits, bitumen, petroleum wax, lubricating oil, petroleum coke, and miscellaneous products.
10. Stocks held in the national territory or elsewhere on the UKCS
11. Percentage change from the same quarter last year.

3 OIL AND OIL PRODUCTS

Table 3.7 Drilling activity[1] on the UKCS

Number of wells started

		Offshore				Onshore	
		Exploration	Appraisal	Exploration & Appraisal	Development[2]	Exploration & Appraisal	Development[2]
2010		28	34	62	130	9	12
2011		14	28	42	123	14	11
2012 p		22	31	53	122	4	13
Per cent change		*+57.1*	*+10.7*	*+26.2*	*-0.8*	*-71.4*	*+18.2*
2011	1st quarter	3	5	8	34	1	3
	2nd quarter	2	8	10	43	2	1
	3rd quarter	5	7	12	22	7	5
	4th quarter	4	8	12	24	4	2
2012	1st quarter	5	6	11	27	-	7
	2nd quarter	5	6	11	29	2	3
	3rd quarter	4	9	13	37	1	1
	4th quarter	8	10	18	29	1	2
2013	1st quarter p	6	5	11	26	-	2
Per cent change[3]		*+20.0*	*-16.7*	*-*	*-3.7*		*-71.4*

1. Including sidetracked wells
2. Development wells are production or injection wells drilled after development approval has been granted.
3. Percentage change in the first quarter of 2013 compared with a year earlier

Section 4 - Gas

Key results show:

Gross UK production of natural gas in Q1 2013 was 14.6 per cent lower than in Q1 2012 **(Chart 4.1).** Within this, production of associated gas was 16.1 per cent lower, and dry gas production was 12.9 per cent lower. **(Chart 4.2).**

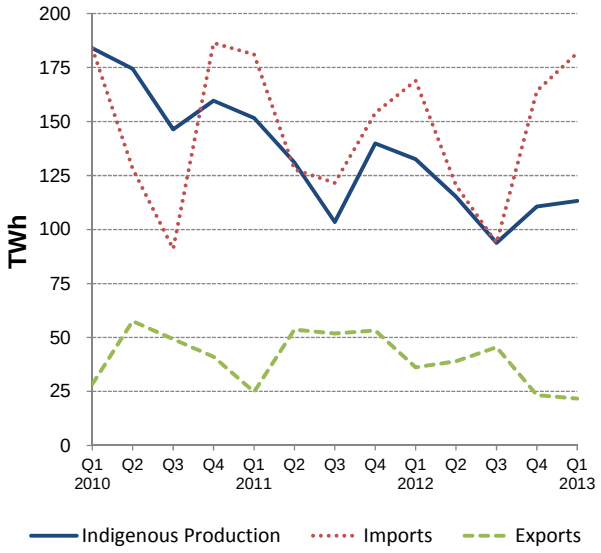
Gas available in Q1 2013 was 3.4 per cent higher than in Q1 2012, at 261TWh. **(Chart 4.3)**

Imports of gas increased by 7.6 per cent in Q1 2013 compared with the same quarter in 2012, with pipeline imports increasing by almost one third but a 59 per cent decrease in shipped imports of LNG **(Chart 4.4)**.

Pipeline imports accounted for 91 per cent of all imports in Q1 2013, compared to 76 per cent in Q1 2012. **(Chart 4.5)**

UK gas demand increased by 11.5 per cent compared to Q1 2012, driven by the colder temperatures seen in Q1 2013 compared to Q1 2012. **(Chart 4.6)**

Chart 4.1 Production and imports and exports of natural gas

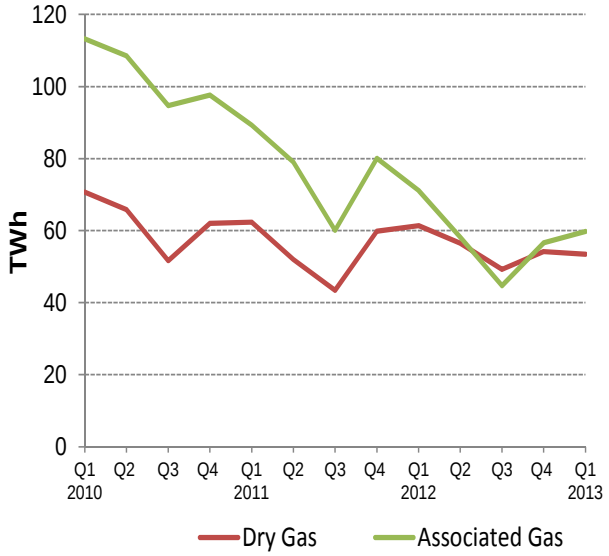


Revised figures for 2012 show production of natural gas was 14.1 per cent lower than in 2011. A key driver of this fall in production was the Elgin gas leak that occurred in March 2012 and which has constrained production since.

Total indigenous UK production of natural gas in Q1 2013 was 14.6 per cent lower than in the same quarter a year earlier.

As a result of much lower production, imports were 7.6 per cent higher in the first quarter of 2013 versus quarter 1 2012, whilst exports were 39.9 per cent lower. Exports were at their lowest since the first quarter of 2008. The trade position for quarter 1 2013 shows net imports (difference between imports and exports) were 160 TWh, 20.6 per cent higher than in the same quarter in 2012.

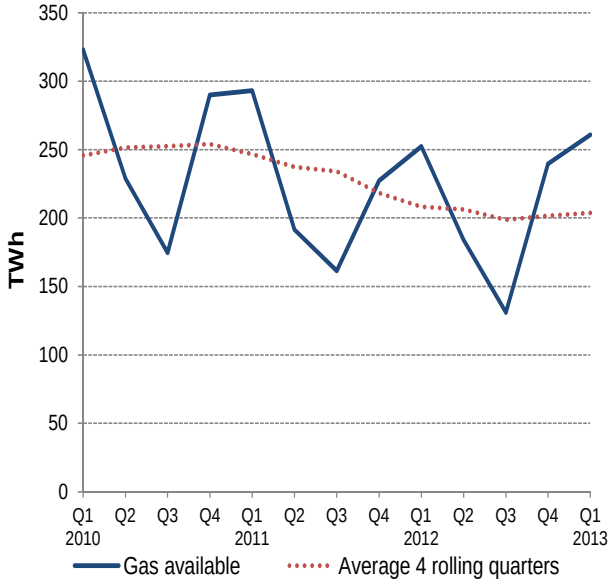
Chart 4.2 Production of dry gas and associated gas



Associated gas production decreased by 16.1 per cent in Q1 2013 compared to Q1 2012, from 71 TWh to 60 TWh. This is consistent with the decrease in production from UK oil fields (section 3) where associated gas is also extracted from this source. This continued reduction in production is the result of planned and unplanned maintenance work continuing into 2013.

Dry gas production decreased by 12.9 per cent in Q1 2013 compared with the previous year; production was down from 61 TWh in Q1 2012 to 54 TWh in Q1 2013.

Chart 4.3 Gas availability

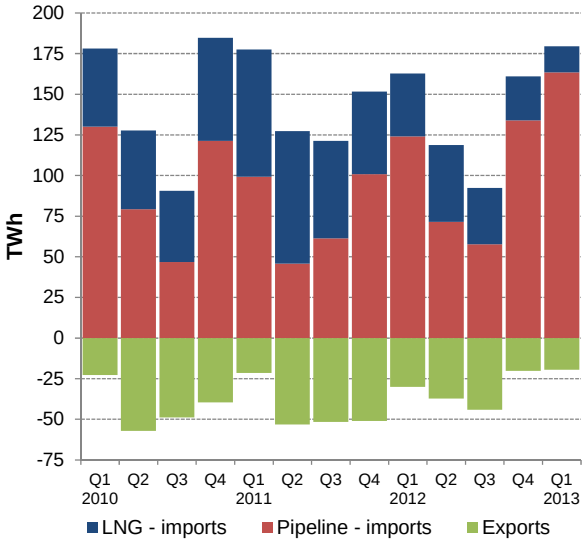


Gas available at terminals is equal to gross gas production, minus producers own use, plus net imports.

Gas availability is seasonal, mirroring gas demand, and peaks during Q1 and Q4 each year. Gas availability in Q1 2013 was 3.4 per cent higher than in Q1 2012. This increase is consistent with the higher demand seen in Q1 2013 due to the colder weather in this quarter, compared to Q1 2012.

The average availability over 4 rolling quarters has shown a shallow decline since Q4 2010. This has flattened in the past three quarters and is currently 204 TWh, 2.1 per cent lower than in Q1 2012. The decline reflects both general improvements in energy efficiency and much lower demand for gas for electricity generation.

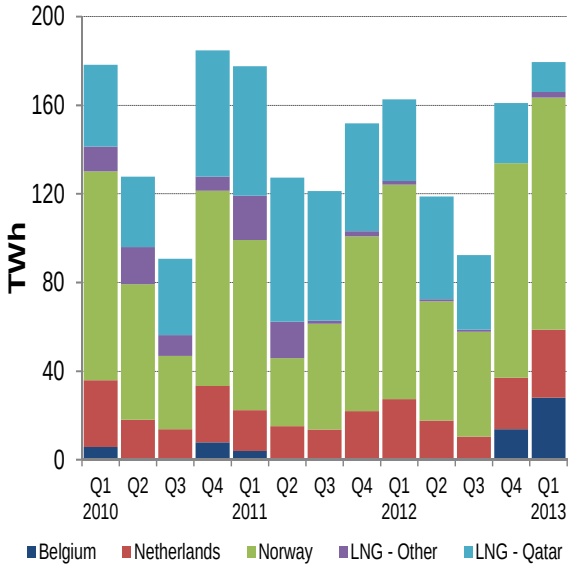
Chart 4.4 Import and exports



Total imports in Q1 2013 increased by 7.6 per cent compared to the same quarter a year ago. Within this, imports of Liquefied Natural Gas (LNG) decreased sharply by 59 per cent. LNG imports accounted for 9 per cent of total imports compared with 23 per cent a year ago. Pipeline imports increased by almost one third in Q1 2013 compared to the Q1 2012. This shift is due to a number of factors including the completion of maintenance work affecting pipeline imports from Norway and the Netherlands and strong competition for LNG on the global market.

Total exports decreased by almost 40 per cent in Q1 2013. This reflects the high demand for gas within the UK driven by colder temperatures.

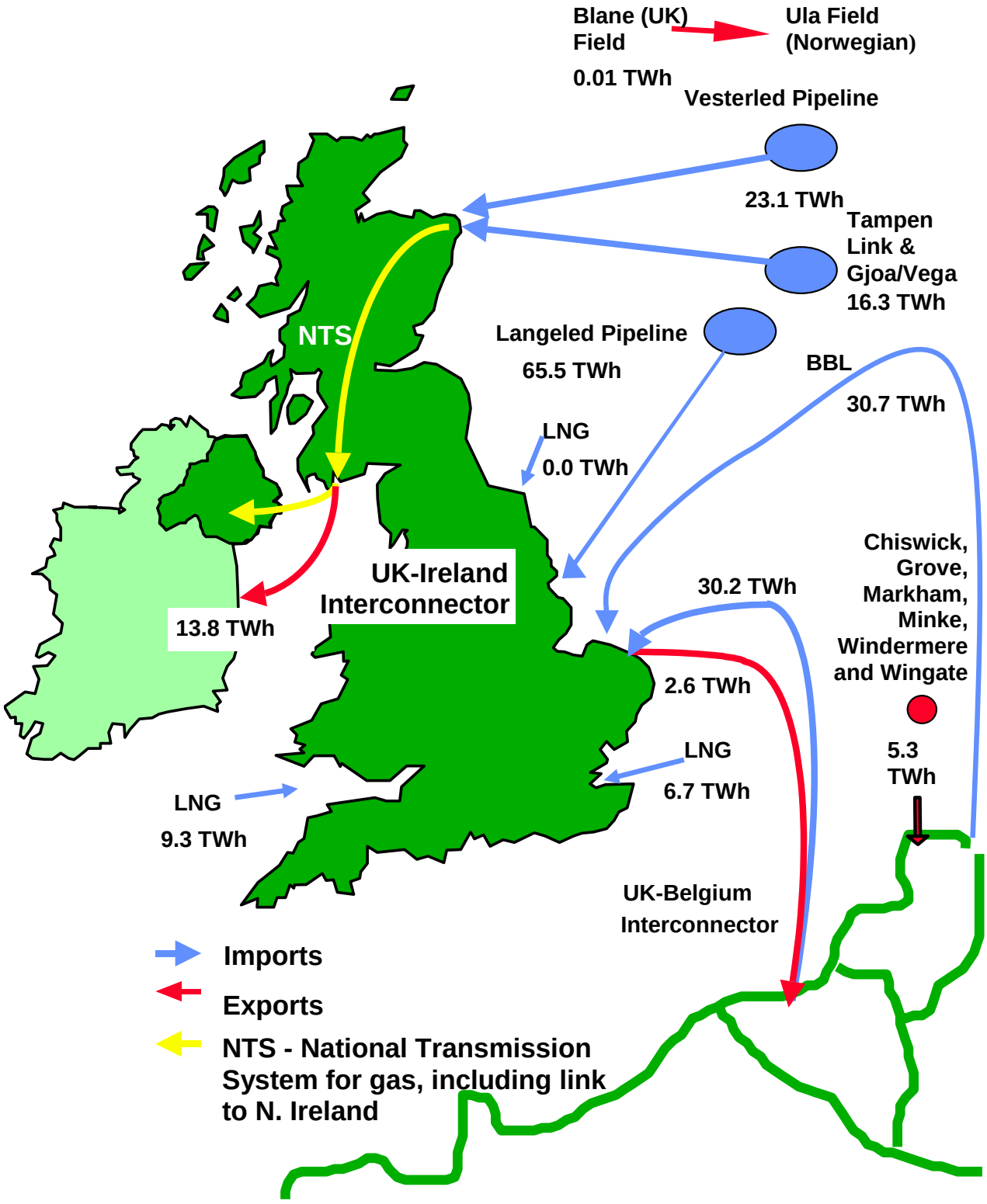
Chart 4.5 Imports by origin



The UK imported 163 TWh via pipelines from Norway, the Netherlands and Belgium in Q1 2013, almost one third more than in Q1 2012. Pipeline imports accounted for 91 per cent of imports in Q1 2013, compared to 76 per cent in Q1 2012.

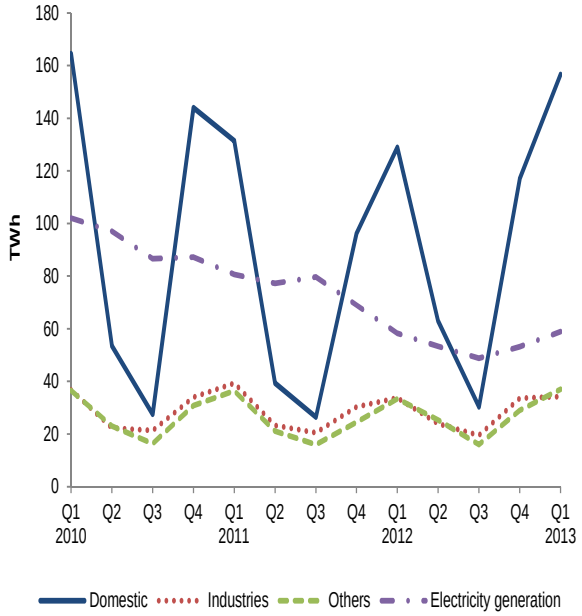
Since 2009, LNG imports have been mainly sourced from Qatar, these were lower by almost two thirds in Q1 2013 compared with the same quarter a year earlier. As noted above, the increased availability of imports via pipelines following the completion of maintenance work and strong completion on the global market for LNG are contributory factors in this change.

Map: UK imports and exports of gas Q1 2013[1]



1. Please note that imports and exports in this map uses nominated flows through the UK-Belgium Interconnector 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.

Chart 4.6 UK demand for natural gas



UK overall demand in Q1 2013 increased by 11.5 per cent compared to the same quarter a year ago.

Increased gas demand was primarily driven by the increase in domestic use, up 21.5 per cent in Q1 2013 versus Q1 2012. The increased domestic demand was driven by Q1 2013 being colder than Q1 2012. The average temperature in the first quarter of 2013 was 2.7 degrees colder than in the same quarter in 2012.

Industry gas use and gas used for electricity generation were similar in Q1 2013 as in the previous year, being up by 1.1 per cent and 1.2 per cent respectively. Other final users gas use was up by 11.5 per cent, again reflecting the colder temperatures in Q1 2013 compared to the previous year. For 2013, the sectoral breakdowns have been revised back to 2008 in line with updated information from other surveys.

Relevant table

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4 GAS

Table 4.1. Natural gas supply and consumption

GWh

	2011	2012 p	*per cent change*	2011 1st quarter	2011 2nd quarter	2011 3rd quarter	2011 4th quarter	2012 1st quarter	2012 2nd quarter	2012 3rd quarter	2012 4th quarter	2013 1st quarter p	*per cent change*[1]
SUPPLY													
Indigenous production	526,030	452,094r	*-14.1*	151,607	131,034	103,515	139,874	132,563r	115,118r	93,807r	110,606r	113,248	*-14.6*
Imports	584,414	547,300r	*-6.4*	181,011	127,837	121,583	153,983	168,873r	120,478	93,784	164,165	181,732	*+7.6*
of which LNG	*270,733*	*147,879r*	*-45.4*	*78,370*	*81,514*	*59,915*	*50,935*	*38,645r*	*47,366*	*34,703*	*27,166*	*15,986*	*(-)*
Exports	183,689	144,023	*-21.6*	24,866	53,666	51,883	53,275	36,215	38,953	45,507	23,348	21,748	*-39.9*
Stock change[2]	-22,623	-269		+6,805	-21,374	-11,109	+3,055	+13,504	-9,544	-8,427	+4,198	+40,380	
Transfers	-60	-56		-32	-10	-11	-7	-11	-4	-14	-26	-29	
Total supply	904,072	855,047	*-5.4*	314,526	183,822	162,095	243,629	278,713r	187,095r	133,644r	255,594r	313,583	*+12.5*
Statistical difference	-3,989	-2,145		-1,388r	-811r	-715r	-1,075r	-699r	-469r	-336r	-641r	2,152	
Total demand	908,061	857,191	*-5.6*	315,914r	184,633r	162,810r	244,704r	279,412r	187,564r	133,979r	256,235r	311,432	*+11.5*
TRANSFORMATION	329,481	235,930	*-28.4*	87,988r	82,134r	84,119r	75,240r	64,933r	58,390r	53,127r	59,481r	65,632	*+1.1*
Electricity generation	306,545	213,539	*-30.3*	80,608r	77,257	79,651r	69,029r	58,234r	53,320r	48,816r	53,169r	58,934	*+1.2*
Heat generation[3]	22,936	22,392	*-2.4*	7,380r	4,877r	4,468r	6,211r	6,699r	5,070r	4,311r	6,312r	6,699	-
Energy industry use	59,200	55,622	*-6.0*	16,360r	15,079r	12,993r	14,768r	14,877r	14,351r	12,586r	13,808r	14,401	*-3.2*
Losses	14,559	12,271	*-15.7*	4,394r	3,638r	2,857r	3,671r	3,719r	2,765r	2,502r	3,286r	3,673	*-1.2*
FINAL CONSUMPTION	504,820	553,368	*+9.6*	207,172r	83,782r	62,841r	151,025r	195,884r	112,058r	65,765r	179,661r	227,726	*+16.3*
Iron & steel	5,569	4,854	*-12.8*	1,856r	1,256r	1,149r	1,307r	1,346r	1,275r	1,101r	1,132r	1,450	*+7.8*
Other industries	107,974	105,851	*-2.0*	37,507r	22,066r	19,364r	29,038r	32,388r	22,585r	18,404r	32,474r	32,749	*+1.1*
Domestic	293,400	339,080	*+15.6*	131,403r	39,377r	26,380r	96,240r	128,836r	62,915r	30,293r	117,036r	156,555	*+21.5*
Other final users	91,928	97,634	*+6.2*	34,919r	19,596r	14,462r	22,952r	31,826r	23,796r	14,480r	27,532r	35,484	*+11.5*
Non energy use[3]	5,949	5,949	-	1,487r	1,487r	1,487r	1,487r	1,487r	1,487r	1,487r	1,487r	1,487	-

1. Percentage change in the first quarter of 2013 compared with a year earlier.

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

3. For Heat generation and non energy use, the 2013 figures currently shown are the 2012 figures carried forward - these will be updated in July 2013.

Section 5 – Electricity

Key results show:

Electricity generated in the first quarter of 2013 rose by 0.7 per cent, from 100.1 TWh a year earlier to 100.8 TWh. (**Chart 5.1**).

Renewables' share of electricity generation increased from 11.3 per cent in the first quarter of 2012 to 12.3 per cent in the first quarter of 2012. (**Chart 5.2**).

Shares of generation between fuels were broadly unchanged in the first quarter of 2013 compared to a year earlier. Coal's share decreased from 42.0 per cent to 41.2 per cent, whilst gas's share of generation fell from 27.0 per cent in the first quarter of 2012 to 26.3 per cent in the first quarter of 2013, its lowest share for at least 15 years, due to high gas prices. (**Chart 5.2**).

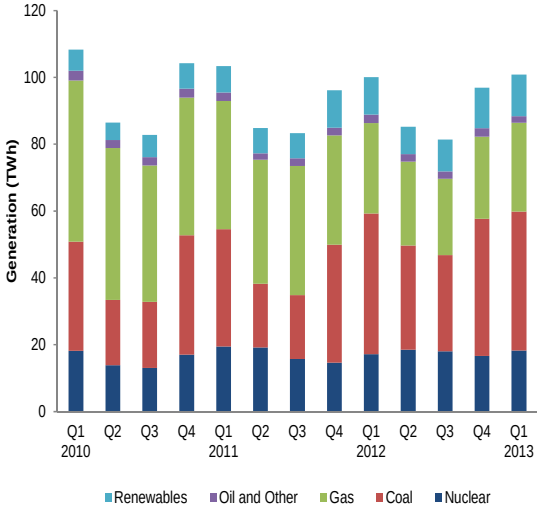
Nuclear's share of generation rose from 17.2 per cent in the first quarter of 2012 to 18.1 per cent in the first quarter of 2013 with increased availability after outages in the same quarter last year. (**Chart 5.2**).

Low carbon electricity's share of generation increased from 28.4 per cent in the first quarter of 2012 to 30.4 per cent in the second quarter of 2013, due to higher renewables and nuclear generation. **(Chart 5.3)**.

The UK remains a net importer with 3.2 per cent of electricity supplied from net imports in the first quarter of 2013 (**Chart 5.4**).

Final consumption of electricity during the first quarter of 2013, at 88.2 TWh, was

Chart 5.1 Electricity generated by fuel type



In 2013 Q1, total electricity generated rose 0.7 per cent from 100.1 TWh in 2012 Q1 to 100.8 TWh.

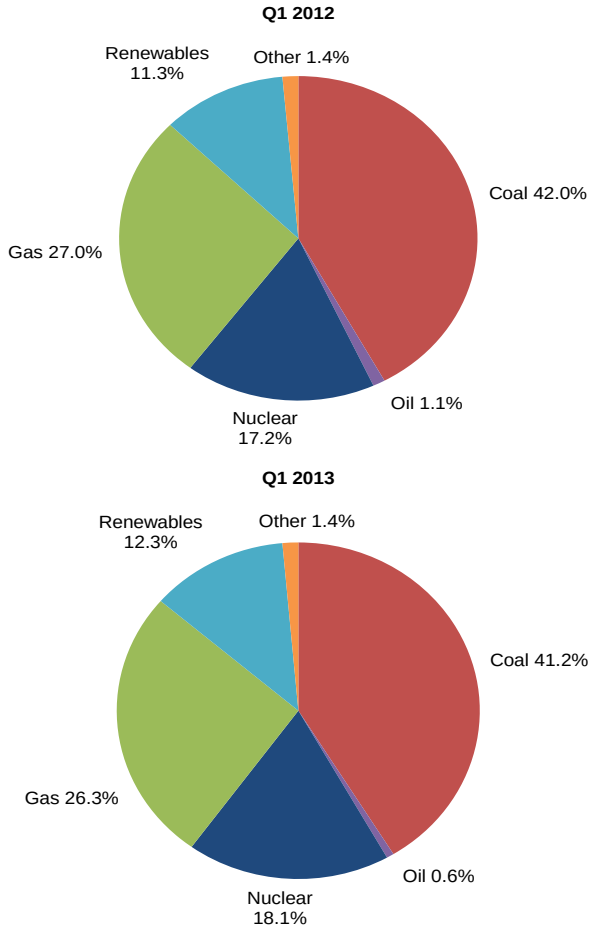
In 2013 Q1, coal fired generation fell by 1.2 per cent from 42.1 TWh to 41.6 TWh.

In 2013 Q1, gas fired generation fell 2.0 per cent from 27.1 TWh to 26.5 TWh, its lowest first quarter level for at least fifteen years. This was due to high gas prices, with several gas stations now closed or mothballed and being run at low levels.

In 2013 Q1, nuclear generation rose 6.3 per cent from 17.2 TWh to 18.3 TWh, due to increased availability after outages in the same quarter last year.

In 2013 Q1, wind and PV generation rose 29.8 per cent from 5.3 TWh to 6.9 TWh, due to increased capacity. Hydro generation fell 32.1 per cent from 1.9 TWh to 1.3 TWh, due to 21 per cent lower rainfall compared to the same period last year. It was the driest March for at least 12 years and the driest month since June 2010.

Chart 5.2 Shares of electricity generation



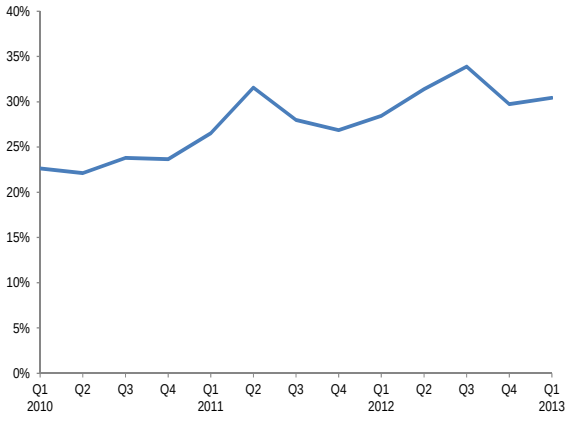
The share of generation from coal decreased from 42.0 per cent in 2012 Q1 to 41.2 per cent in 2013 Q1.

Gas's share of generation decreased from 27.0 per cent in 2012 Q1 to 26.3 per cent in 2013 Q1, its lowest first quarter share for at least fifteen years.

Nuclear's share of generation rose from 17.2 per cent in 2012 Q1 to 18.1 per cent in 2013 Q1.

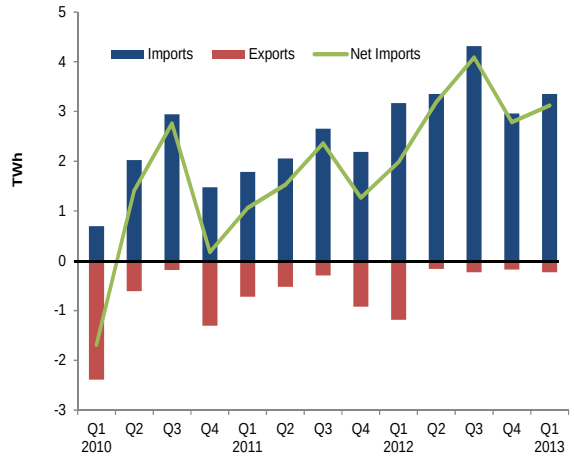
The share of renewables (hydro, wind and other renewables) increased from 11.3 per cent in 2012 Q1 to 12.3 per cent in 2013 Q1. This was due to much increased wind generation capacity as well as the increase in generation from Tilbury B, offset by reduced generation from co-firing due to coal stations burning much less biomass with coal.

Chart 5.3 Low carbon electricity's share of generation



Low carbon electricity's share of generation increased from 28.4 per cent in 2012 Q1 to 30.4 per cent in 2013 Q1, due to higher renewables and nuclear generation.

Chart 5.4 UK trade in electricity

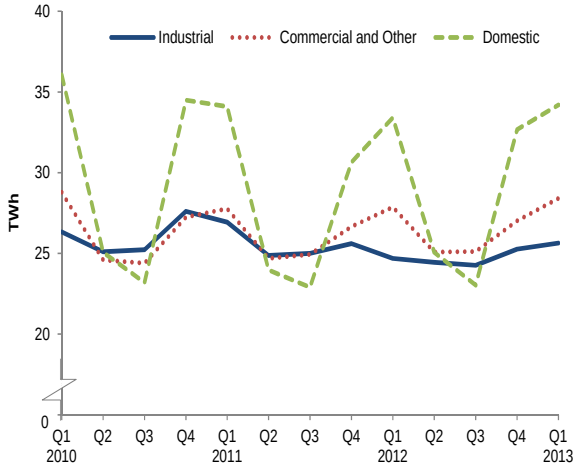


In 2013 Q1, compared with the same period in 2012, imports of electricity rose by 5.8 per cent, whilst exports fell by 80.5 per cent. For every quarter from 2010 Q2, the UK has been a net importer after two quarters of being a net exporter (2009 Q4 and 2010 Q1).

Net imports of electricity rose by 57.2 per cent from 2.0 in 2012 Q1 to 3.1 TWh in 2013, due mainly to increased imports from the Netherlands via the interconnector which came into full operation in April 2011. Net imports represented 3.2 per cent of electricity supplied in 2013 Q1.

In 2013 Q1, the UK was a net importer from France and the Netherlands (whom the UK started trading with in February 2011) with net imports of 1.5 TWh and 1.6 TWh respectively. The UK was also a net importer from Ireland with net imports of 20 GWh, after three quarters of being a net exporter.

Chart 5.5 Electricity Final Consumption



Final consumption of electricity rose by 2.6 per cent in 2013 Q1, from 86.0 TWh in 2012 Q1, to 88.2.

Domestic use rose by 2.3 per cent, from 33.4 TWh to 34.2 TWh, the highest level for the first quarter for three years.

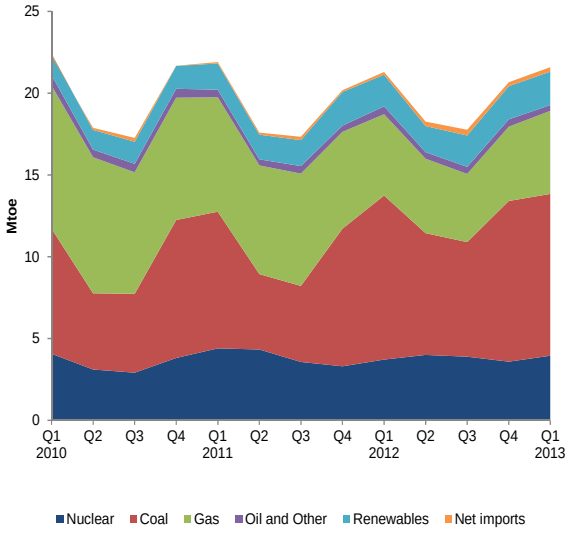
Industrial use of electricity rose 3.8 per cent, from 24.7 TWh to 25.6 TWh, while consumption by commercial and other users [1] rose by 1.9 per cent, from 27.9 TWh to 28.4 TWh.

In 2013 Q1, temperatures were on average 2.7 degrees lower than in 2012 Q1, and the lowest for quarter one for at least 13 years.[2]

[1] Includes commercial, transport and other final users.

[2] Temperature data comes from table ET 7.1, at: www.gov.uk/government/organisations/department-of-energy-climate-change/series/weather-statistics

Chart 5.6 Fuel used for electricity Generation



Fuel used by generators in 2013 Q1 rose 1.4 per cent, from 21.3 mtoe in 2012 Q1 to 21.6 mtoe in 2013 Q1.

In 2013 Q1, gas use was 2.1 per cent higher than in 2012 Q1. Coal use during the quarter was 1.4 per cent lower than a year earlier, while nuclear sources were 6.6 per cent higher.

[3] For wind (and other primary renewable sources), the fuel used is assumed the same as the electricity generated, unlike thermal generation where conversion losses are incurred.

Relevant tables

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5 ELECTRICITY

Table 5.1. Fuel used in electricity generation and electricity supplied

	2011	2012 p	*per cent change*	2011 1st quarter	2011 2nd quarter	2011 3rd quarter	2011 4th quarter	2012 1st quarter	2012 2nd quarter	2012 3rd quarter	2012 4th quarter	2013 1st quarter p	*per cent change* [1]
FUEL USED IN GENERATION													
All generating companies												**Million tonnes of oil equivalent**	
Coal	25.98	34.31	*+32.1*	8.33r	4.59r	4.66	8.41	10.03r	7.45r	7.01r	9.82r	9.89	*-1.4*
Oil	0.76	0.85	*+11.7*	0.22r	0.16r	0.18r	0.20	0.26	0.19	0.18	0.21	0.14	*-47.7*
Gas	26.32	18.23	*-30.7*	6.92r	6.63	6.84r	5.93	4.97r	4.55	4.16r	4.54	5.08	*+2.1*
Nuclear	15.63	15.21	*-2.7*	4.41	4.34	3.57	3.31	3.71r	4.00r	3.89r	3.60r	3.95	*+6.3*
Hydro	0.49	0.45	*-7.1*	0.11	0.10	0.11	0.17	0.16	0.06r	0.09	0.14	0.11	*-32.1*
Wind and Solar [2]	1.35	1.79	*+31.9*	0.29	0.31	0.26	0.49	0.46r	0.36r	0.42r	0.55	0.59	*+29.8*
Bioenergy [3]	4.46	5.24	*+17.4*	1.09r	1.02r	1.09r	1.26r	1.32r	1.16r	1.41r	1.34r	1.35	*+2.0*
Other fuels	1.01	0.91	*-9.4*	0.25r	0.24r	0.27r	0.25r	0.21	0.21	0.25	0.24	0.22	*+2.4*
Net imports	0.53	1.04	*+93.6*	0.09	0.13	0.20	0.11	0.17	0.27	0.35	0.24r	0.27	*+57.2*
Total all generating companies	76.53	78.02	*+1.9*	21.71r	17.52r	17.17r	20.13r	21.30r	18.27r	17.77r	20.67r	21.59	*+1.4*
ELECTRICITY GENERATED													
All generating companies												**TWh**	
Coal	108.57	143.06	*+31.8*	35.07r	18.99r	19.19r	35.32r	42.06r	31.17r	28.82r	41.01r	41.56	*-1.2*
Oil	3.12	3.75	*+20.4*	0.96r	0.57r	0.67r	0.92r	1.10r	0.84r	0.79r	1.03r	0.65	*-40.5*
Gas	146.52	99.52	*-32.1*	38.34r	37.04r	38.57r	32.57r	27.05r	25.14r	22.77r	24.56r	26.52	*-2.0*
Nuclear	68.98	70.41	*+2.1*	19.45	19.15	15.76	14.62	17.20	18.53	18.03	16.65	18.28	*+6.3*
Hydro (natural flow)	5.69	5.28	*-7.1*	1.31r	1.14r	1.23r	2.01r	1.89r	0.75r	1.02r	1.63r	1.28	*-32.1*
Wind and Solar [2]	15.75	20.78	*+31.9*	3.37	3.60r	3.06r	5.72r	5.31r	4.19r	4.87r	6.39r	6.90	*+29.8*
- of which, Offshore	5.13	7.46	*+45.6*	1.00	1.12	1.10	1.92	1.49	1.64	1.69	2.64	2.51	*+68.2*
Bioenergy [3]	13.20	15.20	*+15.1*	3.31	3.02r	3.28r	3.59r	4.07r	3.29r	3.67r	4.17r	4.22	*+3.5*
Pumped Storage	2.91	2.97	*+2.1*	0.77	0.65	0.70	0.78	0.79	0.67	0.71	0.79	0.74	*-6.7*
Other fuels	2.71	2.76	*+1.8*	0.66r	0.66r	0.69r	0.71r	0.62r	0.68r	0.73r	0.73r	0.67	*+7.2*
Total all generating companies	367.45	363.73	*-1.0*	103.23r	84.83r	83.15r	96.24r	100.10r	85.26r	81.41r	96.96r	100.82	*+0.7*
ELECTRICITY SUPPLIED [4]													
All generating companies												**TWh**	
Coal	103.12	135.78	*+31.7*	33.30r	18.04r	18.24r	33.54r	39.93r	29.59r	27.36r	38.91r	39.43	*-1.3*
Oil	2.81	3.38	*+20.5*	0.86r	0.51r	0.60r	0.83r	0.99r	0.76r	0.71r	0.92r	0.59	*-40.7*
Gas	143.83	97.71	*-32.1*	37.63r	36.36r	37.87r	31.96r	26.56r	24.69r	22.36r	24.10r	26.12	*-1.7*
Nuclear	62.66	63.95	*+2.1*	17.67	17.40	14.31	13.28	15.62	16.83	16.38	15.12	16.61	*+6.3*
Hydro	5.65	5.25	*-7.2*	1.30r	1.13r	1.22r	1.99r	1.87r	0.75r	1.01r	1.62r	1.27	*-32.2*
Wind and Solar [2]	15.75	20.78	*+31.9*	3.37	3.60r	3.06r	5.72r	5.31r	4.19r	4.87r	6.39r	6.90	*+29.8*
- of which, Offshore	5.13	7.46	*+45.6*	1.00	1.12	1.10	1.92	1.49	1.64	1.69	2.64	2.51	*+68.2*
Bioenergy [3]	11.75	13.54	*+15.2*	2.95	2.69r	2.92r	3.20r	3.63r	2.93	3.27r	3.72r	3.76	*+3.6*
Pumped Storage (net supply) [5]	-0.95	-1.02		-0.26	-0.22	-0.23	-0.24	-0.26	-0.24	-0.25	-0.27r	-0.26	
Other fuels	2.56	2.61	*+1.8*	0.62r	0.62r	0.65r	0.67r	0.59r	0.65r	0.69r	0.69r	0.63	*+7.2*
Net imports	6.22	12.04	*+93.6*	1.06	1.53	2.36	1.27	1.99	3.19	4.08	2.78	3.12	*+57.2*
Total all generating companies	353.40	354.02	*+0.2*	98.51r	81.67r	81.01r	92.22r	96.25r	83.32r	80.48r	93.97r	98.18	*+2.0*

1. Percentage change in the first quarter of 2013 compared with a year earlier.

2. Includes wave and tidal

3. Up to 2006 Q4, this includes non-biodegradable wastes. From 2007 Q1, this is included in 'Other fuels' (as it is not considered a renewable source).

4. Electricity supplied net of electricity used in generation

5. Net supply from pumped storage is usually negative, as electricity used in pumping is deducted.

5 ELECTRICITY

Table 5.2 Supply and consumption of electricity

GWh

	2011	2012 p	*Per cent change*	2011 1st quarter	2011 2nd quarter	2011 3rd quarter	2011 4th quarter	2012 1st quarter	2012 2nd quarter	2012 3rd quarter	2012 4th quarter	2013 1st quarter p	*Per cent change [1]*
SUPPLY													
Indigenous production	367,801	363,730	*-1.1*	103,406	84,866	83,340	96,189	100,102r	85,261r	81,407r	96,960r	100,821	*+0.7*
Major power producers [2 3]	329,406	325,089	*-1.3*	93,508	75,619	74,088	86,191	89,967r	75,881r	72,110r	87,131r	92,027	*+2.3*
Auto producers	35,490	35,674	*+0.5*	9,128	8,594	8,550	9,218	9,342	8,705r	8,591r	9,036r	8,053	*-13.8*
Other sources [4]	2,906	2,966	*+2.1*	770	654	702	780	794	675	705	793	741	*-6.7*
Imports	8,689	13,791	*+58.7*	1,787	2,054	2,656	2,192	3,169	3,352	4,311	2,958	3,353	*+5.8*
Exports	2,467	1,746	*-29.2*	723	525	297	922	1,182	162	227	176	230	*-80.5*
Transfers	-	-		-	-	-	-	-	-	-	-	-	
Total supply	374,023	375,774	*+0.5*	104,470	86,396	85,699	97,458	102,090	88,451r	85,492r	99,742r	103,945	*+1.8*
Statistical difference	-320	320		-312	-268	-188	449	222r	-277r	335r	40r	379	
Total demand	374,343	375,454	*+0.3*	104,783	86,664	85,887	97,009	101,868	88,728r	85,156r	99,703r	103,566	*+1.7*
TRANSFORMATION	-	-		-	-	-	-	-	-	-	-	-	
Energy industry use [5]	28,153	29,574	*+5.0*	7,755	6,679	6,503	7,217	7,807	7,072r	6,991r	7,704r	7,311	*-6.3*
Losses	28,181	27,955	*-0.8*	8,243	6,472	6,567	6,899	8,085	7,069	5,761	7,041	8,032	*-0.7*
FINAL CONSUMPTION	318,009	317,924	-	88,785	73,513	72,818	82,893	85,975	74,587	72,404	84,958	88,222	*+2.6*
Iron & steel	3,842	3,598	*-6.4*	967	964	962	949	870r	897r	922r	909r	909	*+4.5*
Other industries	98,554	95,064	*-3.5*	25,969	23,897	24,034	24,654	23,826r	23,543r	23,337r	24,358r	24,726	*+3.8*
Transport	4,079	4,089	*+0.2*	1,020	1,020	1,020	1,020	1,022r	1,022r	1,022r	1,022r	1,022	-
Domestic	111,585	114,181	*+2.3*	34,088	23,963	22,895	30,639	33,408r	25,071r	23,033r	32,670r	34,186	*+2.3*
Other final users	99,948	100,993	*+1.0*	26,742	23,669	23,907	25,630	26,849r	24,054r	24,090r	25,999r	27,379	*+2.0*
Non energy use	-	-		-	-	-	-	-	-	-	-	-	

1. Percentage change in the first quarter of 2013 compared with a year earlier.

2. Companies that produce electricity from nuclear sources plus all companies whose prime purpose is the generation of electricity are included under the heading "Major Power Producers". At the end of December 2011 they were:

AES Electric Ltd., Baglan Generation Ltd., Barking Power Ltd., British Energy plc., Centrica Energy, Coolkeeragh ESB Ltd., Corby Power Ltd., Coryton Energy Company Ltd., Derwent Cogeneration Ltd., DONG Energy Burbo UK Ltd, Drax Power Ltd., EDF Energy plc., E.On UK plc., Energy Power Resources, GDF Suez Teesside Power Ltd., Immingham CHP, Infinis plc, International Power Mitsui, Magnox North Ltd., Premier Power Ltd., RGS Energy Ltd, Rocksavage Power Company Ltd., RWE Npower plc., Scottish Power plc., Scottish and Southern Energy plc., Seabank Power Ltd., SELCHP Ltd., Spalding Energy Company Ltd., Statkraft Energy Ltd.

3. This table includes the change of definition of Major power producers (MPPs) to include major wind farm companies. Details of this change of definition were given in an article on pages 43 to 48 of the September 2008 edition of Energy Trends.

4. Gross supply from pumped storage hydro

5. Includes electricity used in generation and for pumping

Section 6 – Renewables

Key results show:

Renewables' share of electricity generation was 12.3 per cent in 2013 Q1, up 1.0 percentage point on the share in 2012 Q1, but a 0.3 percentage point fall on 2012 Q4's record high share of 12.6 per cent. **(Chart 6.1)**

Renewable electricity generation was a record 12.4 TWh in 2013 Q1, an increase of 10 per cent on the 11.3 TWh in 2012 Q1. **(Chart 6.2)**

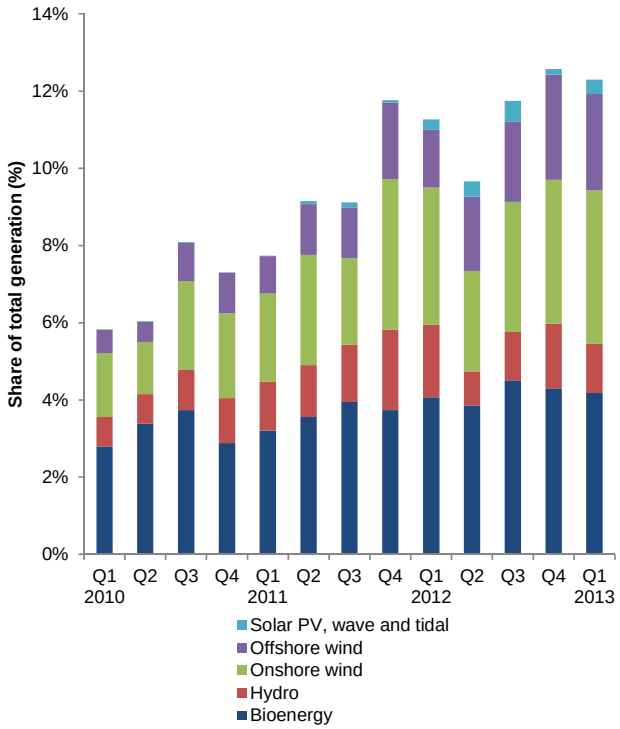
Offshore wind showed the highest absolute increase in generation in 2013 Q1, increasing by 68 per cent, from 1.5 TWh in 2012 Q1 to 2.5 TWh, as a result of much increased capacity. Onshore wind, meanwhile, increased by 13 per cent, from 3.6 TWh to 4.0 TWh. **(Chart 6.2)**

Renewable electricity capacity was 17.6 GW at the end of 2013 Q1, a 33 per cent increase (4.4 GW) on a year earlier, and a 13 per cent increase (2.1 GW) on the previous quarter. Of the 2.1 GW increase in 2013 Q1, almost half was due to the conversion of Ironbridge power station to dedicated biomass. **(Chart 6.3)**

In 2013 Q1, 138 MW of capacity joined the Feed in Tariff scheme, increasing the total to 1,792 MW, approximately 10 per cent of all renewable installed capacity. Of this increase solar PVs contributed 98 MW, wind contributed 31 MW and anaerobic digestion 7 MW. **(Chart 6.5)**

Liquid biofuels consumption fell by 24 per cent, from 418 million litres in 2012 Q1 to 318 million litres in 2013 Q1, and was 30 per cent less than the record 454 million litres in 2011 Q4. In 2013 Q1, they represented 3.0 per cent of petrol and diesel consumed in road transport. **(Chart 6.6)**

Chart 6.1 Renewables' share of electricity generation



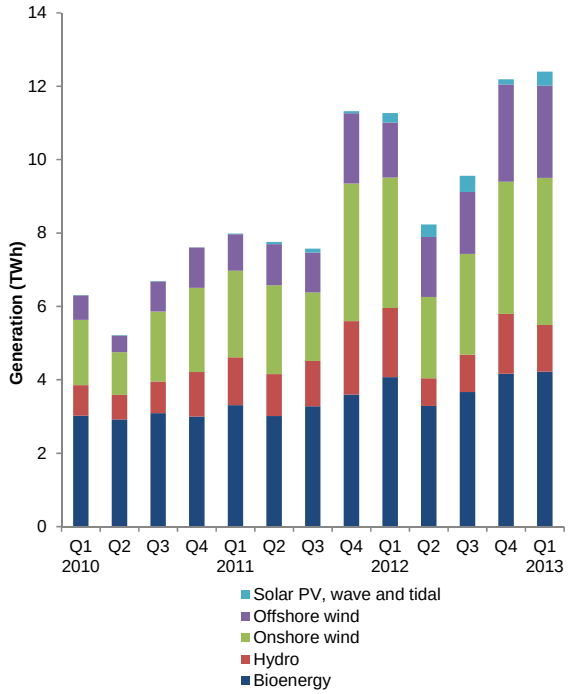
Renewables' share of electricity generation increased from 11.3 per cent in 2012 Q1 to 12.3 per cent in 2013 Q1. However, this was a 0.3 percentage point fall on 2012 Q4's record high share of 12.6 per cent. [1]

The increase on a year earlier reflects increased capacity, particularly in onshore and offshore wind, as well as the return to full operations of Tilbury biomass power station.

Overall electricity generation was 100.8 TWh in 2013 Q1, up 0.7 per cent on a year earlier (100.1 TWh). However, this had minimal impact (a 0.1 percentage point reduction) on the increase in the renewables share. However, this was a 4.0 per cent increase on total generation in 2012 Q4 (97.0 TWh), meaning renewables' share was lower, despite an increase in renewable generation.

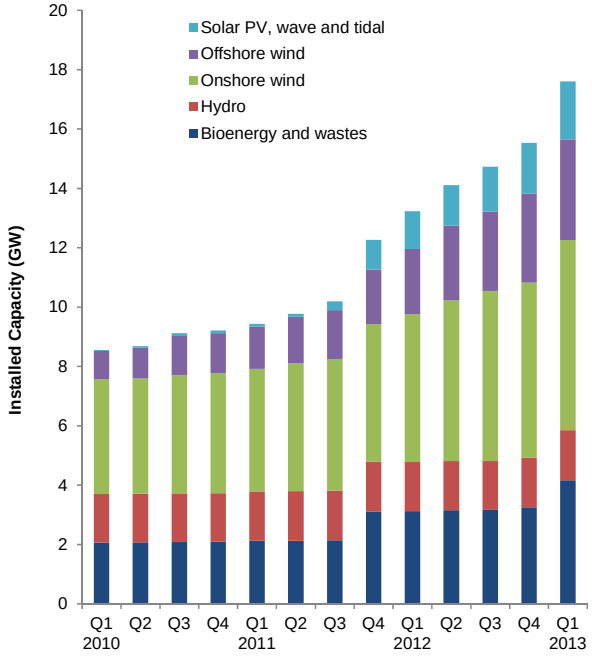
[1] Total electricity generation figures (all generating companies) can be found in table ET 5.1, at: www.gov.uk/government/organisations/department-of-energy-climate-change/series/electricity-statistics

Chart 6.2 Renewable electricity generation



To note that the solar PV (and onshore wind) figures not only include installations confirmed on the FiTs scheme, but also a large number of sub 50 kW installations commissioned, and registered on the Microgeneration Certification Scheme, that are awaiting confirmation on FiTs (as well as any capacity not supported by FiTs).

Chart 6.3 Renewable electricity capacity (as at end of quarter)



Total electricity generated from renewables in 2013 Q1 was up by 10 per cent on 2012 Q1, from 11.3 TWh to a new record of 12.4 TWh.

In 2013 Q1, hydro generation fell by 32 per cent on a year earlier, from 1.9 TWh to 1.3 TWh, with rainfall (in the main hydro areas) in the quarter down by 21 per cent on a year earlier, and including the driest March in Scotland for sixty years.

Electricity generated from onshore wind increased by 13 per cent in 2013 Q1, from 3.6 TWh in 2012Q1 to 4.0 TWh, while generation from offshore wind increased by 68 per cent on a year earlier, from 1.5 TWh to 2.5 TWh. Both increases were primarily due to much increased capacity on a year earlier, with wind speeds only slightly lower. Average wind speeds for 2013 Q1 were 8.5 knots, 0.5 knots lower than a year earlier, and 0.2 knots higher than 2012 Q4.[2]

In 2013 Q1, generation from bioenergy [3] increased by 3.5 per cent on a year earlier, from 4.1 TWh to 4.2 TWh. Generation from plant biomass increased by 69 per cent, from 1.1 TWh to 1.8 TWh, due to Tilbury biomass station being fully operational in the current quarter. However, generation from co-firing fell by 80 per cent, from 0.7 TWh to 0.1 TWh, due to coal stations burning much less biomass with coal.

In 2013 Q1, bioenergy had the largest share of generation (34 per cent) with 32 per cent from onshore wind and 20 per cent from offshore wind.

At the end of 2013 Q1, the UK's renewable electricity capacity totalled 17.6 GW, an increase of 13 per cent (2.1 GW) on that installed at the end of 2012 Q4, and 33 per cent (4.4 GW) on that installed a year earlier.

Of the 2.1 GW increase during 2013 Q1, almost half (900 MW) came from the conversion of Ironbridge power station to dedicated biomass, with 386 MW due to the continued expansion of the London Array and Lincs offshore wind farms. A further 513 MW came from the opening of a number of new onshore wind farms, the largest being Fallago Rig (144 MW).

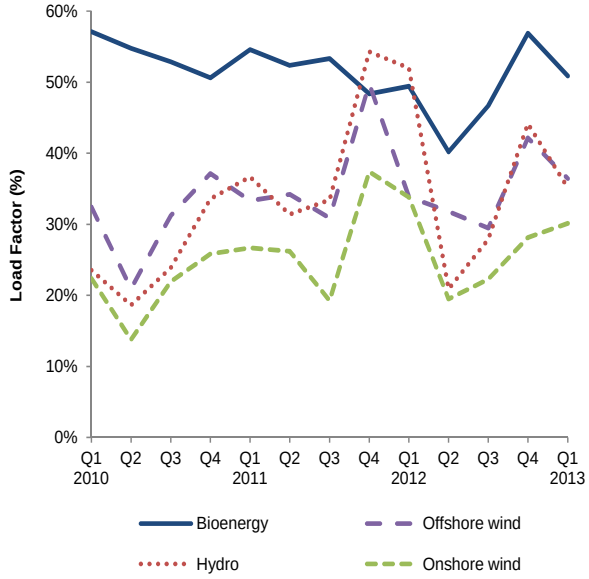
Solar photovoltaics (PV) capacity increased by 261 MW during 2013 Q1, due to the continued high uptake of the GB Feed in Tariff scheme, as well as 29 MW of new capacity accredited on the Renewables Obligation. Solar PV capacity stood at 2.0 GW at the end of 2013 Q1, increasing its share to 11 per cent of all renewables capacity.

At the end of 2013 Q1, onshore wind had the highest share of capacity (36 per cent) followed by bioenergy (24 per cent) and offshore wind (19 per cent).

[2] Statistics on weather (temperature, wind speeds, rainfall and sun levels) can be found in tables ET 7.1 – 7.4, at: www.gov.uk/government/organisations/department-of-energy-climate-change/series/weather-statistics

[3] Bioenergy consists of: landfill gas, sewage gas, energy from waste, plant biomass, animal biomass, anaerobic digestion and co-firing (generation only)

Chart 6.4 Renewable electricity load factors



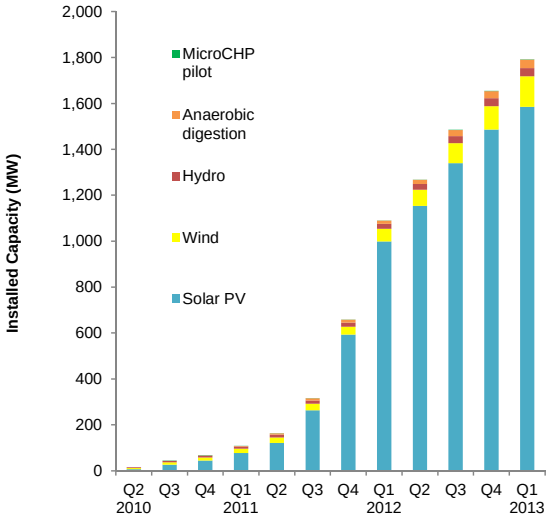
In 2013 Q1, onshore wind's load factor fell by 3.7 percentage points, from 33.8 per cent in 2012 Q1 to 30.2 per cent, reflecting slighlty (0.5 knots) lower average wind speeds [4], but was up by 2.0 percentage points on 2012 Q4, with wind speeds slightly (0.2 knots) higher.

Offshore wind's load factor increased by 2.6 percentage points, from 33.9 per cent in 2012 Q1 to 36.5 per cent in 2013 Q1. However, it was down by 5.7 percentage points on 2012 Q4.

Hydro's load factor in 2013 Q1 fell by 17 percentage points, from 52.0 per cent in 2012 Q1 to 35.1 per cent, with average rainfall around one fifth lower than a year earlier. Compared with 2012 Q4, hydro's load factor in 2013 Q1 fell by 9.0 percentage points, from 44.1 per cent. Despite average rainfall falling by one half, the higher than average levels of 2012 Q4 may have retained high reservoir levels going into 2013 Q1.

For bioenergy, the load factor in 2013 Q1 was up 1.5 percentage points on a year earlier (with Tilbury fully operational), but down 6.0 percentage points on 2012 Q4 (largely due to Ironbridge not yet reaching full operations).

Chart 6.5 Feed in Tariffs: installed capacity confirmed on FiTs, as at end of quarter 1 2013



At the end of 2013 Q1, 1,792 MW of capacity was confirmed on the GB Feed in Tariff (FiTs) scheme. This was a 8.3 per cent increase on the 1,654 MW confirmed on the scheme at the end of 2012 Q4, and nearly twice the amount confirmed at the end of 2012 Q1.[5]

In terms of number of installations, at the end of 2013 Q1, there were 379,409 confirmed on the FiT scheme, a 5.9 per cent increase on the 358,160 confirmed at the end of the previous quarter.

Solar photovoltaics (PVs) represent the majority of both installations and installed capacity confirmed on FiTs, with, respectively, 99 per cent and 88 per cent of the total. The majority of PV installations are sub-4 kW retrofitted schemes, which increased by 19,200 (61 MW) from 2012 Q1 to bring the total to 350,507 (1,041 MW) at the end of 2013 Q1.[6]

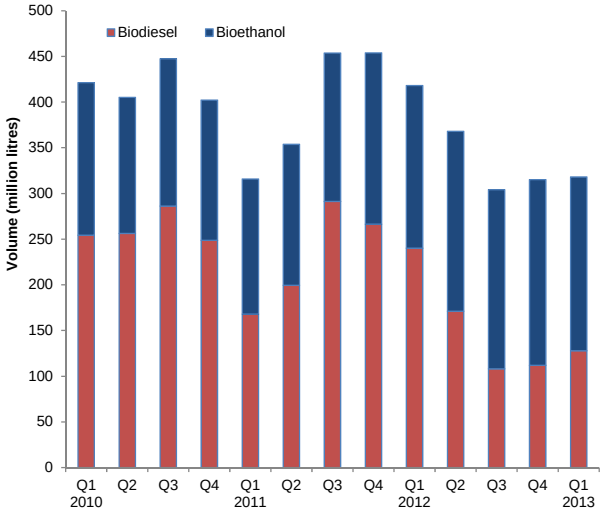
Renewable installations confirmed on FiTs (all except MicroCHP) represented 10 per cent of all renewable installed capacity.

[4] Load Factors are calculated using an average of capacity at the start and end of the quarter. Therefore, they can be influenced by the time in the quarter when any new capacity came online. This may particularly be the case for large wind farms, such as London Array offshore, that come online incrementally throughout the quarter.

[5] Statistics on Feed in Tariff uptake, and generation, can be found in the monthly central Feed-in-Tariff register statistics table and Feed-in-Tariff generation statistics table, at: www.gov.uk/government/organisations/department-of-energy-climate-change/series/feed-in-tariff-statistics

[6] To note that Feed in Tariff uptake statistics are based on the *confirmation* date, which can be several months later than the commissioning (installation) date. Hence the amount of capacity installed in a quarter may differ substantially from that confirmed on the FiTs scheme in the same quarter.

Chart 6.6 Liquid biofuels for transport consumption



In 2013 Q1, 318 million litres of liquid biofuels were consumed in transport, a fall of 24 per cent on the total in 2012 Q1 (418 million litres), and a 30 per cent fall on 2011 Q4's record high of 454 million litres.

In 2013 Q1, biodiesel accounted for 2.1 per cent of diesel, and bioethanol 4.4 per cent of motor spirit. The combined contribution of the two fuels was 3.0 per cent, 0.9 percentage points lower than 2012 Q1's share.

Bioethanol consumption rose by 67 per cent, from 178 million litres to 190 million litres. Biodiesel consumption fell by 47 per cent, from 240 million litres in 2012 Q1 to 128 million litres in 2013 Q1.

Reasons for the fall in biodiesel consumption may include policy changes, from 1 April 2012: the doubling of credits, under the Renewable Transport Fuel Obligation for some types of biodiesel (such as waste cooking oil) - meaning less needs to be blended with diesel; and the ending of a reduced duty rate on cooking oil used for biodiesel, increasing duty payable by 20 pence per litre.

After six years of biodiesel contributing the largest share of biofuels consumption, for the fourth successive quarter, in 2013 Q1 bioethanol had the highest share of total biofuels consumption, with 60 per cent, compared with 40 per cent from biodiesel.

Relevant tables

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6 RENEWABLES

Table 6.1. Renewable electricity capacity and generation

	2011	2012 p	per cent change	2011 1st quarter	2011 2nd quarter	2011 3rd quarter	2011 4th quarter	2012 1st quarter	2012 2nd quarter	2012 3rd quarter	2012 4th quarter	2013 1st quarter p	per cent change
Cumulative Installed Capacity [1]												**MW**	
Onshore Wind	4,638	5,893	*+27.1*	4,129r	4,320r	4,436r	4,638r	4,987r	5,417r	5,728r	5,893r	6,407	*+28.5*
Offshore Wind	1,838	2,995	*+63.0*	1,427	1,564	1,650	1,838	2,200r	2,516r	2,682r	2,995r	3,381	*+53.7*
Shoreline wave / tidal	3	7	*(+)*	3	3	3	3	5r	7r	7r	7r	7	*+37.0*
Solar photovoltaics	993	1,706	*+71.8*	86r	91r	293r	993r	1,261r	1,358r	1,497r	1,706r	1,966	*+56.0*
Small scale Hydro	204	215	*+5.4*	194r	198r	200r	204r	178r	181r	182r	215r	218	*+22.3*
Large scale Hydro	1,471	1,471	-	1,471	1,471	1,471	1,471	1,471	1,471	1,471	1,471	1,471	-
Landfill gas	1,050	1,036	*-1.4*	1,050r	1,050r	1,050r	1,050r	1,034r	1,034r	1,035r	1,036r	1,037	*+0.3*
Sewage sludge digestion	198	199	*+0.6*	195	195	198	198	198	198	199	199	199	*+0.6*
Energy from waste	544	593	*+9.0*	414r	414r	414r	544r	588r	588r	588r	593r	593	*+0.8*
Animal Biomass (non-AD) [2]	111	111	-	111	111	111	111	111	111	111	111	111	-
Anaerobic Digestion	66	110	*+66.4*	37r	39r	51r	66r	62r	69r	70r	110r	110	*+76.7*
Plant Biomass [3]	1,149	1,203	*+4.7*	316r	318r	320r	1,149r	1,136r	1,159r	1,161r	1,203r	2,113	*+86.0*
Total	12,264	15,538	*+26.7*	9,433r	9,773r	10,196r	12,264r	13,230r	14,109r	14,731r	15,538r	17,611	*+33.1*
Co-firing [4]	338	204	*-39.8*	338	338	338	338	204r	204r	204r	204r	67	*-67.3*
Generation [5]												**GWh**	
Onshore Wind [6]	10,384	12,121	*+16.7*	2,355r	2,418r	1,863r	3,747r	3,555r	2,215r	2,743r	3,608r	4,006	*+12.7*
Offshore Wind [6, 7]	5,126	7,463	*+45.6*	997	1,117	1,096	1,916	1,493	1,637r	1,691r	2,642	2,511	*+68.2*
Shoreline wave / tidal [6]	1	4	*(+)*	0	0	0	0	1	1	1	1	1	*+83.8*
Solar photovoltaics [6]	244	1,188	*(+)*	15r	66r	106r	57r	265r	341r	440r	141r	382	*+44.0*
Hydro [6]	5,690	5,284	*-7.1*	1,309r	1,143r	1,233r	2,005r	1,886r	754r	1,017r	1,627r	1,281	*-32.1*
Landfill gas [6]	5,092	5,154	*+1.2*	1,311r	1,238r	1,296r	1,247r	1,299r	1,278r	1,280r	1,297r	1,230	*-5.3*
Sewage sludge digestion [6]	764	720	*-5.8*	191r	191r	191r	191r	188r	181r	173r	178r	178	*-5.0*
Energy from waste [8]	1,739	2,279	*+31.0*	355	344	355	686	536r	560r	599r	584r	534	*-0.3*
Co-firing with fossil fuels	2,964	1,783	*-39.8*	822	586	768	787	703	530	410r	140r	145	*-79.3*
Animal Biomass (non-AD) [6, 9]	615	643	*+4.6*	158r	154	155r	148	177r	141r	144r	180r	178	*+0.5*
Anaerobic Digestion	278	523	*+88.1*	50	54r	73r	101r	105r	124r	140r	153r	149	*+41.2*
Plant Biomass [6, 10]	1,749	4,098	*(+)*	421r	449r	445r	435r	1,065r	475r	922r	1,635r	1,803	*+69.3*
Total	34,645	41,258	*+19.1*	7,984r	7,761r	7,580r	11,321r	11,274r	8,236r	9,560r	12,188r	12,399	*+10.0*
Non-biodegradable wastes [11]	1,000	1,311	*+31.0*	204r	198r	204r	394r	308r	322r	344r	336	308	*-0.2*
Load Factors [12]													
Onshore Wind	27.3%	26.2%		26.7%	26.2%	19.3%	37.4%	33.8%	19.5%	22.3%	28.1%	30.2%	
Offshore Wind	36.8%	35.2%		33.3%	34.2%	30.9%	49.8%	33.9%	31.8%	29.5%	42.2%	36.5%	
Hydro	39.2%	35.8%		36.7%	31.4%	33.4%	54.3%	52.0%	20.9%	27.9%	44.1%	35.1%	
Landfill gas	56.5%	56.2%		59.0%	54.0%	55.9%	53.7%	57.1%	56.6%	56.0%	56.7%	55.0%	
Sewage sludge digestion	44.7%	41.3%		45.5%	44.7%	44.2%	43.9%	43.5%	42.0%	39.5%	40.6%	41.5%	
Energy from waste	40.9%	45.6%		39.0%	38.0%	38.8%	64.8%	43.4%	43.6%	46.1%	44.8%	41.7%	
Animal Biomass (non-AD)	63.5%	66.2%		66.0%	63.9%	63.3%	60.7%	73.3%	58.5%	59.1%	74.0%	74.5%	
Anaerobic Digestion	60.9%	67.6%		61.6%	64.9%	72.9%	78.1%	75.1%	86.1%	91.6%	77.3%	62.5%	
Plant Biomass	27.3%	39.7%		61.7%	64.8%	63.2%	26.8%	42.7%	19.0%	36.0%	62.6%	50.4%	
Total (excluding co-firing and non-biodegradable wastes)	33.7%	32.3%		35.6%	34.2%	30.9%	42.5%	38.0%	25.8%	28.7%	36.1%	34.2%	

1. Cumulative capacity at the end of the quarter/year
2. Includes the use of farm waste digestion, poultry litter and meat and bone.
3. Includes the use of waste tyres, straw combustion, short rotation coppice and hospital waste.
4. This is the amount of fossil fuelled capacity used for co-firing of renewables based on the proportion of generation accounted for by the renewable source over the course of the year.
5. Generation figures for the latest quarter are highly provisional, particularly for the thermal renewable technologies (such as landfill gas) in the lower half of the table.
6. Actual generation figures are given where available, but otherwise are estimated using a typical load factor or the design load factor, where known. All solar photovoltaic generation is estimated this way.
7. For 2009, shoreline wave and tidal are included in offshore wind.
8. Biodegradable part only.
9. Includes the use of farm waste digestion, poultry litter combustion and meat and bone combustion.
10. Includes the use of straw and energy crops.
11. Non-biodegradable part of municipal solid waste plus waste tyres, hosptal waste and general industrial waste.
12. Load factors are calculated based on installed capacity at the beginning and the end of the quarter/year.

6 RENEWABLES

Table 6.2. Liquid biofuels for transport consumption

	2011	2012 p		2010 1st quarter	2010 2nd quarter	2010 3rd quarter	2010 4th quarter	2011 1st quarter	2011 2nd quarter	2011 3rd quarter	2011 4th quarter	2012 1st quarter	2012 2nd quarter	2012 3rd quarter	2012 4th quarter	2013 1st quarter p	
Volume																**Million litres**	
Bioethanol	652	774	*+18.8*	167	149	161	153	148	154	162	188	178	197r	196	203	190	*+6.7*
Biodiesel	925	631	*-31.8*	254	256	286	249	168	200	291	266	240	171r	108	112	128	*-46.7*
Total biofuels for transport	1,577	1,405	*-10.9*	421	405	447	402	316	354	453	454	418	368r	304	315	318	*-23.9*
Energy																**Thousand tonnes of oil equivalent**	
Bioethanol	367	436	*+18.8*	94	84	91	87	83	87	91	106	100	111	110	114	107	*+6.7*
Biodiesel	760	518	*-31.8*	209	211	235	204	138	164	239	219	197	141	89	92	105	*-46.7*
Total biofuels for transport	1,128	955	*-15.3*	303	294	326	291	221	251	331	325	298	252	199	206	212	*-28.7*
Shares of road fuels																	
Bioethanol as per cent of Motor Spirit	3.3%	4.1%		3.4%	2.8%	3.1%	3.0%	3.1%	3.1%	3.3%	3.8%	3.9%	4.1%	4.2%	4.3%	4.4%	
Biodiesel as per cent of DERV	3.6%	2.4%		4.2%	4.0%	4.3%	3.7%	2.7%	3.1%	4.4%	4.0%	3.8%	2.6%	1.6%	1.6%	2.1%	
Total biofuels as per cent of road fuels	3.5%	3.1%	*per cent change*	3.9%	3.4%	3.8%	3.4%	2.9%	3.1%	3.9%	3.9%	3.9%	3.2%	2.7%	2.7%	3.0%	*per cent change*

Source: HM Revenue and Customs Hydrocarbon Oils Bulletin, available a
https://www.uktradeinfo.com/Statistics/Pages/TaxAndDutybulletins.aspx

Renewable energy in 2012

Introduction

This article updates the information on renewable energy published in the June 2012 edition of Energy Trends, and in the 2012 edition of the Digest of UK Energy Statistics. It also presents additional information to that provided in the "Section 6 Renewables" section of this edition of Energy Trends, including an early indication of the UK's progress against the Renewable Energy Directive, and discusses key policies that impact on the delivery of renewable energy.

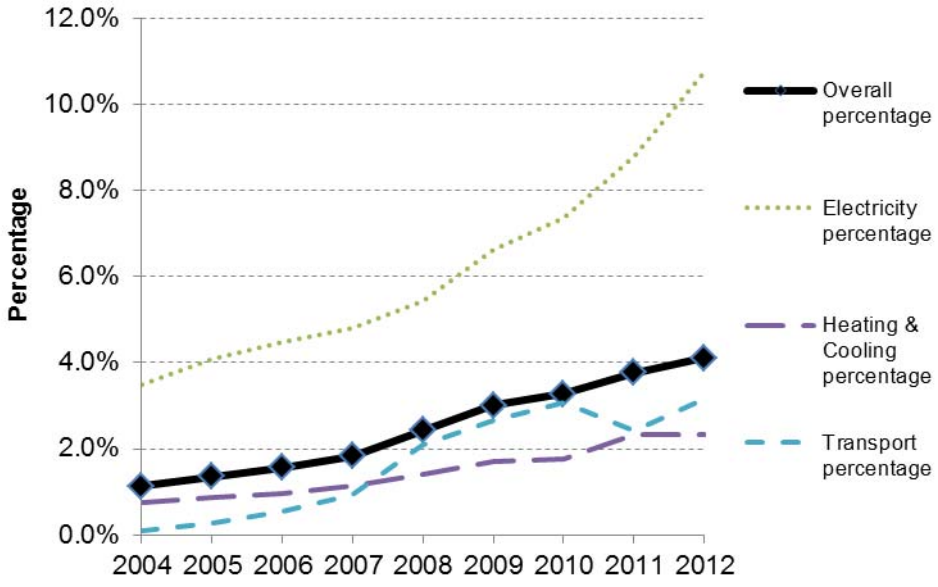
Key messages

In 2012 renewable energy provisionally accounted for 4.1 per cent of energy consumption, as measured using the 2009 Renewable Energy Directive methodology. This is an increase from the 2011 position of 3.8 per cent. There was a significant growth in the contribution of renewable electricity, the renewable heating contribution remained constant, but the renewable transport contribution fell. Whilst the 2012 figure is greater than the first interim target of 4.04 per cent as set out in the Directive, that target is defined as a 2011-2012 target. Calculating the average contribution across these two years shows that provisionally the UK achieved 3.94 per cent, thus falling short by 275 ktoe (or 3,200 GWh) of Directive compliant renewable energy.

The methodology for the derivation of interim targets was specified in the Directive. For the UK this resulted in a target of 4.04 per cent. DECC's normal practise in reporting deployment of renewables is to calculate rates to 1 decimal place, which recognises the uncertainty in estimates of both renewables and final energy consumption; methodology notes on the DECC statistics website give further details. As such whilst the estimate of 3.94 per cent is our best estimate, users should be aware that the uncertainty attached to this estimate would cover the 275 ktoe shortfall between this figure and the target.

The amount of electricity generated from renewables sources in 2012 was 41,258 GWh, a 19 per cent increase on 2011. Generation from solar photovoltaics was almost 4 times higher than in 2011, and plant biomass generation more than doubled. Wind generation also had large increases – offshore wind up 46 per cent, and onshore wind up 17 per cent, taking total wind generation to 19,584 GWh (47 per cent of the total), compared with 37 per cent for bioenergy, 13 per cent for hydro and 3 per cent for solar photovoltaics. The increases in wind generation were driven by growth in installed capacity rather than from increased operation from existing capacity (i.e. not from significant changes in load factors). Hydro generation fell by 7 per cent.

Chart 1: Progress against Renewable Energy Directive



Generation capacity increased by 3.3 GW (27 per cent) to 15.5 GW. The main sources of this increase were onshore wind (up 1.3 GW), offshore wind (up 1.2 GW) and solar photovoltaics (up 0.7 GW).

A number of weather factors had a major impact on renewable electricity generation during 2012; average rainfall levels in hydro catchment areas were 24 per cent lower than in 2011, but at a similar level to the average between 2002 and 2011. Average windspeeds were 0.8 knots lower than in 2011, and 0.6 knots lower than the 10 year average. Whilst these factors affect the raw 2012 generation outputs of renewables, the Renewable Energy Directive measure uses a normalisation approach to smooth the year on year impacts of differing wind and rain patterns.

There are various national and internationally agreed measures of the contribution renewable electricity makes to the generation mix, all of which grew to over 10 per cent for the first time in 2012.

Heat from renewable sources increased by 7 per cent during 2012 (to 1,409 ktoe).This includes heat supported by the Renewable Heat Incentive and Renewable Heat Premium Payment schemes.

Renewable biofuels for transport fell by 15 per cent (to 958 ktoe), accounting for 3.1 per cent by volume of road transport fuels in 2012. Bioethanol, as a proportion of motor spirit, increased by 0.8 percentage points to 4.1 per cent, whilst biodiesel as a proportion of DERV fell by 1.2 percentage points to 2.4 per cent.

Data collection and methodology

The UK collection of renewable energy statistics began in 1989, when all relevant renewable energy sources were identified and, where possible, information was collected on the amounts of energy derived from each source.

The Renewable Energy STATisticS (RESTATS) database now contains 24 years of data from 1989 to 2012 and this database has been used to provide the detailed figures on renewable sources of energy contained within this article and also within the forthcoming 2013 edition of the Digest of UK Energy Statistics, to be published on 25 July 2013.

The normalisation approach.

Generation from wind and hydro sources are very dependent on the weather (wind speeds and rainfall). In order to negate the effects of variable generation due to weather differentials from one year to the next, the 2009 Renewable Energy Directive measure specifies the normalisation of wind and hydro generation. Normalisation is carried out by calculating generation by applying an average load factor to current capacity. For wind, the load factor is calculated as the average of the past five years (including the present one), with current capacity taken as an average of the start and end of year capacity. For hydro, the load factor is the average of the past 15 years, applied to capacity at the end of the current year. The generation figures obtained from this procedure replace the actual generation figures for wind and hydro in the RED calculation. The same method is now also applied to the 2001 Renewables Directive measure.

EU Renewable Energy Directive

In March 2007, the European Council agreed to a common strategy for energy security and tackling climate change. An element of this was establishing a target of 20 per cent of the EU's energy to come from renewable sources by 2020. During 2008 a Directive was negotiated on this basis and resulted in the agreement of country “shares” of this target being included in the final 2009 Renewable Energy Directive. For the UK, 15 per cent of **final energy consumption** - calculated on a net calorific basis (i.e. excluding the energy required to evaporate the water content from the fuel), and with a cap on fuel used for air transport - should be accounted for by energy from renewable sources. Interim targets were set for each member state; the first interim

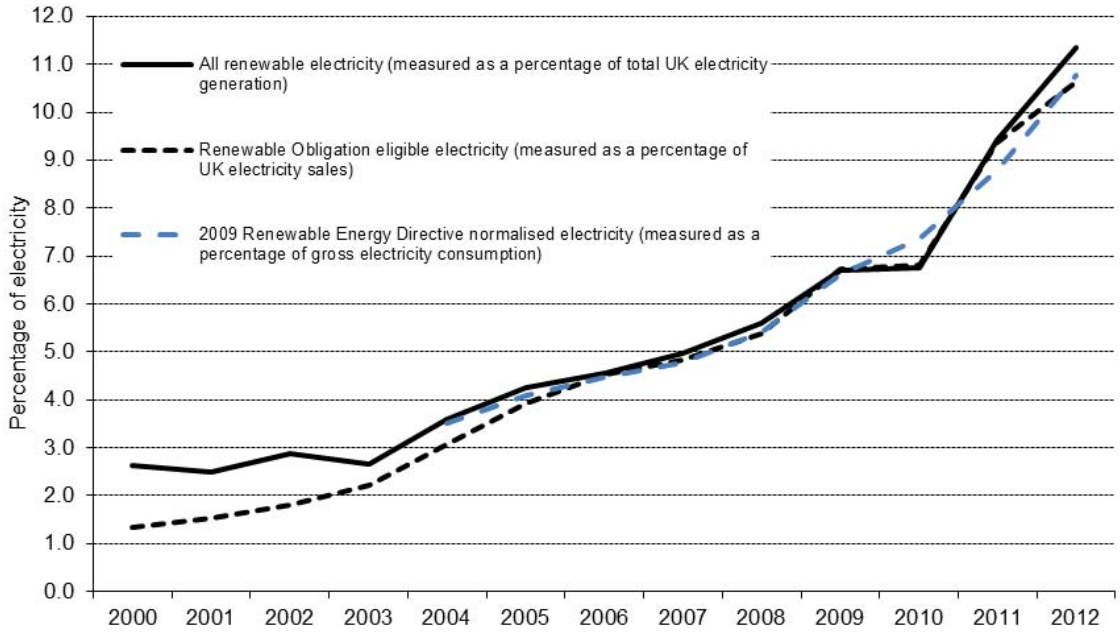
target for the UK was for an average of 4.04 per cent to be achieved across the two calendar years 2011 and 2012. This Directive super-ceded the 2001 Renewables Directive - which focused on electricity - and allocated the UK a 10 per cent target for renewable electricity for 2010. In reporting against these measures, normalised wind and rain is used. Some of the key policy measures that the UK have to increase renewable deployment are shown on pages 55 and 56 of this article.

Renewable electricity targets

Section 6 of the March 2013 edition of Energy Trends contained provisional estimates for three key measures of the share of electricity obtained from renewable sources. These data have now been revised following receipt of new data, and two additional measures have been added. All five measures are shown in Table 1 at the end of this article. On the "international definition basis" renewables provided 11.3 per cent of the electricity generated in the United Kingdom in 2012, a 1.9 percentage point increase on the 2011 proportion. Total electricity generation from renewables in 2012, as shown in Table 3 at the end of this article, amounted to 41,258 GWh, an increase of 6,613 GWh (19 per cent) on 2011. Chart 2 shows the growth in the proportion of electricity generation from renewable sources and also progress under the Renewables Obligation (RO), which is measured as a proportion of UK electricity sales; the RO measure grew by 1.2 percentage points to 10.6 per cent in 2012.

The 2001 EU Renewables Directive measures the renewable contribution of electricity as the proportion of renewable electricity generated (except from non-biodegradable waste) as a percentage of electricity consumption. The 2009 Renewable Energy Directive introduced a fourth measure, which involves normalising wind and hydro generation over 5 and 15 year periods respectively, and measuring against gross electricity consumption. An additional fifth measure has also been proposed, applying the above normalising approach to the 2001 Renewables Directive measure. In 2011, higher average wind speeds and rain fall resulted in the normalised measures showing lower increases than non-normalised measures; however this pattern was reversed in 2012. The normalised Renewables Directive measure increased by 2.0 percentage points to 10.7 per cent, with the non-normalised measure increasing by 1.7 percentage points to 11.0 per cent, thus exceeding the 10 per cent target set in the Directive for 2010. The normalised electricity component of the Renewable Energy Directive increased by 2.0 percentage points, to 10.8 per cent. Future updates of this article will not report the 2001 Renewables Directive measure.

Chart 2: Growth in electricity generation from renewable sources since 2000



The normalised electricity component of the 2009 Renewable Energy Directive measure is also shown in Chart 2; by comparing this line with the non-normalised lines, it illustrates the impact that

low wind speeds and little rain had on renewable electricity generation in 2010, and how this was reversed in 2011, returning to more normal levels in 2012.

Renewable electricity generation

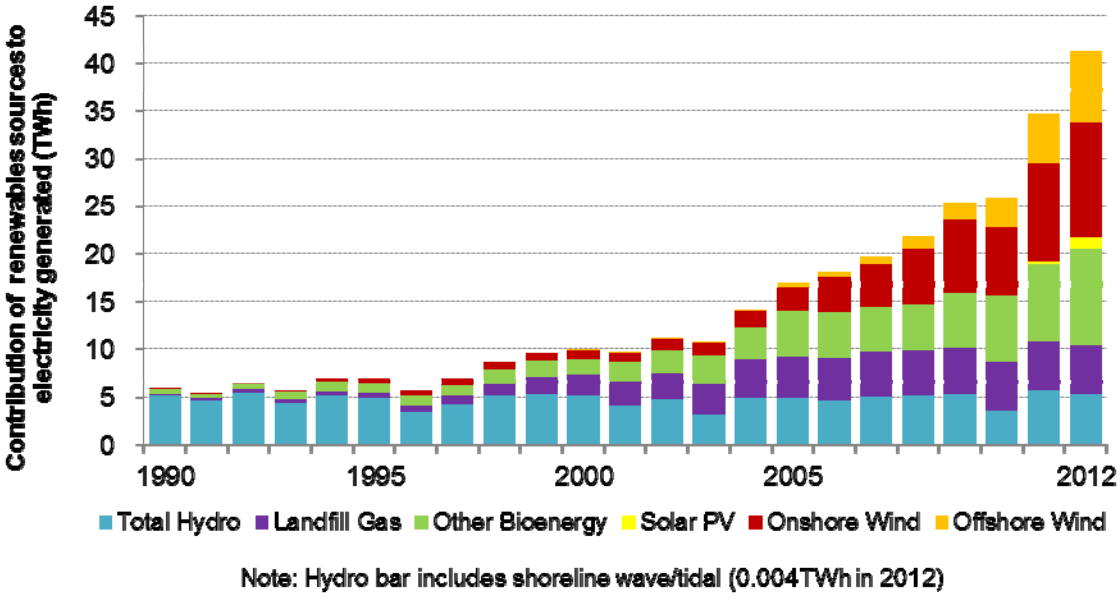
The largest absolute increase in generation came from plant biomass, rising by 2,348 GWh to 4,098 GWh, more than double the previous years contribution; this is due to the conversion of Tilbury B's, previously coal-fired, power station to dedicated biomass in December 2011. Greater capacity also increased generation from offshore wind - raising output by 2,337 GWh to 7,463 GWh (a 46 per cent increase on the previous year). Similar factors helped onshore wind generation contribute the third largest absolute increase, of 1,737 GWh to 12,121 GWh (17 per cent higher). Greater uptake of solar photovoltaics, supported by the Feed-in tariff scheme, led to generation in 2012 up four times on 2011 (by 944 GWh to 1,188 GWh). Generation from biodegradable waste increased by 540 GWh to 2,279 GWh (31 per cent higher).

Other sources showing increases during the year included anaerobic digestion (an increase of 245 GWh, 88 per cent higher), landfill gas (62 GWh, 1 per cent higher) and animal biomass (28 GWh, 5 per cent higher).

There were reductions in generation from co-firing renewables with fossil fuels (1,181 GWh lower mainly due to Drax burning much less biomass with coal), hydro (406 GWh lower due to reduced rain fall) and sewage sludge digestion (44 GWh lower).

Onshore wind continued to be the leading individual technology for the generation of electricity from renewable sources during 2012 with 29 per cent of renewables generation coming from this source; a further 18 per cent came from offshore wind, and 13 per cent came from hydro. However the combined generation from the variety of different bioenergy sources accounted for 37 per cent of renewable generation, with landfill gas accounting for one-third of the bioenergy generation. Despite the large annual increase, just 3 per cent of renewable generation came from solar photovoltaics. Total generation from bioenergy sources was 15 per cent higher than in 2011, with wind being 26 per cent higher, whilst hydro's contribution was 7 per cent lower. Chart 3 shows the growth in generation, by main renewable source, since 1990.

Chart 3: Electricity generation by main renewable source since 1990



Note: Hydro bar includes shoreline wave/tidal (0.004TWh in 2012)

Renewable electricity capacity

Total renewable electricity capacity at the end of 2012, as shown in Table 3, amounted to 15.5 GW, compared with 12.3 GW in 2011; this excludes the capacity within conventional generation station that was used for co-firing (a further 0.2 GW). The largest contributor towards this 27 per cent capacity increase was 1,256 MW from onshore wind, with a further 1,157 MW from offshore wind; capacity from solar photovoltaics increased by 713 MW. In capacity terms, onshore wind accounted for 38 per cent of capacity, followed by offshore wind (19 per cent), solar photovoltaics and hydro (11 per cent each), plant biomass (8 per cent) and landfill gas (7 per cent).

Load factors

Load factors express the average hourly quantity of electricity generated as a percentage of the average capacity at the beginning and end of the year. Load factors for most technologies during 2010 to 2012 are presented in Table 4. As well as the traditionally calculated load factors, additional load factors are also calculated only for those schemes that have operated throughout the calendar year with an unchanged configuration. These differences are particularly prominent for plant biomass, where the large capacity (750MW) and operational changes in 2011 at the Tilbury generation station, and the fire there during 2012, reduced traditionally calculated load factors. Wind speeds and rainfall levels have also had a major impact on load factors.

The load factors reported in Table 4 draw on data on ROCs produced by Ofgem, but at the time that this article was written the ROC data for 2012 were still provisional. In particular this can have an impact on the schemes included in the unchanged configuration definition as new data could include or remove particular schemes. This should be kept in mind if users subsequently reanalyse these results.

Heat production

Around 15 per cent of renewable sources were used to generate heat during 2012. The four categories of renewable heat production in the United Kingdom are the direct combustion of various forms of bioenergy (85 per cent of the total), active solar heating, geothermal aquifers, and heat pumps. Together they produced energy equivalent to 1,409 thousand tonnes of oil equivalent (or 16.4 TWh) in 2012, a 7 per cent increase during the year. Using the Renewable Energy Directive methodology, renewable heat sources accounted for 2.3 per cent of total heat demand in 2012, a similar proportion to 2011.

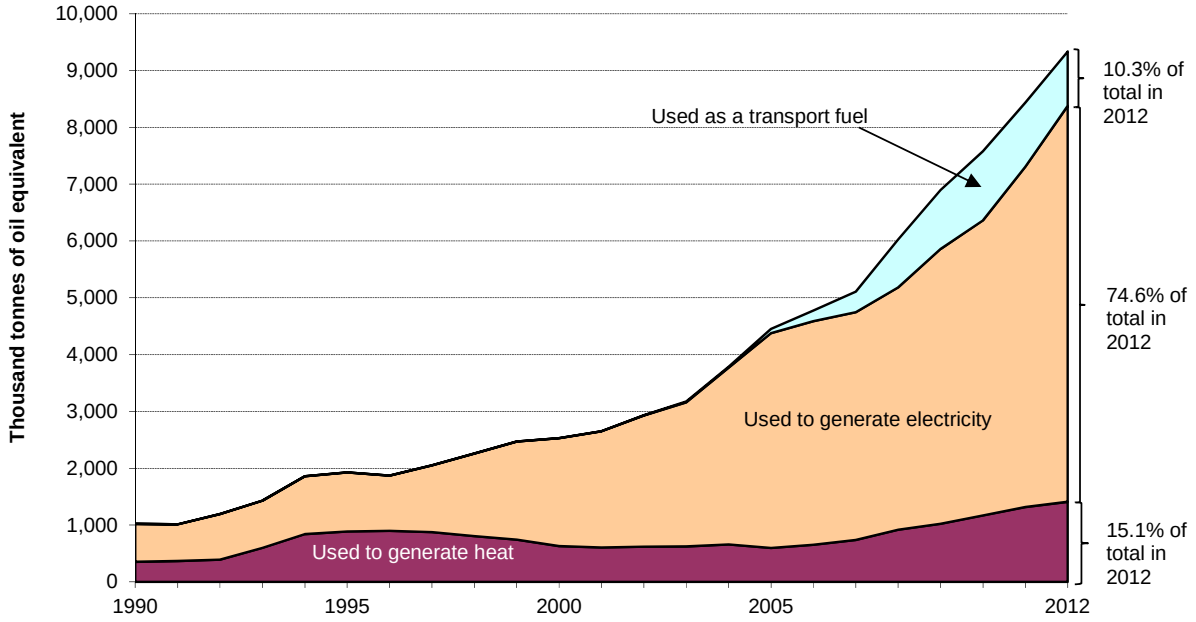
Renewables used to generate heat have shown some growth in recent years, following a decline up to 2005 as a result of tighter emission controls which discouraged on-site burning of biomass, especially wood waste. Policies such as the Renewable Heat Incentive (RHI) and Renewable Heat Premium Payment (RHPP) schemes are designed to support renewable heat production. Around 1 per cent of renewable heat was supported by the RHI during 2012 (13 thousand tonnes of oil equivalent, or 152 GWh). Domestic use of wood is the main contributor to renewables used for heat – comprising around 32 per cent of the renewable heat total. Non-domestic use of wood and wood waste, and plant biomass formed the next largest components, at around 22 per cent and 20 per cent respectively. Heat pumps (mainly in the domestic sector) contributed around 4 per cent of the renewable heat total, calculated using the methodology published in March 2013 for measuring the output of heat pumps as part of the Renewable Energy Directive.

Liquid biofuels for transport

Liquid biofuels for transport comprised around 10 per cent of total renewable sources. Two road transport fuels, biodiesel and bioethanol, are sold blended with diesel and petrol. Figures from HM Revenue and Customs based on road fuel taxation statistics show that 634 million litres of biodiesel and 775 million litres of bioethanol were consumed in 2012; biodiesel consumption was 31 per cent lower than in 2011, whilst bioethanol consumption was 19 per cent higher. Biodiesel has a higher energy content than bioethanol meaning that the combined total energy content of these fuels equates to 958 thousand tonnes of oil equivalent, 15 per cent lower than in 2011. During 2012 biodiesel accounted for 2.4 per cent of diesel, and bioethanol 4.1 per cent of motor spirit; the combined contribution of biodiesel and bioethanol was 3.1 per cent by volume, 0.4 percentage points lower than in 2011. The fall in the consumption of biodiesel is likely to result

from policy changes introduced in April 2012. Credits under the Renewable Transport Fuel Obligation were doubled for some types of biodiesel (such as waste cooking oil), meaning that less needs to be blended with diesel; and the reduced duty rate on cooking oil used for biodiesel ended, increasing duty payable by 20 pence per litre. The Renewable Energy Directive introduced various sustainability criteria for transport biofuels; certain biofuels derived from waste products have extra weighting when monitoring progress against the transport component, but not the overall target, of the Directive. During 2012 around 83 per cent of transport biofuel consumption was from sustainable sources.

Chart 4: Trends in the use of renewable energy for heat, electricity, and transport



All renewable fuels

When renewables used for transport and heat are combined with the use of renewable sources for electricity generation, renewable sources accounted for 4.4 per cent of the United Kingdom's total primary energy requirements in 2012, up from 4.0 per cent in 2011. Use of non-biodegradable wastes accounted for an additional 0.3 per cent of primary energy. The trends in the use of renewable energy for transport, heat and electricity are shown in Chart 4; data are shown in Table 5 disaggregating the totals by various technologies.

On the basis proposed by Eurostat for measuring progress towards the 2009 Renewable Energy Directive, provisionally in the UK during 2012, 4.1 per cent of final energy consumption was from renewable sources. This is an increase from the 2011 figure of 3.8 per cent, and 3.3 per cent in 2010. The Eurostat methodology, as mentioned earlier in this article, measures energy based on a net calorific value basis, as opposed to a gross basis that is generally used in presenting data in Energy Trends and the Digest of UK Energy Statistics. The methodology also includes a cap on energy required for aviation use and normalisation for wind and hydro electricity. In addition to the headline figure, the Directive monitors three constituent parts separately, and these are shown in Table 2. It should be noted that the overall figure is not a simple calculation based around the three constituent parts. The finalised 2012 figures for all member states will be published by Eurostat during 2014. The Renewable Energy Directive introduced interim targets for member states to achieve on their route to attaining the 2020 proportion. For the UK the target for 2011-2012 is for the average proportion of renewables to be 4.04 per cent in these two years; the provisional figures indicate that despite increases during the year, the UK has not met this target, achieving 3.94 per cent. A further 275 thousand tonnes of oil equivalent - or 3,200 GWh - of Directive compliant renewable energy during the two years was required to meet the target.

UK renewables policy

The United Kingdom has a number of policy measures to further increase renewables deployment. These include:

- Putting in place appropriate financial incentives to bring forward and support the take-up of renewable energy, including the "banded" Renewables Obligation (RO), Feed-in Tariffs (FiTs) for small scale (under 5 MW) electricity generation, the Renewable Heat Incentive (RHI) tariff scheme (for industry, commercial premises and the public sector), the Renewable Heat Premium Payment Scheme (for households), and the Renewable Transport Fuel Obligation (RTFO);
- Identifying and removing the most significant non-financial barriers to renewables deployment, including measures to improve existing grid connection arrangements; and
- Overcoming supply chain blockages and promoting business opportunities in the renewables sector in the UK.

The Renewables Obligation (RO)

The Renewables Obligation[1] is an obligation on electricity suppliers to source a specific and annually increasing proportion of electricity from eligible renewable sources or pay a penalty; this is intended to incentivise an increase in the level of renewable generating capacity and so contribute to our climate change targets.

The Office for Gas and Electricity Markets (Ofgem), which administers the RO, issues **Renewables Obligation Certificates** (ROCs) to qualifying renewables. These certificates may be sold by generators directly to licensed electricity suppliers or traders. ROCs can be traded separately from the electricity to which they relate. Suppliers present ROCs to Ofgem to demonstrate their compliance with the obligation.

When the Obligation was first introduced, 1 ROC was awarded for each MWh of renewable electricity generated. In 2009, 'banding' was introduced into the RO, meaning different technologies now receive different numbers of ROCs depending on their costs, relative market maturity, and potential for large scale deployment. A list of technologies eligible for the RO, details of the RO banding review, and the level of ROCs received, is available at:
www.gov.uk/calculating-renewable-obligation-certificates-rocs

Feed-in Tariffs (FiTs)

Feed-in tariffs are a financial support scheme for eligible low-carbon electricity technologies, aimed at small-scale installations with a capacity of less than 5 Megawatts (MW). FiTs support new anaerobic digestion (AD), solar photovoltaic, small hydro and wind, by requiring electricity suppliers to make payments (generation tariffs) to these generators based on the number of kilowatt hours (kWh) they generate. An additional guaranteed export tariff of 4.64p per kWh is paid for electricity generated that is not used on site and exported to the grid. The scheme also supports micro combined heat and power installations with an electrical capacity of 2kW or less, as a pilot programme.

A comprehensive review of the FiTs scheme was launched in February 2012 and completed in December 2012. It had two parts, the first considered support for solar PV and the second other technologies and administrative issues. In May 2012 DECC announced new tariffs for solar PV, which came into effect on 1 August 2012, and in July 2012 it announced changes to tariffs for other technologies which came into effect on 1 December 2012. Changes implemented as a result of the review only affect new entrants to the scheme. Policy information and statistical reports relating to FiTs can be found at:

[1] The Renewables Obligation covering England and Wales and the analogous Renewables (Scotland) Obligation came into effect in April 2002. Northern Ireland introduced a similar Renewables Obligation in April 2005.

www.gov.uk/government/policies/increasing-the-use-of-low-carbon-technologies/supporting-pages/feed-in-tariffs-scheme and www.gov.uk/government/organisations/department-of-energy-climate-change/series/feed-in-tariff-statistics

Renewable Heat Incentive (RHI) and Renewable Heat Premium Payment (RHPP)
The Renewable Heat Incentive opened for applications in November 2011. The scheme provides tariffs for commercial, industrial and community renewable heating installations. For renewable heating in households the Renewable Heat Premium Payment was launched in August 2011; phase 1 ran until March 2012, with phase 2 and the phase 2 extension running during the 2012/13 and 2013/14 financial years respectively. Details of the technologies supported by these two schemes, and statistical reports relating to the RHI and RHPP can be found at:
www.gov.uk/government/policies/increasing-the-use-of-low-carbon-technologies/supporting-pages/renewable-heat-incentive-rhi,
www.gov.uk/renewable-heat-premium-payment-scheme, and
www.gov.uk/government/organisations/department-of-energy-climate-change/series/renewable-heat-incentive-renewable-heat-premium-payment-statistics respectively.

Renewable Transport Fuel Obligation (RTFO)
The Renewable Transport Fuel Obligation introduced in April 2008, placed a legal requirement on transport fuel suppliers (who supply more than 450,000 litres of fossil fuel per annum to the UK market) to ensure that 4.75 per cent (by volume) of their overall fuel sales are from a renewable source by 2013/14, with incremental levels starting from of 2.5 per cent (by volume) for 2008/09. The Department for Transport publish policy and statistical reports on the scheme at:
www.gov.uk/government/publications/rtfo-guidance and
www.gov.uk/government/organisations/department-for-transport/series/biofuels-statistics

Regional statistics

A further renewable statistics article will be produced in the September 2013 edition of Energy Trends, containing a regional breakdown of the renewable electricity generation and capacity statistics. The data will also be available on the RESTATS website at:
https://restats.decc.gov.uk/

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Table 1: Percentages of electricity derived from renewable sources

	2005	2006	2007	2008	2009	2010	2011	2012
Overall renewables percentage – International basis (Electricity generated from all renewables except non-biodegradable wastes, as a percentage of all **electricity generated** in the UK)	4.3	4.6	5.0	5.6	6.7	6.8	9.4	11.3
Percentage on a Renewables Obligation basis (Electricity generated from renewables eligible for the Renewables Obligation as a percentage of **electricity sales** by licensed suppliers in the UK)	3.9	4.5	4.8	5.4	6.7	6.8	9.4	10.6
Percentage on a 2009 Renewable Energy Directive basis (*Normalised* hydro & wind generation combined with actual generation from other sources except non-biodegradable wastes, as a percentage of UK **gross electricity consumption, calculated on a net calorific value basis**)	4.1	4.5	4.8	5.4	6.6	7.4	8.8	10.8
Percentage on a 2001 Renewables Directive basis (original methodology) (Electricity generated from renewable sources eligible under the 2001 EU Directive - i.e. all renewables except non-biodegradable wastes, as a percentage of UK **electricity demand**)	4.2	4.5	4.9	5.5	6.7	6.7	9.3	11.0
Percentage on a 2001 Renewables Directive basis (normalised methodology) (*Normalised* hydro & wind generation combined with actual generation from other sources except non-biodegradable wastes, as a percentage of UK **electricity demand**)	4.1	4.4	4.7	5.4	6.6	7.3	8.7	10.7

Table 2: Progress against the 2009 Renewable Energy Directive

	2005	2006	2007	2008	2009	2010	2011	2012
Percentage of **electricity** from renewable sources (normalised)	4.1	4.5	4.8	5.4	6.6	7.4	8.8	10.8
Percentage of **heating and cooling** from renewable sources	0.9	1.0	1.1	1.4	1.7	1.8	2.3	2.3
Percentage of **transport** energy from renewable sources	0.3	0.5	0.9	2.1	2.6	3.1	2.4	3.2
Overall renewable consumption as a percentage of capped gross final energy consumption using net calorific values (normalised) [not directly calculated from the three percentages	**1.4**	**1.6**	**1.8**	**2.4**	**3.0**	**3.3**	**3.8**	**4.1**

Table 3: Capacity of, and electricity generated from, renewable sources

	2010	2011	2012
Installed Capacity (MWe)			
Wind:			
Onshore	4,045.1	4,637.6	5,893.5
Offshore	1,341.2	1,838.0	2,995.2
Shoreline wave / tidal	2.6	3.1	6.7
Solar photovoltaics	94.1	993.0	1,705.5
Hydro:			
Small scale	187.0	204.4	215.3
Large scale *(1)*	1,452.9	1,470.9	1,470.9
Bioenergy:			
Landfill gas	1,008.2	1,050.3	1,036.0
Sewage sludge digestion	192.7	197.5	198.7
Energy from waste *(2)*	427.5	543.9	592.9
Animal Biomass (non-AD)*(3)*	110.5	110.5	110.5
Anaerobic digestion	38.1	66.1	110.0
Plant Biomass *(4)*	315.1	1,148.8	1,202.7
Total bioenergy and wastes	2,092.2	3,117.1	3,250.8
Total	**9,215.0**	**12,264.2**	**15,537.9**
Co-firing (5)	266.2	338.2	203.5
Generation (GWh)			
Wind:			
Onshore *(6)*	7,140	10,384	12,121
Offshore	3,044	5,126	7,463
Shoreline wave / tidal *(7)*	2	1	4
Solar photovoltaics	40	244	1,188
Hydro:			
Small scale *(6)*	483	701	653
Large scale *(1)*	3,092	4,989	4,631
Bioenergy:			
Landfill gas	5,037	5,092	5,154
Sewage sludge digestion	697	764	720
Energy from waste *(8)*	1,597	1,739	2,279
Co-firing with fossil fuels	2,332	2,964	1,783
Animal Biomass *(3)*	627	615	643
Anaerobic digestion	151	278	523
Plant Biomass *(4)*	1,594	1,749	4,098
Total bioenergy	12,037	13,200	15,198
Total generation	**25,838**	**34,645**	**41,258**
Non-biodegradable energy from wastes *(9)*	919	1,000	1,311
Total generation from sources eligible for the Renewable Obligation *(10)*	21,838	28,903	32,763

(1) Excluding pumped storage stations. Capacities are as at the end of December.

(2) Includes capacity for municipal solid waste, waste tyres, hospital waste, and general industrial waste.

(3) Includes the use of poultry litter and meat & bone.

(4) Includes the use of straw combustion and short rotation coppice energy crops.

(5) This is the proportion of fossil fuelled capacity used for co-firing of renewables based on the proportion of generation accounted for by the renewable source.

(6) Actual generation figures are given where available, but otherwise are estimated using a typical load factor or the design load factor, where known.

(7) Includes electricity from the EMEC test facility.

(8) Biodegradable part only.

(9) Non-biodegradable part of municipal solid waste plus waste tyres, hospital waste and general industrial waste.

(10) See page 55 for definition and coverage.

Table 4: Load factors for renewable electricity generation

Per cent

	2010	2011	2012
Load factors - based on average beginning and end of year capacity *(1)*			
Wind	23.7	29.9	29.0
Onshore wind	21.7	27.3	26.2
Offshore wind	30.3	36.8	35.2
Shoreline wave / tidal	8.4	3.8	8.3
Solar photovoltaics	7.5	5.1	10.0
Hydro	24.9	39.2	35.8
Hydro (small scale)	30.2	40.9	35.4
Hydro (large scale)	24.2	39.0	35.8
Bioenergy (excludes cofiring and non-biodegradable wastes)	55.3	44.9	48.0
Landfill gas	58.2	56.5	56.2
Sewage sludge digestion	45.5	44.7	41.3
Energy from waste (3)	44.9	40.9	45.6
Animal Biomass (4)	64.8	63.5	66.2
Anaerobic Digestion	69.0	60.9	67.6
Plant Biomass (5)	60.7	27.3	39.7
All renewable technologies (excluding cofiring and non-biodegradable wastes)	31.2	33.7	32.3
Load factors - for schemes operating on an unchanged configuration basis *(2)*			
Wind	23.3	29.3	28.0
Onshore wind	21.6	27.2	25.6
Offshore wind	29.5	35.0	33.7
Hydro	26.4	41.7	35.3
Hydro (small scale)	29.4	43.2	36.0
Hydro (large scale)	26.1	41.5	35.3
Bioenergy (excludes cofiring and non-biodegradable wastes)	59.8	61.0	62.5
Landfill gas	57.7	59.5	58.6
Sewage sludge digestion	51.9	53.5	48.0
Energy from waste *(3)*	68.9	63.0	68.1
Animal Biomass *(4)*	59.6	68.9	66.2
Anaerobic Digestion	51.5	56.1	65.4
Plant Biomass *(5)*	65.8	60.9	67.4
All renewable technologies (excluding cofiring and non-biodegradable wastes)	31.9	37.3	35.9

(1) Calculated as the average hourly quantity of electricity generated as a percentage of the average capacity at the beginning and end of the year.

(2) Load factors calculated as above but restricted to those schemes that have operated throughout the calendar year with an unchanged configuration.

(3) Calculation is based on biodegradable energy from waste generation but all energy from waste capacity; this reduces the load factor.

(4) Includes the use of poultry litter and meat & bone.

(5) Includes the use of straw combustion and short rotation coppice energy crops.

Table 5: Renewable sources used to generate electricity and heat, and for transport fuels [(1) (2)]

Thousand tonnes of oil equivalent

	2010	2011	2012
Used to generate electricity *(3)*			
Wind:			
Onshore	614.0	892.9	1,042.2
Offshore	261.7	440.7	641.7
Shoreline wave / tidal (4)	0.2	0.1	0.3
Solar photovoltaics	3.4	21.0	102.1
Hydro:			
Small scale	41.6	60.3	56.2
Large scale *(5)*	265.9	429.0	398.2
Bioenergy:			
Landfill gas	1,652.0	1,670.1	1,690.3
Sewage sludge digestion	228.6	250.5	236.0
Biodegradable energy from waste	659.0	717.3	959.3
Co-firing with fossil fuels	765.0	764.6	400.5
Animal Biomass *(6)*	238.9	224.0	225.0
Anaerobic digestion	49.6	91.1	171.4
Plant Biomass *(7)*	412.3	526.9	1,045.3
Total bioenergy	4,005.4	4,244.6	4,727.9
Total	**5,192.0**	**6,088.5**	**6,968.7**
Non-biodegradable energy from waste *(8)*	385.1	418.6	557.7
Used to generate heat			
Active solar heating	97.5	122.4	153.1
Bioenergy:			
Landfill gas	13.6	13.6	13.6
Sewage sludge digestion	57.8	66.1	72.1
Wood combustion - domestic	379.6	425.4	456.3
Wood combustion - industrial	255.7	281.9	303.3
Animal Biomass *(9)*	40.3	35.8	31.5
Anaerobic digestion	4.8	9.8	15.1
Plant Biomass *(10)*	270.0	288.5	275.1
Biodegradable energy from waste *(6)*	25.9	33.0	32.2
Total bioenergy	1,047.7	1,154.0	1,199.1
Deep geothermal	0.8	0.8	0.8
Heat Pumps	23.6	39.1	56.1
Total	**1,169.7**	**1,316.3**	**1,409.2**
Non-biodegradable wastes *(8)*	135.0	147.7	138.6
Renewable sources used as transport fuels			
as Bioethanol	355.4	367.5	436.9
as Biodiesel	861.9	760.0	520.9
Total	**1,217.3**	**1,127.5**	**957.8**
Total use of renewable sources and wastes			
Solar heating and photovoltaics	101.0	143.4	255.3
Onshore wind	614.0	892.9	1,042.2
Offshore wind	261.7	440.7	641.7
Shoreline wave / tidal	0.2	0.1	0.3
Hydro	307.4	489.3	454.4
Bioenergy	5,053.0	5,398.6	5,927.0
Deep geothermal	0.8	0.8	0.8
Heat Pumps	23.6	39.1	56.1
Transport biofuels	1,217.3	1,127.5	957.8
Total	**7,579.0**	**8,532.4**	**9,335.6**
Non-biodegradable energy from waste *(8)*	520.1	566.4	696.3
All renewables and wastes	**8,099.2**	**9,098.7**	**10,032.0**

(1) Includes some waste of fossil fuel origin.
(2) See the Digest of UK Energy Statistics for technical notes and definitions of the categories used in this table.
(3) For wind, solar PV and hydro, the figures represent the energy content of the electricity supplied but for bioenergy the figures represent the energy content of the fuel used.
(4) Includes the EMEC test facility.
(5) Excluding pumped storage stations.
(6) Includes electricity from poultry litter combustion and meat & bone combustion.
(7) Includes electricity from straw and energy crops.
(8) Non-biodegradable part of municipal solid waste plus waste tyres, hospital waste, and general industrial waste.
(9) Includes heat from farm waste digestion, and meat and bone combustion.
(10) Includes heat from straw, energy crops, paper and packaging.

Physical gas flows across Europe and security and diversity of gas supply in 2011

Background

This article focusses on the upstream supply of gas to the EU. The map published within this article was prepared by DECC statisticians to illustrate physical gas flows at the European level using 2011 data published by the International Energy Agency (IEA)[1], and aims to improve gas data transparency and quality. The first part of this article highlights patterns in European gas production and consumption, and examines how European demand was met in 2011. The second part of this article covers a diversity of supply index developed by DECC statisticians using the same data published by the IEA. This builds on previously published work on oil diversity of supply published in the December 2011 issue of Energy Trends[2].

European Gas Flows

European Gas Production

Total EU-27 gas production in 2011 was 182 billion cubic metres (bcm) with the Netherlands and the UK accounting for 44 per cent and 26 per cent of this total respectively, down 9 per cent on 2010. In the rest of the EU-27, production generally decreased or remained constant, with only the Netherlands and Denmark producing more gas than they consumed.

European Gas Consumption

The greatest demand among EU-27 countries came from Germany, the United Kingdom and Italy. These countries together accounted for over 50 per cent of consumption. Germany remained the largest net importer in Europe in 2011 at 90 bcm, followed by Italy at 62 bcm and the UK at 28 bcm.

Natural gas consumption in the EU-27 decreased by over 10 per cent in 2011 compared to 2010, from 545 bcm to 489 bcm. In particular, countries in North-Western Europe such as Belgium, France, Germany, the Netherlands and the UK have seen a reduction in gas demand. This reflects warmer temperatures in northwest Europe in 2011 and a shift in electricity generation from natural gas to coal.

Sources of Gas

Just over 37 per cent of EU-27 consumption in 2011 was met by indigenous production, with production from Netherlands and UK respectively meeting 16 and 10 per cent of total EU demand.

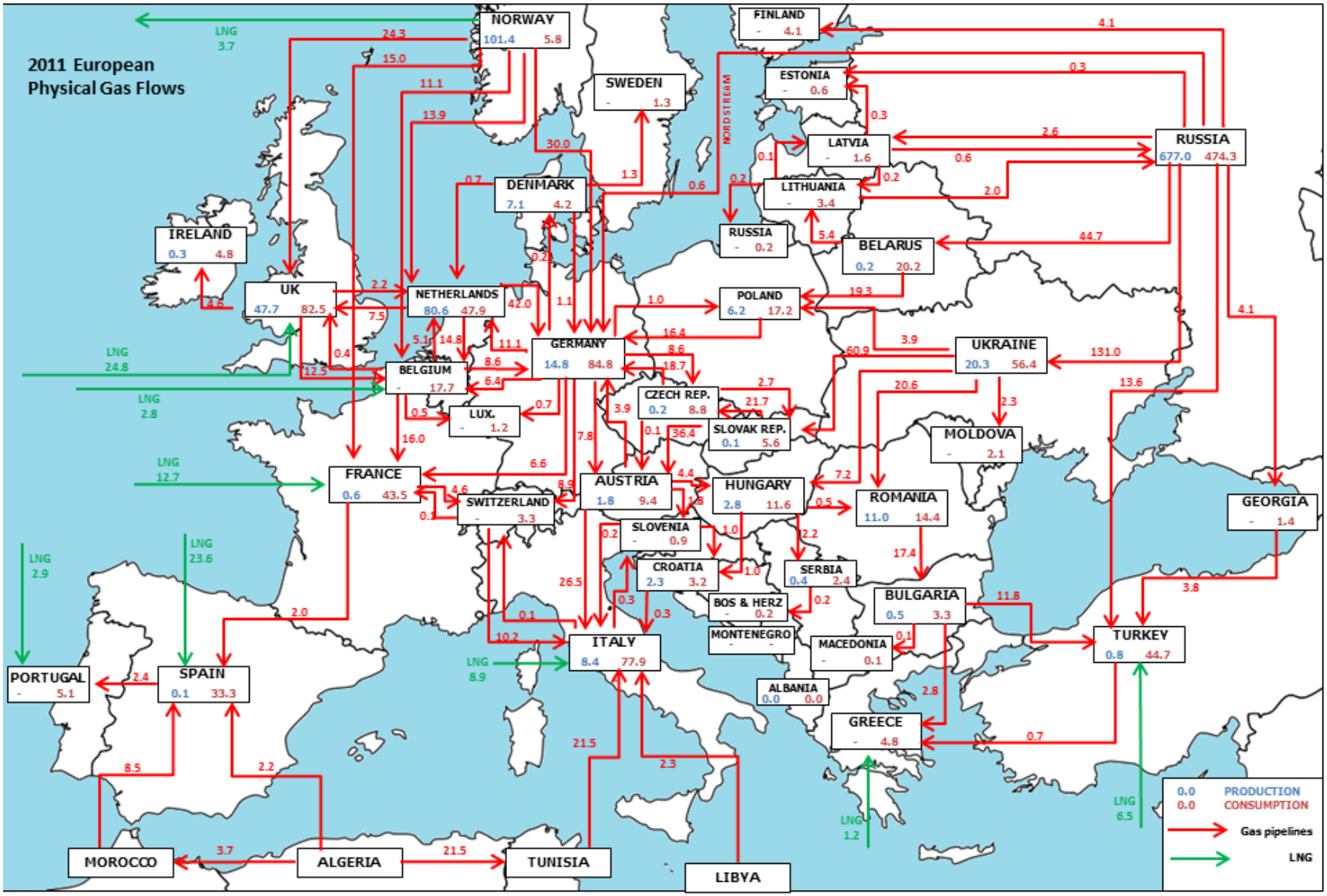
The Russian Federation remained the largest single supplier of gas to the EU-27, delivering around 119 bcm, or 24 per cent, of total EU-27 gas demand in 2011. The European pipeline infrastructure means that Central and Eastern European countries receive almost all of their natural gas supply from Russia. It should be noted that not all of this gas is Russian, since Russia acts as a transit country for gas from Kazakhstan and Turkmenistan to reach European markets.

Norwegian exports to the EU-27 decreased slightly between 2010 and 2011, at around 93 bcm or 19 per cent of total EU-27 gas consumption; 21 per cent of Norwegian exports were directed to the UK in 2011, similar to that in 2010.

North African pipelines via Spain and Italy provided 35 bcm, or 7.2 per cent, of EU-27 demand. Algerian gas, coming direct from Algeria and also via Morocco and Tunisia, accounted for over 93 per cent of North African gas delivered to the EU-27, with Libya supplying the remainder.

[1] Please note that the analysis shows some differences with IEA data in order to provide a coherent view of gas flows. The supply for some countries may appear unbalanced as stock changes are not shown. Data were calculated primarily from 2011 monthly pipeline gas flows, with 2011 annual imports, exports, production and consumption used for quality assurance amendments.

[2] www.gov.uk/government/uploads/system/uploads/attachment_data/file/65816/3928-physical-gas-flows-europe-2010.pdf


2011 European
Physical Gas Flows
NORWAY
101.4 5.8
FINLAND
- 4.1
SWEDEN
- 1.3
ESTONIA
- 0.6
LATVIA
- 1.6
LITHUANIA
- 3.4
RUSSIA
677.0 474.3
DENMARK
7.1 4.2
IRELAND
0.3 4.8
UK
47.7 82.5
NETHERLANDS
80.6 47.9
GERMANY
14.8 84.8
POLAND
6.2 17.2
BELARUS
0.2 20.2
UKRAINE
20.3 56.4
BELGIUM
- 17.7
LUX.
- 1.2
CZECH REP.
0.2 8.8
SLOVAK REP.
0.1 5.6
MOLDOVA
- 2.1
FRANCE
0.6 43.5
SWITZERLAND
- 3.3
AUSTRIA
1.8 9.4
HUNGARY
2.8 11.6
ROMANIA
11.0 14.4
GEORGIA
- 1.4
SLOVENIA
- 0.9
CROATIA
2.3 3.2
SERBIA
0.4 2.4
BOS & HERZ
- 0.2
MONTENEGRO
- -
MACEDONIA
- 0.1
BULGARIA
0.5 3.3
TURKEY
0.8 44.7
ITALY
8.4 77.9
PORTUGAL
- 5.1
SPAIN
0.1 33.3
ALBANIA
0.0 0.0
GREECE
- 4.8
MOROCCO
ALGERIA
TUNISIA
LIBYA
NORDSTREAM
LNG
3.7
LNG
24.8
LNG
2.8
LNG
12.7
LNG
2.9
LNG
23.6
LNG
8.9
LNG
1.2
LNG
6.5
0.0 PRODUCTION
0.0 CONSUMPTION
Gas pipelines
LNG

EU-27 imports of LNG remained high in 2011 at 83.3 bcm (see below for more details), as energy companies sought to take advantage of price differentials across the world. LNG met 17 per cent of EU-27 demand and, in particular, 70 per cent of Spanish gas consumption. The largest suppliers of LNG to the EU-27 were Qatar, Algeria and Nigeria.

UK imports of LNG in 2011

UK imports of LNG increased by over a third to 24.8 bcm in 2011. The data suggest the UK was the largest importer of LNG in 2011. LNG imports from Qatar increased by 45%, whilst imports from elsewhere decreased; 85% of UK imports of LNG came from Qatar in 2011, up from 78% in 2010.

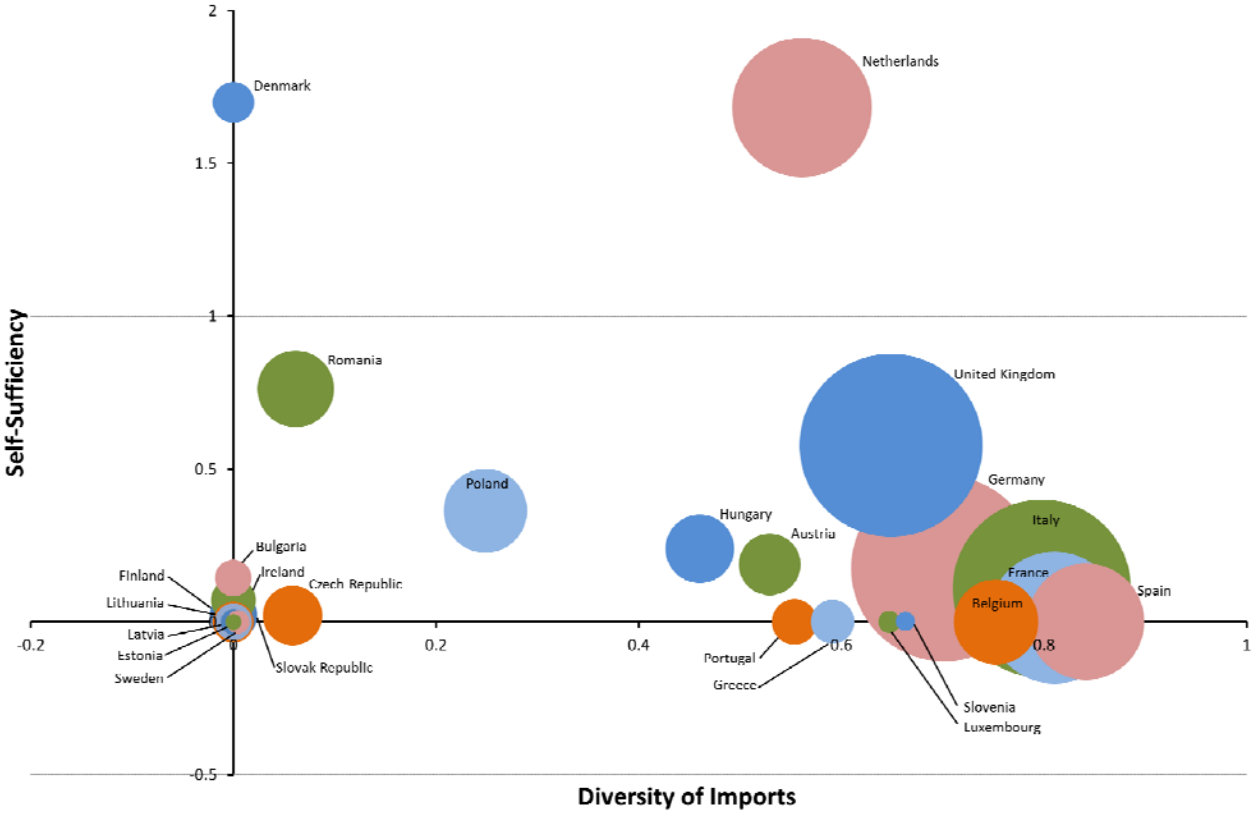
Further data

For readers wanting a greater level of detail, the IEA have made available an interactive gas map, based on entry and exit points throughout Europe. This map is available free of charge at: www.iea.org/gtf/index.asp

Self-sufficiency and diversity of gas supply in 2011

Indigenous production and/or diversification of imports by country of origin are key elements of the security of supply for each EU member state. Indigenous production is a function of recoverable natural resources, available technologies and/or the cost of extraction. Among the EU-27, Denmark and the Netherlands are the only two self-sufficient countries, producing enough gas to meet their own demand and exporting the surplus. In the rest of the EU, only Romania (76 per cent) and the UK (58 per cent) produced half or more of their own consumption. Of the EU-27 countries, 22 member states meet less than 25 per cent of their own gas consumption via indigenous production.

Chart 1: Self-sufficiency and diversity of supply, EU-27* countries in 2011



Source: DECC analysis of IEA data. *No data available for Cyprus and Malta

Chart 1 demonstrates the relationship between demand, indigenous production and the diversity of gross imports for the EU-27 countries.

The profiles show:

- Self-sufficiency: the proportion of a country's demand that could be met through indigenous production is shown on the vertical axis.
- A diversity score: the diversity of a country's gross imports is shown on the horizontal axis, using an index ranging between 0 and 1. Higher values equate to more diverse imports. It is derived from the Herfindahl index using share of imports by countries of origin.
- Consumption is represented by a circle, the area of which indicates the relative level of consumption.

The chart shows that the Netherlands, on the top right corner, has a strong security of supply position, being self-sufficient as well as importing from a range of other countries, leading to a good diversity score for imports. Denmark is also self-sufficient but imports small volumes of gas from Germany only, leading to a score of 0 on the diversity index.

Countries in the bottom right corner of Chart 1 have little or no indigenous production but a diverse source of imports. The majority of these countries are in Western Europe, many of which import gas both via pipelines and as LNG (see Table 1).

Countries in the bottom left corner of Chart 1 have little or no indigenous production and only one source of imports. The majority of these countries are in Scandinavia and Eastern Europe, who import from Norway (Scandinavia) and Russia (Eastern Europe) only. However, the impact of a supply disruption would vary widely according to demand. Sweden's small gas demand accounted for only 2.3 per cent of its primary energy mix (Table 1) and as a result a cut in supply would have less impact than in a country such as Lithuania, which met 36 per cent of its primary energy demand from gas.

In terms of the UK's import diversity, chart 1 illustrates that the UK has a slightly lower diversity index than other countries such as Italy or France which also import LNG; this is because over 80 per cent of UK gas imports came from just two countries, Norway and Qatar.

Gas security and diversity index in 2011

Chart 2 shows the security of supply index for gas in each of the EU-27 countries, ranked according to their score.

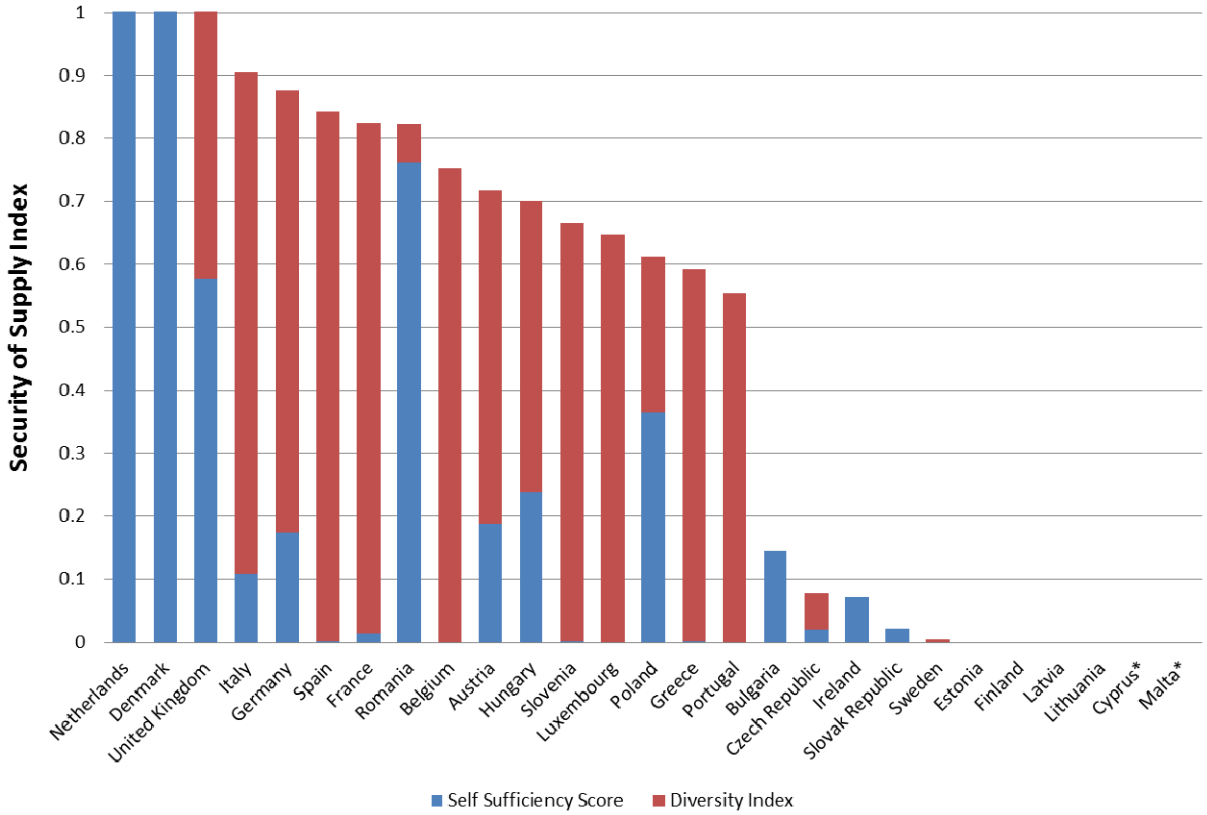
The overall index is derived from the self-sufficiency score of Chart 1 and the diversity score of each country's imports. Self-sufficient countries are shown on the left hand side with a score of one. Countries with no indigenous production and low diversity scores are on the right hand side.

Chart 2 shows that UK had the third highest score in EU-27 after the Netherlands and Denmark, both of whom were self-sufficient. Germany and Italy both show high scores of approximately 0.9, having both a diverse supply of imports and some indigenous natural gas production. Romania had the third highest self-sufficiency score, but scored lower than many Western European countries due to a low diversity index, importing almost all its gas from Russia.

Countries scoring zero on the index include Finland and the Baltic countries. In all cases, these countries have no indigenous production and are entirely dependent on imports from

Russia. The Republic of Ireland also had a low security of supply index, having only small production capabilities and importing from the United Kingdom only.

Chart 2: Gas security and diversity index, EU-27* countries in 2011



Source: DECC analysis of IEA data. *No data available for Cyprus and Malta

It should be noted that the diversity index and the security of supply index make no distinction as to the relative reliability of supplies between LNG and pipelines, or between supplies entering at multiple points rather than one or only a few. Sources of LNG imports can, for example, change very rapidly, in contrast to pipeline supplies.

Stocks are also a key factor affecting security of supply. Stocks do not feed into DECC's current self-sufficiency and diversity index as this article focusses on the upstream supply of gas to the EU, rather than downstream intra-country security of supply. Further, IEA data are not currently available on maximum daily consumption by EU member states, and as such we cannot calculate whether daily peak withdrawal rates at storage sites are able to meet consumption.

Although maximum storage capacities are available for most of the EU-27 countries, we do not have data on actual volumes held and how storage volumes vary on an annual basis. As such, security of supply calculations based on storage volumes are not currently available.

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Table 1: Key data for gas use in the EU-27* countries, 2011

EU MS	billion cubic metres					Self Suffi-ciency Score	Diversity Index	Gas as Proportion of Primary Energy Mix
	Imports	(of which LNG)	Exports	Produc-tion	Consum-ption			
Austria	13.4	-	3.6	1.8	9.4	0.19	0.53	0.24
Belgium	21.9	2.8	4.1	0.0	17.7	0.00	0.75	0.26
Bulgaria	2.8	-	-	0.5	3.3	0.14	0.00	0.13
Cyprus*	-	-	-	0.0	0	-	-	-
Czech Republic	9.3	-	0.2	0.2	8.8	0.02	0.06	0.17
Denmark	0.4	-	3.1	7.1	4.2	1.70	0.00	0.21
Estonia	0.6	-	-	0.0	0.6	0.00	0.00	0.09
Finland	4.1	-	-	0.0	4.1	0.00	0.00	0.10
France	48.3	12.7	3.9	0.6	43	0.01	0.81	0.14
Germany	89.6	-	17.6	14.8	84.8	0.17	0.70	0.21
Greece	4.8	1.2	-	0.0	4.8	0.00	0.59	0.14
Hungary	8.0	-	0.6	2.8	11.6	0.24	0.46	0.37
Ireland	4.5	-	-	0.3	4.8	0.07	0.00	0.30
Italy	70.4	8.9	0.1	8.4	77.9	0.11	0.80	0.39
Latvia	1.7	-	-	0.0	1.6	0.00	0.00	0.33
Lithuania	3.5	-	-	0.0	3.4	0.00	0.00	0.36
Luxembourg	1.2	-	-	0.0	1.2	0.00	0.65	0.25
Malta*	-	-	-	0.0	0	-	-	-
Netherlands	23	-	55.9	80.6	47.9	1.68	0.56	0.44
Poland	11.8	-	-	6.2	17.2	0.36	0.25	0.13
Portugal	5.0	2.9	0.0	0.0	5.1	0.00	0.55	0.19
Romania	3.1	-	-	11.0	14.4	0.76	0.06	0.31
Slovak Republic	5.9	-	0.0	0.1	5.6	0.02	0.00	0.27
Slovenia	0.9	-	-	0.0	0.9	0.00	0.66	0.10
Spain	35.5	23.6	1.2	0.1	33.3	0.00	0.84	0.23
Sweden	1.3	-	-	0.0	1.3	0.00	0.00	0.02
United Kingdom	52.8	24.8	16.0	47.7	82.5	0.58	0.65	0.37

Source: DECC analysis of IEA data. *No data available for Cyprus and Malta

Electricity bill variations by tariff type

Introduction

Annual domestic energy bills are published in DECC's Quarterly Energy Prices (QEP) Publication in December (provisional) and March (final).[1] They are published by fuel and payment type, and by distribution region, based on DECC's standard annual consumption assumptions.[2] In December 2012, DECC's Energy Trends publication featured an article examining the domestic market by tariff type, including the proportion of total customers that are on fixed, or social tariffs for example, and the corresponding bills for an average customer on each type.[3]

However, it is also useful to investigate the range of bills paid by customers in the domestic energy market, as well as the averages, to show the overlap of bills between different payment and tariff types, which may not be clear when comparing averages. This article examines the range of UK domestic energy bills for standard electricity customers only, as it has the greatest range of tariffs. Annual bills are calculated using the customer tariff prices collected in DECC's Domestic Fuel Inquiry survey for Quarter 4 of 2012. As with the bills published in QEP, consumption assumptions of 3,300kWh per annum have been used.

Due to the price rises implemented by suppliers towards the end of 2012[4], the data used for this article will produce higher bills on average than the 2012 bills published in QEP which were £500, £460 and £501 for Standard Credit, Direct Debit, and Pre-Payment respectively. The full impact of these price changes will be visible in the 2013 annual bills.

Distribution of Standard Electricity bills in the UK

Chart 1: Annual Standard Electricity bills based on December 2012 prices[5]

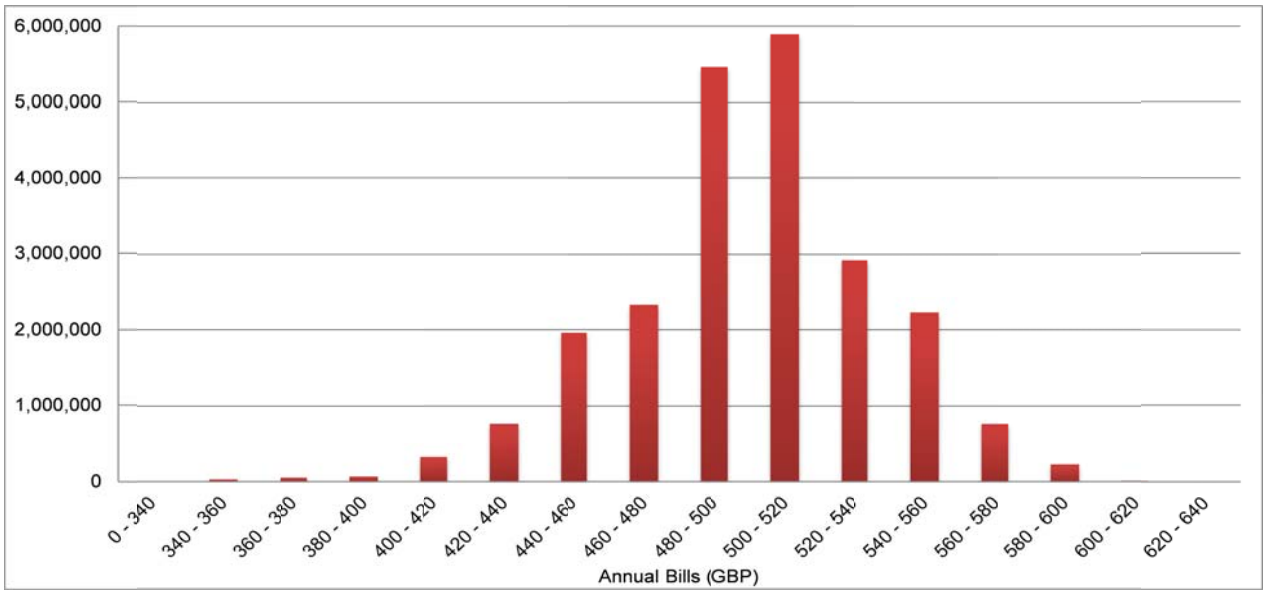


Chart 1 shows the number of customers with bills in each £20 category between £340 and £640, and suggests a relatively normal distribution around the modal categories. In December 2012, almost half of the 23 million UK standard electricity customers had average annual bills between £480 and £520. The number of customers paying more than £520 was 6 million, whilst 5.5 million paid less than £480.

[1] Published online at www.gov.uk/government/statistical-data-sets/annual-domestic-energy-price-statistics
[2] DECC's annual consumption assumptions are: 18,000kWh for gas, 3,300kWh for Standard Electricity and 6,600kWh for Economy 7 electricity.
[3] www.gov.uk/government/uploads/system/uploads/attachment_data/file/65916/7347-tariff-variation-dom-mkt-et-article.pdf
[4] In Quarter 4 2012, 5 of the Big 6 energy suppliers implemented price increases to standard electricity tariffs
[5] Assuming annual consumption of 3,300kWh

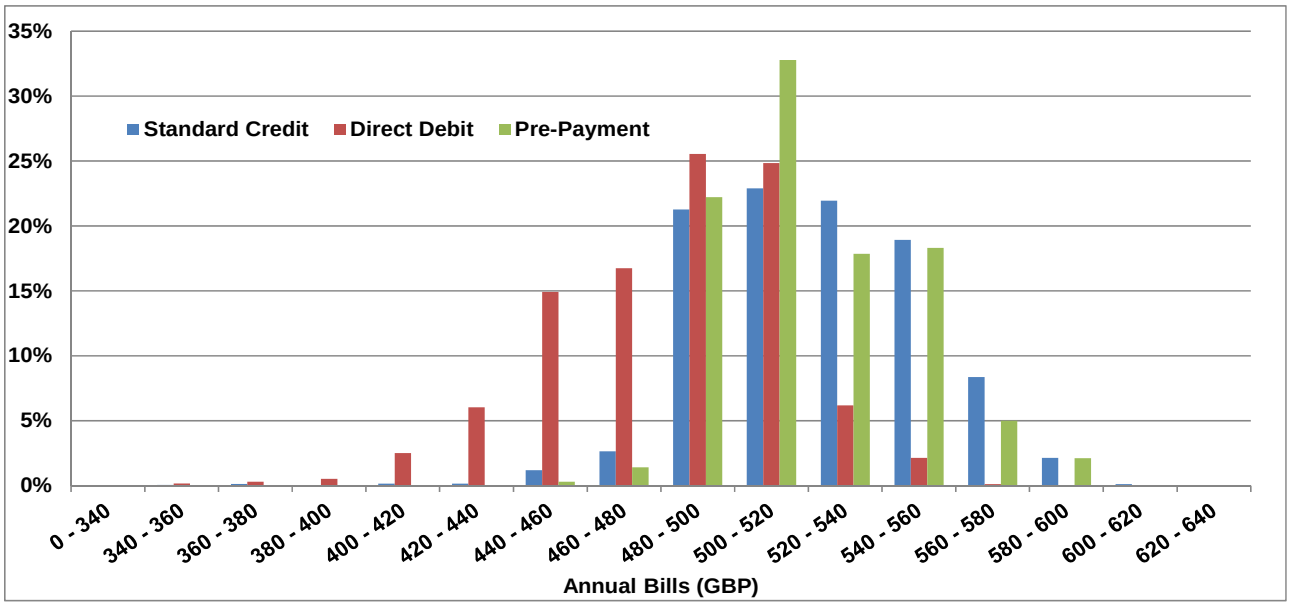
Special feature – Electricity bill variations by tariff type

Chart 1 portrays the distribution of bills for standard electricity tariffs across all tariff types, regions and payment methods. However, the distribution of bills varies significantly when bills are broken down by these three variables.

Distribution of Standard Electricity bills in the UK by payment method

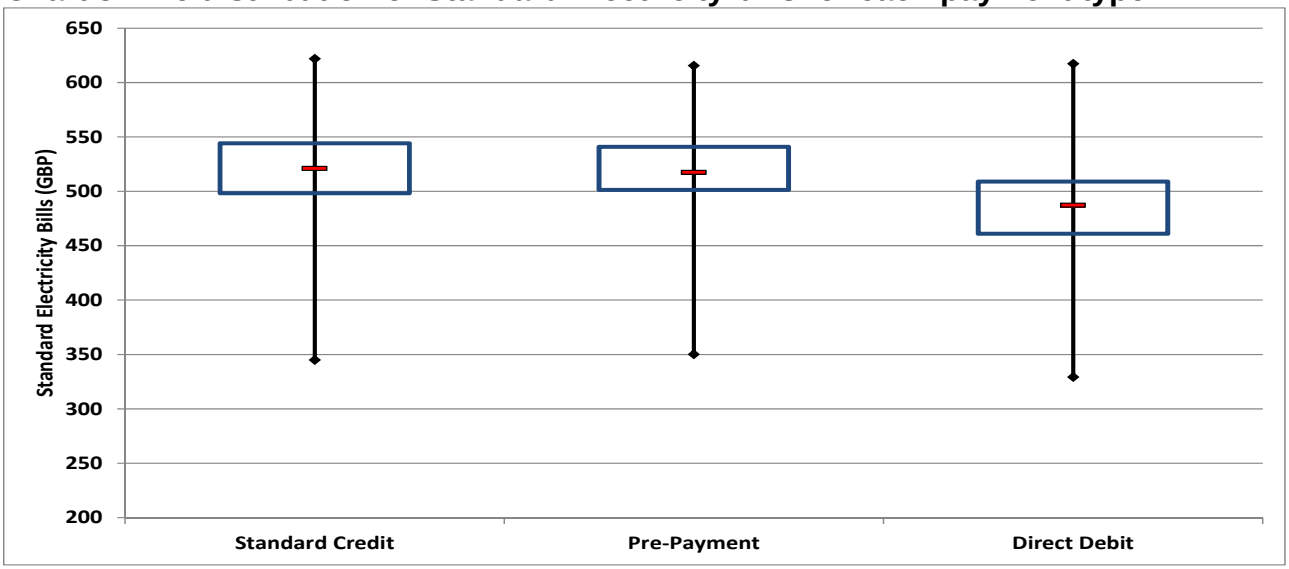
Chart 2 shows the proportion of customers that fall into each bill category on each payment type, across all regions. For Standard Credit and Pre-Payment, the modal category was £500-520, compared with £480-500 for Direct Debit. In general, the distribution of Direct Debit bills is, as expected, lower than that of Standard Credit and Pre-Payment. Two thirds of Direct Debit customers are paying standard electricity bills of less than £500, compared to only a quarter of Standard Credit and Pre-payment customers.

Chart 2: The proportion of Standard Electricity customers in each bill category



Since OFGEM's Energy Supply Probe was released in October 2007, and following campaigns from other bodies to remove Pre-Payment premiums, there has been a convergence of Standard Credit and Pre-Payment bills.[6] Chart 2 reflects this; generally showing a similar proportion of standard credit and pre-payment customers in each bill category.

Chart 3: The distribution of Standard Electricity bills for each payment type



[6] www.ofgem.gov.uk/Markets/RetMkts/ensuppro/Documents1/Update%20on%20Probe%20Monitoring_FINAL.pdf

Chart 3 is a box and whisker plot for the three payment types. The bottom and top of the box show the first and third quartiles, with the band inside the box showing the median value for the payment method. The extremes of the vertical lines shows the maximum and minimum bills by payment types based on our standard consumption estimates.

The chart shows that the distribution of Standard Credit and Pre-Payment tariffs are very similar. The median Standard Credit bill (£521) is very similar to that of Pre-Payment (£517) although the range and inter-quartile range are greater for Standard Credit, as there are far fewer Pre-Payment tariffs available.

The distribution of Direct Debit bills is somewhat different. As expected, the median Direct Debit bill is lower, by around £30. The upper quartile for Direct Debit is similar to the lower quartile for Standard Credit and Pre-Payment. The inter quartile range is largest for Direct Debit, and the overall range is larger too. Direct Debit is the most common payment method for Standard Electricity customers[7] and also has the largest range of tariffs and corresponding bills.

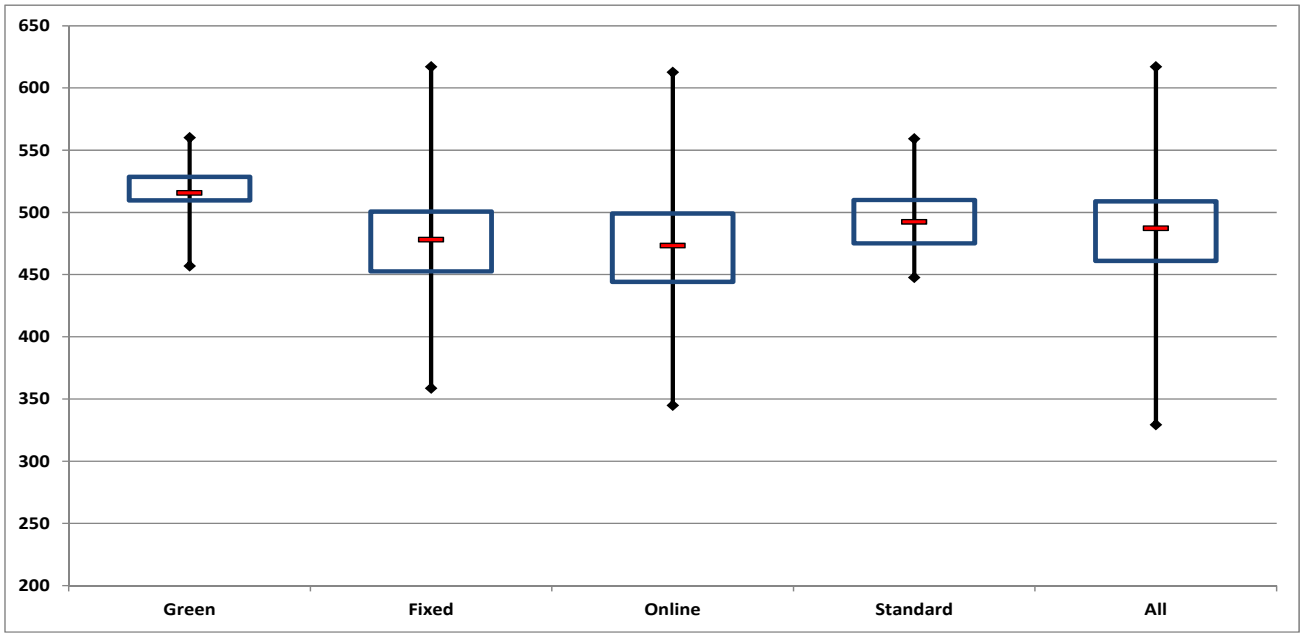
The distribution of Direct Debit Standard Electricity bills in the UK by tariff type

Around 86% of Standard electricity customers paying by Standard Credit are on the company's 'standard' tariff.[8] For Pre-Payment, this figure is even higher at 97%. For Direct Debit customers, 59% are on a 'standard' tariff, with 18% on fixed tariffs, and 18% on online tariffs. As such, analysis of the distribution of bills by tariff type is shown for Direct Debit tariffs only.

Chart 4 demonstrates the distribution of Direct Debit bills for customers on Green[9], Fixed[10], Online, and Standard tariffs, alongside the overall distribution for that payment method. It is worth noting that these four tariff categories are not mutually exclusive (with the exception of 'Standard'), and there may be some overlap of tariffs. Social tariffs are not shown in Chart 4, given the transition towards the Warm Home Discount scheme, which was introduced in April 2011. This involves suppliers working with Government to identify households that qualify, and distribute the appropriate discounts and subsidies[11].

[7] In December 2012, 54% of standard electricity customers were paying by Direct Debit, Quarterly Energy Prices (March 2013)
[8] Figures as of October 2012, published in Energy Trends, December 2012: www.gov.uk/government/uploads/system/uploads/attachment_data/file/65916/7347-tariff-variation-dom-mkt-et-article.pdf
[9] In this article, Green tariffs refer to those were certified by the Green Energy Scheme (GES) as of December 2012: www.greenenergyscheme.org/
[10] Includes all fixed and capped products that had not expired prior to the end of December 2012
[11] www.gov.uk/the-warm-home-discount-scheme/overview

Chart 4: The distribution of Direct Debit bills by tariff type



Standard Tariffs

Standard (core) tariffs are generally the most popular tariffs, but as there is only one per energy supplier, prices don't vary by much; chart 4 shows an inter quartile range of around £35. Generally, the prices of standard tariffs are similar between suppliers, as there are no special features or discounts that will distinguish them from other standard tariffs on the market. The median bill for a standard direct debit tariff is slightly higher than for all direct debit tariffs, as standard tariffs do not offer the discounts that online or fixed/capped tariffs do.

Green Tariffs

The median 'green' bill is higher than for standard tariffs, as customers pay a premium to ensure that their energy is either coming from renewable sources or supporting other environmental benefits. As with standard tariffs, most companies only offer one green tariff at a time, resulting in a very small range of bills. There is also a selection of tariffs offering environmental benefits such as low carbon generation guarantees, and contributions to environmental charities, which have been excluded as they were not Green Energy Scheme (GES) certified in December.

As a result, the interquartile range for customers on green tariffs is the smallest out of all of the tariff types: 50% of customers on green tariffs are paying bills between £510 and £528. The bottom quartile for green tariffs covers a much larger range than for standard tariffs, which is likely as a result of some available online discounts, unlike for standard tariffs.[12]

Fixed Tariffs

The full range of bills for customers on fixed tariffs (£258) is more than double that of standard tariffs (£112). Whilst the average fixed bill was cheaper than the average standard bill in 2012, the highest fixed bills are much more expensive than the highest standard bills. Fixed tariffs are heavily dependent on when the tariff was introduced relative to price expectations and fluctuations, and the duration of the fixed agreement.

Customers tend to pay a premium for fixing for longer periods of time, particularly when future price rises are expected. Cheaper tariffs generally guarantee prices for a shorter period of time than their more expensive competitors. Similarly, if customers signed up to a fixed tariff a long time ago –

[12] Standard tariffs defined in Energy Trends article December 2012: Tariff Variation in the Domestic Energy Market www.gov.uk/government/uploads/system/uploads/attachment_data/file/65916/7347-tariff-variation-dom-mkt-et-article.pdf

before the winter 2012/13 price rises – their annual bill will be comparatively much cheaper than recently fixed or variable rate tariffs.

Online Tariffs

As expected, most online tariffs are cheaper than standard tariffs, with 75 per cent of standard tariff customers paying bills that are higher than the median online tariff bill. However, bills for the most expensive online tariffs are higher than for the most expensive standard tariff in Q4 2012. Many online tariffs are only offered for a short period of time, as suppliers can replace them with a newer version with different prices. As a result, there will be some customers that had signed up to a cheap online tariff prior to the 2012 price rise, and some customers that are on a more expensive tariff introduced after.

Many online tariffs are not just online, but also have some other feature, such as being a social, green or fixed tariff. This can cause prices to vary a lot. For example, in December 2012, 27% of online tariffs were fixed, and therefore susceptible to the large range seen in the fixed tariff bills. Removing fixed online tariffs from the list, the range and inter quartile range for online tariffs are 18 and 15 per cent smaller respectively. This suggests a strong influence from fixed and other types of tariffs on the prices of online bills.

Conclusion

DECC's published average bills give a good indication of the relative prices of different tariffs and/ or payment methods. However, this article illustrates that there are still some large variations in the bills paid by consumers, even where they have the same payment method or tariff type.

User Feedback

Please send any comments or queries regarding this analysis to the contact details below.

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The effect of the cold 2012/13 winter on energy bills

Introduction

DECC publishes data in its Quarterly Energy Prices (QEP) publication[1] on annual gas and electricity bills, based on standard consumption assumptions[2]. These fixed assumptions mean that these published bills do not reflect the effects of year on year changes in energy consumption due to weather fluctuations. The bills also represent an average bill for the whole year, with no estimate made of bills specifically for the winter period.

This article focuses on gas and electricity bills for the winter of 2011/12 and the winter of 2012/13. The winter period is based on quarter 4 and quarter 1 of the respective years, i.e. the October – March period, because gas consumption data is collected on a quarterly basis. Therefore it is not possible to calculate bills for a more precise definition of winter, such as the December – February period.

The winter of 2012/13 was particularly cold compared with previous years, especially the relatively mild winter of 2011/12. This article looks at the extent to which this cold weather affected domestic energy consumption, and subsequently the energy bills faced by households. It considers the differences in bills between the two winters, and the relative contributions of energy consumption and energy prices to these differences.

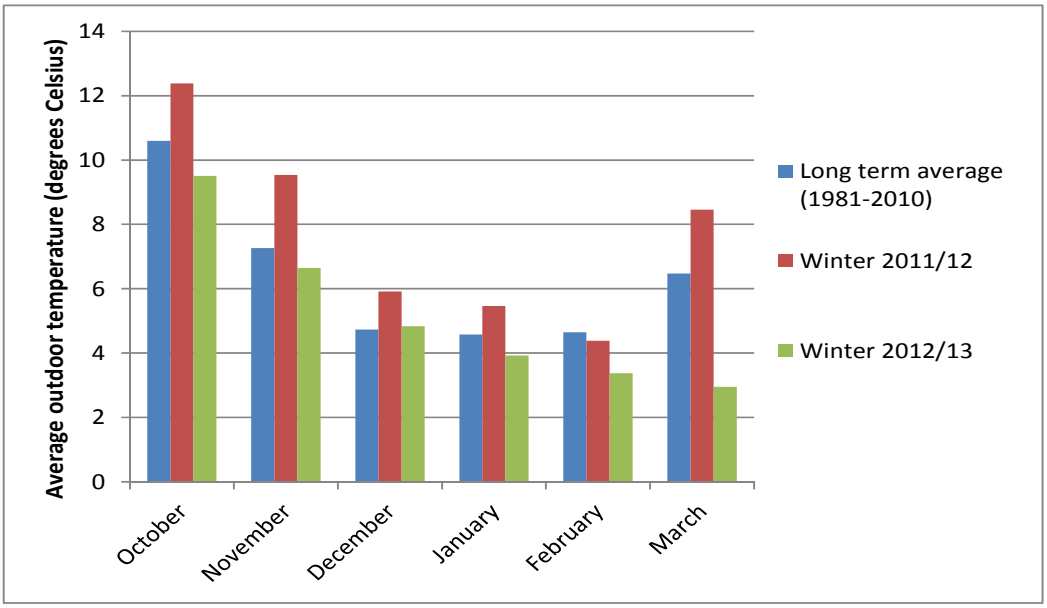
Weather in winter 2011/12 compared with 2012/13

As chart 1 shows, winter 2012/13 saw average outdoor temperatures[3] being lower in every month than in 2011/12. This was particularly noticeable in March, where average outdoor temperatures were lower by 5.5 degrees Celsius. It is worth noting, however, that the winter of 2011/12 was milder than the long term average of winter temperatures from 1981-2010. So the difference between the winters of 2011/12 and 2012/13 should be considered as the difference between a relatively cold winter and a relatively mild one, rather than the difference between a relatively cold winter and a typical one. On average, the winter of 2012/13 was colder than a year earlier by 2.5 degrees per day.

In addition to the trend in outdoor temperatures, the number of heating degree days[4] was also far greater in the winter of 2012/13 than 2011/12; there was an increase of 31 per cent in the number of heating degree days between the two years, from 47.2 in 2011/12 to 61.7 in 2012/13.

[1] Published online at www.gov.uk/government/statistical-data-sets/annual-domestic-energy-price-statistics
[2] DECC's standard annual consumption figures are: 18,000kWh for gas, 3,300kWh for standard electricity and 6,600kWh for Economy 7 electricity.
[3] Energy Trends, table 7.1: www.gov.uk/government/uploads/system/uploads/attachment_data/file/203607/et7_1.xls
[4] Heating Degree Days (HDDs) are used to reflect how weather influences the energy used to heat homes. They are calculated relative to a base temperature (DECC use 15.5°C), so if a day has an average (of the maximum and minimum) temperature of 10°C, the HDD for that day will be 5.5. If the daily average temperature exceeds the base temperature, the HDD for that day will be 0. The HDDs are summed for each month and published in Table 7.1 of Energy Trends.

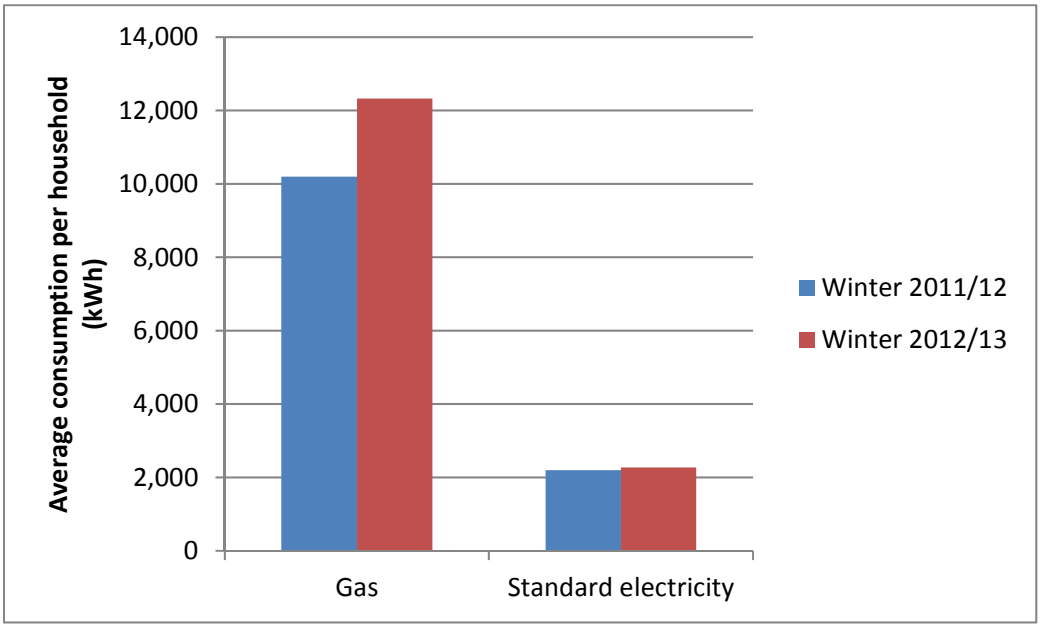
Chart 1: Average outdoor temperatures, winter 2011/12 and winter 2012/13



Energy consumption in winter 2011/12 compared with winter 2012/13[5]

Over time, the amount of energy consumed by households tends to closely reflect weather patterns. This is particularly true for gas, as this is the fuel used by most households for space heating. Chart 2 shows that the average gas consumption per household (of those that use gas) was considerably higher in the colder winter of 2012/13 than the milder winter of 2011/12. Standard electricity (excluding time of use tariffs), on the other hand, which is seldom used for heating, only saw slightly increased consumption in this period.

Chart 2: Average gas and electricity consumption per household, winter 2011/12 and winter 2012/13[6]



[5] Average consumption per household is calculated by taking the total gas and electricity consumption from tables 4.1 (gas) and 5.5 (electricity) from DECC's Energy Trends publication, and dividing by DECC estimates of the number of gas and standard electricity consumers.

[6] Standard electricity consumption excludes consumption by households with time of use tariffs

The effect of consumption and energy prices on winter energy bills

By comparing scenarios based on different levels of energy prices[7] and energy consumption, it is possible to estimate the effects of price and consumption changes on gas and electricity bills. To do this, we consider energy bills under four scenarios:

1. 2011/12 energy prices, 2011/12 energy consumption – this should give an indication of actual bills in winter 2011/12.
2. 2012/13 energy prices, 2012/13 energy consumption – this should give an indication of actual bills in winter 2012/13.
3. 2011/12 energy prices, 2012/13 energy consumption – this should give an indication of what energy bills would have been in 2012/13 if energy prices had not changed from the previous winter.
4. 2012/13 energy prices, 2011/12 energy consumption – this should give an indication of what energy bills would have been in this winter if energy consumption had not changed from the previous winter.

Table 1 shows energy bills under each of these scenarios.

Table 1: Average gas bills in winter 2011/12 and winter 2012/13, under scenarios where energy prices, energy consumption, or both change[8]

	Average gas bill (£)	Average standard electricity bill (£)	Average dual fuel bill (£)
Actual bill for winter 2011/12	502	342	844
Bill for winter 2012/13 if energy consumption had not changed	522	352	875
Bill for winter 2012/13 if energy prices had not changed	583	351	934
Actual bill for winter 2012/13	607	362	969

This table shows that increasing energy consumption, largely due to the cold weather, caused average dual fuel energy bills to increase by approximately £90 between the winters of 2011/12 and 2012/13. Meanwhile, increasing energy prices caused bills to increase by approximately £31.

The vast majority of the effect of rising consumption on dual fuel bills can be attributed to the gas component. Because this is the fuel used by most households for space heating, any cold weather is likely to mean a large rise in gas consumption, and therefore gas bills will rise by more than standard electricity bills (excluding time of use tariffs). Data on domestic energy consumption by end use and fuel is published in Energy Consumption in the UK (ECUK), table 3.7[9]. According to this data, gas accounts for 80 per cent of domestic fuel used for heating.

Conclusion

The cold winter of 2012/13 caused a large increase in household energy bills compared with the previous winter, which had been comparatively mild. Although both energy prices and increased consumption contributed to this increase, it is clear that energy consumption changes, driven by the colder weather, had a greater impact over the winter.

User Feedback

Please send any comments or queries regarding this analysis to the contact details below:

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Energy Prices
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[7] Energy prices for the two winters are calculated using the fixed and variable energy costs for 2012, produced in tables 2.2.4 (standard electricity) and 2.3.4 (gas) of DECC's Quarterly Energy Prices (QEP) publication. These were then adjusted using the monthly Retail Price Index (RPI) data, published by the Office for National Statistics (ONS).
[8] Numbers do not sum because of the combined effects of changes in energy consumption and price rises.
[9] www.gov.uk/government/publications/energy-consumption-in-the-uk

National Energy Efficiency Data-Framework analysis

Introduction

The National Energy Efficiency Data-Framework (NEED) was set up to provide a better understanding of energy use and energy efficiency in domestic and non-domestic buildings.

The first of two NEED reports during 2013 was published on 27 June. It presents analysis of domestic gas and electricity consumption using data available in NEED. The report covers energy consumption in 2011 by property attributes, household characteristics, region and socio-demographic classifications. It also includes trends in energy consumption between 2005 and 2011. For the first time, information for Wales and consumption by number of adults in the property is also being published. This article provides a summary of the report. The full report can be found at: www.gov.uk/government/publications/national-energy-efficiency-data-framework-need-report-summary-of-analysis-2013-part-1.

Results are based on a representative sample of data for England and Wales, with the exception of trends, which cover only England between 2005 and 2010 and both England and Wales for 2011.

The relationship between energy use and any individual characteristic is complex, but there is a high correlation between certain characteristics and a household's energy use (for example, size of property or household income). The report provides insight into how each characteristic relates to energy use, but makes no attempt to control for other characteristics[1].

Domestic consumption

Of the variables in NEED, property size has the greatest influence on households' gas and electricity consumption (see Chart 1).

Chart 1: Median electricity and gas consumption in 2011, by area of property, m^2

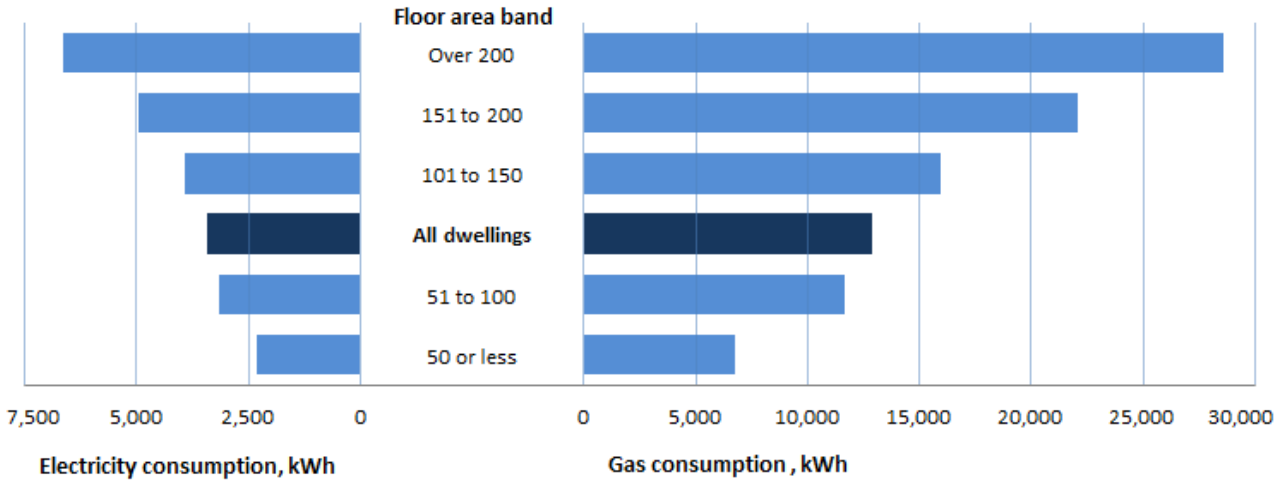
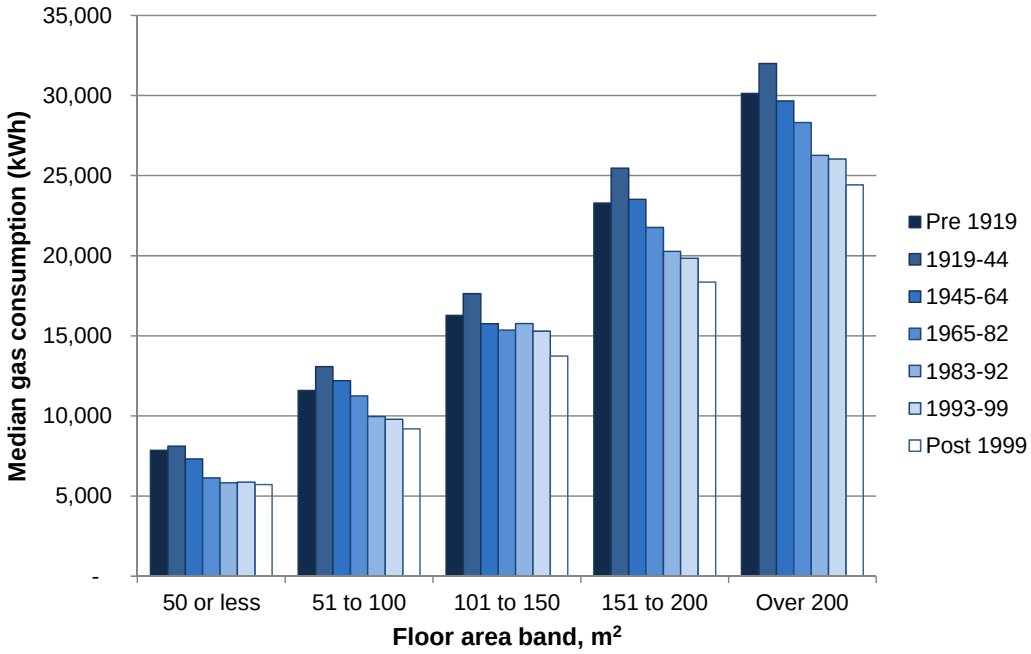


Chart 1 shows that properties in the larger floor area bands have a higher typical consumption, for both gas and electricity. However, there is a significant amount of variation which is not explained by this single variable. Chart 2 shows how gas consumption by property age varies for properties even within the same floor area category.

[1] This was explored in regression and econometric models of gas consumption presented in the November 2012 NEED report, Annexes E and F: www.gov.uk/government/publications/national-energy-efficiency-data-need-report-summary-of-analysis. Further work in this area is also planned and will be published when available.

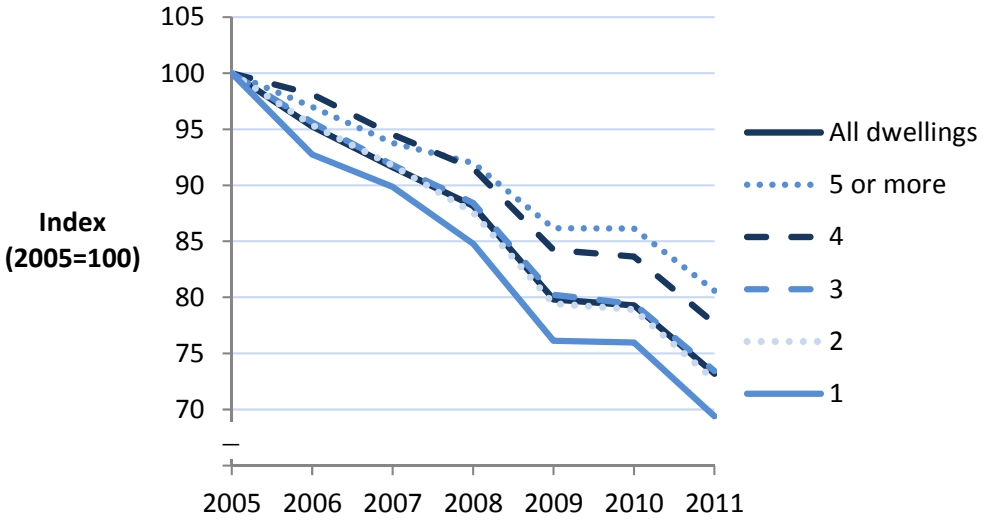
Chart 2: Median gas consumption in 2011, by floor area and property age



Trends in domestic consumption

Median consumption has generally decreased over the period 2005 to 2011. While reductions have been seen for all property and household types, the scale of the reduction varies for different groups. This is demonstrated for number of bedrooms in Chart 3. In general, properties with fewer bedrooms showed a greater percentage decrease in median consumption over the period.

Chart 3: Change in median gas consumption by number of bedrooms, 2005 to 2011 (2005=100)



The results from this work have provided important evidence to enable DECC to further develop its understanding of how energy is used in households. DECC will continue to work to understand more about these areas and expand the analysis undertaken with data from NEED; with results published as analysis is completed. The next publication will be Part II of this report in November 2013, summarising the impact of energy efficiency measures.

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Recent and forthcoming publications of interest to users of energy statistics

Annual Fuel Poverty Statistics Report and sub-regional data

This annual Internet only publication, published in support of the UK Fuel Poverty Strategy, details the latest statistics on fuel poverty. The 2013 edition, detailing the 2011 statistics, was published on 16 May 2013, along with a series of appendices, at: www.gov.uk/government/organisations/department-of-energy-climate-change/series/fuel-poverty-statistics. Data for 2011 at sub-regional level can be accessed at: www.gov.uk/government/organisations/department-of-energy-climate-change/series/fuel-poverty-sub-regional-statistics

Estimates of Home Insulation Levels in Great Britain

This quarterly publication provides estimates of the number of homes in Great Britain with cavity wall insulation, loft insulation and solid wall insulation. The latest release, detailing estimates of home insulation levels in Great Britain: April 2013, was published on 27 June 2013 at: www.gov.uk/government/statistical-data-sets/estimates-of-home-insulation-levels-in-great-britain

Road Transport fuels consumption at local authority level during 2011

This annual publication provides sub-regional estimates for road transport fuel consumption in the United Kingdom, by vehicle and fuel type. The latest release was published on 27 June 2013 at: www.gov.uk/government/organisations/department-of-energy-climate-change/series/road-transport-consumption-at-regional-and-local-level

Northern Ireland electricity consumption

These publications present estimates of the latest analysis of electricity consumption in Northern Ireland at District Council level. Domestic electricity consumption through 2010 and 2011, and non-domestic electricity consumption for 2011 were published on 27 June 2013 at: www.gov.uk/government/organisations/department-of-energy-climate-change/series/sub-national-electricity-consumption-in-northern-ireland. The Northern Ireland data are classified as experimental statistics.

National Energy Efficiency Data-Framework 2013 Part I

This publication presents analysis from the National Energy Efficiency Data-Framework (NEED). It provides details of median gas and electricity consumption for England and Wales broken down by property attributes and household characteristics. Latest estimates covering 2011 consumption were published on 27 June 2013 at: www.gov.uk/government/publications/national-energy-efficiency-data-framework-need-report-summary-of-analysis-2013-part-1.

Domestic Green Deal and ECO – monthly and quarterly analysis

These publications provide estimates of various elements of the rollout of the Green Deal and ECO policy, including number of assessments, plans, and measures installed. The latest releases were published on 27 June 2013 at: www.gov.uk/government/organisations/department-of-energy-climate-change/series/green-deal-and-energy-company-obligation-eco-statistics

Digest of United Kingdom Energy Statistics

This annual publication provides essential information for everyone involved in energy, from economists to environmentalists, and from energy suppliers to energy users. The 2013 edition will be published on 25 July 2013. With extensive tables, charts and commentary covering all the major aspects of energy, it provides a detailed and comprehensive picture of energy production and use over the last 5 years. It will be available to purchase from The Stationery Office, and it can also be accessed for free on the Internet (along with additional annexes and key series back to 1970) at: www.gov.uk/government/organisations/department-of-energy-climate-change/series/digest-of-uk-energy-statistics-dukes

Energy Flow Chart

This annual publication illustrates the flow of primary fuels from home production and imports to their eventual final uses. The flows are shown in their original state and after being converted into different kinds of energy by the secondary fuel producers, and are measured in million tonnes of oil equivalent, with the widths of the bands approximately proportional to the size of the flows they represent. The 2013 edition of the chart, showing the flows for 2012, will be published on 25 July 2013. The Chart will be available free from DECC and it can also be accessed on the Internet at: www.gov.uk/government/organisations/department-of-energy-climate-change/series/energy-flow-charts

UK Energy in Brief

This annual publication summarises the latest statistics on energy production, consumption, prices and climate change in the United Kingdom. The figures are primarily taken from the Digest of United Kingdom Energy Statistics (see above). The 2013 edition will be published on 25 July 2013 and will be available free from DECC. It can also be accessed on the Internet at: www.gov.uk/government/organisations/department-of-energy-climate-change/series/uk-energy-in-brief

Energy Consumption in the UK

This annual Internet only publication brings together statistics from a variety of sources to produce a comprehensive review of energy consumption and changes in efficiency, intensity and output since the 1970s, with a particular focus on trends since 1990. The information is presented in five sections covering overall energy consumption and energy consumption in the transport, domestic, industrial and service sectors. The 2013 edition will be published on 25 July 2013 at: www.gov.uk/government/organisations/department-of-energy-climate-change/series/energy-consumption-in-the-uk

List of special feature articles published in Energy Trends between June 2012 and March 2013

Energy

June 2012	DECC report on surveys of business in 2011/12
September 2012	Running hours during winter 2011/12 for plants opted-out of the Large Combustion Plant Directive (LCPD) Estimates of heat use in the United Kingdom in 2011
March 2013	Long term mean temperatures 1981-2010 DECC and the new Government website

Coal

March 2013	Coal in 2012

Combined Heat and Power (CHP)

September 2012	Combined Heat and Power in Scotland, Wales, Northern Ireland and the regions of England in 2011

Electricity

December 2012	Electricity generation and supply figures for Scotland, Wales, Northern Ireland and England, 2008 to 2011

Energy efficiency

September 2012	Home insulation levels in Great Britain – methodological changes Number of properties benefitting through receipt of insulation measures and energy efficiency products from Energy Supplier obligations
December 2012	National Energy Efficiency Data-Framework

Energy prices

June 2012	Estimates of domestic dual fuel energy bills in 2011 Industrial energy prices
December 2012	Tariff type variation in the domestic energy market
March 2013	Domestic energy bills in 2012: The impact of variable consumption Petrol and diesel prices

Feed-in Tariffs

June 2012	Identifying trends in the deployment of domestic solar PV under the Feed-in Tariff scheme
September 2012	Feed-in Tariff statistics

Fuel Poverty

June 2012	Fuel Poverty levels in England, 2010

Renewables

June 2012	Renewable energy in 2011
September 2012	Renewable electricity in Scotland, Wales, Northern Ireland and the regions of England in 2011 National Grid operational metering data and renewables New Renewables Obligation Certificates (ROCs) table

Sub-national energy consumption

June 2012	Sub-national road transport fuel consumption statistics for 2010 and analysis of national trends in diesel and petrol use
December 2012	Sub-national energy consumption statistics updates

UK Continental Shelf (UKCS)

March 2013	UKCS capital expenditure survey 2012

PDF versions of the special feature articles appearing in Energy Trends since 2012 can be accessed on the DECC section of the gov.uk website at:
www.gov.uk/government/organisations/department-of-energy-climate-change/series/energy-trends-articles

Articles published before 2012 can be accessed on the National Archives version of the DECC website at:
http://webarchive.nationalarchives.gov.uk/20130109092117/http://www.decc.gov.uk/en/content/cms/statistics/statistics.aspx

Explanatory notes

General

More detailed notes on the methodology used to compile the figures and data sources are available on the DECC website.

Symbols used in the tables

.. not available
- nil or less than half the final digit shown
p provisional
r revised; where a column or row shows 'r' at the beginning, most, but not necessarily all, of the data have been revised.
e estimated; totals of which the figures form a constituent part are therefore partly estimated

Notes to tables

- Figures for the latest periods and the corresponding averages (or totals) are provisional and are liable to subsequent revision.
- The figures have not been adjusted for temperature or seasonal factors except where noted.
- Due to rounding the sum of the constituent items may not equal the totals.
- Percentage changes relate to the corresponding period a year ago. They are calculated from unrounded figures but are shown only as (+) or (-) when the percentage change is very large.
- Quarterly figures relate to calendar quarters.
- All figures relate to the United Kingdom unless otherwise indicated.

Conversion factors

1 tonne of crude oil =	7.55 barrels
1 tonne =	1,000 kilograms
1 gallon (UK) =	4.54609 litres
1 kilowatt (kW) =	1,000 watts
1 megawatt (MW) =	1,000 kilowatts
1 gigawatt (GW) =	1,000 megawatts
1 terawatt (TW) =	1,000 gigawatts

All conversion of fuels from original units to units of energy is carried out on the basis of the gross calorific value of the fuel. More detailed information on conversion factors and calorific values is given in Annex A of the Digest of United Kingdom Energy Statistics.

Conversion matrices

To convert from the units on the left hand side to the units across the top multiply by the values in the table.

To:	**Thousand toe**	**Terajoules**	**GWh**	**Million therms**
From	**Multiply by**			
Thousand toe	1	41.868	11.630	0.39683
Terajoules (TJ)	0.023885	1	0.27778	0.0094778
Gigawatt hours (GWh)	0.085985	3.6000	1	0.034121
Million therms	2.5200	105.51	29.307	1

To:	**Tonnes of oil equivalent**	**Gigajoules**	**kWh**	**Therms**
From	**Multiply by**			
Tonnes of oil equivalent	1	41.868	11,630	396.83
Gigajoules (GJ)	0.023885	1	277.78	9.4778
Kilowatt hours (kWh)	0.000085985	0.003600	1	0.034121
Therms	0.0025200	0.105510	29.307	1

Note that all factors are quoted to 5 significant figures

Abbreviations

ATF	Aviation turbine fuel
CCGT	Combined cycle gas turbine
DERV	Diesel engined road vehicle
GVA	Gross value added
LNG	Liquefied natural gas
MSF	Manufactured solid fuels
NGLs	Natural gas liquids
UKCS	United Kingdom continental shelf

Sectoral breakdowns

The categories for final consumption by user are defined by the Standard Industrial Classification 2007, as follows:

Fuel producers	05-07, 09, 19, 24.46, 35
Final consumers	
Iron and steel	24 (excluding 24.4, 24.53 and 24.54)
Other industry	08, 10-18, 20-23, 24.4 (excluding 24.46), 24.53, 24.54, 25-33, 36-39, 41-43
Transport	49-51
Other final users	
Agriculture	01-03
Commercial	45-47, 52-53, 55-56, 58-66, 68-75, 77-82
Public administration	84-88
Other services	90-99
Domestic	Not covered by SIC 2007

ENERGY TRENDS

Energy is a major natural resource and a key factor in the economy and environment of the United Kingdom. Data on energy supply and demand, energy prices and values and trade in energy are vital components of this country's main economic and environmental indicators.

ENERGY TRENDS, which was first published in the 1960s, is a quarterly publication produced by the Department of Energy and Climate Change. With tables, charts and commentary covering all the major aspects of energy, it provides a comprehensive picture of energy production and use.

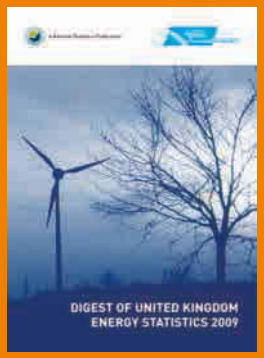
ENERGY TRENDS provides essential information for everyone involved in energy, from economists to environmentalists, and from energy suppliers to energy users.

Quarterly Energy Prices and Energy Trends

Subscription available from DECC (0300 068 5056)
Price £40 per annum UK
www.gov.uk/government/organisations/department-of-energy-climate-change/series/quarterly-energy-prices
and
www.gov.uk/government/organisations/department-of-energy-climate-change/series/energy-trends
Single copies available from the Publications Orderline
priced £6 for Energy Trends and £8 for Quarterly Energy Prices.

UK Energy in Brief

Available from the Publications Orderline
www.gov.uk/government/organisations/department-of-energy-climate-change/series/uk-energy-in-brief



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