Department of Energy & Climate Change

A National Statistics Publication

ENERGY TRENDS

DECEMBER 2014

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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.

This document is also available from our website at: www.gov.uk/government/collections/energy-trends

Explanatory notes are to be found inside the back cover

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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 December editions cover the third 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 2014 edition of the Digest was published on 31 July 2014. Printed and bound copies of the 2014 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/collections/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

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/collections/quarterly-energy-prices

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The main points for the third quarter of 2014:

- Total energy production was 4½ per cent lower than in the third quarter of 2013. This decline in output is due to the large falls in petroleum production as a result of maintenance work and in nuclear due to outages more than offsetting the combined increases in coal, gas, bioenergy & waste, and wind & hydro production.

- Oil production fell by 11 per cent when compared with the third quarter of 2013. Refinery production in the third quarter of 2014 was down by 11½ per cent on the same quarter of last year, due to the suspension of one of the UK's refineries and rationalisation elsewhere in the sector.

- Natural gas production was 3½ per cent higher than the third quarter of 2013, due to significantly increased volumes of gas into Teeside following the start-up of new fields at the end of 2013. Gas imports increased by 15½ per cent, with shipped imports of LNG more than double. Gas consumption was up by 11 per cent, driven by higher generation use.

- Total primary energy consumption for energy uses fell by 4 per cent. When adjusted to take account of weather differences between the third quarter of 2013 and the third quarter of 2014, primary energy consumption fell by 4½ per cent.

- Final energy consumption consumption (excluding non-energy use) fell by 1 per cent compared to the third quarter of 2013. Industrial consumption fell by 5½ per cent; domestic consumption fell by 3½ per cent, other final users consumption fell by 3 per cent, whilst transport consumption rose by 2 per cent.

- On a seasonally and temperature adjusted basis, final consumption (excluding non-energy use) fell by 1½ per cent.

- Electricity generated in the third quarter of 2014 fell by 5 per cent, from 79.5 TWh a year earlier to 75.4 TWh, the lowest level of generation since 1998.

- Of electricity generated in the third quarter of 2014, gas accounted for 38½ per cent, up from 26½ per cent in the third quarter of 2013, due to a large decrease in coal generation and lower wholesale gas prices, whilst coal accounted for 20 per cent, down from 33½ per cent in the third quarter of 2013. Nuclear generation accounted for 21 per cent of total electricity generated in the third quarter of 2014, a decrease from the 23½ per cent share in the third quarter of 2013, due to outages at two EDF power stations.

- Renewables' share of electricity generation increased to 18 per cent, up from the 14 per cent share in the third quarter of 2013. Hydro generation increased by 6 per cent on the third quarter of 2013. Over the same period, offshore wind generation increased by 14 per cent, and onshore wind generation increased by 8 per cent. Generation from bioenergy was up by 31 per cent, mainly due to the conversion of Drax to biomass. Overall renewable electricity generation was up 24 per cent compared to the same quarter in 2013.

- Low carbon electricity's share of generation increased from 37 per cent in the third quarter of 2013 to 38½ per cent in the third quarter of 2014, with the fall in nuclear generation offset by an increase in generation by renewables.

- By the end of the third quarter of 2014, 3.0 GW of capacity had been installed under the Feed in Tariff scheme, an increase of 28 per cent on a year earlier, representing 13 per cent of all renewable installed capacity.

Section 1 - Total Energy

Key results show:

Total energy production was 4.6 per cent lower than in the third quarter of 2013. (**Charts 1.1 & 1.2**)

Total primary energy consumption for energy uses fell by 4.1 per cent. When adjusted to take account of weather differences between the third quarter of 2013 and the third quarter of 2014, primary energy consumption fell by 4.6 per cent. (**Chart 1.3**)

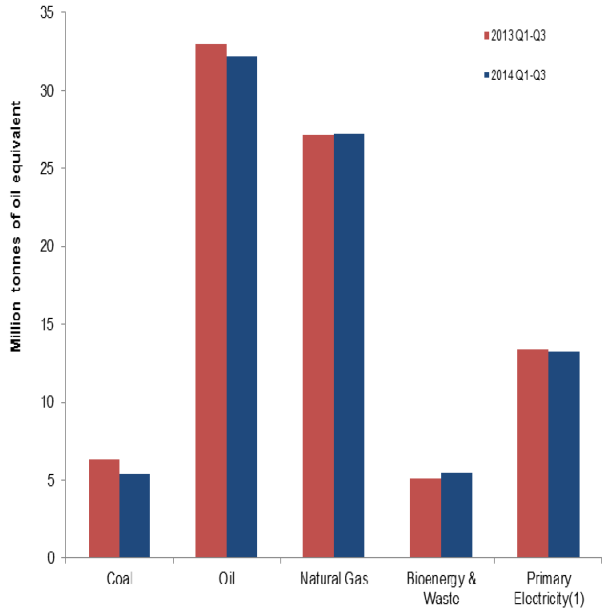
Final energy consumption consumption (excluding non-energy use) fell by 1.2 per cent compared to the third quarter of 2013. Industrial consumption fell by 5.6 per cent, domestic consumption fell by 3.7 per cent, other final users' consumption fell by 3.0 per cent, whilst, and transport consumption rose by 1.9 per cent. (**Charts 1.4 & 1.5**)

On a seasonally and temperature adjusted basis, final energy consumption (excluding non-energy use) fell by 1.6 per cent. (**Chart 1.5**)

Net import dependency was 48.7 per cent, up 0.6 percentage points from the third quarter of 2013 and up 5.7 percentage points from the second quarter of 2014 reflecting lower primary energy supply. (**Chart 1.6**)

Fossil fuel dependency was 82.9 per cent in the third quarter of 2014, a record low level. (**Chart 1.7**)

Chart 1.1 Production of indigenous primary fuels



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

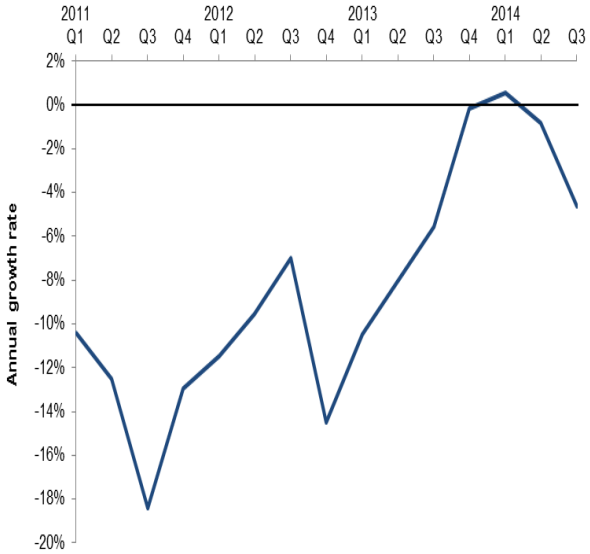
Total production in the third quarter of 2014 at 24.4 million tonnes of oil equivalent was 4.6 per cent lower than in the third quarter of 2013.

Production of natural gas rose by 3.6 per cent, due to the start-up of the Jasmine and Breagh fields towards the end of 2013, whilst production of oil fell by 10.9 per cent compared to the third quarter of 2013, as a result of maintenance work and other production issues.

Primary electricity output in the third quarter of 2014 was 12.1 per cent lower than in the third quarter of 2013, within which nuclear electricity output was 16.2 per cent lower due to outages at a couple of stations. However, output from wind and natural flow hydro was 19.0 per cent higher than the same period in 2013, with in particular a large increase in wind generation (see sections 5&6).

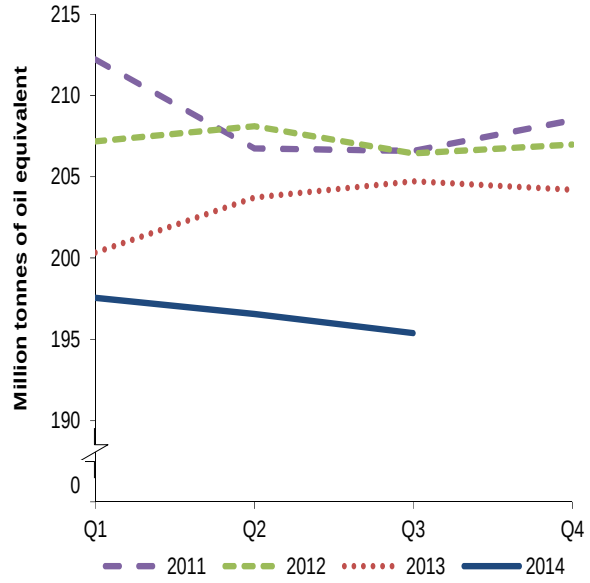
In the third quarter of 2014 production of coal and other solid fuels was 1.4 per cent higher than the corresponding period of 2013. This was due to an increase in output of deep-mined coal (see section 2). However coal production for Q1–Q3 2014 was 14 per cent lower than the corresponding period in 2013.

Chart 1.2 UK production (annual growth rate)



In the third quarter of 2014, the annual growth rate of UK production was -4.6 per cent. Growth in natural gas, bioenergy and waste, coal, wind and hydro was not large enough to offset either the falls in oil production which were due to maintenance activity and slowdowns or the fall in nuclear output due to outages at two stations.

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



Total inland consumption on a primary fuel input basis (temperature corrected, seasonally adjusted annualised rate), was 195.4 million tonnes of oil equivalent in the third quarter of 2014, 4.6 per cent lower than in the third quarter of 2013. The average temperature in the third quarter of 2014 was 0.5 degree Celsius colder than the same period a year earlier.

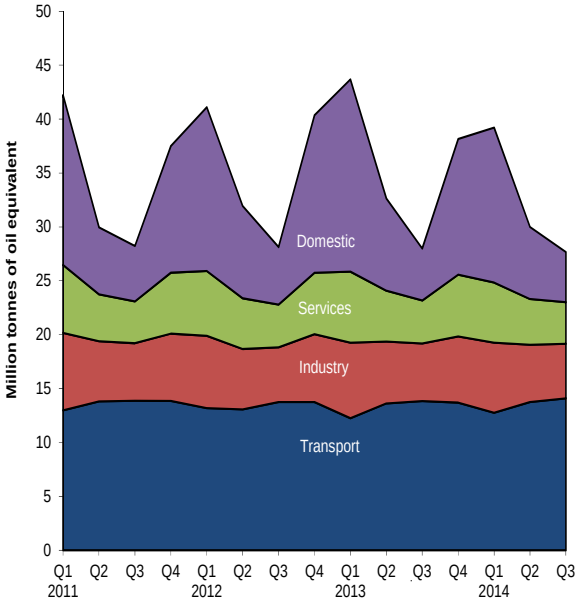
Between the third quarter of 2013 and the third quarter of 2014 (on a seasonally adjusted and temperature corrected basis) natural gas consumption rose by 6.3 per cent as lower wholesale gas prices led to more gas being used in electricity generation. However domestic use of gas fell despite the slightly colder weather.

Also on a seasonally adjusted and temperature corrected basis, coal and other solid fuel consumption decreased by 32.5 per cent. Nuclear was also down by 16.3 per cent.

On the same basis, oil consumption fell by 0.1 per cent between the third quarter of 2013 and the third quarter of 2014.

(1) Seasonally adjusted and temperature corrected annual rates.

Chart 1.4 Final energy consumption by user



Total final consumption fell by 1.6 per cent between the third quarter of 2013 and the third quarter of 2014.

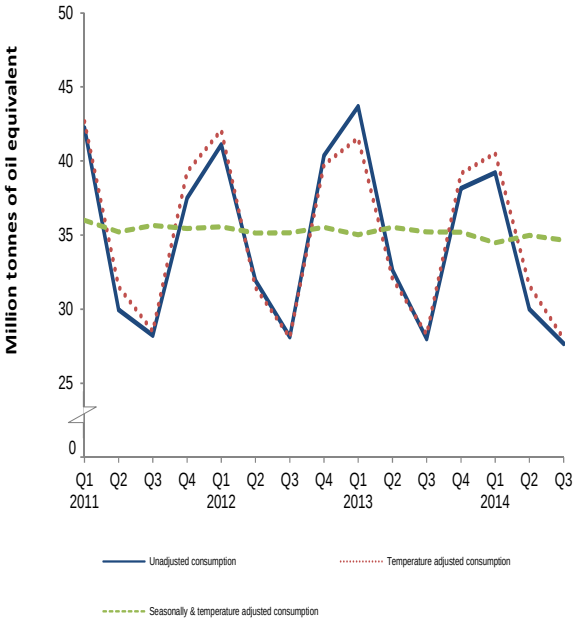
Industrial energy consumption fell by 5.6 per cent.

Domestic sector energy consumption fell by 3.7 per cent.

Service sector energy consumption fell by 3.0 per cent.

Transport sector energy consumption rose by 1.9 per cent.

Chart 1.5 Seasonally adjusted and temperature corrected final energy consumption

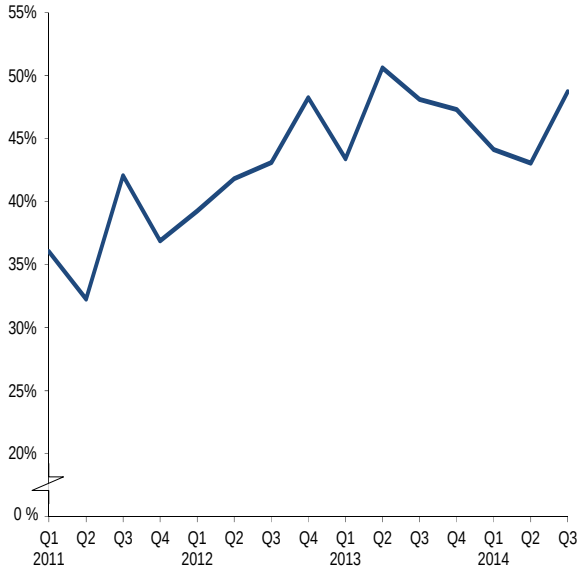


Total unadjusted final energy consumption (excluding non-energy use) fell by 1.2 per cent between the third quarter of 2013 and the third quarter of 2014.

On a seasonally and temperature adjusted basis final energy consumption (excluding non-energy use) fell by 1.6 per cent between the third quarter of 2013 and the third quarter of 2014.

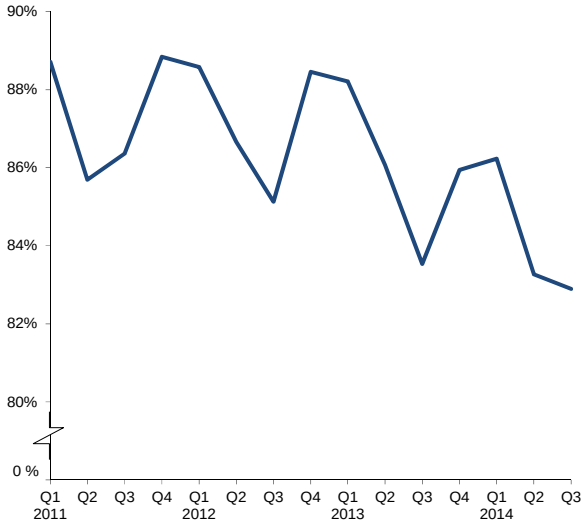
These analyses and consumption data by fuel and sector is available in the table ET 1.3c on the DECC section of the gov.uk website at: www.gov.uk/government/publications/total-energy-section-1-energy-trends

Chart 1.6 Net import dependency



In the third quarter of 2014 net import dependency was 48.7 per cent, up 0.6 percentage points from the third quarter of 2012, and up 5.7 percentage points from the second quarter of 2014. This though reflects lower primary energy supply, as net imports fell by 0.7 million tonnes of oil equivalent (3.1 per cent).

Chart 1.7 Fossil fuel dependency



In the third quarter of 2014 dependency on fossil fuels was 82.9 per cent, down 0.6 percentage points from the third quarter of 2013, and at a record low level. Low carbon fuels accounted for 39 per cent of generation in 2014 quarter 3 (see section 5).

Relevant tables

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1.3: Supply and use of fuels……Page 11-12

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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]	Bioenergy & waste[4,5]	Nuclear	Wind and natural flow hydro[6]
2009		166.8	11.0	74.7	59.7	4.8	15.2	1.25
2010		157.9	11.5	69.0	57.2	5.2	13.9	1.19
2011		136.8	11.6	56.9	45.3	5.5	15.6	1.84
2012		122.0	10.6	48.8	38.9	6.2	15.2	2.26
2013		114.4	8.0	44.5	36.5	6.9	15.4	3.02
Per cent change		*-6.3*	*-24.5*	*-8.8*	*-6.2*	*+10.4*	*+1.6*	*+33.7*
2013	Quarter 3	25.6	1.8	10.0	7.8	1.4	4.1	0.54
	Quarter 4	29.4	1.7	11.5	9.3	1.8	4.0	1.06
2014	Quarter 1	30.5r	1.8r	12.1	9.9	2.0	3.6	1.16r
	Quarter 2	28.8	1.8r	11.3	9.3	2.0	3.8	0.65
	Quarter 3 p	24.4r	1.8	8.9r	8.0	1.6r	3.4	0.64r
Per cent change[7]		*-4.6*	*+1.4*	*-10.9*	*+3.6*	*+10.3*	*-16.2*	*+19.0*

1. Includes an estimate of slurry.
2. Crude oil, offshore and land, plus condensates and petroleum gases derived at onshore treatment plants.
3. Includes colliery methane, excludes gas flared or re-injected.
4. Includes solid renewable sources (wood, straw and waste), a small amount of renewable primary heat sources (solar, geothermal etc), liquid biofuels and sewage gas and landfill gas.
5. Bioenergy & waste introduced as a separate category from March 2014 - see special feature article in the March 2014 edition of Energy Trends at: www.gov.uk/government/collections/energy-trends-articles
6. Includes generation by solar PV.
7. Percentage change between the most recent quarter and the same quarter 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	Bioenergy		Wind and natural	Net				Natural	Bioenergy		Wind and natural	Net
		Total	Coal[1]	Petroleum[2]	gas[3]	& waste[4, 5]	Nuclear	flow hydro[6]	imports	Total	Coal	Petroleum	gas	& waste	Nuclear	flow hydro	imports
		Unadjusted [7]								*Seasonally adjusted and temperature corrected* [8,9] *(annualised rates)*							
2009		211.2	31.2	70.9	86.3	6.1	15.2	1.25	0.25	212.4	31.5	70.9	87.1	6.1	15.2	1.25	0.25
2010		218.7	32.7	70.2	93.6	6.9	13.9	1.19	0.23	212.7	31.1	70.2	89.2	6.9	13.9	1.19	0.23
2011		202.9	32.3	67.8	77.6	7.2	15.6	1.84	0.53	208.5	34.0	67.8	81.5	7.2	15.6	1.84	0.53
2012		207.2	41.0	66.9	73.3	7.7	15.2	2.26	1.02	207.2	40.9	66.9	73.3	7.7	15.2	2.26	1.02
2013		205.9	39.2	65.5	72.7	8.8	15.4	3.02	1.24	203.2	38.7	65.5	70.5	8.8	15.4	3.02	1.24
Per cent change		*-0.6*	*-4.3*	*-2.0*	*-0.8*	*+15.0*	*+1.6*	*+33.7*	*+21.6*	*-1.9*	*-5.5*	*-2.0*	*-3.7*	*+15.0*	*+1.6*	*+33.7*	*+21.6*
2013	Quarter 3	42.5	8.4	16.6	10.4	2.0	4.1	0.54	0.40	204.7	41.9	66.5	67.3	7.9	16.7	2.75	1.60
	Quarter 4	54.3	10.2	16.7	19.8	2.3	4.0	1.06	0.29	204.2	37.3	66.8	69.8	9.2	16.5	3.42	1.17
2014	Quarter 1	55.3	10.4r	15.7r	21.6	2.4	3.6	1.16r	0.42	197.5	37.2r	62.7r	68.4	9.6	13.9	4.07r	1.68
	Quarter 2	43.7	7.0r	16.2	13.1r	2.4	3.8	0.65	0.44	196.5r	34.9r	64.9r	67.2r	9.6r	15.1	3.07r	1.75
	Quarter 3 p	40.8r	5.7r	16.6r	11.5r	2.4r	3.4	0.64r	0.47	195.4r	28.2r	66.4r	71.6r	9.8r	14.0	3.46r	1.87
Per cent change [10]		*-4.1*	*-33.1*	*-0.1*	*+10.7*	*+23.8*	*-16.2*	*+19.0*	*+16.7*	*-4.6*	*-32.5*	*-0.1*	*+6.3*	*+23.8*	*-16.3*	*+25.5*	*+16.7*

1. Includes 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 and colliery methane. Excludes gas flared or re-injected and non-energy use of gas.
4. Includes solid renewable sources (wood, straw and waste), a small amount of renewable primary heat sources (solar, geothermal, etc.), liquid biofuels, landfill gas and sewage gas.
5. Bioenergy & waste introduced as a separate category from March 2014 - see special feature article in the March 2014 edition of Energy Trends at:
www.gov.uk/government/collections/energy-trends-articles
6. Includes generation by solar PV. Excludes generation from pumped storage stations.
7. Not seasonally adjusted or temperature corrected.
8. Coal and natural gas are temperature corrected; petroleum, bioenergy and waste, and primary electricity are not temperature corrected.
9. For details of temperature correction see the June and September 2011 editions of Energy Trends; Seasonal and temperature adjustment factors were reassessed in June 2013
https://www.gov.uk/government/collections/energy-trends
10. Percentage change between the most recent quarter and the same quarter a year earlier.

1 TOTAL ENERGY

Table 1.3a Supply and use of fuels

Thousand tonnes of oil equivalent

	2012	2013	*per cent change*	2012 3rd quarter	2012 4th quarter	2013 1st quarter	2013 2nd quarter	2013 3rd quarter	2013 4th quarter	2014 1st quarter	2014 2nd quarter	2014 3rd quarter p	*per cent change [1]*
SUPPLY													
Indigenous production	122,016	114,366	*-6.3*	27,103	29,398	30,357	29,062	25,591	29,356	30,524r	28,828r	24,402	*-4.6*
Imports	174,040	177,984	*+2.3*	39,817	46,402	47,117	46,081	40,074	44,712	43,444r	38,219r	38,026	*-5.1*
Exports	-80,295	-76,182	*-5.1*	-20,199	-17,608	-19,292	-20,642	-18,328	-17,920	-17,942r	-18,268r	-16,944	*-7.5*
Marine bunkers	-2,812	-2,691	*-4.3*	-738	-702	-665	-714	-684	-629	-636r	-599r	-619	*-9.5*
Stock change [2]	+1,613	+53		-1,206	+1,496	+5,934	-4,226	-2,129	+473	+1,747r	-2,445r	-2,211	
Primary supply	214,563	213,530	*-0.5*	44,777	58,985	63,452	49,561	44,525	55,993	57,137r	45,735r	42,654	*-4.2*
Statistical difference [3]	-268	-384		-134	-51	-31	-189	-147	-17	-104r	-198r	-99	
Primary demand	214,831	213,914	*-0.4*	44,912	59,036	63,482	49,750	44,671	56,010	57,240r	45,933r	42,753	*-4.3*
Transfers [4]	-55	3		-12	-12	0	-2	-5	9	-3r	-12	7	
TRANSFORMATION	-49,278	-48,071	*-2.5*	-11,138	-13,192	-13,749	-11,001	-10,954	-12,366	-12,174r	-10,366r	-9,850	*-10.1*
Electricity generation	-45,868	-44,024	*-4.0*	-10,293	-12,242	-12,708	-10,077	-9,988	-11,250	-11,081r	-9,433r	-8,929	*-10.6*
Heat generation	-1,168	-1,138	*-2.5*	-229	-329	-364	-258	-217	-299	-364	-258	-217	*+0.1*
Petroleum refineries	-74	-75	*+2.1*	-9	-79	-14	35	-4	-92	-10	-34r	-22	*(+)*
Coke manufacture	-268	-446	*+66.3*	-86	-57	-97	-90	-146	-113	-59r	-51r	-57	*-61.0*
Blast furnaces	-1,890	-2,381	*+26.0*	-519	-487	-563	-609	-602	-607	-644r	-573r	-607	*+0.8*
Patent fuel manufacture	-11	-6	*-41.3*	-2	1	-3	-1	3	-5	-16r	-17r	-19	*(-)*
Energy industry use	13,383	12,597	*-5.9*	3,197	3,083	3,282	3,266	3,061	2,988	3,009r	2,842r	2,723	*-11.1*
Losses	3,251	3,179	*-2.2*	697	813	918	784	654	823	922r	701r	673	*+2.9*
FINAL CONSUMPTION	148,864	150,069	*+0.8*	29,877	41,931	45,494	34,703	30,010	39,863	41,093r	32,018r	29,528	*-1.6*
Iron & steel	1,148	1,346	*+17.2*	267	306	336	333	330	347	362r	348r	348	*+5.5*
Other industries	22,526	22,886	*+1.6*	4,807	5,990	6,664	5,407	5,019	5,795	6,131r	4,964r	4,704	*-6.3*
Transport	53,769	53,418	*-0.7*	13,753	13,749	12,254	13,624	13,841	13,699	12,760	13,756r	14,098	*+1.9*
Domestic	43,720	43,794	*+0.2*	5,334	14,623	17,834	8,551	4,822	12,588	14,380r	6,687r	4,645	*-3.7*
Other Final Users	20,376	21,017	*+3.1*	3,964	5,700	6,594	4,715	3,982	5,725	5,580r	4,238	3,863	*-3.0*
Non energy use	7,324	7,609	*+3.9*	1,752	1,563	1,811	2,073	2,016	1,708	1,880r	2,024r	1,871	*-7.2*
DEPENDENCY [5]													
Net import dependency	43.1%	47.1%		43.1%	48.2%	43.4%	50.6%	48.1%	47.3%	44.1%r	43.1%r	48.7%	
Fossil fuel dependency	87.4%	86.2%		85.1%	88.5%	88.2%	86.1%	83.5%	85.9%	86.2%	83.3%r	82.9%	
Low carbon share	11.8%	12.9%		13.7%	10.9%	11.1%	13.0%	15.2%	13.2%	12.6%r	15.2%r	15.4%	

1. Percentage change between the most recent quarter and the same quarter 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

	2013 Quarter 3									2014 Quarter 3 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	1,815	-	9,963	-	7,756	1,431	4,626	-	-	1,840	-	8,881	-	8,036	1,578	4,067	-	-
Imports	8,178	167	16,618	7,367	6,668	611	-	464	-	5,272	195	15,269	8,159	7,687	925	-	519	-
Exports	-72	-14	-8,294	-7,225	-2,589	-70	-	-65	-	-84	-20	-7,861	-5,418	-3,448	-61	-	-52	-
Marine bunkers	-	-	-	-684	-	-	-	-	-	-	-	-	-619	-	-	-	-	-
Stock change[1]	-1,515	-79	+671	+74	-1,280	-	-	-	-	-1,466	-53	+274	-360	-607	-	-	-	-
Primary supply	8,406	74	18,959	-468	10,554	1,973	4,626	400	-	5,562	122	16,563	1,762	11,668	2,443	4,067	467	-
Statistical difference[2]	-21	-1	+42	-145	-2	+7	-	-26	-	-86	-1	-25	+68	-53	-	-	-2	-
Primary demand	8,426	75	18,918	-323	10,557	1,966	4,626	426	-	5,648	123	16,588	1,694	11,721	2,443	4,067	469	-
Transfers[3]	-	1	-586	+581	-1	-	-539	+539	-	-	+9	-340	+339	-1	-	-642	+642	-
TRANSFORMATION	-7,978	424	-18,332	18,135	-4,170	-1,456	-4,087	6,232	277	-5,264	379	-16,248	16,074	-5,542	-1,888	-3,425	5,787	277
Electricity generation	-6,500	-235	-	-156	-3,799	-1,442	-4,087	6,232	-	-3,916	-211	-	-118	-5,172	-1,874	-3,425	5,787	-
Heat generation	-80	-13	-	-17	-370	-14	-	-	277	-80	-13	-	-17	-370	-14	-	-	277
Petroleum refineries	-	-	-18,332	18,328	-	-	-	-	-	-	-	-16,248	16,226	-	-	-	-	-
Coke manufacture	-1,068	922	-	-	-	-	-	-	-	-908	851	-	-	-	-	-	-	-
Blast furnaces	-299	-304	-	-	-	-	-	-	-	-308	-298	-	-	-	-	-	-	-
Patent fuel manufacture	-31	54	-	-20	-	-	-	-	-	-52	50	-	-17	-	-	-	-	-
Energy industry use	0	203	-	1,230	1,043	-	-	546	40	0	198	-	1,103	965	-	-	417	40
Losses	-	65	-	-	139	-	-	450	-	-	78	-	-	142	-	-	453	-
FINAL CONSUMPTION	449	233	-	17,162	5,204	510	-	6,202	251	384	234	-	17,005	5,071	554	-	6,028	251
Iron & steel	9	133	-	1	105	-	-	81	-	10	146	-	1	111	-	-	80	-
Other industries	325	19	-	1,104	1,291	90	-	1,978	212	254	11	-	924	1,308	91	-	1,904	212
Transport	2	-	-	13,442	-	308	-	88	-	3	-	-	13,663	-	344	-	88	-
Domestic	107	45	-	441	2,203	66	-	1,957	4	109	46	-	399	2,097	69	-	1,921	4
Other final users	6	-	-	314	1,485	46	-	2,097	35	8	-	-	300	1,434	51	-	2,035	35
Non energy use	-	36	-	1,860	120	-	-	-	-	-	32	-	1,718	120	-	-	-	-

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:

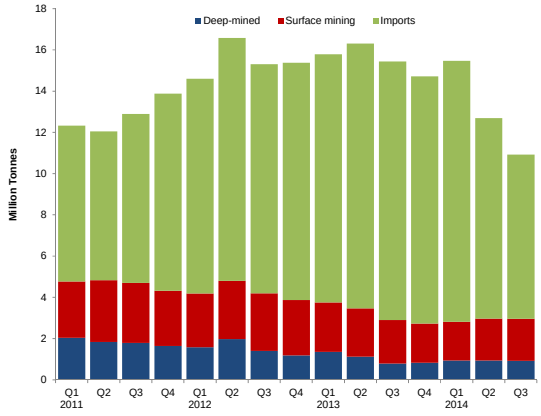
Overall coal production in the third quarter of 2014 was up 2.1 per cent (+0.1 million tonnes) compared with quarter 3 2013, with deep-mined output up 16.7 per cent (+0.1 million tonnes) and surface mining output up by 1.6 per cent. **(Chart 2.1)**

Coal imports were down 37 per cent (-4.5 million tonnes) on levels shown in quarter 3 2013, as demand fell, especially for use by electricity generators. **(Charts 2.1 and 2.2)**

The demand for coal by electricity generators in the third quarter of 2014 was 40 per cent (-4.1 million tonnes) lower than that in the third quarter of 2013, reflecting lower demand for electricity and greater use of gas. **(Chart 2.3)**

Total stock levels were 17.7 million tonnes, up 15.1 per cent (+2.4 million tonnes) compared to quarter 3 2013, and 2.2 million tonnes higher than in quarter 2 2014. **(Chart 2.4)**

Chart 2.1 Coal supply



Coal production in Q3 2014 at 3.0 million tonnes was 2.1 per cent higher than the third quarter of 2013.

Imports of coal in the third quarter of 2014 were 37 per cent lower than in the third quarter of 2013 at 8.0 million tonnes. This was the lowest value since the second quarter of 2011 and was due to less coal being used for electricity generation.

Table 2A Coal imports by origin

Thousand Tonnes

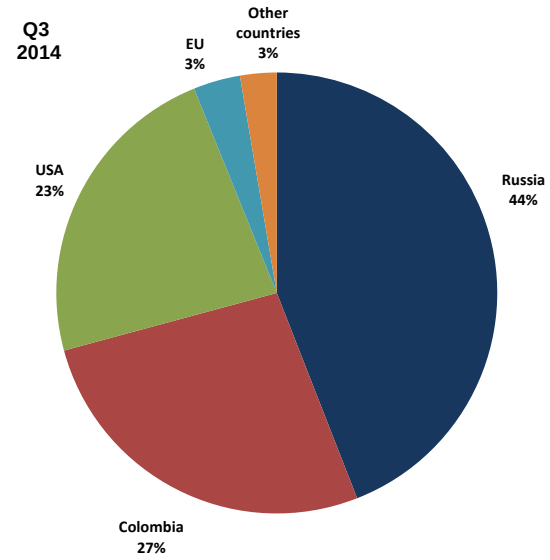
	2012	2013	2013 Q3	2014 Q3p
European Union	693	1,228	254	230
Russia	18,053	20,250	5,674	3,150
Colombia	10,790	12,196	3,157	1,645
USA	11,749	11,494	2,609	2,061
Australia	2,360	2,147	420	405
Other Countries	1,170	2,087	426	468
Total imports	44,815	49,402	12,540	7,958

In the third quarter of 2014, 40 per cent of total coal imports came from Russia.

Steam coal imports at 6.2 million tonnes accounted for 77 per cent of total coal imports.

Coking coal imports at 1.8 million tonnes accounted for 22 per cent of total coal imports.

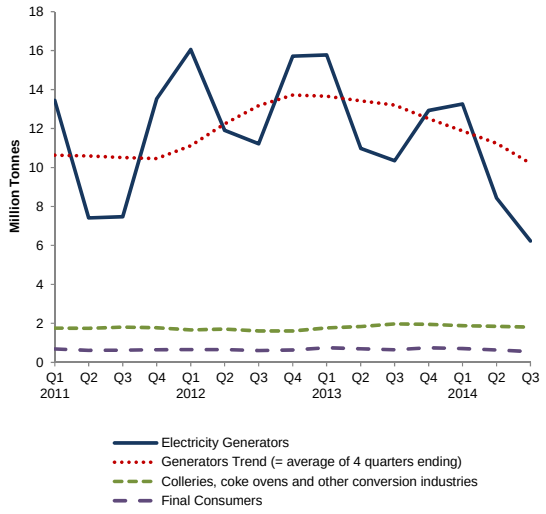
Chart 2.2 Steam coal imports by origin



All but six per cent of UK steam coal imports came from just three countries: Russia (44 per cent), Colombia (27 per cent), and the USA (23 per cent).

Steam coal imports were down by 43 per cent, with large falls recorded from Russia (49 per cent), and Colombia (47 per cent).

Chart 2.3 Coal consumption

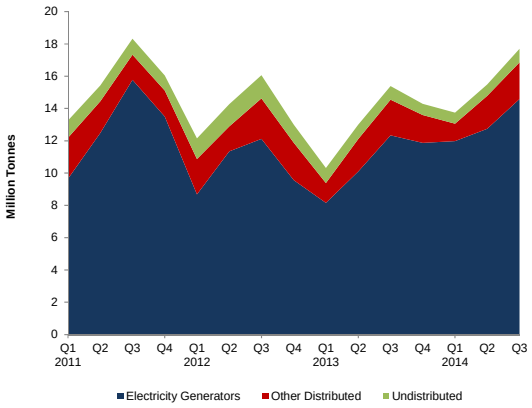


Total demand for coal in the third quarter of 2014, at 8.6 million tonnes, was 34 per cent lower than in the third quarter of 2013. Consumption by electricity generators was down by 40 per cent to 6.2 million tonnes (a new record low). This fall was due to a number of reasons, including outages at several power stations, the closure of Uskmouth and the partial closure of Ferrybridge C during 2014, Drax unit 2 being converted to biomass, lower demand for electricity overall, and increases in generation from gas due to cheaper wholesale prices.

Electricity generators accounted for 73 per cent of total coal use in the third quarter of 2014; compared with 80 per cent a year earlier.

Sales to industrial users fell by 21 per cent in the third quarter of 2014. This was the lowest value since the third quarter of 2006. Sales to other final consumers (as measured by disposals to final consumers) rose by 6.3 per cent to 0.2 million tonnes during the third quarter of 2014.

Chart 2.4 Coal stocks



Coal stocks showed a seasonal rise of 2.2 million tonnes during the third quarter of 2014 and stood at 17.7 million tonnes, 2.3 million tonnes higher than at the end of September 2013.

The level of coal stocks at power stations at the end of the third quarter of 2014 was 14.6 million tonnes, 2.3 million tonnes higher than at the end of September 2013, reflecting lower use for generation from coal.

Stocks held by coke ovens were 0.7 million tonnes at the end of the third quarter of 2014, 0.2 million tonnes lower than levels at the end of the September 2013.

Stocks held by producers (undistributed stocks) increased by 1.2 per cent during the third quarter of 2014 to stand at 0.8 million tonnes.

Relevant tables

2.1: Supply and consumption of coal…….....Page 16
2.2: Supply and consumption of coke oven coke, coke breeze and other manufactured solid fuels……...Page 17
2.3: Supply and consumption of coke oven gas, blast furnace gas, benzole and tars…….Page 18

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2 SOLID FUEL AND DERIVED GASES

Table 2.1 Supply and consumption of coal

Thousand tonnes

	2012	2013	*per cent change*	2012 3rd quarter	2012 4th quarter	2013 1st quarter	2013 2nd quarter	2013 3rd quarter	2013 4th quarter	2014 1st quarter	2014 2nd quarter	2014 3rd quarter p	*per cent change*[1]
SUPPLY													
Indigenous production	17,047	12,847	*-24.6*	4,191	3,869	3,754	3,465	2,898	2,731	2,818r	2,965r	2,960	*+2.1*
Deep mined	6,153	4,089	*-33.6*	1,406	1,184	1,350	1,124	785	829	932	936	916	*+16.7*
Surface mining[2]	10,134	8,584	*-15.3*	2,585	2,550	2,404	2,268	2,011	1,902	1,887r	2,029r	2,043	*+1.6*
Other sources	760	175	*-77.0*	200	135	-	73r	102	-	-	-	-	*-100.0*
Imports[3]	44,815	49,402	*+10.2*	11,117	11,505	12,035	12,843	12,540	11,983	12,649r	9,727r	7,958	*-36.5*
Exports[4]	488	593	*+21.5*	102	134	186	127	95	185	129r	79	112	*+17.8*
Stock change[5]	+2,967	-1,298	*(-)*	-1,797	+3,057	+2,686	-2,683	-2,383	+1,082	+571r	-1,739r	-2,217	*-7.0*
Total supply	64,341	60,358	*-6.2*	13,409	18,298	18,289	13,498	12,960	15,611	15,910r	10,874r	8,589	*-33.7*
Statistical difference	+310	-46	*(-)*	-19	+341	-7	-17	-7	-15	+69r	-38r	+3	*(-)*
Total demand	64,030	60,405	*-5.7*	13,428	17,956	18,297	13,515	12,966	15,627	15,842r	10,912r	8,586	*-33.8*
TRANSFORMATION	61,486	57,561	*-6.4*	12,828	17,322	17,544	12,819	12,318	14,880	15,139r	10,275r	8,033	*-34.8*
Electricity generation	54,901	50,042	*-8.9*	11,217	15,715	15,777	10,984	10,348	12,933	13,257r	8,430r	6,231	*-39.8*
Heat generation[6]	461	609	*+32.1*	94	128	179	143	129	157	179	143	129	-
Coke manufacture	4,965	5,288	*+6.5*	1,215	1,149	1,242	1,310	1,404	1,331	1,235	1,252	1,195	*-14.9*
Blast furnaces	987	1,411	*+43.0*	255	279	294	325	393	399	411	377	406	*+3.3*
Patent fuel manufacture	172	212	*+23.1*	46	51	52	57	43	60	57r	72r	73	*+67.6*
Energy industry use	4	3	*-32.0*	1	1	1	0	0	0	0	0	-	*-100.0*
FINAL CONSUMPTION	2,541	2,841	*+11.8*	600	634	751	695	648	747	703r	637r	553	*-14.7*
Iron & steel	51	53	*+5.1*	12	13	13	13	13	13	14	14	14	*+4.2*
Other industries	1,776	2,094	*+17.9*	429	427	547	514	485	549	487r	448r	379	*-21.7*
Domestic	674	646	*-4.1*	146	185	179	160	139	168	191r	162r	145	*+4.0*
Other final users	40	48	*+19.1*	12	9	12	9	11	16	10	13r	15	*+34.5*
Stocks at end of period													
Distributed stocks	11,883	13,591	*+14.4*	14,621	11,883	9,385	12,104	14,548	13,591	13,059r	14,779r	16,855	*+15.9*
Of which:													
Major power producers[7]	9,561	11,871	*+24.2*	12,118	9,561	8,151	10,093	12,336	11,871	11,982r	12,739r	14,589	*+18.3*
Coke ovens	831	518	*-37.6*	941	831	558	1,170	952	518	323	473r	741	*-22.2*
Undistributed stocks	1,120	696	*-37.9*	1,439	1,120	933	897	836	696	686r	705r	846	*+1.2*
Total stocks[8]	13,003	14,287	*+9.9*	16,061	13,003	10,317	13,000	15,383	14,287	13,745r	15,484r	17,701	*+15.1*

1. Percentage change between the most recent quarter and the same quarter 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 2014 heat generation will not be published until the end of July 2015. Therefore, the 2013 figure is used as an estimate for 2014.

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

	2012	2013	*per cent change*	2012 3rd quarter	2012 4th quarter	2013 1st quarter	2013 2nd quarter	2013 3rd quarter	2013 4th quarter	2014 1st quarter	2014 2nd quarter	2014 3rd quarter p	*per cent change* [3]
SUPPLY													
Indigenous production	4,000	4,136	*+3.4*	956	948	984	1,052	1,053	1,047	994	1,025	963	*-8.6*
Coke Oven Coke	3,712	3,769	*+1.5*	884	853	894	958	969	949	919	940	885	*-8.6*
Coke Breeze	31	32	*+3.2*	8	8	8	8	8	8	8	8	8	*-5.0*
Other MSF	258	336	*+30.4*	65	87	83	87	76	90	67	77	70	*-7.9*
Imports	207	834	*(+)*	23	156	105	327	235	167	204	202	273	*+16.5*
Exports	552	117	*-78.8*	43	42	36	35	20	26	40	30	29	*+44.7*
Stock change[1]	+94	-123	*(-)*	+52	-41	+91	-98	-111	-5	+42	-92	-74	*-33.4*
Transfers	-	0		-	-	-	0	0	-0	-1	-13	9	*(+)*
Total supply	3,749	4,730	*+26.2*	989	1,022	1,144	1,246	1,157	1,183	1,199	1,093r	1,143	*-1.3*
Statistical difference	-5	-2	*-62.2*	-1r	-2	-1	-	-0r	-1	-0	-	-0	
Total demand	3,754	4,732	*+26.1*	990	1,024	1,145	1,246	1,157	1,184	1,200	1,093r	1,143	*-1.2*
TRANSFORMATION	3,014	3,713	*+23.2*	828	782	902	987	913	911	958r	856r	899	*-1.5*
Coke manufacture	-	-		-	-	-	-	-	-	-	-	-	
Blast furnaces	3,014	3,713	*+23.2*	828	782	902	987	913	911	958r	856r	899	*-1.5*
Energy industry use	-	-		-	-	-	-	-	-	-	-	-	
FINAL CONSUMPTION	740	1,019	*+37.7*	162	242	243	259	244	273	242r	237r	244	*-0.2*
Iron & steel	435	626	*+43.9*	91	142	141	156	159	169	165r	161r	170	*+6.5*
Other industries	45	83	*+83.2*	12	15	14	25	22	23	11	10r	10	*-56.0*
Domestic	260	310	*+19.3*	59	84	88	78	63	81	66	66	64	*+2.1*
Stocks at end of period[2]	854	714	*-16.4*	779	854	500	689	599	714	465	524r	618	*+3.2*

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 between the most recent quarter and the same quarter 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

	2012	2013	*per cent change*	2012 3rd quarter	2012 4th quarter	2013 1st quarter	2013 2nd quarter	2013 3rd quarter	2013 4th quarter	2014 1st quarter	2014 2nd quarter	2014 3rd quarter p	*per cent change* [1]
SUPPLY													
Indigenous production	21,489	25,625	*+19.2*	5,446	5,651	5,915	6,502	6,660	6,548	6,628r	6,393r	6,482	*-2.7*
Coke oven gas	8,254	8,479	*+2.7*	2,009	1,989	2,004	2,140	2,216	2,119	2,132r	2,211r	2,135	*-3.6*
Blast furnace gas	11,692	15,515	*+32.7*	3,080	3,286	3,516	3,959	4,027	4,013	4,075	3,762r	3,972	*-1.4*
Benzole & tars	1,543	1,630	*+5.6*	357	375	395	403	417	416	421r	420r	375	*-10.0*
Transfers	56	56	-	14	26	28	11	13	4	9	25	37	*(+)*
Total supply	21,545	25,680	*+19.2*	5,460	5,677	5,943	6,513	6,673	6,552	6,637r	6,419r	6,519	*-2.3*
Statistical difference	-50	-29	*-41.4*	-12	-13	+20	-21	-16	-13	-18	-21	-10	*-33.7*
Total demand	21,595	25,710	*+19.1*	5,472	5,690	5,923	6,534	6,688	6,565	6,656r	6,440r	6,530	*-2.4*
TRANSFORMATION	9,906	11,522	*+16.3*	2,557	2,593	2,778	3,009	2,887	2,849	2,883r	2,815r	2,604	*-9.8*
Electricity generation	9,309	10,925	*+17.4*	2,408	2,443	2,629	2,860	2,737	2,699	2,734r	2,665r	2,454	*-10.3*
Heat generation[2]	598	598	-	149	149	149	149	149	149	149	149	149	-
Energy industry use	8,133	9,041	*+11.2*	2,092	2,141	2,070	2,289	2,358	2,323	2,463r	2,333r	2,307	*-2.2*
Losses	1,008	2,500	*(+)*	213	299	445	604	755	697	579r	561r	910	*+20.5*
FINAL CONSUMPTION	2,547	2,646	*+3.9*	610	658	629	632	689	695	730r	731r	709	*+2.9*
Iron & steel	806	842	*+4.4*	206	235	181	196	231	235	278r	266r	290	*+25.8*
Other industries	198	174	*-12.1*	47	48	53	33	42	45	32	45	44	*+4.9*
Non-Energy Use[3]	1,543	1,630	*+5.6*	357	375	395	403	417	416	421r	420r	375	*-10.0*

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

2. For Heat generation, the 2014 figures currently shown are the 2013 figures carried forward - these will be updated in July 2015.

3. From 2009, unclassified final consumption for benzole and tars has been recorded under non energy use

Section 3 - Oil and Oil Products

Key results show:

Total indigenous UK production of crude oil and Natural Gas Liquids (NGL) in Q3 2014 was 10.9 per cent lower than a year ago. Taken together, UK indigenous production of crude and NGLs was lower in Q3 2014 than in any other quarter since 1977. (**Chart 3.1**)

Refinery production in Q3 2014 was down 11.6 per cent on the same quarter of last year. Production was lower due to the suspension of one of the UK's refineries and rationalisation elsewhere in the sector as well as an on-going decline in UK refinery production. (**Chart 3.2**)

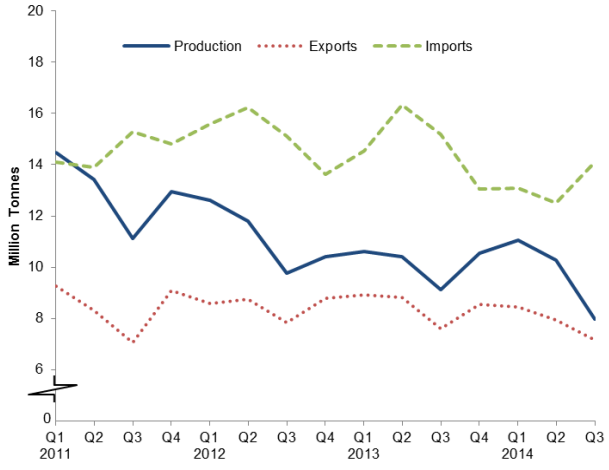
Net imports of primary oils (crude oil, NGLs and process oils) in Q3 2014 were 6.8 million tonnes (down 9.0 per cent) due to lower refinery demand. This met around 46 per cent of the UK's refinery demand. **(Chart 3.3)**

Imports of petroleum products increased by 10.7 per cent on last year and exports decreased by 25 per cent due to low refinery production. As a result, the UK was a net importer of petroleum products in Q3 2014, for the fifth consecutive quarter, by 2.5 million tonnes, following a long period where the UK was generally a net exporter of petroleum products. **(Chart 3.2)**

Total deliveries of the key transport fuels were up slightly on the same period last year (up 1.7 per cent). Diesel deliveries increased by 3.3 per cent in line with a long term trend, diesel share of road fuels is now 65 per cent, up 17 percentage points on 10 years ago. Deliveries of aviation turbine fuel were up by 2.9 per cent. **(Chart 3.5)**

Overall stocks of crude oil and petroleum products, at 13.9 million tonnes, were at the roughly the same level as the end of Q3 2013. **(Chart 3.7)**

Chart 3.1 Production and trade of crude oil and NGLs



Indigenous UK crude oil production was 12.0 per cent lower in Q3 of 2014 compared with the same quarter a year earlier. In particular, crude oil production in August 2014 was lower by more than a quarter; this was largely the result of planned maintenance at Buzzard, the UK's largest oil field. In addition to the maintenance issues there has been a general decline in North Sea production.

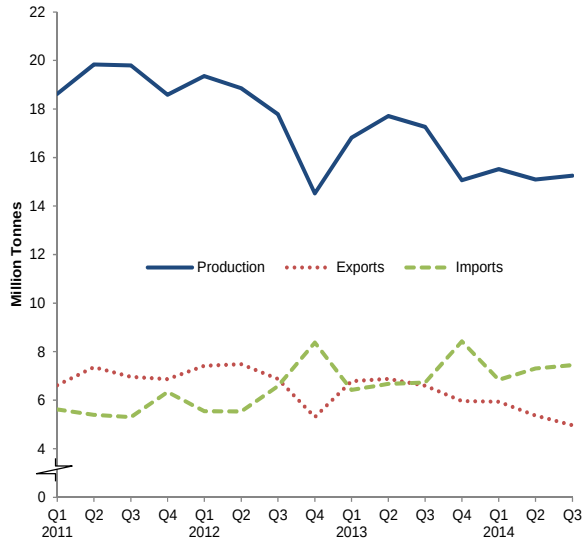
Taken together, UK indigenous production of crude and NGLs was lower in Q3 2014 than in any other quarter since 1977.

Production of NGLs was 10.9 per cent higher than last year, however, production was still lower than Q1 or Q2 2014 due to maintenance. NGL production was up despite a sharp decrease in crude production. Two new fields came online at the end of 2013, they provide a relatively high amount of NGLs compared to crude.

Despite a decrease in indigenous production, imports of crude oil and NGL's decreased by 5.3 per cent compared with the same quarter a year earlier. This was driven by a decrease in refinery demand.

Net imports of primary oils (crude, NGLs and feedstocks) decreased to 6.8 million tonnes in Q3 2014, this met around 46 per cent of the UK's refinery demand.

Chart 3.2 Production and trade of petroleum products



Indigenous production of petroleum products at refineries in the third quarter of 2014 was 11.6 per cent lower compared with the same quarter a year earlier. This is partly due to the suspension of refining activity at a UK refinery and maintenance issues at another major refinery. There has also been rationalisation elsewhere in the sector as well as an on-going decline in UK refinery production.

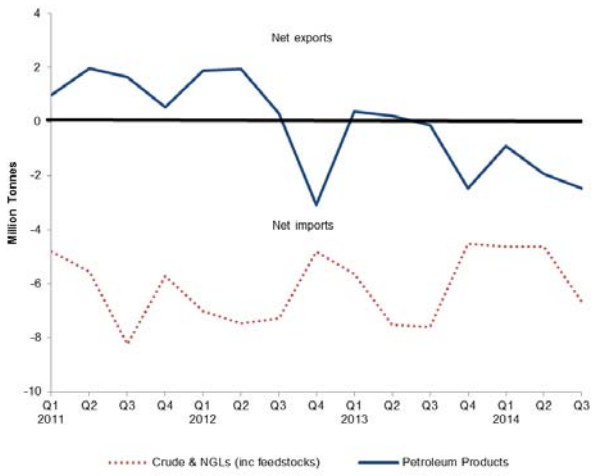
Motor spirit showed the largest absolute change, decreasing by 1.2 million tonnes, about a quarter, on Q3 2013. Road diesel (DERV) and fuel oil also showed large absolute decreases (0.4 million tonnes), 10 per cent and 25 per cent respectively.

Imports of petroleum products were up on Q3 2013 by around 11 per cent and exports were down by nearly a quarter cent due to the decrease in production. As a result the UK was a net importer of petroleum products in the third quarter of 2014 by 2.5 million tonnes.

Imports of DERV and aviation turbine fuel showed the largest absolute increases, 0.4 and 0.3 million tonnes respectively, both being up by 15 per cent.

For exports, motor spirit showed the largest absolute decrease, down by around 1 million tonnes (39 per cent).

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



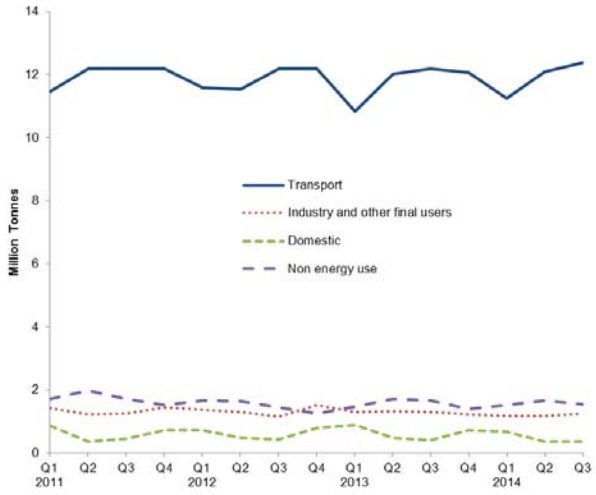
The UK's overall net import dependence for primary oils (Crude, NGL's and feedstocks) was 46 per cent in Q3 2014, broadly the same level as Q3 2013.

Crude oil import dependence has been on an increasing trend as the production from the UKCS declines. There were maintenance issues which dented UK indigenous production of crude this quarter, however, NGL production was up and total demand for primary oils was down, due to lower refinery activity.

In Q3 2014 the UK was a net importer of petroleum products, by 2.5 million tonnes, a large increase from Q3 2013 when the UK had net imports of 0.1 million tonnes. There have now been 5 consecutive quarters where the UK has imported more petroleum products than it exported. In 2013 the UK was a net importer, the first year this has happened since 1984 when there was industrial action in the coal industry. Data for the year to date indicate that net import dependency is now the new normal.

The UK remains structurally short in diesel road fuel and aviation fuel. Decreased production in the latest quarter increased the UK's import dependence rate for DERV, increasing to 41 per cent compared with 31 per cent in Q3 2013. Whist the dependence rate for aviation fuel increased to 67 per cent from 57 per cent.

Chart 3.4 Final consumption of oil

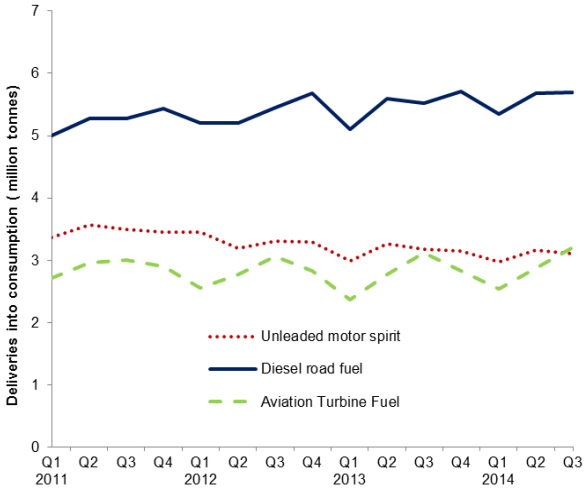


Final consumption in the oil sector is slightly seasonal with different products peaking at different times of the year. Consumption of domestic fuels for heating peaks in Q1 and Q4 each year, and consumption of aviation fuels is higher in Q2 and Q3.

Overall, final consumption of petroleum products in Q3 2014 was at roughly the same level as Q3 2013. Domestic consumption, primarily used for heating, was lower by 9.8 per cent. Non-energy use was also down, by 6.9 per cent. However, these falls were largely offset by a 1.7 per cent increase in oil used for transport.

Transport accounts for over three-quarters of UK final consumption. Transport fuels are examined in more detail below.

Chart 3.5 Demand for key transport fuels

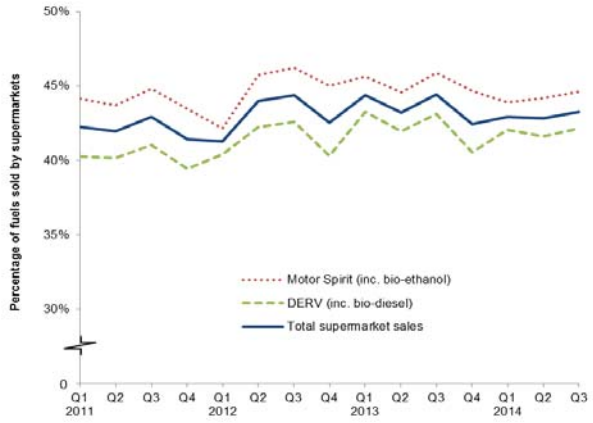


Total deliveries of key hydrocarbon transport fuels in Q3 2014 were higher by 1.7 per cent than the same quarter of 2013.

Consumption of motor spirit decreased by 2.3 per cent but road diesel consumption was up by 3.3 per cent. This is part of an on-going trend as more motorists switch from unleaded to diesel. Diesel's share of road fuel now stands at 65 per cent.

Deliveries of aviation turbine fuel were up by 2.9 per cent on the same quarter last year and for the first time exceed demand for motor spirit. (These figures are based on the hydrocarbon element, total deliveries of motor spirit including the blended bio-fuels are slightly higher).

Chart 3.6 Hypermarket share of road fuel sales

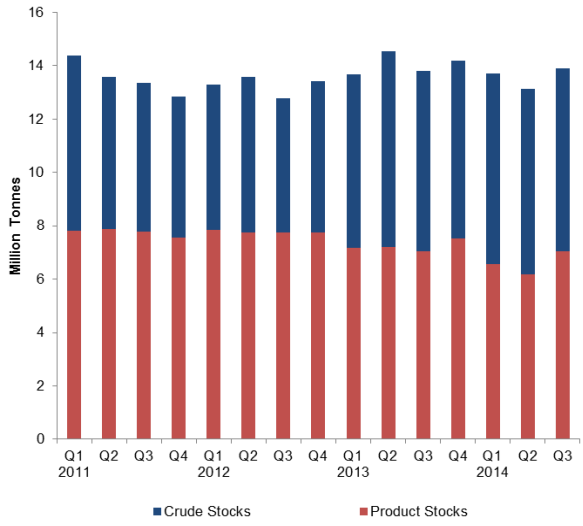


On an overall basis, supermarket outlets accounted for nearly 43 per cent of total retail sales. This is down slightly on the third quarter of 2013 where supermarkets accounted for just over 44 per cent of retail sales. However, supermarket's market share is up slightly on the first two quarters of 2014.

Supermarkets accounted for 45 per cent of motor spirit (unleaded) and 42 per cent of DERV (diesel) in the third quarter of 2014, down from 46 per cent and 43 per cent respectively.

The Supermarket figures refer to Asda, Morrisons, Sainsbury's and Tesco only.

Chart 3.7 UK oil stocks

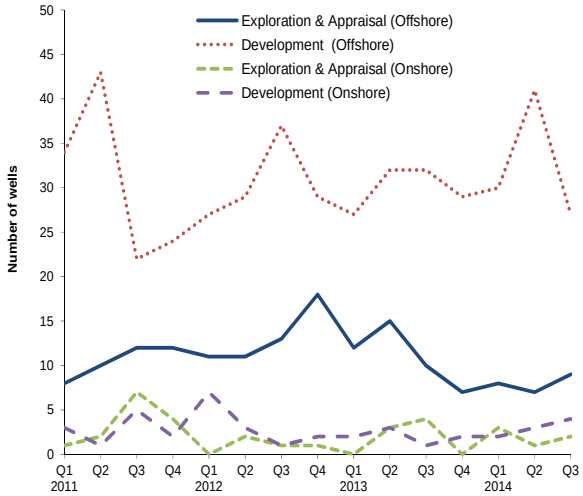


At the end of Q3 2014, UK oil stocks were up slightly on the end of Q3 2013, by 0.8 per cent. Total stocks of crude oil and process oils were 1.8 per cent (1.6 million tonnes) higher than a year earlier while total stocks of oil products were at roughly the same level.

Stocks of petroleum products held in the UK were lower at the end of September 2014 than they were a year previously (by 0.4 million tonnes). However, this was offset by a 20 per cent increase in petroleum product stocks held abroad for the UK (under bilateral agreements). From 2013 onwards, EC Directive 2009/119/EC came into effect and this has led to changes in how petroleum products were defined and what opportunities UK companies have with respect to how they choose to meet their stocking obligations.

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. The UK is required to hold 61 days of stock for emergency purposes, and there is additional stock (in the region of 10 to 15 days) held by companies as part of their day to day operations

Chart 3.8 Drilling activity on the UKCS



There were 9 exploration and appraisal wells started offshore in the third quarter of 2014, compared to 10 in the corresponding quarter of 2013.

There were 27 development wells drilled offshore in the third quarter of 2014, compared to 32 in the corresponding quarter of 2013.

There were 2 exploration and appraisal wells started onshore in the third quarter of 2014, compared to 4 in the corresponding quarter of 2013.

There were 4 development wells drilled onshore in the third quarter of 2014, compared to 1 in the corresponding quarter of 2013.

Relevant tables

3.1: Supply and use of crude oil, natural gas liquids and feedstocks..... Page 24
3.2: Supply and use of petroleum products..... Page 25
3.3: Supply and use of petroleum products - annual data..... Page 26
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3.7: Drilling activity on the UK Continental Shelf..... Page 30

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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

	2012	2013	*per cent change*	2012 3rd quarter	2012 4th quarter	2013 1st quarter	2013 2nd quarter	2013 3rd quarter	2013 4th quarter	2014 1st quarter	2014 2nd quarter	2014 3rd quarter p	*per cent change*[8]
SUPPLY													
Indigenous production[2]	44,561	40,646	*-8.8*	9,751	10,394	10,600	10,397	9,108	10,541	11,055r	10,285r	8,115	*-10.9*
Crude oil	42,052	38,456	*-8.6*	9,361	9,816	10,006	9,729	8,647	10,074	10,372r	9,641r	7,612	*-12.0*
NGLs[3]	2,508	2,190	*-12.7*	390	578	594	668	461	466	683	644	503	*+9.0*
Imports[4]	60,559	59,137	*-2.3*	15,120	13,619	14,541	16,344	15,195	13,056	13,082r	12,495r	13,962	*-8.1*
Crude oil & NGLs	55,340	52,470	*-5.2*	13,823	12,798	12,880	14,773	13,533	11,284	11,584r	11,313r	12,809	*-5.3*
Feedstocks	5,218	6,667	*+27.8*	1,297	821	1,660	1,571	1,662	1,773	1,498	1,182r	1,153	*-30.6*
Exports[4]	33,961	33,844	*-0.3*	7,848	8,798	8,905	8,821	7,587	8,531	8,451r	7,922r	7,182	*-5.3*
Crude Oil & NGLs	29,939	31,754	*+6.1*	6,815	7,722	8,314	8,314	7,045	8,082	7,811r	7,215r	6,668	*-5.3*
Feedstocks	4,021	2,089	*-48.0*	1,033	1,076	590	507	542	450	640	707	514	*-5.1*
Stock change[5]	-486	+724		+673	-740	+555	-222	+615	-224	-320	+59r	+252	
Transfers[6]	-1,934	-1,674		-306	-391	-496	-572	-490	-116	-327	-293	-274	
Total supply	68,738	64,990	*-5.5*	17,390	14,085	16,296	17,126	16,842	14,726	15,039	14,624r	14,874	*-11.7*
Statistical difference[7]	-124	-44		-114	-101	-93	-21	+51	+20	+3	-2	-15	
Total demand	68,862	65,034	*-5.6*	17,504	14,186	16,389	17,148	16,791	14,706	15,036	14,626r	14,889	*-11.3*
TRANSFORMATION	68,862	65,034	*-5.6*	17,504	14,186	16,389	17,148	16,791	14,706	15,036	14,626r	14,889	*-11.3*
Petroleum refineries	68,862	65,034	*-5.6*	17,504	14,186	16,389	17,148	16,791	14,706	15,036	14,626r	14,889	*-11.3*

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 between the most recent quarter and the same quarter a year earlier.

3 OIL AND OIL PRODUCTS

Table 3.2 Supply and use of petroleum products

Thousand tonnes

	2012	2013	*per cent change*	2012 3rd quarter	2012 4th quarter	2013 1st quarter	2013 2nd quarter	2013 3rd quarter	2013 4th quarter	2014 1st quarter	2014 2nd quarter	2014 3rd quarter p	*per cent change* [1]
SUPPLY													
Indigenous production [2]	70,522	66,865	*-5.2*	17,785	14,525	16,821	17,710	17,265	15,068	15,525	15,098	15,257	*-11.6*
Imports [3]	26,028	28,245	*+8.5*	6,579	8,375	6,422	6,669	6,728	8,426	6,841	7,305r	7,445	*+10.7*
Exports [3]	27,083	26,223	*-3.2*	6,874	5,304	6,783	6,879	6,600	5,961	5,934	5,366r	4,971	*-24.7*
Marine bunkers	2,663	2,540	*-4.6*	698	666	626	677	645	591	600r	563r	582	*-9.9*
Stock change [4]	+128	+106		-102	-5	+30	+53	+63	-41	+204	+227	-324	
Transfers [5]	+53	-463		-17	-27	-13	-29	-49	-371	-238r	-272	-181	
Total supply	66,985	65,990	*-1.5*	16,673	16,899	15,852	16,847	16,761	16,530	15,798r	16,428r	16,645	*-0.7*
Statistical difference [6]	-85	-124		+29	-68	+63	-6	-132	-49	-37r	-32r	-71	
Total demand	67,070	66,114	*-1.4*	16,644	16,966	15,789	16,853	16,893	16,579	15,835r	16,460r	16,715	*-1.1*
TRANSFORMATION	853	726	*-14.9*	171	236	203	155	190	178	169	150r	142	*-25.3*
Electricity generation	694	551	*-20.7*	134	188	158	112	151	130	125	110	106	*-29.8*
Heat generation	76	65	*-14.5*	19	19	16	16	16	16	16	16	16	*+1.2*
Other Transformation	83	111	*+33.0*	19	29	29	26	24	32	27	24	20	*-16.0*
Energy industry use	4,916	4,387	*-10.8*	1,234	974	1,087	1,155	1,156	989	1,040	998	1,029	*-10.9*
Petrolem Refineries	4,299	3,768	*-12.4*	1,080	819	932	1,000	1,001	834	885	843	875	*-12.6*
Blast Furnaces	-	-		-	-	-	-	-	-	-	-	-	
Others	617	619	*+0.4*	154	154	155	155	155	155	155	155	155	*+0.0*
FINAL CONSUMPTION	61,300	61,000	*-0.5*	15,238	15,756	14,499	15,543	15,547	15,412	14,627r	15,312r	15,544	*-*
Iron & steel	5	4	*-17.6*	1	1	1	2	1	1	1	1	1	*+15.4*
Other industries	4,177	4,059	*-2.8*	859	1,210	1,047	1,040	1,016	955	948r	900r	975	*-4.0*
Transport	47,515	47,104	*-0.9*	12,196	12,190	10,833	12,021	12,184	12,066	11,243	12,092r	12,388	*+1.7*
Domestic	2,433	2,489	*+2.3*	425	795	890	483	398	719	668	361r	359	*-9.8*
Other final users	1,166	1,113	*-4.5*	310	299	256	289	288	280	234	282	276	*-4.3*
Non energy use	6,004	6,231	*+3.8*	1,446	1,262	1,471	1,709	1,660	1,392	1,533r	1,676r	1,544	*-6.9*

1. Percentage change between the most recent quarter and the same quarter 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

	2012									2013								
	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]	70,522	17,013	15,772	8,941	5,775	7,164	6,666	2,268	6,924	66,865	17,572	14,831	8,193	4,527	6,483	6,546	2,705	6,008
Imports[5]	26,028	4,184	9,541	1,186	7,127	660	293	702	2,334	28,245	4,511	10,145	589	8,077	626	414	637	3,246
Exports[5]	27,083	8,561	3,377	4,270	1,320	5,300	1,147	112	2,996	26,223	10,213	2,843	3,310	970	4,586	1,165	381	2,755
Marine bunkers	2,663	-	-	1,123	-	1,540	-	-	-	2,540	-	-	1,248	-	1,292	-	-	-
Stock change[6]	+128	+26	-133	+7	+96	+90	+9	+40	-6	+106	-356	+46	+91	-20	+93	+11	+52	188
Transfers[7]	+53	+560	-268	+217	-479	-14	+23	+446	-432	-463	+1,060	-253	+250	-535	-401	+23	+463	-1,070
Total supply	66,985	13,222	21,535	4,958	11,199	1,059	5,844	3,343	5,824	65,990	12,574	21,926	4,566	11,080	922	5,828	3,477	5,617
Statistical difference[8]	-85	-8	-3	-33	-22	+8	-0	+14	-42	-124	+0	+0	-66	-3	+9	-37	+16	-45
Total demand	67,070	13,231	21,538	4,990	11,221	1,052	5,844	3,329	5,866	66,114	12,574	21,926	4,631	11,083	913	5,865	3,460	5,662
TRANSFORMATION	853	-	-	60	-	390	209	-	194	726	-	-	105	-	252	207	-	162
Electricity generation	694	-	-	54	-	337	191	-	111	551	-	-	100	-	199	201	-	51
Heat generation	76	-	-	5	-	52	18	-	-	65	-	-	5	-	53	7	-	-
Petroleum refineries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coke manufacture	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Blast furnaces	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Patent fuel manufacture	83	-	-	-	-	-	-	-	83	111	-	-	-	-	-	-	-	111
Energy industry use	4,916	-	-	617	-	346	2,348	-	1,606	4,387	-	-	619	-	331	2,133	-	1,303
FINAL CONSUMPTION	61,300	13,231	21,538	4,313	11,221	316	3,287	3,329	4,066	61,000	12,574	21,926	3,907	11,083	330	3,524	3,460	4,197
Iron & steel	5	-	-	-	-	2	2	-	-	4	-	-	-	-	3	1	-	-
Other industries	4,177	-	-	1,878	-	120	377	1,332	-	4,059	-	-	1,520	-	147	276	1,400	-
Transport	47,515	13,231	21,538	1,326	11,221	89	93	-	17	47,104	12,574	21,926	1,323	11,083	89	94	-	16
Domestic	2,433	-	-	140	-	-	297	1,996	-	2,489	-	-	129	-	-	300	2,060	-
Other final users	1,166	-	-	954	-	105	108	-	-	1,113	-	-	921	-	90	102	-	-
Non energy use	6,004	-	-	15	-	-	2,410	-	3,579	6,231	-	-	14	-	-	2,751	-	3,466

1. Includes: Middle distillate feedstock destined for use in the petrochemical industry and marine diesel o
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

	2013 3rd quarter									2014 3rd 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]	17,265	4,671	3,922	2,106	1,389	1,535	1,731	494	1,417	15,257	3,486	3,548	2,109	1,336	1,159	1,511	357	1,751
Imports[5]	6,728	958	2,425	116	2,143	136	56	75	819r	7,445	913	2,797	156	2,464	271	59	73	711
Exports[5]	6,600	2,613	716	781	371	1,102	293	94	630	4,971	1,585	476	844	319	818	213	26	689
Marine bunkers	645	-	-	317	-	328	-	-	-	582	-	-	338	-	244	-	-	-
Stock change[6]	+63	-68	-34	+29	+52	-6	+3	+18	+69	-324	-63	-32	-43	-150	-62	+2	+5	+19
Transfers[7]	-49	+229	-79	+72	-96	-25	+6	+70	-227	-181	+352	-136	+123	-107	-144	+7	+99	-375
Total supply	16,761	3,178	5,518	1,225	3,117	211	1,503	563	1,448r	16,645	3,104	5,701	1,163	3,223	162	1,367	507	1,417
Statistical difference[8]	-132	-0	-0	+59	+3	-8	-39	-128	-18	-71	+1	-0	-31	+20	+4	+13	-55	-21
Total demand	16,893	3,178	5,518	1,166	3,114	219	1,542	691	1,466r	16,715	3,103	5,701	1,194	3,204	158	1,355	563	1,438
TRANSFORMATION	190	-	-	27	-	60	52	-	51	142	-	-	22	-	48	52	-	20
Electricity generation	151	-	-	26	-	47	50	-	-	106	-	-	21	-	35	50	-	-
Heat generation	16	-	-	1	-	13	2	-	-	16	-	-	1	-	13	2	-	-
Petroleum refineries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coke manufacture	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Blast furnaces	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Patent fuel manufacture	24	-	-	-	-	-	-	-	24	20	-	-	-	-	-	-	-	20
Energy industry use	1,156	-	-	155	-	83	581	-	337	1,029	-	-	156	-	29	550	-	295
FINAL CONSUMPTION	15,547	3,178	5,518	984	3,114	76	909	691	1,077r	15,544	3,103	5,701	1,016	3,204	81	753	563	1,123
Iron & steel	1	-	-	-	-	1	-	-	-	1	-	-	-	-	1	-	-	-
Other industries	1,016	-	-	380	-	37	111	350	138r	975	-	-	421	-	40	89	265	160
Transport	12,184	3,178	5,518	330	3,114	16	23	-	5	12,388	3,103	5,701	335	3,204	17	24	-	4
Domestic	398	-	-	22	-	-	35	341	-	359	-	-	20	-	-	42	297	-
Other final users	288	-	-	248	-	22	18	-	-	276	-	-	238	-	22	16	-	-
Non energy use	1,660	-	-	4	-	-	722	-	934	1,544	-	-	2	-	-	583	-	959

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.

3 OIL AND OIL PRODUCTS

Table 3.5 Demand for key petroleum products[1]

Thousand tonnes

	2012	2013	*per cent change*	2012 3rd quarter	2012 4th quarter	2013 1st quarter	2013 2nd quarter	2013 3rd quarter	2013 4th quarter	2014 1st quarter	2014 2nd quarter	2014 3rd quarter p	*per cent change [2]*
MOTOR SPIRIT													
of which, Hydrocarbon [3]	13,231	12,574	*-5.0%*	3,305	3,288	2,983	3,268	3,178	3,145	2,974	3,163	3,103	*-2.3%*
of which, Bio-ethanol [4]	615	650	*5.8%*	156	161	151	161	178	160	152	164	168	*-5.4%*
Total Motor Spirit including Bio-ethanol	**13,845**	**13,224**	*-4.5%*	**3,460**	**3,449**	**3,134**	**3,429**	**3,355**	**3,305**	**3,126**	**3,327**	**3,271**	*-2.5%*
of which, sold through Supermarkets [5]	6,196	5,974	*-3.6%*	1,599	1,552	1,431	1,528	1,539	1,476	1,373	1,471	1,460	*-5.1%*
of which, sold through Refiners, and other traders [6]	7,649	7,250	*-5.2%*	1,861	1,897	1,704	1,901	1,816	1,829	1,753	1,856	1,811	*-0.3%*
of which, sold via commercial sales [7]	-	-		-	-	-	-	-	-	-	-	-	
DIESEL ROAD FUEL													
Hydrocarbon [8]	21,538	21,926	*1.8%*	5,447	5,685	5,104	5,598	5,518	5,706	5,341	5,674	5,701	*3.3%*
Bio-diesel [9]	563	682	*21.0%*	97	101	114	170	197	201	174	230	243	*23.5%*
Total Diesel Road Fuel including Bio-diesel	**22,101**	**22,607**	*2.3%*	**5,544**	**5,786**	**5,218**	**5,768**	**5,715**	**5,907**	**5,514**	**5,903**	**5,944**	*4.0%*
of which, sold through Supermarkets [10]	5,959	6,217	*4.3%*	1,539	1,519	1,471	1,577	1,607	1,562	1,508	1,602	1,631	*1.5%*
of which, sold through Refiners, and other traders [11]	8,446	8,519	*0.9%*	2,073	2,251	1,929	2,182	2,118	2,289	2,077	2,247r	2,240	*5.7%*
of which, sold via commercial sales [12]	7,696	7,871	*2.3%*	1,931	2,015	1,817	2,008	1,989	2,056	1,929	2,054	2,074	*4.3%*
OTHER GAS DIESEL OIL [13]	**4,990**	**4,631**	*-7.2%*	**1,258**	**1,246**	**1,149**	**1,143**	**1,166**	**1,173**	**1,041r**	**1,103r**	**1,194**	*2.4%*
AVIATION FUELS													
Total sales	11,238	11,099	*-1.2%*	3,064	2,839	2,367	2,774	3,119	2,838	2,547	2,881	3,207	*2.8%*
Aviation spirit	17	16	*-10.3%*	5	4	3	4	5	3	7	5	4	*-29.8%*
Aviation turbine fuel	11,221	11,083	*-1.2%*	3,059	2,835	2,365	2,770	3,114	2,835	2,541	2,876	3,204	*2.9%*
FUEL OIL													
Total Sales	707	581	*-17.7%*	177	188	174	147	136	123	143	138r	169	*23.5%*
Light	367	229	*-37.5%*	98	130	81	60	69	19	25	75r	93	*34.5%*
Medium	118	139	*17.8%*	30	35	32	45	31	32	32	31r	31	*0.5%*
Heavy	221	213	*-3.9%*	49	23	61	43	37	72	87	32r	45	*22.3%*

1. Monthly data for inland deliveries of oil products are available - See DECC website: https://www.gov.uk/government/collections/oil-statistics
2. Percentage change between the most recent quarter and the same quarter a year earlier
3. Demand excluding bioethanol. Based on HMRC data.
4. Bioethanol based on HMRC data and excludes other renewables
5. Data for sales by supermarkets collected by a monthly reporting system. Includes Asda, Morrisons, Sainsburys and Tesco only.
6. Equals total motor spirit sales minus supermarket and commercial sales.
7. Commercial sales are estimated through returns provided by the UK's refiners
8. Demand excluding biodiesel. Based on HMRC data.
9. Biodiesel based on HMRC data and excludes other renewables.
10. Data for sales by supermarkets collected by a monthly reporting system. Includes Asda, Morrisons, Sainsburys and Tesco only.
11. Equals total diesel sales minus supermarket and commercial sales.
12. Commercial sales are estimated through returns provided by the UK's refiners
13. 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[9]	Net bilaterals of products [5]	Total products	Total Net bilaterals [5]	Total Stocks in UK[10]	Total stocks
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		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		3,592	1,102	513	1,469	6,677	1,041	1,419	1,539	404	693	2,432	7,528	3,901	10,304	14,205
Per cent change		*-6.2*	*-7.6*	*+8.4*	*(+)*	*+17.3*	*+72.2*	*-0.5*	*-20.6*	*-17.8*	*-17.6*	*-0.3*	*-2.8*	*+48.0*	*-4.6*	*+5.7*
2012	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	3,588	965	392	1,562	6,507	1,073	1,103	1,704	490	963	1,827	7,160	3,388	10,278	13,666
	2nd quarter	3,843	1,274	508	1,719	7,344	987	1,235	1,634	481	872	2,005	7,213	3,724	10,833	14,557
	3rd quarter	3,314	1,020	473	1,943	6,750	1,015	1,276	1,641	469	804	1,841	7,047	3,784	10,012	13,797
	4th quarter	3,592	1,102	513	1,469	6,677	1,041	1,419	1,539	404	693	2,432	7,528	3,901	10,304	14,205
2014	1st quarter	3,538	1,216	452	1,946	7,152	1,066	1,210	1,454	364	710	1,769	6,573	3,715	10,010	13,725
	2nd quarter	3,384	1,227	548r	1,799	6,957r	887	1,118	1,688	228	718	1,529	6,168	3,328	9,797r	13,125r
	3rd quarter p	3,248	1,309	429	1,863	6,849	914	1,259	1,659	323	684	2,215	7,054	4,078	9,826	13,904
Per cent change [11]		*-2.0*	*+28.3*	*-9.3*	*-4.1*	*+1.5*	*-10.0*	*-1.3*	*+1.1*	*-31.0*	*-14.9*	*+20.3*	*+0.1*	*+7.8*	*-1.9*	*+0.8*

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 underare approved bilateral agreements 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 between the most recent quarter and the same quarter a year earlier.

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]
2009		23	41	64	131	15	11
2010		28	34	62	130	9	12
2011		14	28	42	123	14	11
2012		22	31	53	122	4	13
2013		15	29	44	120	7	8
Per cent change		*-31.8*	*-6.5*	*-17.0*	*-1.6*	*+75.0*	*-38.5*
2012	3rd quarter	4	9	13	37	1	1
	4th quarter	8	10	18	29	1	2
2013	1st quarter	7	5	12	27	-	2
	2nd quarter	3	12	15	32	3	3
	3rd quarter	3	7	10	32	4	1
	4th quarter	2	5	7	29	-	2
2014	1st quarter	6	2	8	30	3	2r
	2nd quarter	4r	3r	7r	41	1	3r
	3rd quarter p	3	6	9	27	2	4
Per cent change[3]		*-*	*-14.3*	*-10.0*	*-15.6*	*-50.0*	*(+)*

1. Including sidetracked wells

2. Development wells are production or injection wells drilled after development approval has been granted.

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

Section 4 - Gas

Key results show:

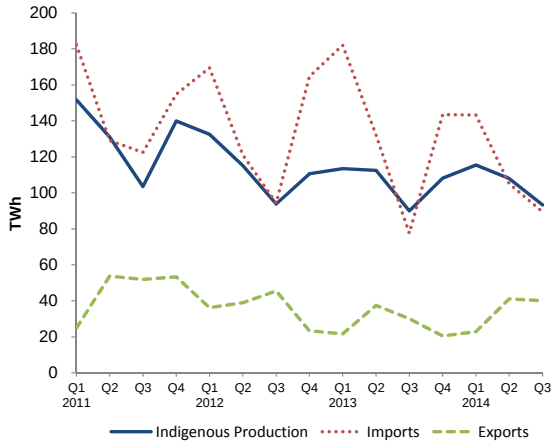
Gross UK production of natural gas in Q3 2014 was 3.6 per cent higher than in the same period a year ago, partially as a result of new fields coming on stream. **(Chart 4.1).**

Within total UK production, production of associated gas (natural gas produced from oil fields) increased by 11 per cent whilst dry gas production decreased by 5.2 per cent **(Chart 4.2).**

Imports of gas increased by 15.3 per cent in Q3 2014 compared with the same quarter in 2013, with shipped imports of LNG more than doubled. Exports also increased, up a third on the same period as last year. **(Chart 4.4)**.

Overall UK gas demand increased by 11.0 per cent to around 136 TWh, largely driven by an increase in gas demand for electricity generation. **(Chart 4.6)**

Chart 4.1 Production and imports and exports of natural gas

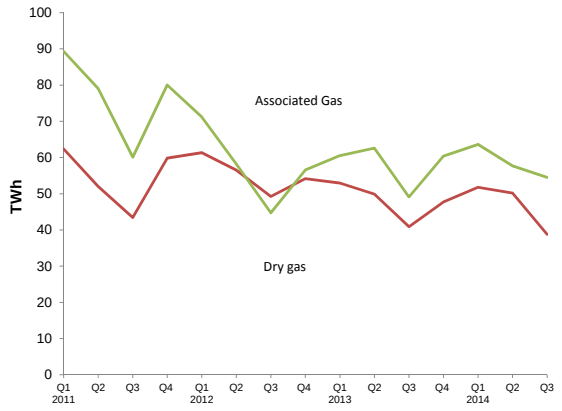


Total indigenous UK production of natural gas in Q3 2014 was 3.6 per cent higher than in the same quarter a year earlier, the largest increase since 2010.

In general terms, UKCS production has been in decline year on year, and over the last ten years UKCS production has decreased by around 9.2 per cent on average per annum.

In Q3 2014, imports and exports of natural gas were 89 TWh and 40 TWh respectively, 15.3 and 33.2 per cent higher than a year ago. The trade position shows net imports have increased 3.9 per cent compared to the same period a year ago.

Chart 4.2 Production of dry gas and associated gas

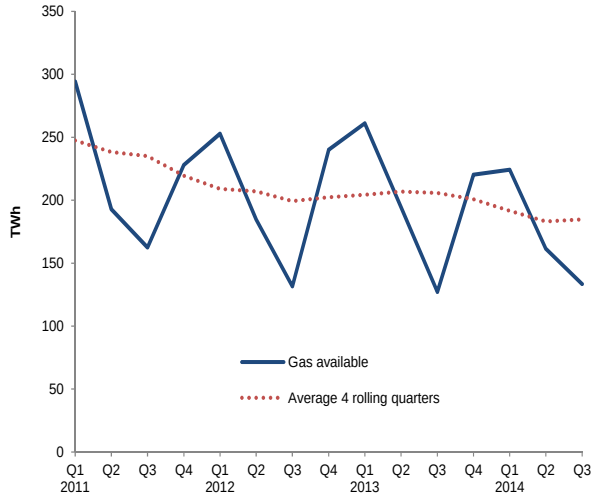


In Q3 2014 associated gas production (natural gas produced from oil fields) increased by 11.0 per cent from 49 TWh in Q3 2013 to 55 TWh in Q3 2014.

The main driver behind this is due to increased flows of associated gas into Teesside following the start-up of the relatively large Jasmine field during Q4 2013.

Compared to the same quarter a year ago, dry gas production decreased by 5.2 per cent to 39 TWh reflecting the continuing decrease in UK gas production.

Chart 4.3 Gas availability



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

Gas availability is seasonal, mirroring gas demand, and peaks during Q1 and Q4 each year. Gas availability in Q3 2014 increased by 5.0 per cent compared to Q3 2013 to 133 TWh.

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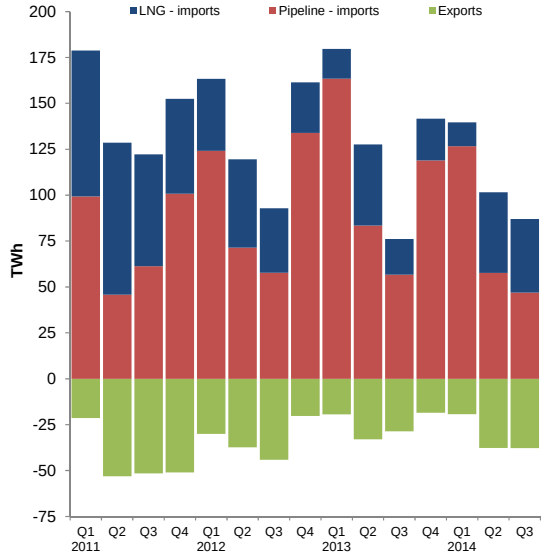
Chart 4.4 Import and exports



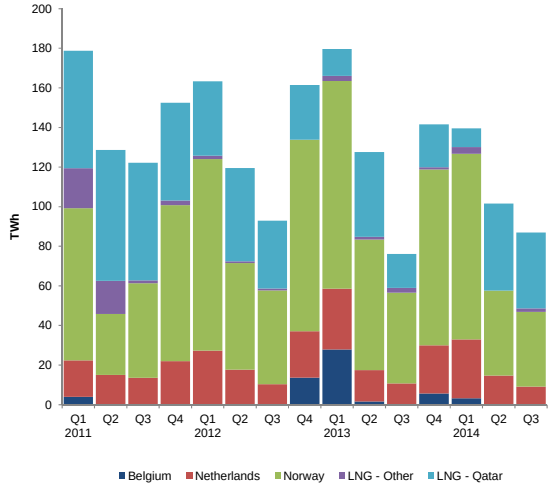
Total imports in Q3 2014 increased by 15.3 per cent compared to the same quarter a year ago.

The main bulk of this increase between Q3 2014 and Q3 2013 was an increase in imports of Liquefied Natural Gas (LNG). LNG imports increased sharply by 107 per cent as a result of significantly cheaper LNG prices as demand fell in the Asian market. LNG imports accounted for 46 per cent of total imports in Q3 2014 compared with 26 per cent a year ago.

As a consequence pipeline imports decreased 17 per cent – from 57 TWh in Q3 2013 to 47 TWh in the latest quarter.

Total exports also increased by 33 per cent in Q3 2014. This is largely due to higher exports through the Bacton – Zeebrugge interconnector during Q3 2014.

Chart 4.5 Imports by origin



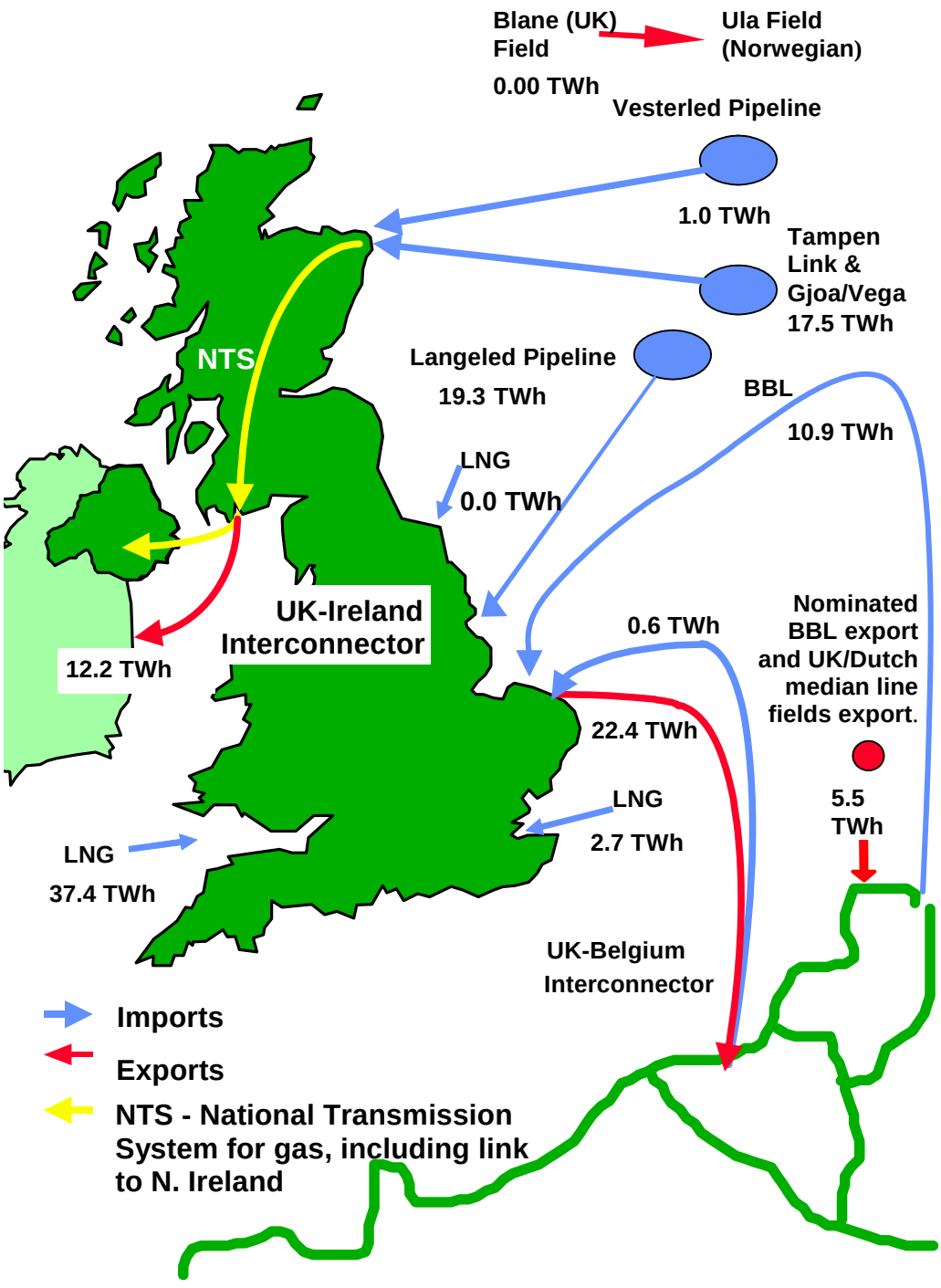
The majority of LNG imports are sourced from Qatar. There was a sharp increase in LNG imports from Qatar in Q3 2014, 125 per cent higher than the same quarter in 2013.

The increase in LNG imports is due to recent low demand for LNG from Asia which has resulted in sharp falls in the price of LNG to the UK market.

Pipeline imports from the Netherlands were 13 per cent lower in the most recent quarter compared with the previous year, falling from 10.5 TWh in Q3 2013 to 9.1 TWh in Q3 2014. Similarly, imports from Norway were 18 per cent lower than a year ago.

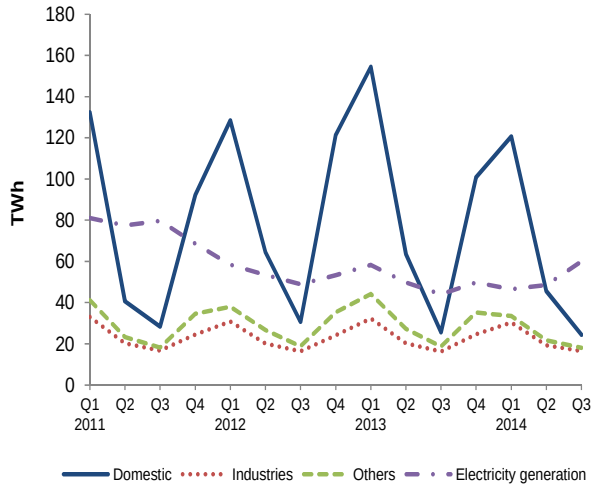
A complete country breakdown for pipeline and LNG imports is provided in Energy Trends table 4.4 - *Supplementary information on the origin of UK gas imports.*

Map: UK imports and exports of gas Q3 2014[1]



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

Chart 4.6 UK demand for natural gas



UK demand for natural gas in Q3 2014 was 11.0 per cent higher than in the same period a year ago. This was primarily driven by the increase in gas used for electricity generation, with gas use up 36 per cent in this sector.

There was a mixed picture across other sectors. Energy industry saw a 7.5 per cent decrease in gas use, domestic and other final user demand also fell by 4.8 and 3.4 per cent respectively. Both iron and steel and other industry gas use increased, by 5.7 and 1.3 per cent respectively.

A complete breakdown for gas demand is provided in Energy Trends table 4.1 - *Natural gas supply and consumption.*

Relevant table

4.1: Natural gas supply and consumption..……..……..Page 36

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4 GAS

Table 4.1. Natural gas supply and consumption

GWh

	2012	2013	*per cent change*	2012 3rd quarter	2012 4th quarter	2013 1st quarter	2013 2nd quarter	2013 3rd quarter	2013 4th quarter	2014 1st quarter	2014 2nd quarter	2014 3rd quarter p	*per cent change* [1]
SUPPLY													
Indigenous production	452,094	424,153	*-6.2*	93,807	110,606	113,470	112,494	90,047	108,142	115,401	107,920r	93,303	*+3.6*
Imports	549,518	535,105	*-2.6*	94,305	164,573	181,972	132,068	77,546	143,520	143,212	105,078	89,405	*+15.3*
of which LNG	*150,098*	*102,620*	*-31.6*	*35,223*	*27,573*	*16,226*	*44,196*	*19,428*	*22,771*	*12,911*	*43,973*	*40,151*	*(+)*
Exports	144,023	109,664	*-23.9*	45,507	23,348	21,692	37,423	30,106	20,443	22,862	41,063r	40,102	*+33.2*
Stock change[2]	-269	+621		-8,427	+4,198	+40,380	-25,196	-14,890	+327	+16,992	-18,072	-7,057	
Transfers	-56	-61		-14	-26	-29	-12	-14	-5	-29	-12	-14	
Total supply	857,265	850,155	*-0.8*	134,164	256,002	314,100	181,931	122,583	231,541	252,714	153,851r	135,534	*+10.6*
Statistical difference	-2,353	-227		-387	-1,278	455	-855	-26	200	-1,224	-714r	-615	
Total demand	859,618	850,382	*-1.1*	134,551	257,280	313,645	182,786	122,609	231,342	253,938	154,565r	136,149	*+11.0*
TRANSFORMATION	239,242	224,992	*-6.0*	53,879	60,421	65,819	54,916	48,370	55,887	53,996	53,715r	64,335	*+33.0*
Electricity generation	214,151	201,834	*-5.8*	48,965	53,344	58,278	49,720	44,065	49,771	46,455	48,519r	60,030	*+36.2*
Heat generation[3]	25,091	23,158	*-7.7*	4,914	7,077	7,541	5,197	4,305	6,116	7,541	5,197	4,305	-
Energy industry use	57,235	54,775	*-4.3*	12,955	14,064	14,991	14,650	12,103	13,033	13,485	12,638r	11,194	*-7.5*
Losses	7,891	7,474	*-5.3*	1,917	1,894	1,963	2,069	1,614	1,828	2,030	1,645	1,647	*+2.1*
FINAL CONSUMPTION	555,250	563,141	*+1.4*	65,800	180,901	230,873	111,151	60,522	160,594	184,427	86,567r	58,973	*-2.6*
Iron & steel	5,091	5,338	*+4.9*	1,168	1,172	1,491	1,289	1,224	1,335	1,492	1,385r	1,293	*+5.7*
Other industries	86,415	87,953	*+1.8*	15,230	22,926	30,720	18,923	15,016	23,295	28,786	17,930r	15,209	*+1.3*
Domestic	345,080	344,502	*-0.2*	30,676	121,540	154,453	63,606	25,616	100,827	120,684	45,558	24,391	*-4.8*
Other final users	112,893	119,749	*+6.1*	17,283	33,820	42,809	25,935	17,266	33,739	32,065	20,294r	16,680	*-3.4*
Non energy use[3]	5,771	5,598	*-3.0*	1,443	1,443	1,399	1,399	1,399	1,399	1,399	1,399r	1,399	-

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

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

3. For Heat generation and non energy use, the 2014 figures currently shown are the 2013 figures carried forward - these will be updated in July 2015.

Section 5 – Electricity

Key results show:

Electricity generated in the third quarter of 2014 fell by 5.1 per cent, from 79.5 TWh a year earlier to 75.4 TWh, the lowest level of generation since 1998. (**Chart 5.1**).

Renewables' share of electricity generation was 17.8 per cent in 2014 Q3, up 4.2 percentage points on the share in 2013 Q3. **(Chart 5.2)**

Gas maintained a larger share than coal for the second quarter running. Coal's share decreased from 33.6 per cent to 20.1 per cent, whilst gas' share of generation increased from 26.6 per cent in the third quarter of 2013 to 38.6 per cent in the third quarter of 2014, due to a large decrease in coal generation and lower wholesale gas prices. (**Chart 5.2**).

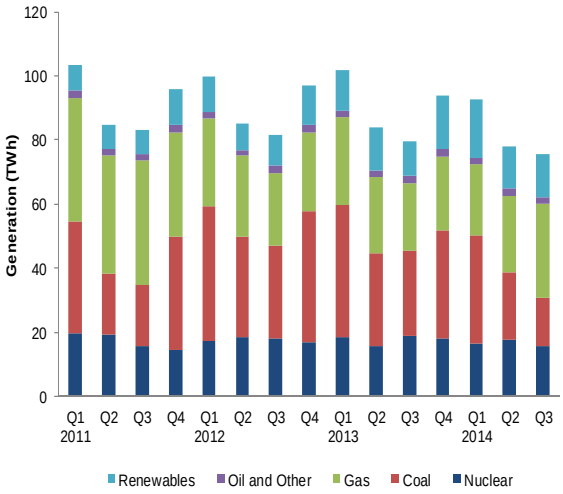
Nuclear's share of generation fell from 23.5 per cent in the third quarter of 2013 to 20.8 per cent in the third quarter of 2014 due to outages at two EDF power stations. (**Chart 5.2**).

Low carbon electricity's share of generation increased from 37.1 per cent in the third quarter of 2013 to 38.6 per cent in the third quarter of 2014, with the fall in nuclear generation offset by an increase in generation by renewables. **(Chart 5.3)**.

The UK remains a net importer with 7.0 per cent of electricity supplied from net imports in the third quarter of 2014 (**Chart 5.4**).

Final consumption of electricity during the third quarter of 2014, at 70.1 TWh, was 2.8 per cent lower than in the same period last year. Domestic sales fell by 1.8 per cent, to its lowest quarter three level for 14 years. (**Chart 5.5**).

Chart 5.1 Electricity generated by fuel type



In 2014 Q3, total electricity generated fell 5.1 per cent from 79.5 TWh in 2013 Q3 to 75.4 TWh, reflecting lower demand.

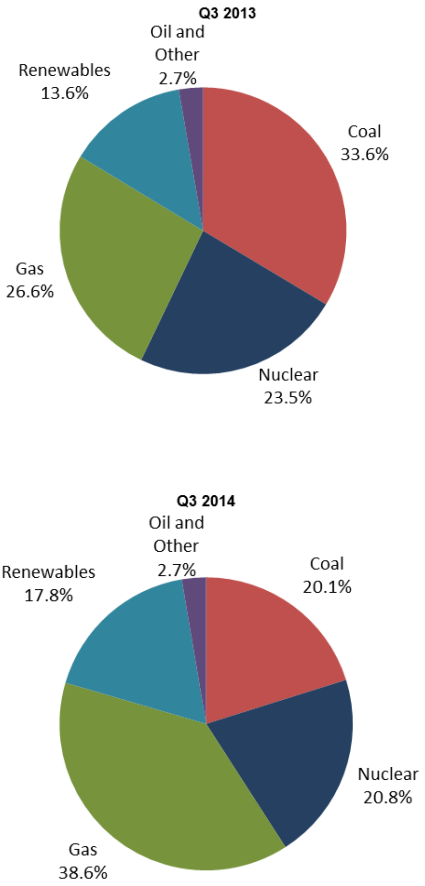
Coal fired generation fell by 43 per cent from 26.7 TWh in 2013 Q3 to 15.2 TWh in 2014 Q3, as a result of reduced capacity due to the closure of several power stations and the conversion of a unit at Drax from coal to biomass.

In 2014 Q3, gas fired generation rose 38 per cent from 21.1 TWh to 29.1 TWh, its highest third quarter level for three years due to lower wholesale gas prices relative to other inputs during the quarter.

Nuclear generation fell 16.2 per cent from 18.7 TWh in 2013 Q3 to 15.7 TWh in 2014 Q3 due to outages at two EDF power stations.

In 2014 Q3, wind and solar generation rose 20.8 per cent from 5.5 TWh to 6.7 TWh. Wind generation was up 10.4 per cent compared with a year ago. Solar generation increased by 79 per cent due to increased capacity. Hydro generation rose 6.0 per cent from 0.7 TWh to 0.8 TWh.

Chart 5.2 Shares of electricity generation



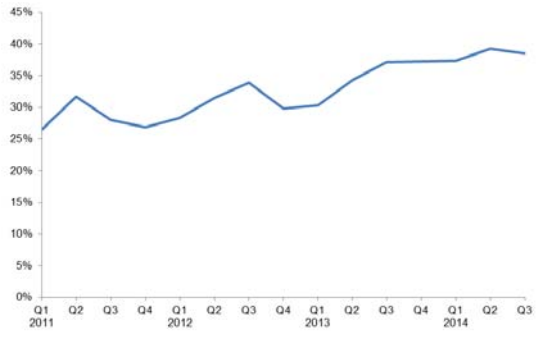
The share of generation from coal decreased from 33.6 per cent in 2013 Q3 to 20.1 per cent in 2014 Q3.

Gas' share of generation increased from 26.6 per cent in 2013 Q3 to 38.6 per cent in 2014 Q3.

Nuclear's share of generation fell from 23.5 per cent in 2013 Q3 to 20.8 per cent in 2014 Q3.

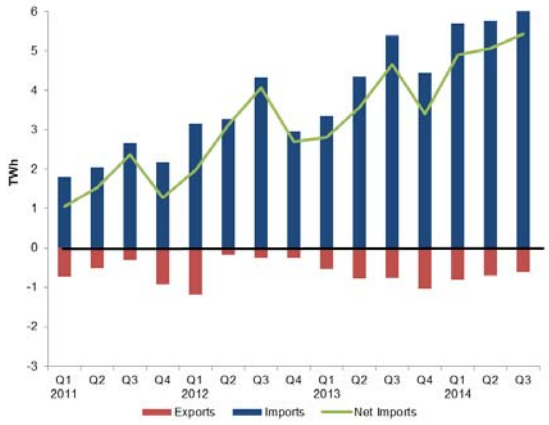
The share of renewables (hydro, wind and other renewables) increased from 13.6 per cent in 2013 Q3 to 17.8 per cent in 2014 Q3. This was due to increased bioenergy generation due to the conversion of Drax from coal to biomass.

Chart 5.3 Low carbon electricity's share of generation



Low carbon electricity's share of generation increased from 37.1 per cent in 2013 Q3 to 38.6 per cent in 2014 Q3, with the fall in nuclear generation offset by an increase in generation by renewables.

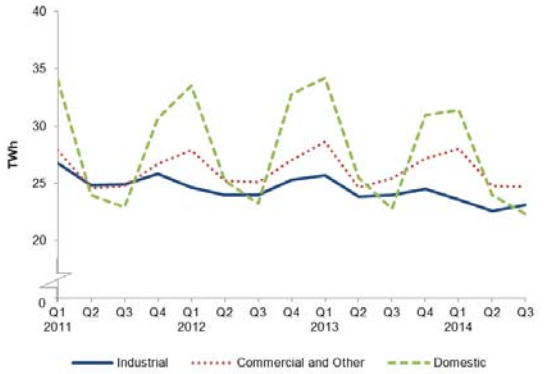
Chart 5.4 UK trade in electricity



In 2014 Q3, compared with the same period in 2013, imports of electricity rose by 11.6 per cent (+0.6 TWh), whilst exports fell by 19.9 per cent. For every quarter since 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 16.7 per cent from 4.7 TWh in 2013 Q3 to 5.4 TWh in 2014 Q3, due mainly to increased imports from France to their highest level since 1998 Q1. Net imports represented 7.0 per cent of electricity supplied in 2014 Q3.

Chart 5.5 Electricity final consumption



Final consumption of electricity fell by 2.8 per cent in 2014 Q3, from 72.1 TWh in 2013 Q3, to 70.1 TWh.

Domestic use fell by 1.8 per cent, from 22.8 TWh to 22.3 TWh.

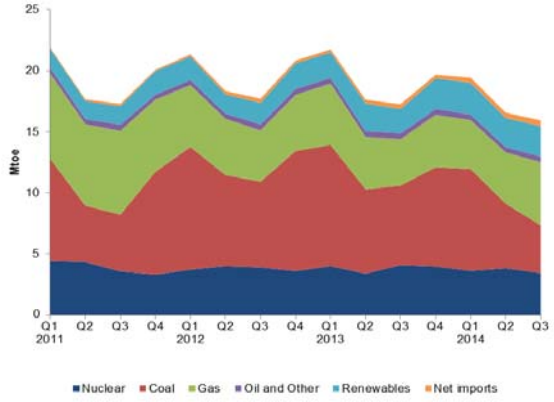
Industrial use of electricity, including iron and steel, fell 3.7 per cent, from 24.0 TWh to 23.1 TWh, while consumption by commercial and other users [1] decreased by 2.8 per cent, from 25.4 TWh to 24.7 TWh.

In 2014 Q3, temperatures were on average 0.5 degrees lower than in 2013 Q3.[2]

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

[2] Temperature data comes from ET 7.1, at: www.gov.uk/government/publications/energy-trends-section-7-weather

Chart 5.6 Fuel used for electricity Generation

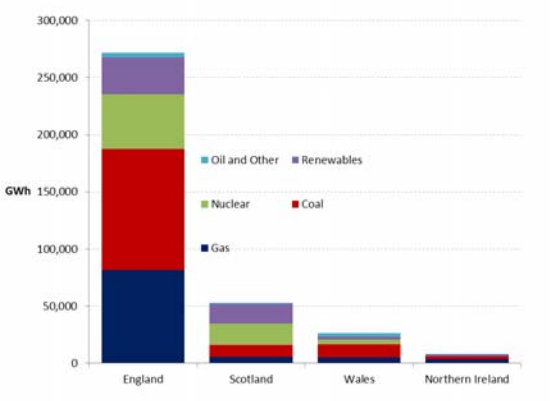


Fuel used by generators in 2014 Q3 fell 7.7 per cent, from 17.3 mtoe in 2013 Q3 to 15.9 mtoe in 2014 Q3[3].

In 2014 Q3, gas use was 36 per cent higher than in 2013 Q3 due to lower wholesale gas prices relative to other inputs. Coal use during the quarter was 40 per cent lower than a year earlier, while nuclear sources were 16.2 per cent lower due to outages at two EDF nuclear stations.

[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.

Chart 5.7 Generation by fuel in 2013 for England, Scotland, Wales and Northern Ireland



In 2013, England had a share of 75.7 per cent of electricity generation in the UK with 271.9 TWh. Of England's generation 30.0 per cent was from gas and 38.9 per cent was from coal.

Scotland had a share of 14.8 per cent of electricity generation in the UK with 53.1 TWh. Of Scotland's generation 34.9 per cent was from nuclear, 32.0 per cent from renewables, and 20.4 per cent was from coal.

Wales had a share of 7.2 per cent of electricity generation in the UK with 26.4 TWh. Of Wales's generation 18.8 per cent was from gas, with 43.6 per cent from coal.

Northern Ireland had a share of 2.2 per cent of electricity generation in the UK with 7.8 TWh. Of Northern Ireland's generation, 45.6 per cent came from gas and 34.0 per cent came from coal.

Of electricity generated in the UK, 14.9 per cent came from renewables in 2013. The shares of electricity generated by renewables for each country are: Scotland 32.0 per cent, Northern Ireland 19.7 per cent, England 12.0 per cent and Wales 10.1 per cent.

Data from special feature article "*Electricity generation and supply figures for Scotland, Wales, Northern Ireland and England, 2010 to 2013*" (page 49).

Relevant tables

5.1: Fuel used in electricity generation and electricity supplied .....Page 41
5.2: Supply and consumption of electricity.....Page 42

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Table 5.1. Fuel used in electricity generation and electricity supplied

	2012	2013	per cent change	2012 3rd quarter	2012 4th quarter	2013 1st quarter	2013 2nd quarter	2013 3rd quarter	2013 4th quarter	2014 1st quarter	2014 2nd quarter	2014 3rd quarter p	per cent change [1]
FUEL USED IN GENERATION													
All generating companies										**Million tonnes of oil equivalen**			
Coal	34.33	31.44	*-8.4*	7.01	9.83	9.92	6.90	6.50	8.12	8.33	5.30	3.91	*-39.8*
Oil	0.73	0.59	*-19.0*	0.16	0.19	0.14	0.11	0.17	0.16	0.16r	0.17r	0.15	*-14.8*
Gas	18.46	17.40	*-5.7*	4.21	4.59	5.02	4.29	3.80	4.29	4.00r	4.18r	5.17	*+36.1*
Nuclear	15.21	15.44	*+1.6*	3.89	3.60	4.00	3.38	4.09	3.97	3.61	3.82	3.43	*-16.2*
Hydro	0.46	0.40	*-11.2*	0.09	0.14	0.11	0.08	0.06	0.15	0.19	0.10	0.07	*+5.8*
Wind and Solar [2]	1.80	2.62	*+45.6*	0.43	0.56	0.61	0.62	0.48	0.91	0.97r	0.55r	0.57	*+20.8*
Bioenergy [3]	5.08	5.82	*+14.5*	1.24	1.38	1.38	1.57	1.44	1.44	1.44r	1.73r	1.85	*+28.9*
Other fuels	1.11	1.31	*+17.5*	0.32	0.30	0.31	0.35	0.32	0.32	0.30r	0.27r	0.30	*-5.0*
Net imports	1.02	1.24	*+21.6*	0.35	0.23	0.24	0.31	0.40	0.29	0.42	0.44	0.47	*+16.7*
Total all generating companies	78.19	76.27	*-2.5*	17.71	20.82	21.74	17.62	17.25	19.66	19.42r	16.56r	15.92	*-7.7*
ELECTRICITY GENERATED													
All generating companies												**TWh**	
Coal	143.16	130.77	*-8.7*	28.79	41.01	41.53	28.97	26.69	33.58	33.82r	21.38r	15.19	*-43.1*
Oil	2.57	2.14	*-16.9*	0.56	0.75	0.57	0.47	0.60	0.50	0.56	0.55	0.48	*-20.1*
Gas	100.16	95.61	*-4.5*	22.96	24.73	27.24	24.05	21.10	23.22	21.93	23.77r	29.13	*+38.0*
Nuclear	70.41	70.61	*+0.3*	18.03	16.65	18.28	15.47	18.69	18.16	16.52	17.48	15.66	*-16.2*
Hydro (natural flow)	5.28	4.70	*-11.1*	1.05	1.63	1.26	0.97	0.74	1.73	2.23	1.11r	0.79	*+6.0*
Wind and Solar [2]	21.01	30.48	*+45.0*	4.98	6.53	7.12	7.23	5.53	10.59	11.28	6.41r	6.68	*+20.8*
- of which, Offshore	7.55	11.44	*+51.6*	1.69	2.73	2.85	2.61	1.96	4.01	4.37	2.03	2.24	*+14.1*
Bioenergy [3]	14.91	18.49	*+24.0*	3.59	4.10	4.28	5.15	4.55	4.51	4.55r	5.54r	5.96	*+31.0*
Pumped Storage	2.97	2.90	*-2.3*	0.71	0.79	0.74	0.69	0.71	0.76	0.79	0.67	0.65	*-7.9*
Other fuels	2.94	3.46	*+17.9*	0.77	0.77	0.86	0.91	0.85	0.85	0.86	0.86	0.88	*+4.1*
Total all generating companies	363.41	359.15	*-1.2*	81.42	96.96	101.87	83.92	79.46	93.90	92.53r	77.78r	75.42	*-5.1*
ELECTRICITY SUPPLIED [4]													
All generating companies												**TWh**	
Coal	135.86	124.06	*-8.7*	27.32	38.90	39.40	27.48	25.32	31.86	32.90	21.05r	15.14	*-40.2*
Oil	2.28	1.94	*-15.0*	0.50	0.66	0.51	0.43	0.55	0.45	0.51	0.51	0.44	*-19.9*
Gas	98.25	93.80	*-4.5*	22.51	24.25	26.72	23.59	20.73	22.77	21.54r	23.36r	28.61	*+38.0*
Nuclear	63.95	64.13	*+0.3*	16.38	15.12	16.61	14.05	16.97	16.50	15.00	15.87	14.22	*-16.2*
Hydro	5.26	4.66	*-11.4*	1.04	1.62	1.25	0.96	0.74	1.72	2.21r	1.10r	0.78	*+5.9*
Wind and Solar [2]	21.01	30.48	*+45.0*	4.98	6.53	7.12	7.23	5.53	10.59	11.28	6.41r	6.68	*+20.8*
- of which, Offshore	7.55	11.44	*+51.6*	1.69	2.73	2.85	2.61	1.96	4.01	4.37	2.03	2.24	*+14.1*
Bioenergy [3]	13.12	16.04	*+22.3*	3.16	3.61	3.71	4.49	3.94	3.90	3.94r	4.82r	5.30	*+34.2*
Pumped Storage (net supply) [5]	-1.02	-1.04	*+1.9*	-0.25	-0.27	-0.27	-0.26	-0.26	-0.25	-0.26	-0.25	-0.24	*-6.3*
Other fuels	2.77	3.26	*+17.9*	0.73	0.73	0.81	0.85	0.80	0.80	0.81	0.81	0.83	*+4.1*
Net imports	11.87	14.43	*+21.6*	4.07	2.70	2.82	3.56	4.65	3.40	4.89	5.08	5.43	*+16.7*
Total all generating companies	353.35	351.76	*-0.5*	80.43	93.85	98.66	82.39	78.97	91.74	92.82r	78.77r	77.18	*-2.3*

1. Percentage change between the most recent quarter and the same quarter 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

	2012	2013	*Per cent change*	2012 3rd quarter	2012 4th quarter	2013 1st quarter	2013 2nd quarter	2013 3rd quarter	2013 4th quarter	2014 1st quarter	2014 2nd quarter	2014 3rd quarter p	*Per cent change* [1]
SUPPLY													
Indigenous production	363,407	359,149	*-1.2*	81,425	96,964	101,873	83,915	79,456	93,904	92,531r	77,779r	75,420	*-5.1*
Major power producers [2 3]	325,225	320,805	*-1.4*	72,124	87,231	92,365	74,298	70,411	83,731	82,270r	67,766r	65,311	*-7.2*
Auto producers	35,216	35,446	*+0.7*	8,596	8,941	8,766	8,928	8,339	9,413	9,469r	9,340r	9,459	*+13.4*
Other sources [4]	2,966	2,898	*-2.3*	705	793	742	690	706	761	792	672	650	*-7.9*
Imports	13,742	17,533	*+27.6*	4,333	2,960	3,354	4,340	5,402	4,436	5,701	5,771	6,031	*+11.6*
Exports	1,871	3,103	*+65.8*	267	262	538	777	751	1,038	807	695	602	*-19.9*
Transfers	-	-		-	-	-	-	-	-	-	-	-	
Total supply	375,278	373,578	*-0.5*	85,491	99,662	104,689	87,479	84,107	97,302	97,425r	82,854r	80,850	*-3.9*
Statistical difference	-920	-176		277	-420	-112	17	-305	223	-328r	-414r	-25	
Total demand	376,198	373,755	*-0.6*	85,214	100,082	104,801	87,462	84,413	97,079	97,752r	83,268r	80,875	*-4.2*
TRANSFORMATION	-	-		-	-	-	-	-	-	-	-	-	
Energy industry use [5]	29,458	29,455	*-*	6,965	7,678	7,980	6,998	7,052	7,425	6,547r	5,980r	5,494	*-22.1*
Losses	28,911	27,000	*-6.6*	5,975	7,263	8,272	6,443	5,236	7,048	8,109	5,941	5,270	*+0.6*
FINAL CONSUMPTION	317,829	317,300	*-0.2*	72,274	85,140	88,549	74,021	72,124	82,605	83,097r	71,347r	70,111	*-2.8*
Iron & steel	3,376	3,803	*+12.7*	860	851	950	967	946	939	955r	944r	936	*-1.1*
Other industries	94,437	94,204	*-0.2*	23,102	24,445	24,766	22,864	23,009	23,565	22,653r	21,638r	22,144	*-3.8*
Transport	4,097	4,109	*+0.3*	1,024	1,024	1,027	1,027	1,027	1,027	1,027	1,027	1,027	*-*
Domestic	114,763	113,453	*-1.1*	23,231	32,799	34,234	25,521	22,755	30,943	31,438r	23,978	22,336	*-1.8*
Other final users	101,156	101,731	*+0.6*	24,056	26,021	27,572	23,641	24,386	26,131	27,024r	23,761	23,668	*-2.9*
Non energy use	-	-		-	-	-	-	-	-	-	-	-	

1. Percentage change between the most recent quarter and the same quarter 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 2013 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.,

Dong Energy Burbo UK Ltd., Drax Power Ltd., EDF Energy plc., Eggborough Power Ltd., E.On UK plc., Energy Power Resources, Falck Renewables Ltd., GDF Suez Teesside Power Ltd.,

Immingham CHP, Infinis plc, International Power Mitsui, London Waste Ltd., Magnox North Ltd., Peel Energy Ltd., Premier Power Ltd., RGS Energy Ltd, Riverside Resource Recovery 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 17.8 per cent in 2014 Q3, an increase of 4.2 percentage points on a year earlier, reflecting increased capacity and generation. This was 1.7 percentage points less than the record share set in 2014 Q1 **(Chart 6.1)**

Renewable electricity generation was 13.4 TWh in 2014 Q3, an increase of 24 per cent on the 10.8 TWh in 2013 Q3, and 2.8 per cent higher than the quarterly generation of 2014 Q2 (13.1 TWh). **(Chart 6.2)**

Bioenergy generation increased by 1.4 TWh (31 per cent) to 6.0 TWh in 2014 Q3, largely due to the conversion of Drax Unit 2 earlier in 2014. **(Chart 6.2)**

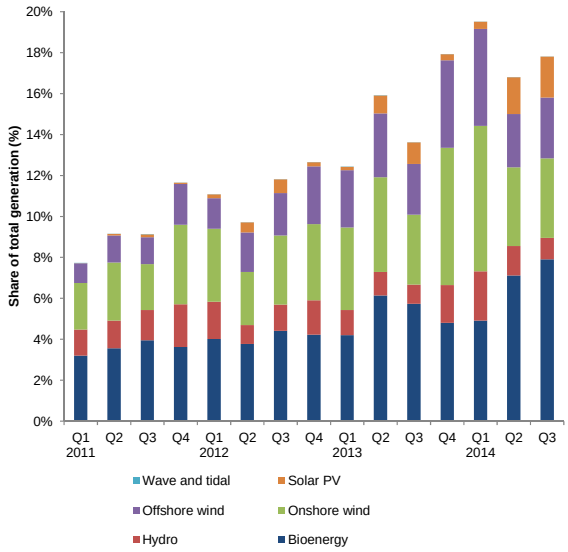
Solar photovoltaic generation increased from 0.8 TWh in 2013 Q3 to 1.5 TWh in 2014 Q3, as a result of increased capacity. **(Chart 6.2)**

Wind generation grew by 10 per cent from 4.7 TWh in 2013 Q3 to 5.2 TWh in 2014 Q3, due to increased capacity, with wind speeds around the same for the quarter as a whole, despite September being the calmest (and driest) month in the last fourteen years. **(Chart 6.2)**

Renewable electricity capacity was 23.1 GW at the end of 2014 Q3, a 19 per cent increase (3.8 GW) on a year earlier, including 0.8 GW installed in 2014 Q3. **(Chart 6.3)**

Solar PV capacity increased by 1.9 GW (74 per cent) between 2013 Q3 and 2014 Q3, while wind capacity increased by 1.5 GW (13 per cent), with offshore and onshore capacity each contributing around half of the increase. **(Chart 6.3)**

Chart 6.1 Renewables' share of electricity generation



Renewables' share of electricity generation increased from 13.6 per cent in 2013 Q3 to 17.8 per cent in 2014 Q3. This was a 1.7 percentage point fall on 2014 Q1's record share of 19.5 per cent. [1]

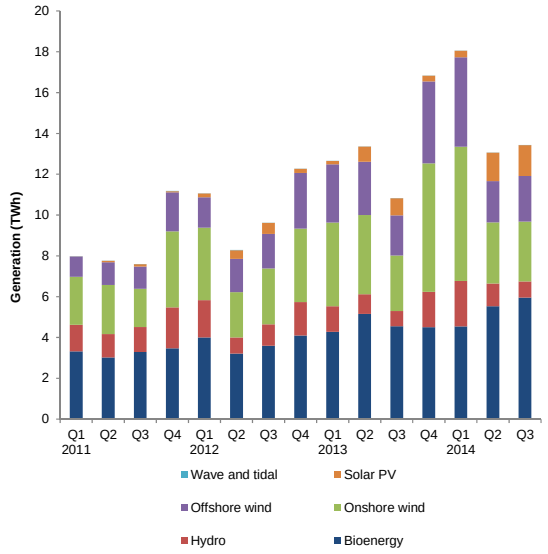
Total generation from renewables in 2014 Q3 increased by 24 per cent compared to 2013 Q3, from 10.8 TWh to 13.4 TWh. Overall electricity generation (75.4 TWh) in 2014 Q3 was down 5.0 per cent on a year earlier (79.5 TWh); this reduction contributed 0.9 percentage points of the 4.2 percentage point increase in renewables' share.

Over half of the increase in renewable generation on a year earlier was due to increased generation from bioenergy, and particularly the conversion of a second Drax unit to biomass in May 2014. However, increased capacity also led to increased generation from solar PV and wind.

Renewables' share of electricity generation in the first three-quarters of 2013 increased to 18.1 per cent, from 13.9 per cent one year earlier.

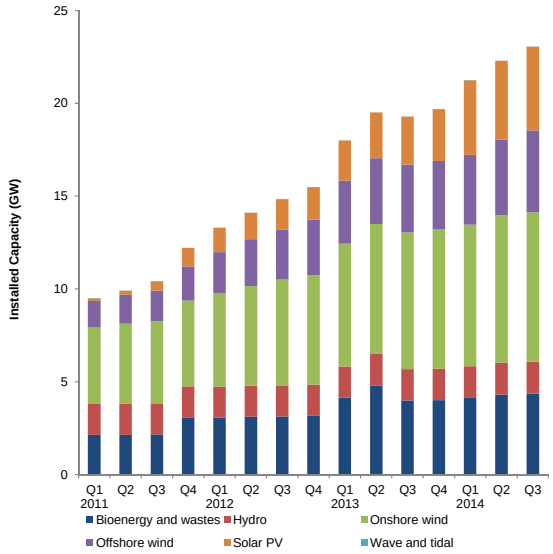
[1] Total electricity generation figures (all generating companies) can be found in table ET 5.1, at: www.gov.uk/government/publications/electricity-section-5-energy-trends

Chart 6.2 Renewable electricity generation



To note that the solar PV (and onshore wind) figures not only include installations confirmed on the Feed in Tariffs (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 supported by the Renewables Obligation (RO) or un-accredited capacity).

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



Electricity generated from onshore wind increased by 7.7 per cent in 2014 Q3, from 2.7 TWh in 2013 Q3 to 2.9 TWh, while generation from offshore wind was up by 14.1 per cent, from 2.0 TWh to 2.2 TWh. The increase in wind generation was due to increased capacity; the average wind speed fell from 7.2 knots in 2013 Q3 to 7.0 knots in 2014 Q3; September 2014 was the calmest month in in the last fourteen years with average wind speeds of just 5.5 knots.[2]

Hydro generation increased from 744 GWh in 2013 Q3 to 787 GWh in 2014 Q3 (5.9 per cent), despite average rainfall falling by 15 per cent. September 2014 was the driest month in the last fourteen years, and saw just 23.7 mm of rainfall, compared to a 10 year average for the month of 120.7 mm.

Generation from bioenergy [3] in 2014 Q3 increased by 31 per cent compared to 2013 Q3, from 4.6 TWh to 6.0 TWh, mostly due to plant biomass which was up by 60 per cent from 2.2 TWh to 3.6 TWh. This can mostly be accounted for by the conversion of Drax (Unit 2) to biomass.

Generation from solar PV in 2014 Q3 increased by 79 per cent, from 0.8 TWh in 2014 Q2 to 1.5 TWh, due to increased capacity.

In 2014 Q3, bioenergy had the largest share of renewable generation, at 44 per cent, with 22 per cent from onshore wind, 17 per cent from offshore wind, 11 per cent from solar PV and 5.9 per cent from hydro.

In 2014 Q3, renewable capacity totalled 23.1 GW, an increase of 19.5 per cent (3.8 GW) on that installed a year earlier. Between 2014 Q2 and 2014 Q3, total renewable capacity grew by 0.8 GW.

Solar photovoltaics (PV) capacity was the largest contributor to the increase on a year earlier, increasing by 1.9 GW (74 per cent), with the majority of this coming from large-scale schemes accredited under the RO. Of this increase, 255 MW was installed in 2014 Q3

Wind capacity increased by 1.5 GW between 2013 Q3 and 2014 Q3. Of this, 447 MW was installed in 2014 Q3, with 335 MW of this from the expanding Gwynt-y-mor and West of Duddon Sands offshore wind farms.

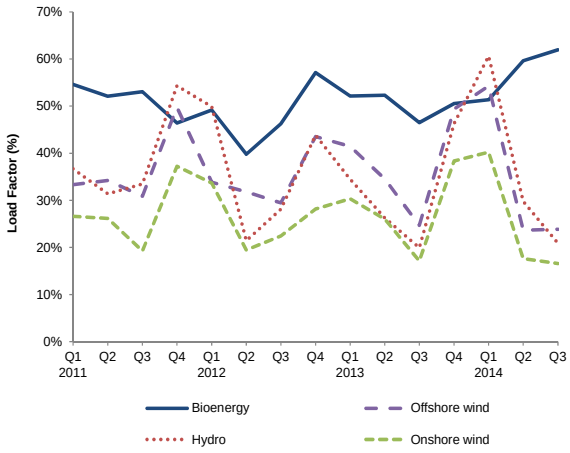
Bioenergy capacity increased by 0.4 GW between 2013 Q3 and 2014 Q3, with the increase from Drax Unit 2 in May 2014 offset slightly by a reduction in capacity at Ironbridge.

At the end of 2014 Q3, onshore wind had the largest share of capacity, at 35 per cent, with 20 per cent from solar PV and 19 per cent from each of bioenergy and offshore wind.

[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/publications/energy-trends-section-7-weather

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

Chart 6.4 Renewable electricity load factors



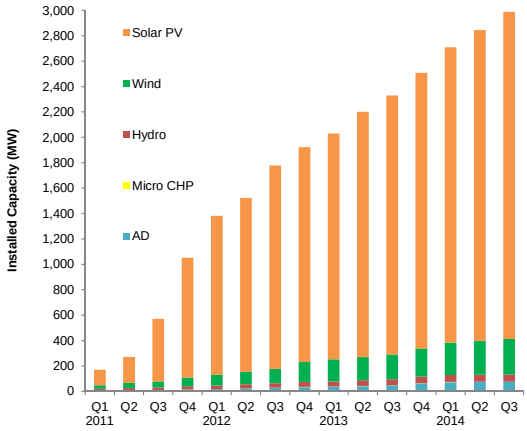
In 2014 Q3, onshore wind's load factor fell by 0.6 percentage points, from 17.1 per cent in 2013 Q3 to 16.6 per cent. Meanwhile, offshore wind's load factor fell by 0.8 percentage points, from 24.7 per cent to 23.9 per cent.[4]

Compared with 2014 Q2, onshore wind's load factor for 2014 Q3 fell by 1.0 percentage point while offshore wind's increased by 0.2. Average wind speeds were just 0.2 knots lower.

Hydro's load factor in 2014 Q3 rose slightly by 0.9 percentage points, from 19.9 per cent in 2013 Q3 to 20.9 per cent. Although rainfall for 2014 Q3 was lower than for the same quarter in 2013, it was higher for the first two quarters in 2014, resulting in higher overall rainfall for 2014 year to date compared to 2013.

For bioenergy, the load factor in 2014 Q3 was up 15.5 percentage points on a year earlier (when the closure of Tilbury during the quarter reduced the load factor), largely due to the second Drax unit coming online in 2014 Q2 and operating at high availability levels. The load factor was up a further 2.3 percentage points on 2014 Q2.

Chart 6.5 Feed in Tariffs: eligible installed capacity (as at end of quarter)



At the end of 2014 Q3, 3.0 GW of capacity was eligible for the GB Feed in Tariff (FiTs) scheme. This was a 5.1 per cent increase on the 2.8 GW eligible at the end of 2014 Q2, and 28.3 per cent higher than that at the end of 2013 Q3. [5]

In terms of number of installations, at the end of 2014 Q3, there were 606,102 eligible for the FiT scheme, a 6.0 per cent increase on the 571,659 at the end of the previous quarter.

Solar photovoltaics (PVs) represent the majority of both installations and installed capacity eligible for FiTs, with, respectively, 98.7 per cent and 86.2 per cent of the total.[6]

Renewable installations eligible for FiTs (all except MicroCHP) represented 13 per cent of all renewable installed capacity.

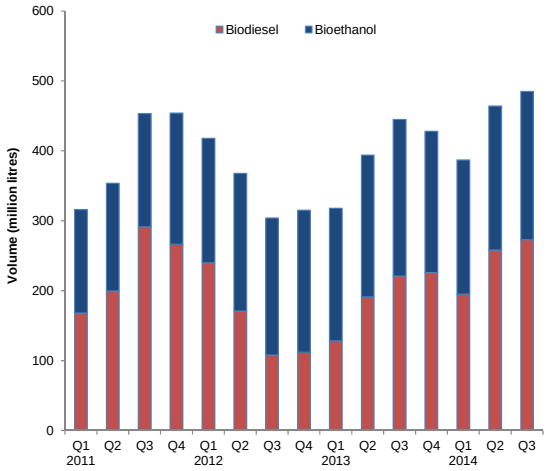
DECC has recently produced load factors, based on actual generation, for installations accredited under the Feed in Tariff. These can be found at: www.gov.uk/government/statistics/quarterly-and-annual-load-factors

[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.

[5] Statistics on Feed in Tariffs can be found at: www.gov.uk/government/collections/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 2014 Q3, 485 million litres of liquid biofuels were consumed in transport, a rise of 9 per cent on the total in 2013 Q3 (445 million litres), exceeding the previous record high of 464 million litres in 2014 Q2.

Bioethanol consumption fell by 5.4 per cent, from 224 million litres to 212 million litres. Conversely, biodiesel consumption rose by 24 per cent, from 221 million litres in 2013 Q3 to 273 million litres in 2014 Q3.

Biodiesel contributed 56.3 per cent to the total liquid biofuel mix in 2014 Q3. Apart from the period 2012 Q2 to 2013 Q4, biodiesel has dominated the proportion averaging 60 per cent though varying between 35 per cent and 85 per cent.

Relevant tables

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6.2: Liquid biofuels for transport consumption…….....Page 48

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6 RENEWABLES

Table 6.1. Renewable electricity capacity and generation

	2012	2013	per cent change	2012 3rd quarter	2012 4th quarter	2013 1st quarter	2013 2nd quarter	2013 3rd quarter	2013 4th quarter	2014 1st quarter	2014 2nd quarter	2014 3rd quarter p	per cent change [11]
Cumulative Installed Capacity [1]												**MW**	
Onshore Wind	5,899	7,513	*+27.4*	5,696	5,899	6,620	7,011	7,360	7,513	7,624r	7,943	8,054	*+9.4*
Offshore Wind	2,995	3,696	*+23.4*	2,682	2,995	3,381	3,544	3,657	3,696	3,765r	4,085	4,420	*+20.9*
Shoreline wave / tidal	7	7	*+7.5*	7	7	6	6	7	7	7	8	8	*+10.5*
Solar photovoltaics	1,747	2,780	*+59.1*	1,653	1,747	2,170	2,462	2,593	2,780	4,021r	4,249	4,504	*+73.7*
Small scale Hydro	216	222	*+2.8*	212	216	216	219	220	222	237r	238	238	*+7.9*
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	1,036	1,042	*+0.5*	1,035	1,036	1,041	1,042	1,042	1,042	1,037r	1,037	1,040	*-0.2*
Sewage sludge digestion	204	198	*-3.1*	204	204	196	197	198	198	203r	205	206	*+3.8*
Energy from waste	521	553	*+6.1*	516	521	546	553	553	553	604r	648	656	*+18.8*
Animal Biomass (non-AD) [2]	111	111	-	111	111	111	111	111	111	111	111	111	-
Anaerobic Digestion	118	150	*+26.5*	97	118	126	132	136	150	158r	163	162	*+18.7*
Plant Biomass [3]	1,166	1,949	*+67.1*	1,161	1,166	2,118	2,767	1,949	1,949	2,016r	2,152	2,189	*+12.3*
Total	15,491	19,690	*+27.1*	14,844	15,491	18,003	19,514	19,296	19,690	21,253r	22,308	23,058	*+19.5*
Co-firing [4]	203	35	*-82.7*	203	203	35	35	35	35	14r	14r	14	*-59.0*
Generation [5]												**GWh**	
Onshore Wind [6]	12,111	16,992	*+40.3*	2,742	3,605	4,100	3,875	2,720	6,297	6,579r	2,994	2,929	*+7.7*
Offshore Wind [6, 7]	7,550	11,441	*+51.5*	1,691	2,728	2,855	2,614	1,963	4,010	4,374r	2,027	2,240	*+14.1*
Shoreline wave / tidal [6]	4	6	*+64.8*	1	1	2	2	1	1	1	0	1	*-34.5*
Solar photovoltaics [6]	1,351	2,036	*+50.7*	544	199	166	743	843	284	325r	1,392	1,505	*+78.6*
Hydro [6]	5,285	4,698	*-11.1*	1,045	1,631	1,256	968	744	1,730	2,227r	1,112	787	*+5.9*
Landfill gas [6]	5,154	5,169	*+0.3*	1,280	1,297	1,297	1,293	1,272	1,306	1,260r	1,260	1,249	*-1.8*
Sewage sludge digestion [6]	719	761	*+5.8*	173	178	180	202	184	196	186r	214	203	*+10.7*
Energy from waste [8]	2,034	1,987	*-2.3*	535	521	499	484	506	499	494r	556	592	*+17.1*
Co-firing with fossil fuels	1,783	309	*-82.7*	410	140	170	49	39	50	35r	37	23	*-42.9*
Animal Biomass (non-AD) [2, 6]	643	628	*-2.3*	144	180	166	167	144	151	160r	162	133	*-7.5*
Anaerobic Digestion	499	707	*+41.6*	133	154	166	168	180	192	203r	210	208	*+15.3*
Plant Biomass [3, 6]	4,083	8,933	*(+)*	918	1,630	1,800	2,792	2,226	2,116	2,208r	3,097	3,552	*+59.6*
Total	41,214	53,667	*+30.2*	9,616	12,265	12,657	13,355	10,823	16,833	18,051r	13,061	13,424	*+24.0*
Non-biodegradable wastes [9]	1,170	1,144	*-2.2*	308	300	287	278	291	287	284	320	341	*+17.1*
Load Factors [10]													
Onshore Wind	26.2%	28.9%		22.4%	28.2%	30.3%	26.0%	17.1%	38.4%	40.2%	17.6%	16.6%	
Offshore Wind	35.6%	39.0%		29.5%	43.5%	41.4%	34.6%	24.7%	49.4%	54.3%	23.6%	23.9%	
Hydro	35.8%	31.7%		28.1%	43.8%	34.5%	26.3%	19.9%	46.3%	60.6%	29.8%	20.9%	
Landfill gas	56.2%	56.8%		56.0%	56.7%	57.8%	56.8%	55.3%	56.8%	56.1%	55.7%	54.5%	
Sewage sludge digestion	40.7%	43.2%		38.4%	39.5%	41.5%	47.1%	42.2%	44.7%	42.8%	47.9%	44.9%	
Energy from waste	45.2%	42.3%		47.0%	45.5%	43.3%	40.3%	41.4%	40.9%	39.6%	40.6%	41.1%	
Animal Biomass (non-AD)	66.2%	64.9%		59.1%	74.0%	69.5%	69.3%	59.1%	61.9%	67.1%	67.2%	54.7%	
Anaerobic Digestion	60.2%	60.2%		65.6%	64.9%	62.9%	59.5%	60.9%	60.8%	61.0%	60.0%	58.1%	
Plant Biomass	40.2%	65.5%		35.9%	63.5%	50.7%	52.3%	42.7%	49.2%	51.6%	68.0%	74.1%	
Total (excluding co-firing and non-biodegradable wastes)	32.4%	34.6%		28.8%	36.2%	34.5%	32.5%	25.2%	39.0%	40.7%	27.4%	26.8%	

1. Cumulative capacity at the end of the quarter/year
2. Includes the use of poultry litter and meat and bone.
3. Includes the use of straw and energy crops. Also includes enhanced co-firing (>85% biomass).
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. Non-biodegradable part of municipal solid waste plus waste tyres, hosptal waste and general industrial waste.
10. Load factors are calculated based on installed capacity at the beginning and the end of the quarter/year. These can be influenced by the time in the period when new capacity came online. Load factors on an *unchanged configuration* basis, which consider just those sites operational throughout the year, are available annually in table DUKES 6.5, at: https://www.gov.uk/government/publications/renewable-sources-of-energy-chapter-6-digest-of-united-kingdom-energy-statistics-dukes
11. Percentage change between the most recent quarter and the same quarter a year earlier.

6 RENEWABLES

Table 6.2. Liquid biofuels for transport consumption

	2012	2013	per cent change	2012 3rd quarter	2012 4th quarter	2013 1st quarter	2013 2nd quarter	2013 3rd quarter	2013 4th quarter	2014 1st quarter	2014 2nd quarter	2014 3rd Quarter p	per cent change [1]
Volume													**Million litres**
Bioethanol	775	819	*+5.7*	196	203	190	203	224	202	192	206	212	*-5.4*
Biodiesel	634	766	*+20.8*	109	113	128	191	221	226	195	258	273	*23.5*
Total biofuels for transport	1,409	1,585	*+12.5*	305	316	318	394	445	428	387	464	485	*9.0*
Energy													**Thousand tonnes of oil equivalent**
Bioethanol	437	462	*+5.7*	111	115	107	114	126	114	108	116	120	*-5.4*
Biodiesel	521	629	*+20.8*	89	92	105	157	182	186	160	212	224	*+23.5*
Total biofuels for transport	958	1,091	*+13.9*	200	207	212	271	308	300	268	328	344	*+11.7*
Shares of road fuels													
Bioethanol as per cent of Motor Spirit	4.1%	4.5%		4.2%	4.3%	4.4%	4.3%	4.9%	4.5%	4.5%	4.5%	4.8%	
Biodiesel as per cent of DERV	2.4%	2.8%		1.6%	1.6%	2.1%	2.8%	3.2%	3.2%	3.0%	3.7%	3.9%	
Total biofuels as per cent of road fuels	3.1%	3.5%		2.7%	2.7%	3.0%	3.4%	3.9%	3.7%	3.6%	4.0%	4.2%	

1. Percentage change between the most recent quarter and the same quarter a year earlier.
Source: HM Revenue and Customs Hydrocarbon Oils Bulletin, available a
www.uktradeinfo.com/Statistics/Pages/TaxAndDutybulletins.aspx

Electricity generation and supply figures for Scotland, Wales, Northern Ireland and England, 2010 to 2013

Introduction

This article shows how generation and consumption of electricity varies across the four countries of the United Kingdom. It updates and extends that published in December 2013. The UK figures shown in the tables in this article are taken from the Digest of United Kingdom Energy Statistics (DUKES) 2014, Chapters 5 and 6 and so the definitions used are identical to those in the Digest. Tables 1 and 2 are shown in "landscape" format at the end of the main text and cover the last four years.

Generation and trade

Table 1 shows generation and supply of electricity in each of the UK countries. Because the mix of generating plant is not the same in each country, the overall percentage for each fuel type in individual years will change according to the fuels and stations that are available and the most advantageous to use.

Between 2012 and 2013, England's share of total generation decreased marginally to 75.7 per cent. An increase in renewable generation was offset by a fall in coal, oil and gas generation. Scotland's share, meanwhile, increased from 13.9 per cent to 14.8 per cent, due to an increase in nuclear and renewable generation. The share of generation in Wales and Northern Ireland remained broadly flat at 7.3 and 2.2 per cent respectively. On average, over the last four years, 76.4 per cent of UK electricity generation has taken place in England, 13.9 per cent in Scotland, 7.7 per cent in Wales and 2.1 per cent in Northern Ireland.

Both Scotland and Wales are net exporters of electricity, with England importing electricity from both countries and from continental Europe (via the France and Netherlands interconnectors). Northern Ireland trades electricity with the Republic of Ireland to which it is a net exporter. It also imports electricity from Scotland via the Moyle interconnector - these imports were greater than exports to the Irish Republic in each of the last four years. In 2012, Scotland exported 25.6 per cent of the electricity generated there to consumers elsewhere in the UK, which increased to 27.9 in 2013. Transfers from Scotland to England increased by 23.9 per cent between 2012 and 2013 to a new record high of 13.3 GWh. Wales exported the equivalent of 6.4 per cent (1.7 GWh) of its generation to consumers in England in 2013, a decrease on the 9.8 per cent in 2012 and a new record low.

Generation by fuel

For each of the four UK countries, Table A1 shows the shares of the generation of electricity by the fuel categories used in Table 5.5 of the Digest of UK Energy Statistics 2014, for 2010 to 2013. The position in 2013 is shown in Chart 1, in terms of GWh. The share of nuclear in generation in England fell in 2010 due to maintenance outages at several stations including Sizewell B, which was offline for six months, before increasing once more in 2011 as these stations came back on line, a trend which continued into 2012, with little change in shares in 2013. In Scotland, after a decrease in the share of nuclear in 2010 due to maintenance outages, shares have been increasing and rose again in 2013 to over one third of all generation due to increased availability. In Wales, nuclear's share of generation has fluctuated in recent years and, following the fall in 2012, rose to 16.4 per cent of all generation in Wales in 2013.

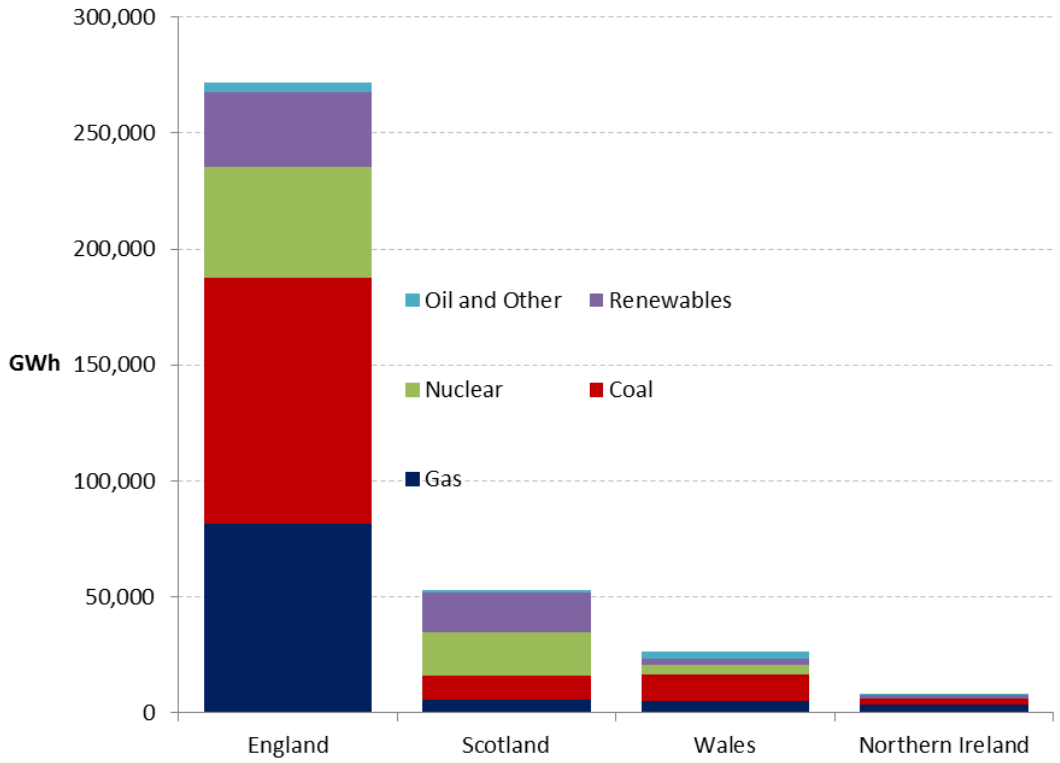
Due to high gas prices, gas' share of generation has been falling since 2010, accounting for 30 per cent of England's generation in 2013 and 10 per cent in Scotland. Coal's share fell by four percentage points in both England and Scotland in 2013, following the closures of Tilbury B and Cockenzie. Gas's share also declined in Wales, whilst coal's share increased by three percentage points. In 2013, gas' share of generation in each of England, Scotland, Wales and Northern Ireland was at a record low for the 2004 to 2013 period covered.

Table A1: Shares of each country's generation, by fuel type, 2012 and 2013

	Scotland	Wales	Northern Ireland	England
2012				
Coal	23.6%	40.8%	32.5%	42.3%
Gas	11.2%	23.7%	50.5%	30.3%
Nuclear	33.8%	15.6%	-	17.6%
Renewables	28.9%	9.2%	15.9%	8.2%
Oil and Other	2.5%	10.8%	1.1%	1.5%
Total	100%	100%	100%	100%
2013				
Coal	20.4%	43.6%	34.0%	38.9%
Gas	10.3%	18.8%	45.6%	30.0%
Nuclear	34.9%	16.4%	-	17.6%
Renewables	32.0%	10.1%	19.7%	12.0%
Oil and Other	2.5%	11.1%	0.7%	1.5%
Total	100%	100%	100%	100%

Combined heat and power (CHP) forms the bulk of "Other generators" generation, although some major power producers (MPPs) also operate generating plant that is partially CHP. CHP statistics for 2013 on a sub-national and regional basis were published in the September 2014 issue of Energy Trends (see references at the end of the article). The share of generation accounted for by generators other than major power producers varies slightly across the UK. In Scotland, in 2013, other generators had a 12 per cent share, while in England the share was 9 per cent, in Wales 11 per cent and in Northern Ireland 14 per cent.

Chart 1: Generation by country and fuel type in 2013 (all generating companies)



Renewables

The share of renewables in electricity generation or sales is measured in two different ways in the UK[1]. First, there is the "headline" overall measure that shows the percentage of electricity generation accounted for by all renewables. Secondly, there is the measure that is based on the Renewables Obligation (RO) (and the analogous Renewables Obligation (Scotland) - ROS) which shows the percentage of electricity sales accounted for by renewables eligible under these obligations. The main differences are the exclusion from the RO of large-scale hydro and non-biodegradable wastes[2]. Table A2 shows the overall measure for 2010, 2011, 2012 and 2013.

Table A2: Renewables percentages

		UK	Scotland	Wales	Northern Ireland	England
Overall renewables percentage	2010	6.8	18.9	5.4	10.0	4.8
	2011	9.4	26.5	8.4	12.6	6.3
	2012	11.3	28.9	9.2	15.9	8.2
	2013	14.9	32.0	10.1	19.7	12.0

Lower rainfall in 2010 saw Scotland's renewables' share fall. Since then, higher rainfall, wind speeds and increased wind capacity have seen Scotland's renewables' share rise to 32.0 per cent in 2013. In 2013, all four countries had a record high percentage of electricity generated by renewables (Table A2). On a RO basis, the percentage measure for the UK (6.9 per cent in 2010, 9.4 per cent in 2011, 10.8 per cent in 2012 and 14.1 in 2013) is not meaningful at sub-national level because electricity generated in one part of the UK can be sold in a different part of the UK.

In Scotland, the renewables target (which is to reach 100 per cent by 2020) is expressed as generation as a proportion of gross electricity consumption (defined as generation plus transfers into Scotland less transfers out of Scotland). In 2010, this percentage was 23.8 per cent, rising to 36.0 per cent in 2011, thus exceeding the interim target of 31 per cent. In 2012, this rose to 38.8 per cent and has continued to rise to 44.4 per cent in 2013. The next interim target is to reach 50 per cent by 2015.

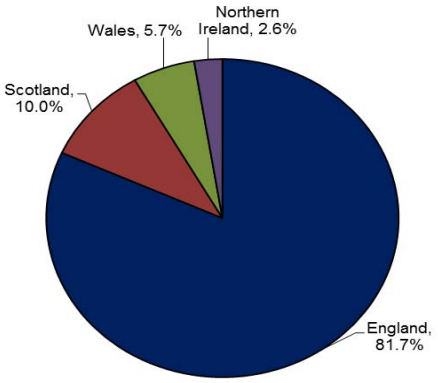
The amount of electricity from renewable sources transferred from Scotland or Wales to England, or from Scotland to Northern Ireland, is not known. What is known from Table 2 is that the amount of ROS eligible electricity generated in Scotland in 2013 was 30 per cent more than in 2012, while the amount of RO eligible electricity generated in Wales in 2013 was 14 per cent more than in 2012. In England, the increase was 31 per cent. In Northern Ireland RO eligible electricity generated increased by 35 per cent. In the UK as a whole, RO eligible electricity production increased by 30 per cent. Over the four years shown in Table A2, the increases in RO eligible electricity production have been substantial across all countries, namely 43 per cent for Wales, and an increase of around double in England, Scotland and Northern Ireland.

Renewables statistics for 2013 on a sub-national and regional basis were published in the September 2014 issue of Energy Trends (see references at the end of the article).

[1] There is also a third method used by the EU – a Renewables Directive basis – see Chapter 6 of the Digest of UK Energy Statistics 2014, table 6.7 and paragraph 6.52.

[2] Specific exclusions from eligibility for the RO are existing hydro plants over 20 MW; all plants using renewable sources built before 1990 (unless re-furbished); and energy from mixed waste combustion unless the waste is first converted to fuel using advanced conversion technology.

Chart 2: Electricity consumption in 2013



Consumption and sales

Transmission and distribution losses are not separately available for Scotland, Wales, Northern Ireland and England so estimates have been made using the UK proportions. Consumption figures have then been calculated by deducting net transfers and losses figures from the electricity supplied figures shown in Table 1. These show (Chart 2) that in 2013, 10.0 per cent of electricity consumption in the UK was in Scotland, 5.7 per cent in Wales, 2.6 per cent in Northern Ireland and 81.7 per cent in England. These are all around the average percentage shares for each country for the period 2010 to 2013, namely 81.9 per cent for England, 9.9 per cent for Scotland, 5.6 per cent for Wales and 2.6 per cent for Northern Ireland.

Separate data is collected for sales of electricity from the public supply system in Scotland, England and Wales, and Northern Ireland and published in monthly table ET 5.5 on DECC's Energy Statistics website (see references at the end of the article), but for this article the breakdown between England and Wales has been estimated. Because of definitional and other differences set out in the technical notes to Chapter 5 of DUKES 2014, there is a statistical difference between the calculated consumption and the sales data in Table 1. The overall statistical difference for the UK equals that shown in Table 5.2 of DUKES for the UK as a whole for the public distribution system.

As part of its commitment to improving the quality of its statistics, DECC continues to examine this statistical difference and look further at the component series to see where the differences might be arising and thus where improvements to the data might be made.

Chart 3 shows the relationship between generation and consumption of electricity in each of the countries by means of a flow diagram.

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References:

Digest of UK Energy Statistics 2014 (DUKES); published for DECC by The Stationery Office. £68.00, but also available on DECC's energy statistics website at:
www.gov.uk/government/collections/digest-of-uk-energy-statistics-dukes.
Energy Trends monthly table 5.5:
www.gov.uk/government/statistics/electricity-section-5-energy-trends
"Combined Heat and Power in Scotland, Wales, Northern Ireland and the regions of England in 2013" – Energy Trends September 2014, page 60:
www.gov.uk/government/collections/energy-trends-articles
"Renewable energy in Scotland, Wales, Northern Ireland and the regions of England in 2013" – Energy Trends September 2014, page 49:
www.gov.uk/government/collections/energy-trends-articles

Chart 3: Electricity generation and consumption flow chart, 2013

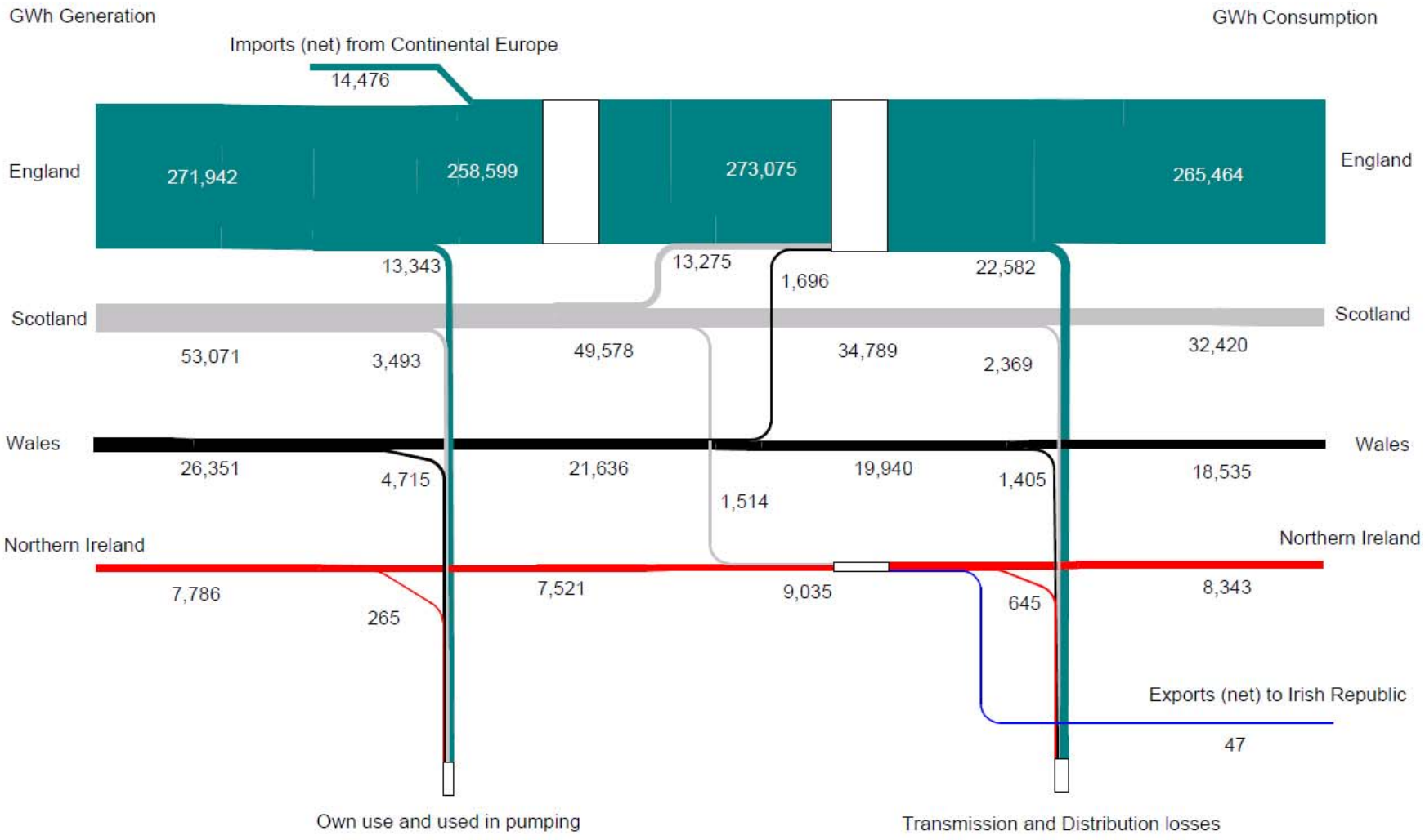


Table 1: Generation and supply of electricity in Scotland, Wales, Northern Ireland and England, 2010 to 2013

GWh

		2010					2011				
		UK total	Scotland	Wales	Northern Ireland	England	UK total	Scotland	Wales	Northern Ireland	England
Generated by	Major power producers	347,785	44,179	30,018	7,128	266,460	332,312	44,880	25,043	7,319	255,070
	Other generators	33,921	5,641	2,263	483	25,534	34,939	6,141	2,558	611	25,630
Total generated		381,707	49,820	32,281	7,612	291,994	367,251	51,021	27,601	7,930	280,699
Own use by Other generators		1,702	283	114	24	1,282	1,934	340	142	34	1,419
Electricity supplied (net) by Other generators		32,219	5,358	2,150	459	24,253	33,005	5,801	2,417	577	24,211
Used in pumping at pumped storage and other own use by MPPs		18,615	3,264	4,383	199	10,768	18,323	2,924	4,149	179	11,072
Electricity supplied (net) by MPPs		329,170	40,915	25,634	6,929	255,692	313,988	41,956	20,893	7,140	243,998
Electricity transferred to England (net of receipts)		-	7,998	7,897	-	-15,896	-	11,597	3,652	-	-15,250
Electricity transferred to Northern Ireland (net of receipts)			2,297	-	-2,297	-	-	1,769	-	-1,769	-
Electricity transferred to Europe (net of receipts)		-2,663	-	-	232	-2,895	-6,222	-	-	246	-6,468
Transfers from other generators to public supply		14,601	2,622	670	364	10,944	15,059	3,035	857	443	10,724
Transmission losses		5,974	590	326	155	4,902	6,467	630	360	169	5,308
Distribution losses and theft		21,058	1,812	1,049	532	17,664	21,662	1,810	1,091	548	18,214
Consumption from public supply [A]		319,417	30,842	17,032	8,672	262,871	307,151	29,188	16,648	8,389	252,926
Consumption by autogenerators		17,603	2,733	1,479	95	13,297	17,936	2,764	1,559	134	13,479
Total Electricity consumption		337,020	33,574	18,511	8,767	276,169	325,087	31,952	18,207	8,523	266,405
Electricity sales (public supply) [B]		319,919	31,143	17,737	8,932	262,108	308,033	29,783	17,241	8,209	252,801
Statistical difference between calculated consumption [A] and sales [B]		-502	-301	-705	-260	+764	-883	-595	-593	180	125

Figures in this table do not sum exactly to the UK totals shown because of rounding
Negative figures for transfers indicate net imports into the country and positive figure indicate net exports

Table 1 continued: Generation and supply of electricity in Scotland, Wales, Northern Ireland and England, 2010 to 2013

GWh

		2012					2013				
		UK total	Scotland	Wales	Northern Ireland	England	UK total	Scotland	Wales	Northern Ireland	England
Generated by	Major power producers	328,192	44,823	24,029	6,573	252,766	323,704	46,771	23,577	6,706	246,650
	Other generators	35,216	5,613	2,528	825	26,250	35,446	6,300	2,774	1,080	25,291
Total generated		363,407	50,436	26,558	7,398	279,016	359,150	53,071	26,351	7,786	271,942
Own use by Other generators		2,078	331	149	49	1,549	2,267	403	177	69	1,618
Electricity supplied (net) by Other generators		33,138	5,282	2,379	776	24,701	33,179	5,897	2,597	1,011	23,674
Used in pumping at pumped storage and other own use by MPPs		19,846	2,980	4,330	196	12,339	19,550	3,090	4,538	196	11,725
Electricity supplied (net) by MPPs		308,346	41,843	19,699	6,377	240,427	304,155	43,681	19,038	6,510	234,926
Electricity transferred to England (net of receipts)		-	10,717	2,589	-	-13,306	-	13,275	1,696	-	-14,971
Electricity transferred to Northern Ireland (net of receipts)		-	2,179	-	-2,179	-	-	1,541	-	-1,541	-
Electricity transferred to Europe (net of receipts)		-11,871	-	-	153	-12,024	-14,429	-	-	47	-14,476
Transfers from other generators to public supply		16,129	2,931	701	621	11,876	14,979	3,443	1,172	878	9,486
Transmission losses		6,754	654	372	175	5,552	6,351	628	360	163	5,200
Distribution losses and theft		22,157	1,880	1,111	545	18,621	20,649	1,741	1,045	482	17,382
Consumption from public supply [A]		307,450	29,346	16,328	8,303	253,472	306,585	29,944	17,110	8,238	251,293
Consumption by autogenerators		16,993	2,349	1,677	155	12,813	18,178	2,450	1,423	132	14,172
Total Electricity consumption		324,444	31,695	18,005	8,458	266,285	324,762	32,395	18,534	8,370	265,464
Electricity sales (public supply) [B]		308,408	28,636	17,109	7,962	254,701	306,778	28,986	17,342	7,792	252,659
Statistical difference between calculated consumption [A] and sales [B]		-958	710	-781	342	-1,229	-193	959	-232	446	-1,366

Figures in this table do not sum exactly to the UK totals shown because of rounding
Negative figures for transfers indicate net imports into the country and positive figure indicate net exports

Table 2: Generation of electricity by fuel in Scotland, Wales, Northern Ireland and England, 2010 to 2013

GWh

		2010					2011				
		UK total	Scotland	Wales	Northern Ireland	England	UK total	Scotland	Wales	Northern Ireland	England
Major power producers:	Coal	103,941	14,653	5,929	1,817	81,542	104,797	10,728	6,170	1,414	86,485
	Oil	2,271	206	-	73	1,992	1,074	160	-	52	862
	Gas	161,748	6,618	15,227	4,840	135,063	132,753	6,227	9,880	5,301	111,346
	Nuclear	62,140	15,293	5,532	-	41,315	68,980	16,892	5,364	-	46,725
	Thermal renewables	3,691	299	72	-	3,321	4,533	274	76	-	4,182
	Hydro natural flow	2,703	2,521	164	-	18	4,594	4,362	210	-	21
	Hydro pumped storage	3,150	779	2,372	-	-	2,906	604	2,301	-	-
	Non thermal renewables	8,141	3,811	722	398	3,211	12,675	5,632	1,041	553	5,450
	Total	347,785	44,179	30,018	7,128	266,460	332,312	44,880	25,043	7,319	255,070
Other Generators:	Coal	3,753	62	-	41	3,650	3,774	51	-	36	3,687
	Oil	2,532	1,007	173	34	1,318	2,043	780	121	36	1,106
	Gas	13,908	1,770	806	44	11,289	13,767	2,028	926	96	10,717
	Thermal renewables	8,305	989	460	86	6,770	8,565	985	540	82	6,958
	Other thermal	1,559	-	511	-	1,048	1,714	-	508	-	1,207
	Hydro natural flow	865	737	48	36	43	1,088	959	58	20	51
	Non thermal renewables	2,081	1,063	265	242	511	3,042	1,326	404	341	971
	Wastes	919	14	-	-	905	945	12	-	-	933
	Total	33,921	5,641	2,263	483	25,534	34,939	6,141	2,558	611	25,630
Total generation by fuel		381,707	49,820	32,281	7,612	291,994	367,251	51,021	27,601	7,930	280,699
within which: Renewables	Hydro	3,568	3,258	213	36	61	5,682	5,322	268	20	72
	Wind, wave, solar	10,222	4,873	987	640	3,722	15,718	6,958	1,445	893	6,420
	Other	11,996	1,288	532	86	10,091	13,098	1,259	617	82	11,140
	Total	25,785	9,419	1,731	761	13,874	34,498	13,539	2,330	996	17,633
Renewables eligible under the renewables obligation		21,947	7,476	1,517	740	12,214	29,034	10,620	2,015	1,056	15,343
Percentage shares of generation:	Coal	28.2%	29.5%	18.4%	24.4%	29.2%	29.6%	21.1%	22.4%	18.3%	32.1%
	Oil	1.3%	2.4%	0.5%	1.4%	1.1%	0.8%	1.8%	0.4%	1.1%	0.7%
	Gas	46.0%	16.8%	49.7%	64.2%	50.1%	39.9%	16.2%	39.1%	68.1%	43.5%
	Nuclear	16.3%	30.7%	17.1%	-	14.1%	18.8%	33.1%	19.4%	-	16.6%
	Hydro natural flow	0.9%	6.5%	0.7%	0.5%	-	1.5%	10.4%	1.0%	0.3%	-
	Other renewables	5.8%	12.4%	4.7%	9.5%	4.7%	7.8%	16.1%	7.5%	12.3%	6.3%
	Other	1.5%	1.6%	8.9%	-	0.7%	1.5%	1.2%	10.2%	-	0.8%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Figures in this table do not sum exactly to the UK totals shown because of rounding

Table 2 continued: Generation of electricity by fuel in Scotland, Wales, Northern Ireland and England, 2010 to 2013 *GWh*

		2012					2013				
		UK total	Scotland	Wales	Northern Ireland	England	UK total	Scotland	Wales	Northern Ireland	England
Major power producers:	Coal	140,164	11,867	10,824	2,367	115,105	130,204	10,802	11,478	2,606	105,319
	Oil	1,132	155	-	44	933	745	161	-	21	563
	Gas	86,229	3,680	5,167	3,609	73,773	82,405	3,497	3,985	3,457	71,466
	Nuclear	70,405	17,050	4,141	-	49,214	70,608	18,498	4,326	-	47,785
	Thermal renewables	6,156	422	104	-	5,630	9,405	360	129	-	8,915
	Hydro natural flow	4,169	3,859	287	-	24	3,609	3,409	175	-	24
	Hydro pumped storage	2,966	610	2,357	-	-	2,898	615	2,283	-	-
	Non thermal renewables	16,970	7,181	1,149	553	8,087	23,830	9,428	1,200	622	12,579
	Total	328,192	44,823	24,029	6,573	252,766	323,704	46,771	23,577	6,706	246,650
Other Generators:	Coal	2,992	25	-	39	2,928	564	18	-	39	507
	Oil	1,439	449	56	36	899	1,391	434	49	38	870
	Gas	13,929	1,959	1,125	124	10,721	13,207	1,946	971	95	10,195
	Thermal renewables	8,759	1,070	466	109	7,114	9,087	1,001	490	134	7,462
	Other thermal	1,767	27	454	-	1,286	2,319	127	594	-	1,598
	Hydro natural flow	1,115	980	51	21	64	1,089	957	52	21	59
	Non thermal renewables	4,045	1,074	377	496	2,098	6,645	1,812	618	753	3,463
	Wastes	1,170	31	-	-	1,139	1,143	6	-	-	1,137
	Total	35,216	5,613	2,528	825	26,250	35,446	6,300	2,774	1,080	25,291
Total generation by fuel		363,407	50,436	26,558	7,398	279,016	359,150	53,071	26,351	7,786	271,942
within which: Renewables	Hydro	5,285	4,838	337	21	88	4,698	4,366	227	21	83
	Wind, wave, solar	21,015	8,254	1,527	1,049	10,185	30,475	11,240	1,817	1,375	16,042
	Other	14,914	1,491	570	109	12,744	18,492	1,361	619	134	16,377
	Total	41,214	14,584	2,434	1179	23,017	53,665	16,967	2,664	1531	32,503
Renewables eligible under the renewables obligation		33,428	11,134	1,901	1,121	19,273	43,359	14,422	2,170	1,512	25,256
Percentage shares of generation:	Coal	39.4%	23.6%	40.8%	32.5%	42.3%	36.4%	20.4%	43.6%	34.0%	38.9%
	Oil	0.7%	1.2%	0.2%	1.1%	0.7%	0.6%	1.1%	0.2%	0.7%	0.5%
	Gas	27.6%	11.2%	23.7%	50.5%	30.3%	26.6%	10.3%	18.8%	45.6%	30.0%
	Nuclear	19.4%	33.8%	15.6%	-	17.6%	19.7%	34.9%	16.4%	-	17.6%
	Hydro natural flow	1.5%	9.6%	1.3%	0.3%	-	1.3%	8.2%	0.9%	0.3%	-
	Other renewables	9.9%	19.3%	7.9%	15.7%	8.2%	13.6%	23.7%	9.2%	19.4%	11.9%
	Other	1.6%	1.3%	10.6%	-	0.9%	1.8%	1.4%	10.9%	0.0%	1.0%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Figures in this table do not sum exactly to the UK totals shown because of rounding

Diversity of supply for oil and oil products in OECD countries

Introduction and summary

Countries meet their oil needs through a combination of indigenous production and trade. This article is a comparative assessment of how OECD (Organisation for Economic Co-operation and Development) countries manage their crude oil and transport fuel demand in terms of diversity of supply and self-sufficiency, using data from the IEA database[1].

Within the OECD, only four countries were net exporters of crude oil: Norway, Mexico, Canada and Denmark. All other OECD countries had to meet their demand through imports with 10 countries producing no crude oil indigenously.

The majority of OECD countries met their motor gasoline (petrol) demand through indigenous production, with Western Europe being net exporters. Despite motor gasoline having the lowest average diversity index, i.e. imports came from a smaller range of countries, it achieved the highest average security of supply score of the four products due to high levels of indigenous production in the OECD.

For jet fuel, the position is markedly different with only a third of OECD countries being self-sufficient. The UK, Sweden and France were the top scorers for diversity of imports within the OECD.

Over a third of OECD countries were not able to support their diesel consumption by indigenous production alone. Greece and Finland scored highest for indigenous production within the OECD with some countries producing no diesel indigenously.

The UK was able to meet over half of its demand for crude oil through indigenous production, the UK also ranked fifth overall for security of supply with regards to crude oil. The UK was able to meet its demand for motor gasoline through indigenous production but still maintained diverse import sources. For jet and diesel, the UK scored below average for indigenous production for both of these oil products, but scored top overall for diversity of imports for jet fuel and third overall for diesel compared to other OECD countries.

Charting oil self-sufficiency and diversity of supply

Bubble Charts

The bubble charts demonstrate the relationship between a country's demand, its indigenous production, diversity of its gross imports and the political stability of the countries of import. The profiles show:

- Self-sufficiency: the proportion of a country's demand that could be met through indigenous production (although some of this product could be exported) is shown on the vertical axis. A score of 1 indicates a country produces as much oil as it uses.
- A diversity score: the diversity and political stability – defined via the World Bank's governance indicators - of a country's gross imports is shown on the horizontal axis (see Appendix 2 for a methodological note). A higher score indicates a wider range of stable, import sources to that country.
- Consumption: represented by the circle or bubble, the area of which indicates the relative level of consumption for 2013 for each OECD country.

[1] http://wds.iea.org/WDS/Common/

Bar Charts

The bars charts provide a means of comparing OECD countries by self-sufficiency and diversity of imports. These profiles combine the proportion of demand that is met through indigenous production (shown in the coloured part of the chart) with the diversity and political stability of import origins (shown in white). The sum of these two components is used as a simplified metric for security of supply. This is an unweighted metric, and does not represent a full description of security of supply beyond import diversity, stability and self-sufficiency. Appendix 1 shows the underlying data.

Choropleth Map

These maps are a visual representation of the import origin for each product, categorised by quantity. The darker shades of colour show a larger proportion of World imports originating from a particular country and as shades get lighter, the proportion decreases, indicating that very few, or none of the Worlds imports originated from that country. Appendix 1 again shows the underlying data.

Results

Crude Oil

Only four OECD countries were self-sufficient for crude oil in 2013 (Chart 1). Norway had by far the highest self-sufficiency score, producing over 5 times its own consumption of crude oil. With a self-sufficiency score of 0.64, the UK was above the OECD average of 0.38. Similarly, the UK's diversity score of 0.69 was above the average score of 0.42.

Chart 1: Diversity and self-sufficiency of crude oil for OECD countries 2013

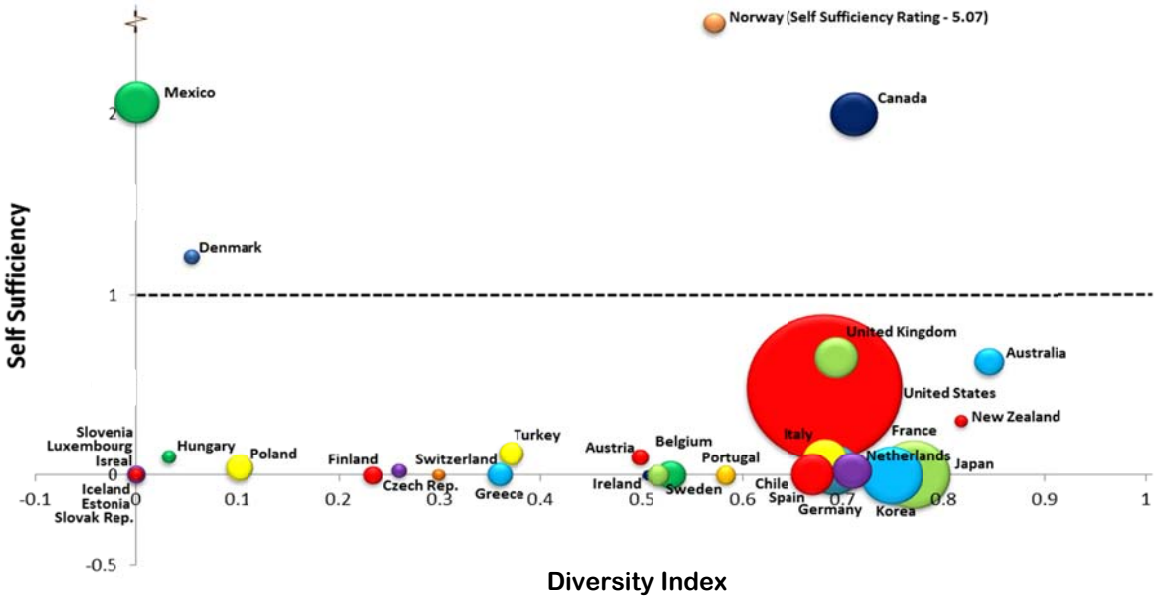
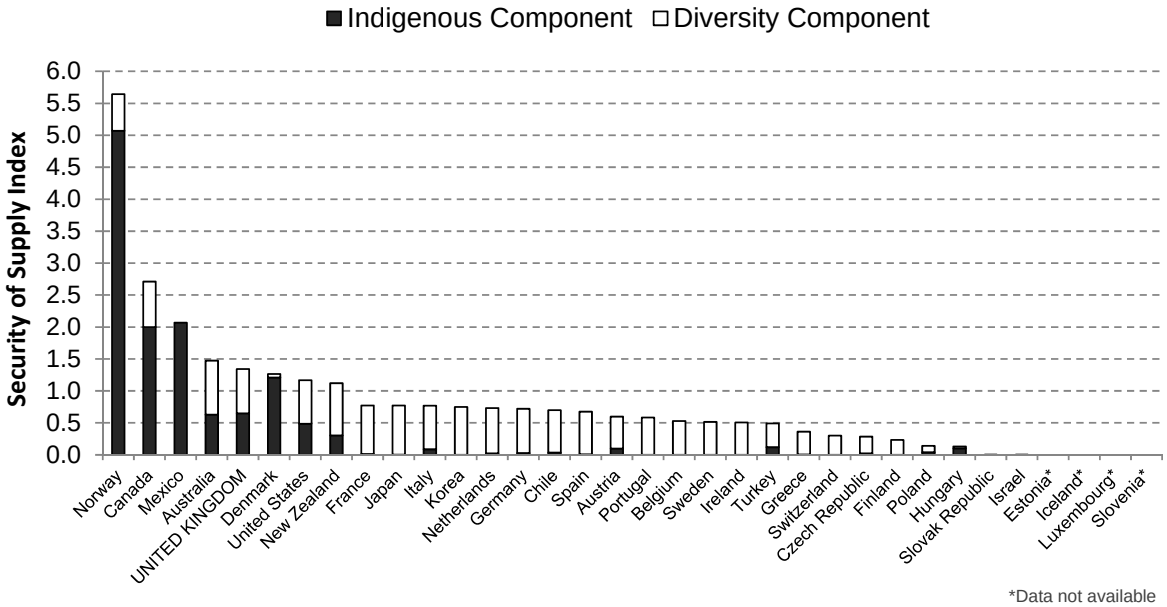


Chart 2 shows that the UK placed highly in the ranking of OECD countries being one of the few countries with significant oil production. The majority of OECD countries showed scores that reflect a strong trading element, with a relatively small contribution from indigenous production (Chart 2).

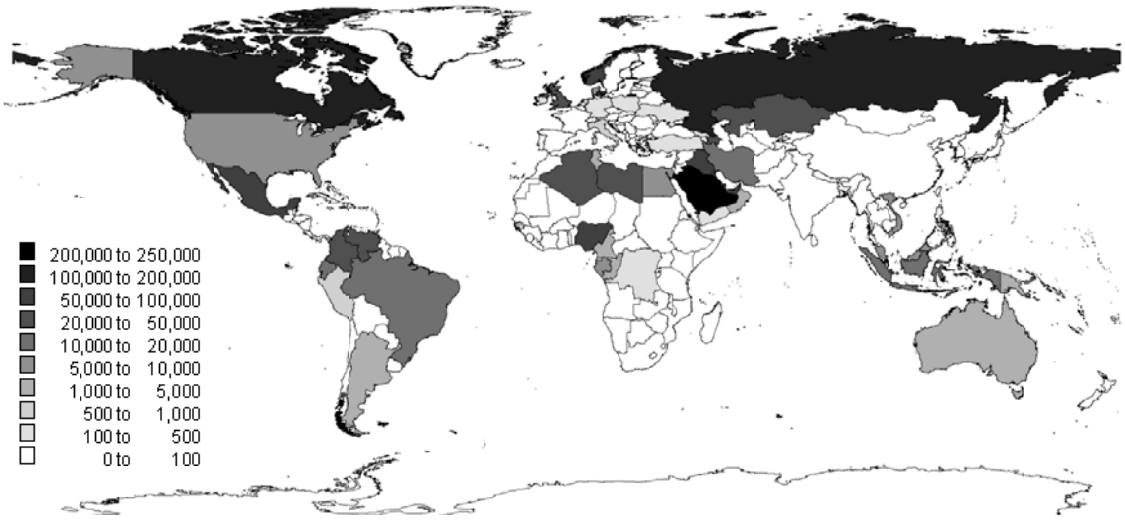
Chart 2: Security of supply of crude oil for OECD countries 2013



*Data not available

Chart 3 is an illustration of where crude oil originated in 2013. The chart shows that the bulk of crude oil is exported from the Middle East, with Saudi Arabia being the largest producer of indigenous crude oil out of all countries. Russia, North America and South America all produce significant quantities of crude oil as well, with Norway being the largest producer and exporter of crude oil in Europe.

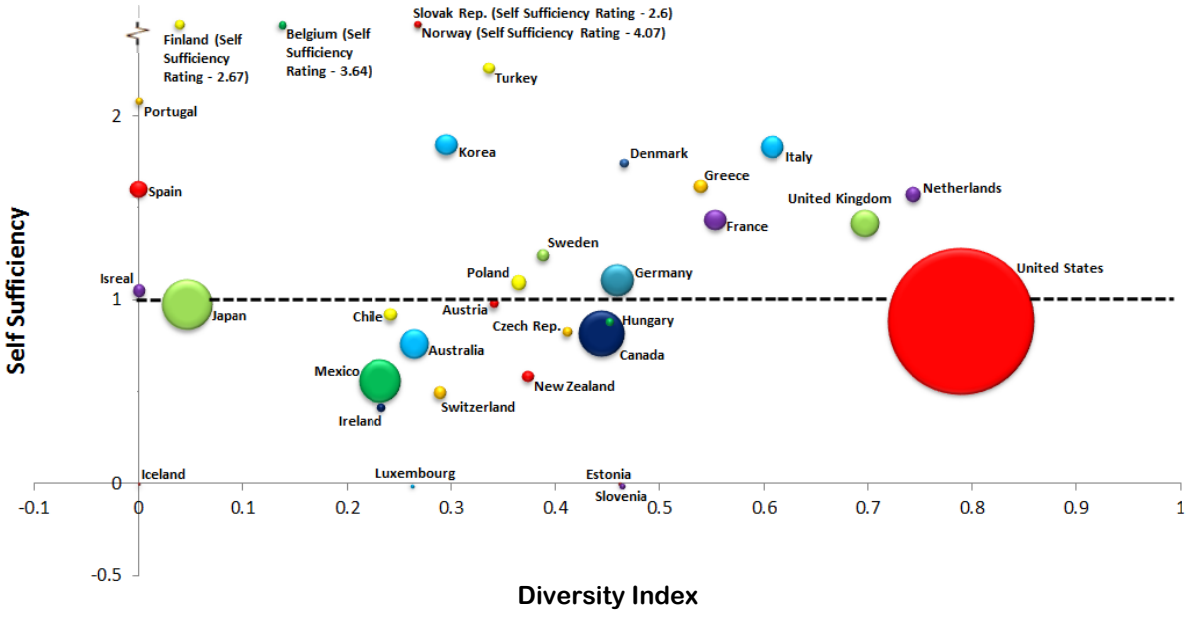
Chart 3: Worldwide Crude Oil Exports (kt) 2013



Motor Gasoline

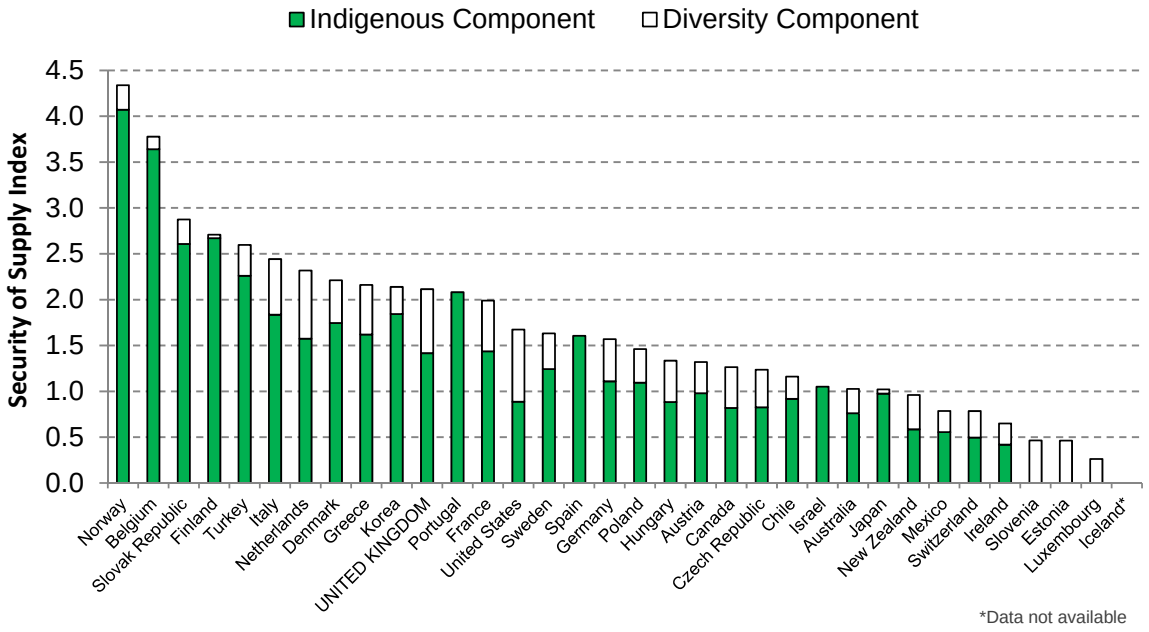
The profiles for motor gasoline are considerably different to that of crude. Over 50 per cent of OECD countries were self-sufficient in 2013 (Chart 4). The UK had a self-sufficiency score of 1.41, which was higher than the average across all OECD countries of 1.29. The UK's diversity score of 0.70 was higher than the average of 0.34, reflecting the UK imports from 15 countries.

Chart 4: Diversity and self-sufficiency of motor gasoline for OECD countries 2013



Our simplified security of supply index (Chart 5) shows how the vast majority of countries produce enough petrol to meet their needs and how much trade there is in motor gasoline amongst the OECD countries. The UK ranks in the top third out of all OECD countries.

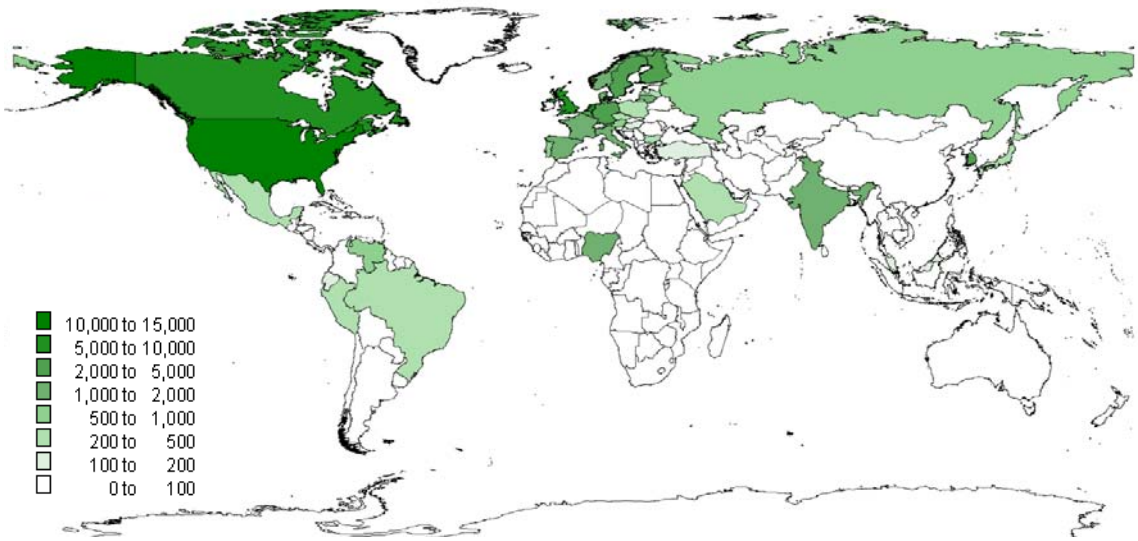
Chart 5: Security of supply of motor gasoline for OECD countries 2013



*Data not available

The main area of export for motor gasoline around the world is North America, with the most exports from Canada and United States despite the UK exporting some amount of motor gasoline to the United States. The map also shows Europe to be a large exporter of motor gasoline with nearly all but a few, exporting some volume of motor gasoline. South East Asia, Australia and New Zealand have the lowest volume of exports.

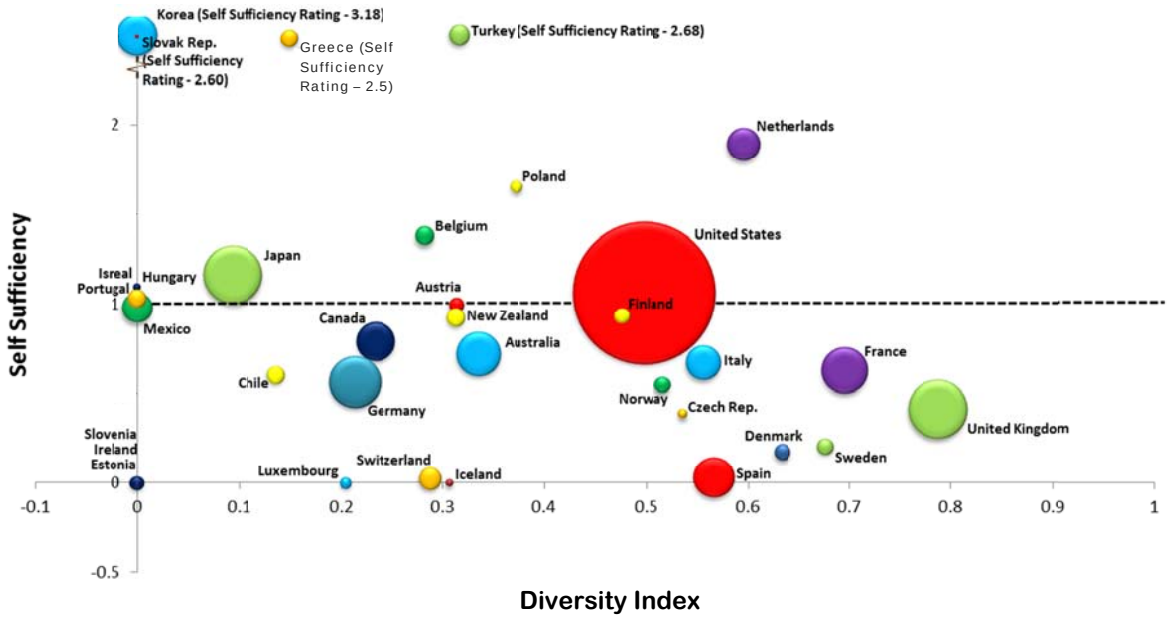
Chart 6: Worldwide Motor Gasoline Exports (kt) 2013



Jet Fuel

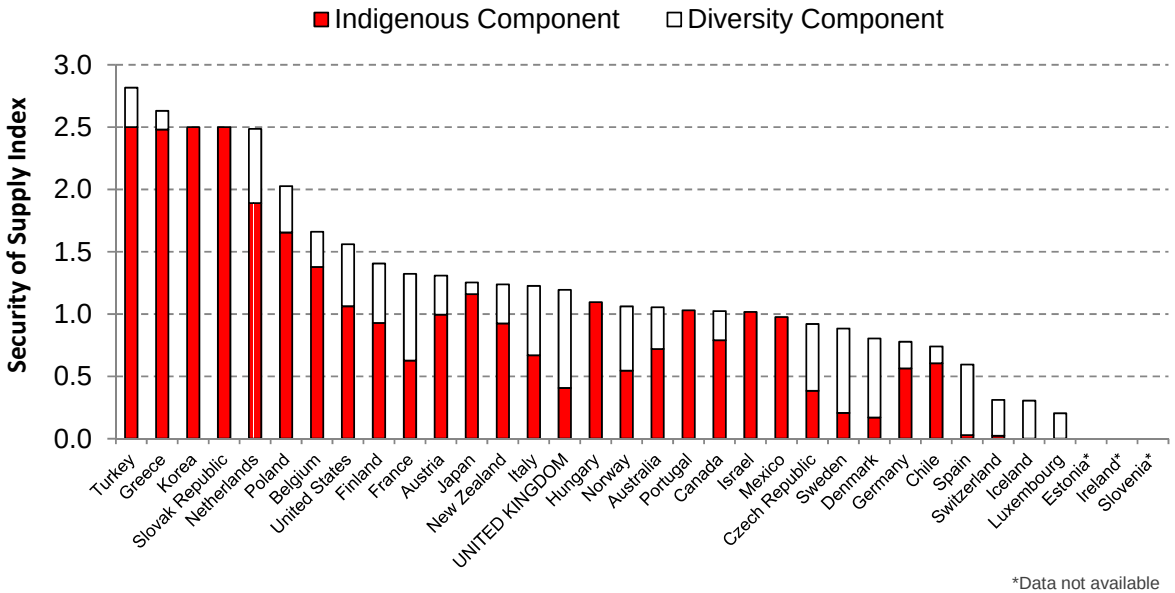
Chart 7 shows that, with a self-sufficiency score of 0.40 and with the second highest demand, the UK was below both the self-sufficient threshold of 1 and the OECD average 0.90 for jet fuel. However, the UK's import diversity score of 0.79 was more than double the average for all OECD countries (0.30) and the highest of all OECD countries.

Chart 7: Diversity and self-sufficiency of jet fuel for OECD countries 2013



Many OECD countries have significant production capacity of jet fuel. For instance, Turkey produces two and a half times its demand and requires little imports. The UK's capacity to meet its demand through indigenous production is low: in 2013 the UK was capable of meeting only around half its demand, which is one of the largest deficits in the OECD. However, the UK had the most diverse and stable import sources within the OECD.

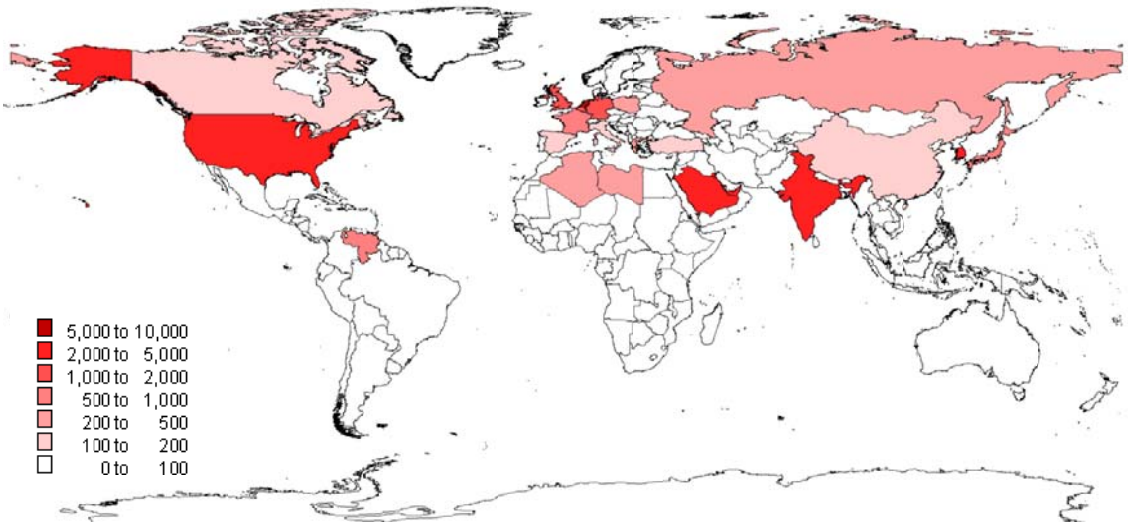
Chart 8: Security of supply of jet fuel for OECD countries 2013



*Data not available

Jet fuel is only produced in significant quantities in a few countries around the world. Korea, Saudi Arabia, India and the United States produce and export the most (see Chart 9). Europe produces small amounts of jet fuel as well as China, Russia and North Africa.

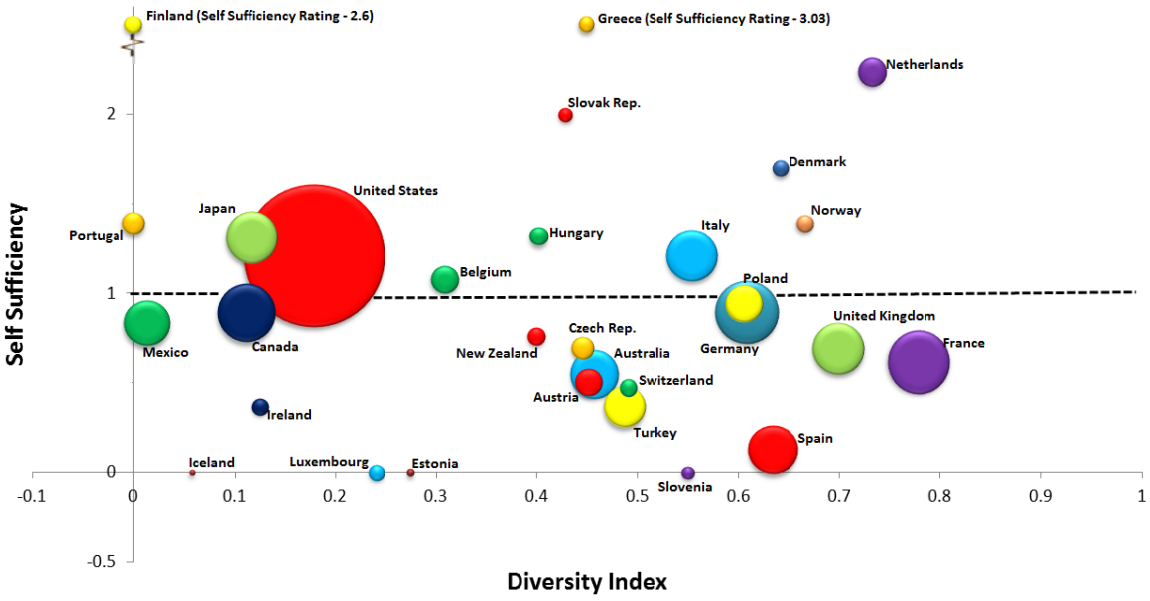
Chart 9: Worldwide Jet Fuel Exports (kt) 2013



Diesel Road Fuel

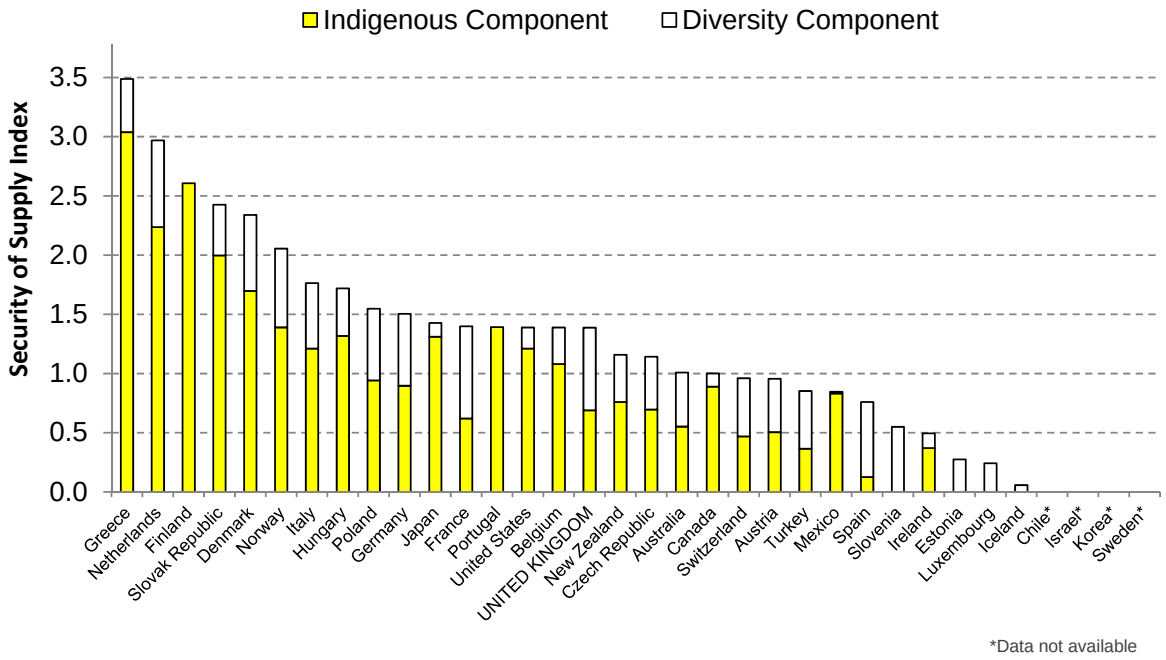
With a self-sufficiency score of 0.69, the UK produces just over two thirds of the diesel it consumes. The UK was below the average OECD self-sufficiency score of 0.86 in 2013. However, the UK is in a favourable position in terms of diversity and political stability of imports; the UK's diversity score of 0.70 was higher than the OECD average of 0.35 and third highest of all OECD countries (Chart 10).

Chart 10: Diversity and self-sufficiency of diesel for OECD countries 2013



The majority of countries either met demand through indigenous production or by a combination of production and diverse imports. Chart 11 shows how the UK was in the top half of OECD countries.

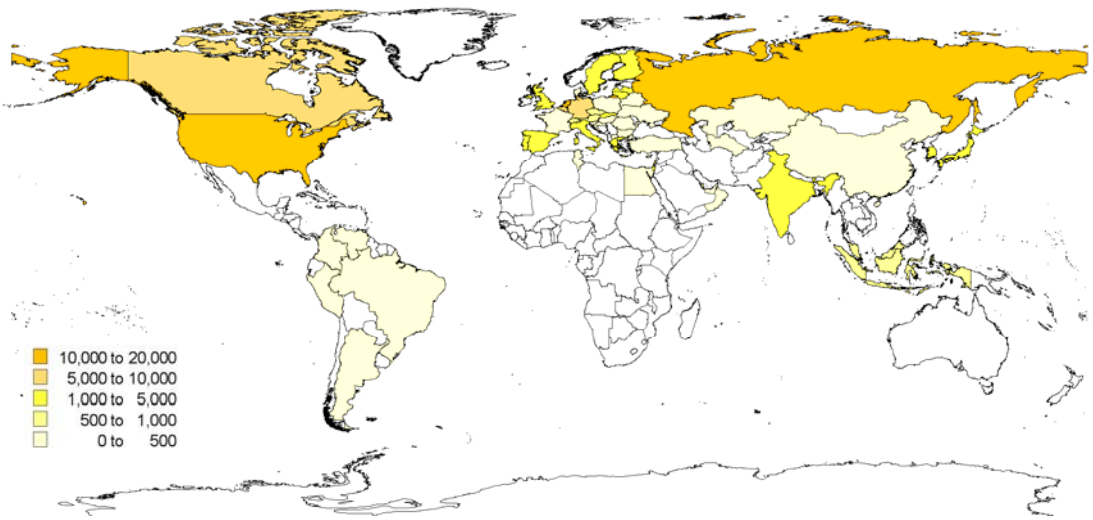
Chart 11: Security of supply of diesel for OECD countries 2013



*Data not available

The map shows that only two countries in the world produce a significant amount of diesel, United States and Russia. There is limited production throughout Asia and South America with Europe producing slightly more, per capita each year. United Kingdom met just over half of its demand through indigenous production (Chart 12).

Chart 12: Worldwide Diesel Exports (kt) 2013



Summary

Self-Sufficiency and Import Diversity of OECD Countries

The overall picture of diversity of supply for oil and oil products reflects a higher security of supply for oil products than for crude oil, primarily driven by higher levels of indigenous production for products than for crude itself. With an average self-sufficiency score of (0.38), OECD countries are highly dependent on imports of crude oil to meet refinery demand, compared to average scores of 1.20, 0.88 and 0.86 for motor gasoline, jet fuel and diesel respectively. However, although average self-sufficiency scores for transport fuels were much higher, these scores are dependent on refining crude oil, and as such indigenous production of productions cannot be decoupled easily from crude oil security of supply.

Motor gasoline production across the OECD outstrips demand significantly, because the refining profile has historically been biased towards petrol production. With the increasing shift to dieselisation of passenger road transport, the majority of OECD countries more than met their consumption needs for motor gasoline.

In contrast to motor gasoline, many countries did not produce enough jet fuel or diesel domestically to meet their demand. Although diesel imports scored the highest average diversity index of approximately 0.35, jet fuel imports had an average score similar to that of motor gasoline, at approximately 0.3. This relatively low diversity score, combined with a low self-sufficiency score put jet fuel as the lowest scoring oil product in our simplified security of supply index. However the UK, with a diversity score of 0.79, scored the highest overall, with most north-western European countries also scoring higher than the OECD average of 0.30. This suggests a number of countries have taken steps to maximise the diversity and political stability of jet fuel imports.

Self-Sufficiency and Import Diversity of the UK

The UK compares well with other OECD countries for both self-sufficiency and diversity, always being in the top half of rankings for both crude oil and oil. The UK could meet around two thirds of its crude oil consumption via indigenous production, putting it sixth out of all the OECD countries. The UK meets its needs for motor gasoline from indigenous production, but conversely, the UK relies on imports to meets its requirements for jet fuel and diesel road fuel as its refineries do not meet demand from increasing air travel and the shift towards diesel road vehicles.

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Appendix 1 – Provisional Data for 2013

	Crude Oil			Motor Spirit			Jet Fuel			Diesel Road Fuel		
	Diversity plus Political Stability	Self-sufficiency	Demand (KT)	Diversity plus Political Stability	Self-sufficiency	Demand (KT)	Diversity plus Political Stability	Self-sufficiency	Demand (KT)	Diversity plus Political Stability	Self-sufficiency	Demand (KT)
Australia	0.84	0.63	27,303	0.26	0.76	14,583	0.33	0.72	6,141	0.46	0.55	19,610
Austria	0.50	0.10	8,581	0.34	0.98	1,663	0.31	**1.00**	657	0.45	0.50	6,381
Belgium	0.53	0.00	27,459	0.14	**2.50**	1,237	0.28	**1.38**	1,118	0.31	**1.08**	6,387
Canada	0.71	**2.00**	63,642	0.44	0.82	35,144	0.23	0.79	4,446	0.11	0.89	27,462
Chile	0.66	0.03	9,452	0.24	0.92	2,743	0.14	0.60	1,005	0.00	-	3,753
Czech Republic	0.26	0.02	6,664	0.41	0.83	1,564	0.54	0.38	289	0.45	0.70	4,034
Denmark	0.05	**1.21**	7,172	0.47	**1.74**	1,285	0.63	0.17	873	0.64	**1.70**	2,241
Estonia	0.00	-	0	0.46	0.00	223	0.00	-	38	0.27	-	460
Finland	0.23	0.00	11,269	0.04	**2.50**	1,554	0.48	0.93	720	0.00	**2.61**	2,415
France	0.76	0.01	55,654	0.55	**1.44**	7,544	0.70	0.63	6,793	0.78	0.62	33,823
Germany	0.69	0.03	92,454	0.46	**1.11**	18,422	0.21	0.56	8,435	0.61	0.90	33,447
Greece	0.36	0.00	19,891	0.54	**1.62**	2,708	0.15	**2.48**	957	0.45	**3.03**	2,070
Hungary	0.03	0.10	5,958	0.45	0.88	1,297	0.00	**1.10**	167	0.40	**1.32**	2,631
Iceland	0.00	-	0	0.00	0.00	133	0.31	0.00	182	0.06	-	274
Ireland	0.51	0.00	2,840	0.23	0.42	1,201	0.00	-	615	0.13	0.37	2,256
Israel	0.00	0.00	10,951	0.00	**1.05**	2,673	0.00	**1.02**	773	0.00	-	0
Italy	0.68	0.09	62,502	0.61	**1.83**	9,010	0.56	0.67	3,800	0.55	**1.21**	21,879
Japan	0.77	0.00	159,585	0.05	0.97	41,226	0.09	**1.16**	10,398	0.12	**1.31**	20,855
Korea	0.75	0.00	122,816	0.30	**1.84**	8,220	0.00	**3.17**	5,187	0.00	-	15,262
Luxembourg	0.00	-	0	0.26	0.00	317	0.20	0.00	360	0.24	-	1,822
Mexico	0.00	**2.07**	63,129	0.23	0.56	32,878	0.00	0.98	2,842	0.01	0.83	17,777
Netherlands	0.71	0.02	47,707	0.74	**1.57**	4,041	0.60	**1.89**	3,397	0.73	**2.24**	6,974
New Zealand	0.82	0.30	5,215	0.37	0.59	2,279	0.31	0.93	1,047	0.40	0.76	2,540
Norway	0.57	**5.06**	14,612	0.27	**2.50**	954	0.52	0.55	885	0.67	**1.39**	2,440
Poland	0.10	0.04	24,301	0.36	**1.10**	3,662	0.37	**1.65**	518	0.61	0.94	11,437
Portugal	0.58	0.00	11,910	0.00	**2.08**	1,073	0.00	**1.03**	1,047	0.00	**1.39**	4,124
Slovak Republic	0.00	0.00	5,793	0.27	**2.50**	546	0.00	**2.60**	42	0.43	**2.00**	1,533
Slovenia	0.00	-	0	0.46	0.00	450	0.00	-	26	0.55	-	1,277
Spain	0.67	0.01	58,143	0.00	**1.61**	4,652	0.57	0.03	5,133	0.63	0.13	20,465
Sweden	0.52	0.00	16,528	0.39	**1.24**	2,755	0.68	0.21	812	0.00	-	4,239
Switzerland	0.30	0.00	4,847	0.29	0.50	2,803	0.29	0.02	1,570	0.49	0.47	2,622
Turkey	0.37	0.12	19,925	0.34	**2.26**	1,909	0.32	**2.68**	1,337	0.49	0.37	14,692
United Kingdom	0.69	0.65	59,024	0.70	**1.42**	13,220	0.79	0.41	11,113	0.70	0.69	22,529
United States	0.68	0.49	755,369	0.79	0.89	384,446	0.50	**1.06**	65,308	0.18	**1.21**	172,928

Source: IEA (http://data.iea.org/ieastore/statslisting.asp)

Items in **bold** highlight those countries where indigenous capacity exceeded domestic consumption.

Appendix 2 – Methodology

Crude oil and transport fuel self-sufficiency

Data for crude oil, motor gasoline and jet fuel were extracted from the IEA database. For diesel, data were provided on request from the IEA. Self-sufficiency was determined from data on indigenous production and consumption (production (kt) ÷ consumption (kt)).

Crude oil and transport fuel diversity indices

The diversity index used here is a product of a standard diversity index and an index for political stability. As a basic index for measuring diversity, we used the Shannon-Wiener diversity index. The Shannon-Wiener diversity index is a measure of diversity and increases as both the number of countries from which the OECD country imports from increases and the evenness of the size of the import from each country increases. The Shannon-Wiener index is of the form:

$$\sum_{i=1}^{n} -x_i \ln(x_i)$$

Where x_i is the proportion of total fuel supply represented by the ith source country and n represents the final source country. A value below 1 signifies a country that is dependent on a small range of import sources, a value above 2 represents a country with a wide range of import sources. The minimum value of zero denotes a country that has one imported fuel source or relies entirely on indigenous production.

A previous comparative study on import diversities in Energy Trends March 2011 used the Herfindahl Index as the basic diversity index. Although both of these indices have their advantages, the Shannon-Wiener was chosen here as this represents the data with less skew, as well as placing more weight on the diversity of contributions from smaller countries and lessening the impact of larger nations.

Political stability was determined using data from the World Bank worldwide governance indicators. Specifically, the index reflects perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism. These data were standardised between 0 and 1. Once Shannon-Wiener and political stability indices were determined, these were multiplied and summed:

$$\sum_{i=1}^{n} -x_i \ln(xi)\, b_i$$

Where b is an index of political stability of producing country. This is called the SWNI (Shannon-Weiner-Neumann index), in line with previous work.

Each SWNI index was normalised for each petroleum product between 0 and 1, in order to have a standardised index. This was done by working out a maximum diversity score, by assuming maximum diversity was equivalent to importing products in line with proportional contributions of exporting countries (e.g. if a single country were responsible for exporting 50 per cent of all product, and five other countries were responsible for 10 per cent each, we assumed maximum import diversity at a ratio of 5:1:1:1:1:1). This maximum diversity score then acted as our upper score of 1, with all other scores divided by this maximum to standardise the data.

Physical gas flows across the EU-28 and diversity of gas supply in 2013

Background

This article has two main purposes. The first is to illustrate physical gas flows at the European level using 2013[1] data published by the International Energy Agency (IEA), with the aim to improve gas data transparency and quality. The second is to attempt to compare the resilience of the UK's supply infrastructure with that of other EU Member States.

European Physical Gas Flows

European Gas Production

The total EU-28 gas production in 2013 was 172.4 billion cubic metres (bcm), with the Netherlands and the UK accounting for 50 per cent and 22 per cent of this total respectively. Out of all EU-28 countries, only the Netherlands and Denmark produced more gas than they consumed.

European Gas Consumption

During 2013 total EU-28 gas consumption was 471 bcm with the greatest demand coming from Germany, the United Kingdom and Italy. These countries together accounted for 50 per cent of EU-28 consumption. Germany remained the largest net importer in Europe in 2013 at 84 bcm, followed by Italy at 61 bcm and then France at 45 bcm[2].

Countries such as Italy, Spain, Romania and Hungary have seen a reduction in gas demand. This reflected sluggish economic growth in 2013 and a continuing shift in electricity generation away from natural gas and in to coal.

Sources of Gas

Thirty seven per cent of EU-28 consumption in 2013 was met by indigenous production, with production from Netherlands and UK meeting 18 and 8 per cent of total EU demand respectively.

The Russian Federation remained the largest single supplier of gas to the EU-28, delivering around 122 bcm, or 26 per cent, of total EU-28 gas demand in 2013. 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 the origin of all of this gas is not necessarily Russian, since Russia acts as a transit country for gas from Kazakhstan and Turkmenistan to reach European markets.

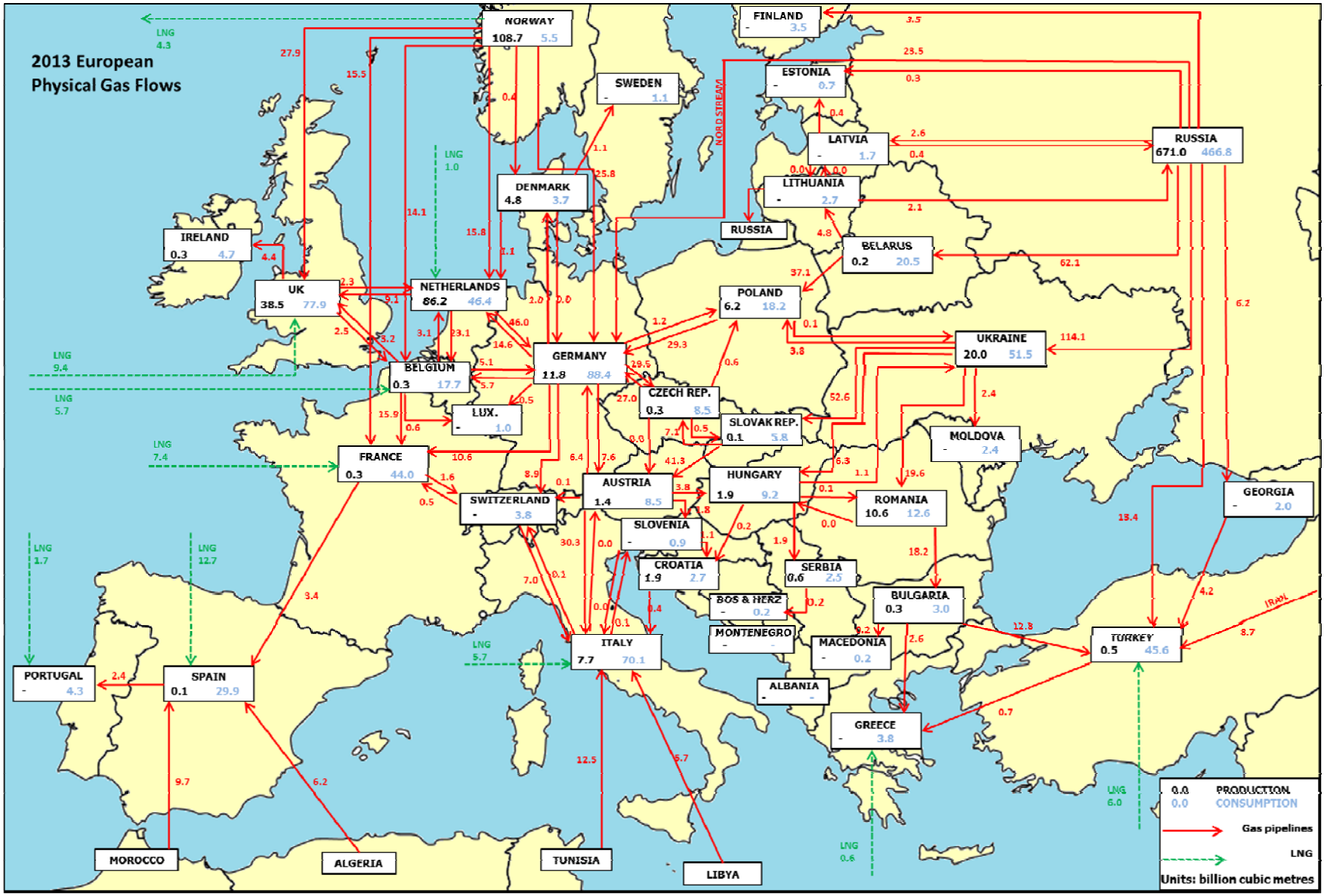
Norwegian exports to the EU-28 remained the same between 2012 and 2013, at around 102 bcm or 21 per cent of total EU-28 gas consumption; 27 per cent of Norwegian exports were directed to the UK in 2013.

North African pipelines via Spain and Italy provided 34 bcm, or 7 per cent, of EU-28 demand. Algerian gas, coming direct from Algeria and also via Morocco and Tunisia, accounted for 83 per cent of North African gas delivered to the EU-28, with Libya supplying the remainder.

EU-28 imports of LNG were 44.3 bcm in 2013 versus 55.8 bcm in 2012, reflecting increased demand from Asia in 2013 (and henceforth higher prices relative to the previous year). LNG met 9 per cent of EU-28 demand and, in particular, 42 per cent of Spanish gas consumption. The largest suppliers of LNG to the EU-28 were Qatar, Algeria and Nigeria, who supplied 40, 29 and 16 per

1 January 1st 2013 to December 31st 2013 data

2 These numbers differ slightly from the IEA's annual figures due to the adjustments necessary to balance supply to within +/- 5% of observed consumption. The supply for some countries may appear unbalanced as stock changes are not shown. Data were calculated primarily from 2013 monthly pipeline gas flows, with 2013 annual imports, exports, production and consumption used for quality assurance amendments.


2013 European
Physical Gas Flows
NORWAY
108.7 5.5
FINLAND
- 3.5
SWEDEN
- 1.1
ESTONIA
- 0.7
LATVIA
- 1.7
LITHUANIA
- 2.7
RUSSIA
671.0 466.8
DENMARK
4.8 3.7
RUSSIA
IRELAND
0.3 4.7
UK
38.5 77.9
NETHERLANDS
86.2 46.4
BELARUS
0.2 20.5
POLAND
6.2 18.2
UKRAINE
20.0 51.5
GERMANY
11.8 88.4
BELGIUM
0.3 17.7
LUX.
- 1.0
CZECH REP.
0.3 8.5
SLOVAK REP.
0.1 5.8
MOLDOVA
- 2.4
FRANCE
0.3 44.0
AUSTRIA
1.4 8.5
HUNGARY
1.9 9.2
ROMANIA
10.6 12.6
GEORGIA
- 2.0
SWITZERLAND
- 3.8
SLOVENIA
- 0.9
CROATIA
1.9 2.7
SERBIA
0.6 2.5
BOS & HERZ
- 0.2
BULGARIA
0.3 3.0
MONTENEGRO
-
MACEDONIA
- 0.2
TURKEY
0.5 45.6
ALBANIA
-
GREECE
- 3.8
ITALY
7.7 70.1
PORTUGAL
- 4.3
SPAIN
0.1 29.9
MOROCCO
ALGERIA
TUNISIA
LIBYA
IRAN
NORD STREAM
LNG
4.3
LNG
1.0
LNG
9.4
LNG
5.7
LNG
7.4
LNG
1.7
LNG
12.7
LNG
5.7
LNG
6.0
LNG
0.6
0.0 PRODUCTION
0.0 CONSUMPTION
Gas pipelines
LNG
Units: billion cubic metres

cent of total EU-28 LNG imports respectively.

UK imports of LNG in 2013

Although UK imports of LNG decreased by 32 per cent, from 13.9 bcm in 2012 to 9.4 bcm in 2013, the data showed the UK to be the second largest importer of LNG in 2013, behind Spain. 93 per cent of UK imports of LNG came from Qatar in 2013, down from 98 per cent in 2012.

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

EU-28 Infrastructure peak daily gas supply in 2013

There are four sources of gas supply available to EU Member States: indigenous production, gas storage facilities, imports via LNG terminal and imports via pipeline, with the potential of multiple sources within each of these categories. We used the peak flow (i.e. the maximum gas deliverable in billion cubic metres per day) as a comparative measure of gas supply for each individual source for each country. For pipeline and LNG terminal, peak flow data were extracted from IEA physical gas flows data[3]. Similarly, peak outputs for storage facilities were extracted from the IEA Natural Gas Information 2014[4]. Storage facilities are assumed to be capable of working at peak capacity during times of peak demand. Although this is susceptible to inaccuracies, as peak capacity from storage facilities may not indeed be achievable by the point of peak demand in EU member states, it does allow a consistent metric across all storage facilities. Data for peak outputs for production had to be estimated, by taking the maximum monthly production (bcm) in 2013 for each gas-producing member state and dividing this by the number of days in that month.

Chart 1 shows peak gas supply for each individual country as a stacked bar chart, with different colours representing different categories of gas supply. Stacks were arranged with production and storage facilities stacked at the base of the chart and imports via LNG terminals and pipelines stacked above. Further, for these imports and storage sources, data were divided within categories by individual source (represented by horizontal lines within an individual bar colour).

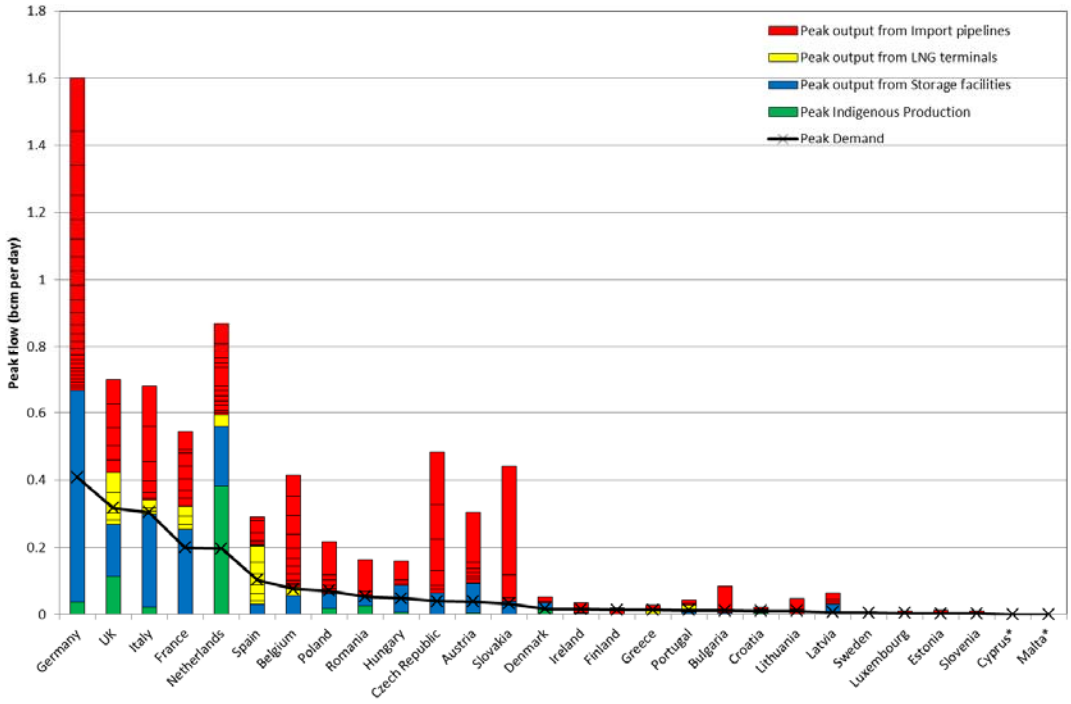
Chart 1 includes all EU-28 member states in order of peak gas demand. Peak gas demand data (bcm per day) are included within Chart 1 as a single line-and-cross plot running across the graph. Peak gas demand acts as a comparator for peak gas supply, and was estimated for each country by taking the maximum monthly demand in 2013 (bcm) divided by the number of days within that month. Data for peak flows are provided in the table in Annex 1.

Chart 1 shows that in all EU countries for which data were available, maximum gas supply exceeded peak demand. According to the data, Germany had the highest peak demand in 2013, but also had the largest potential peak output from both indigenous storage facilities and import pipelines. The data indicated that only the Netherlands had sufficient indigenous production capacities to meet peak daily demand. The majority of countries had a peak supply more than double that of peak demand, with the exception of Finland and Sweden.

The UK had the second largest peak demand of the EU member states. The UK also had the most diverse category breakdown for gas supplies, with each of the four potential gas sources making up at least 16 per cent of peak supply.

[3] www.iea.org/gtf/index.asp
[4] Natural Gas Information 2014, International Energy Agency, ISBN 9789264217058

Chart 1: Peak outputs for gas supply sources versus peak demand for EU-28 Member States



Source: DECC analysis of IEA data. *Cyprus and Malta have no consumption and are included for completeness only. For import data, stacks are further divided by number/volume of pipelines/terminals. Data are provided in Table in Annex 1.

Looking at the pipeline import data in Chart 1 (red stacks), it is clear that the five member states with the largest peak demand have a diverse range of import pipelines. Germany in particular has a large number of import pipelines, 26 in total. There are substantially fewer import pipelines in EU countries east of Germany. Of particular note, although the Slovak Republic appeared to have a peak supply that far exceeded demand, almost all of this came via a single pipeline. Aside from Spain (six), the UK (four) and Italy and France (three), all other member states had at most a single LNG terminal.

EU-28 Gas Infrastructure Resilience 2013

In order to give an indication of the resilience of the gas supply infrastructure, we have developed a simple methodology that takes the sum of all gas supplies coming into a country running at maximum capacity (*PF*, peak flow), removes the largest supply route, and looks at the remaining percentage supply relative to peak demand. The equation below indicates PF as

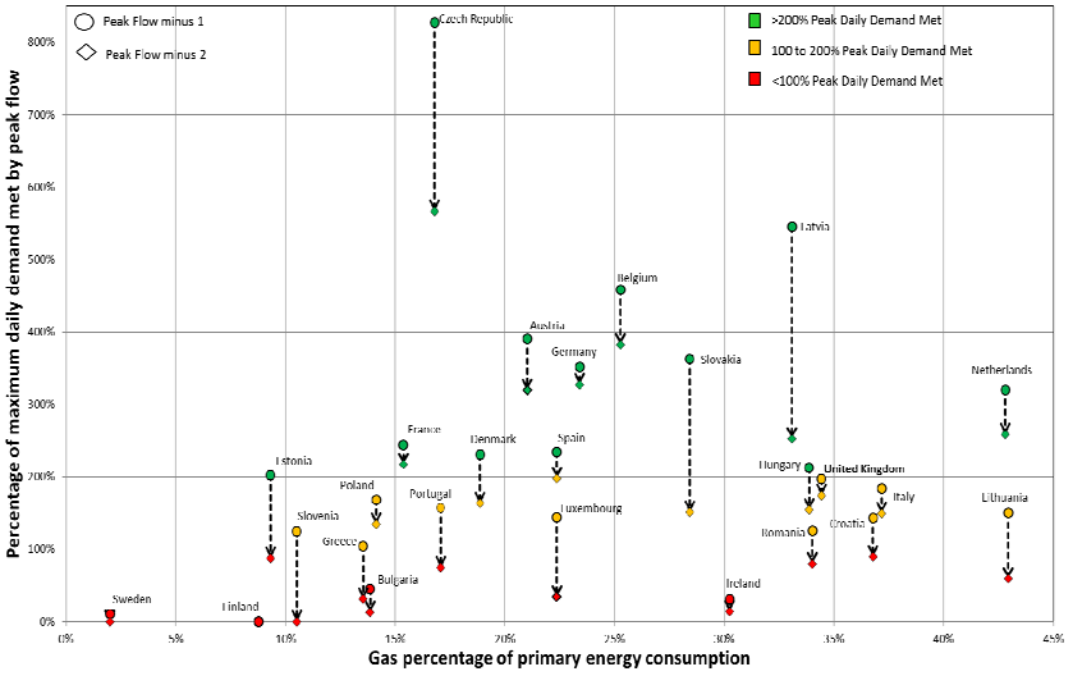
$$PF - 1[\%] = \frac{EP_{\max} + P_{\max} + S_{\max} + LNG_{\max} - I_{\max}}{D_{\max}} \qquad \text{Equation 1}$$

Where:
PF = Peak Flow (bcm/day)
EP_{max} = Peak capacity of entry points (bcm/day)
P_{max} = Peak capacity for each indigenous production pipeline (bcm/day)
S_{max} = Peak output for each storage facility (bcm/day)
LNG_{max} = Peak output for each LNG terminal (bcm/day)
D_{max} = Average 2013 peak gas demand (bcm/day)
I_{max} = Peak daily capacity of single largest supply route (bcm/day)

This formula is similar to a more widely used metric - the 'N-1' measure of supply outlined in the EU Regulation No. 994/2010 - but differs to that due to the historical nature of the data used here. Additionally, in the EU regulation, peak demand (D_{max}) is defined as the total daily gas demand of the country during a day of exceptionally high gas demand occurring with a statistical probability of once in 20 years. In this report, because we are calculating resilience for 2013, we use the peak gas demand in each country for 2013 (January 1st 2013 to December 31st 2013), taking the maximum monthly demand in 2013 (bcm) and dividing this by the number of days within that month. In addition to *PF*-1, *PF*-2 was also calculated using the same methodology but removing the two largest supply routes as a more rigorous test of infrastructure resilience.

As well as considering infrastructure resilience, it is also important to consider the extent to which each EU-28 country relies on gas to meet its primary energy demand. If the *PF*-1 score is less than 100 per cent, it could have considerable consequences for a country that relies on gas for a large proportion of its primary energy demand, compared to a lesser extent for a country that mainly uses other energy sources. We therefore plotted out *PF*-1 and *PF*-2 against the percentage of total primary energy demand met by gas for each EU Member State (Chart 2).

Chart 2: EU-28* gas infrastructure resilience versus percentage of primary energy consumption met by gas, 2013



*Data for Cyprus and Malta not available. Peak flow minus 1 = total gas supply capacity minus largest gas supply route (*PF*-1). Peak flow minus 2 = total gas supply capacity minus two largest gas supply routes (*PF*-2). For each member state, top circle represents *PF*-1 and bottom diamond represents *PF*-2. Red-amber-green are illustrative, and do not reflect any pre-defined or standard resilience metric.

Chart 2 shows Czech Republic, Belgium, Germany, Austria, Netherlands, Latvia and France to have particularly resilient gas infrastructure. In all seven countries, the gas infrastructure was able to provide more than double the peak gas demand in 2013, even with the loss of their two largest gas supply routes, although in the case of Latvia peak demand was lower than 2012 whilst peak supply was similar. The Czech Republic effectively doubled its resilience following the completion of the Gazelle pipeline project which became operational in January 2013 connecting into German pipelines receiving flows from Russia through the Nord Stream. Finland, Sweden, Ireland and Bulgaria were particularly vulnerable to infrastructure disruptions, with these four countries unable to meet peak daily demand after the loss of the largest gas supply route. Ireland was particularly vulnerable, given that they relied on gas for more than 30 per cent of their primary energy demand.

Including both *PF*-1 and *PF*-2 scores in Chart 2 gives further insight into infrastructure resilience which would not be captured by the *PF*-1 score alone. For example, the data indicate that Estonia has two major supply routes: although resilient to a single supply disruption (meeting 203 per cent of peak demand), Estonia becomes vulnerable after the loss of these two main routes. This is also the case for Slovenia, Greece, Portugal, Luxembourg, Romania, Croatia and Lithuania.

According to the data, the UK was resilient to infrastructure disruptions in 2013, with 197 and 175 per cent of peak demand met with the loss of the largest and two largest gas supply routes respectively. Overall, according to the peak flow metric and data used in this report, the UK was the ninth most resilient Member State to gas supply infrastructure disruptions, but was the fifth most dependent on gas for primary energy demand in 2013.

EU regulations, enforcing that all Member States must have an *N*-1 score of greater than 100 per cent (using the larger value of peak gas demand based on a statistical probability of once in 20 years) came into force from 3rd December 2014. Given the similarity between the EU *N*-1 methodology and the *PF*-1 methodology used here, the UK appears well-placed to meet this requirement. For those seven countries most at risk (*PF*-1 and *PF*-2 both less than 100% in Chart 2), all apart from Luxembourg have plans in place to increase their gas infrastructure[5]. Further, it is important to note these data was collected from a range of sources and we have not confirmed each of the data items with the countries who submit data to the IEA.

This report shows the physical flow of natural gas around Europe and resilience of the EU Member States to infrastructure disruption. It has built on a previous report, published in Energy Trends March 2014[6]. From a UK perspective, there are a diverse range of gas sources, from pipelines LNG imports, storage and indigenous production, with good resilience to disruption of major supply sources. In general, North-western Europe has the highest resilience to infrastructure disruption.

Importantly, this report has focussed on within-country infrastructure disruptions, and not considered the more complex issue of supply disruptions impacting on the entire EU-28 infrastructure, such as difficulties in gas supply from major gas-supplying countries such as Russia or Norway. We aim to build on this report to consider these wider-ranging supply difficulties in future reports.

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[5] www.entsog.eu/maps/transmission-capacity-map
[6] www.gov.uk/government/uploads/system/uploads/attachment_data/file/295263/Physical_gas_flows.pdf

Annex 1: Table of key data for gas use in the EU-28* countries, 2013

	Peak daily [X] (Billion cubic metres per day)							(annual)	(annual)
EU-28 MS	**Demand ****	**Indigenous production ****	**Import pipelines**	**Storage supply**	**LNG output**	***PF*-1 score**	***PF*-2 score**	**Natural Gas Consum-ption (Mtoe)**	**Total Primary Energy Consumption (Mtoe)**
Austria	0.03942	0.00435	0.211	0.0896	0	391%	320%	7.00	33.30
Belgium	0.07681	0	0.332	0.057	0.026	459%	383%	14.19	56.14
Bulgaria	0.0122	0.00159	0.08	0.004	0	46%	13%	2.37	17.09
Croatia	0.01088	0.005	0.012	0.0058	0	143%	90%	2.99	8.12
Cyprus*	0	0	0	0	0	0%	0%	0.00	2.90
Czech Republic	0.03958	0.00061	0.418	0.065	0	828%	567%	6.95	41.37
Denmark	0.01713	0.0151	0.016	0.0202	0	231%	164%	3.31	17.54
Estonia	0.00355	0	0.014	0	0	203%	88%	0.55	5.90
Finland	0.01435	0	0.019	0	0	0%	0%	2.83	32.27
France	0.20019	0.00132	0.222	0.2521	0.069	245%	218%	38.81	252.29
Germany	0.40884	0.03806	0.933	0.6295	0	352%	328%	73.13	312.39
Greece	0.01426	0	0.015	0	0.0145	104%	32%	3.24	23.93
Hungary	0.04829	0.00658	0.073	0.0798	0	213%	155%	7.75	22.88
Ireland	0.01613	0.00229	0.03	0.0028	0	32%	14%	4.05	13.39
Italy	0.30474	0.022	0.339	0.2758	0.0444	184%	150%	57.37	154.31
Latvia	0.00648	0	0.035	0.03	0	545%	253%	1.36	4.11
Lithuania	0.01088	0	0.048	0	0	150%	60%	2.43	5.67
Luxembourg	0.00416	0	0.011	0	0	144%	35%	0.89	3.98
Malta*	0	0	0	0	0	0%	0%	0.00	2.32
Netherlands	0.19632	0.38245	0.274	0.1778	0.0348	320%	259%	33.05	77.20
Poland	0.07081	0.01829	0.155	0.0439	0	169%	135%	13.72	97.05
Portugal	0.01371	0	0.014	0.0072	0.0219	158%	75%	3.77	22.08
Romania	0.05444	0.02674	0.11	0.028	0	126%	80%	11.24	33.04
Slovak Republic	0.03294	0.00071	0.403	0.0393	0	363%	152%	4.81	16.92
Slovenia	0.00345	0	0.011	0	0	125%	0%	0.69	6.56
Spain	0.10271	0.00019	0.085	0.0315	0.1734	235%	198%	26.07	116.56
Sweden	0.00568	0	0.009	0.0006	0	11%	0%	0.96	48.01
United Kingdom	0.3179	0.11535	0.277	0.154	0.1545	197%	175%	65.50	190.22

Source: DECC analysis of IEA data. *No data available for Cyprus and Malta **Calculated by peak month divided by number of days in that month.

Annex 2: Table of *PF*-1 and *PF*-2 values for EU-28* countries, 2013

EU-28 MS	PF (bcm/day)	PF-1 (bcm/day)	Nature of the largest supply source	PF-2 (bcm/day)	Nature of the second largest supply source	Peak demand (bcm/d)
Austria	0.305	0.15	Import pipeline	0.13	Storage	0.04
Belgium	0.415	0.35	Import pipeline	0.29	Import pipeline	0.08
Bulgaria	0.085	0.01	Import pipeline	0.00	Storage	0.01
Croatia	0.023	0.02	Import pipeline	0.01	Storage	0.01
Cyprus	0.000	0.00	-	0.00	-	0.00
Czech Republic	0.484	0.33	Import pipeline	0.22	Import pipeline	0.04
Denmark	0.052	0.04	Storage	0.03	Import pipeline	0.02
Estonia	0.014	0.01	Import pipeline	0.00	Import pipeline	0.00
Finland	0.019	0.00	Import pipeline	0.00	-	0.01
France	0.545	0.49	Storage	0.44	Import pipeline	0.20
Germany	1.600	1.44	Import pipeline	1.34	Import pipeline	0.41
Greece	0.029	0.01	LNG	0.00	Import pipeline	0.01
Hungary	0.159	0.10	Import pipeline	0.07	Storage	0.05
Ireland	0.035	0.01	Import pipeline	0.00	Storage	0.02
Italy	0.681	0.56	Import pipeline	0.46	Import pipeline	0.30
Latvia	0.065	0.04	Storage	0.02	Import pipeline	0.01
Lithuania	0.048	0.02	Import pipeline	0.01	Import pipeline	0.01
Luxembourg	0.011	0.01	Import pipeline	0.00	Import pipeline	0.00
Malta	0.000	0.00	-	0.00	-	0.00
Netherlands	0.869	0.63	Indigenous production	0.51	Import pipeline	0.20
Poland	0.217	0.12	Import pipeline	0.10	Storage	0.07
Portugal	0.044	0.02	LNG	0.01	Import pipeline	0.01
Romania	0.165	0.07	Import pipeline	0.04	Storage	0.05
Slovakia	0.443	0.12	Import pipeline	0.05	Import pipeline	0.03
Slovenia	0.011	0.00	Import pipeline	0.00	Import pipeline	0.00
Spain	0.290	0.24	LNG	0.20	Import pipeline	0.10
Sweden	0.009	0.00	Import pipeline	0.00	Storage	0.01
United Kingdom	**0.701**	**0.626915**	**Import pipeline**	**0.555395387**	**Import pipeline**	**0.317903226**

Source: DECC analysis of IEA data. *PF* = peak flow (defined in Equation 1 in report). *No data available for Cyprus and Malta.

Global coal trade

Introduction

This article gives an overview of EU and global trade of hard coal[1] since 1990. Utilising data from Eurostat and the International Energy Agency it shows how EU and global imports of coal have increased, production has decreased and how source countries have changed over the period 1990 - 2012.

In 2012 coal imports in the EU were 231 million tonnes, while production was 125 million tonnes. Germany was the largest importer of coal in the EU, while Russia was the main supplier to the EU.

In 2012 1,181 million tonnes of coal were traded globally, with the largest importer being China and the largest exporter being Indonesia.

European Union

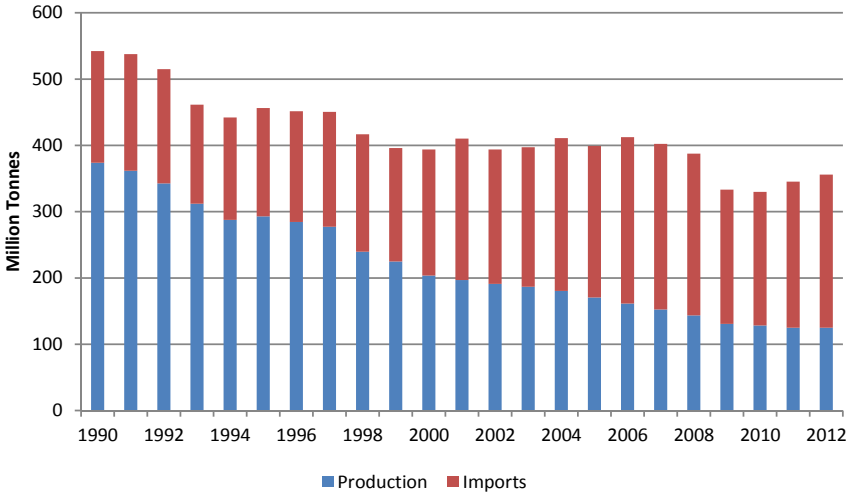
Data on European Union coal trade is available from Eurostat available at:
www.epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database

EU Coal Imports and Production

EU imports of hard coal were 168 million tonnes in 1990. After a dip in 1993 hard coal imports rose steadily as production in the EU fell. In 2001 imports of hard coal overtook production for the first time and increased to a record high of 251 million tonnes in 2006. From 2007 imports fell every year until 2010, before rising again due to increased demand for electricity generation. Imports of hard coal were 231 million tonnes in 2012.

Production of hard coal in the EU was 374 million tonnes in 1990. From 1991 onwards production fell gradually with imports rising in most years. The supply of hard coal production and imports together were 542 million tonnes in 1990. After 1990 supply fell steadily as energy supply started to become more diverse through natural gas and renewables. In 2012 production and imports were 356 million tonnes. **(Chart 1)**

Chart 1: EU (28) Hard Coal Production and Imports[2] [3]



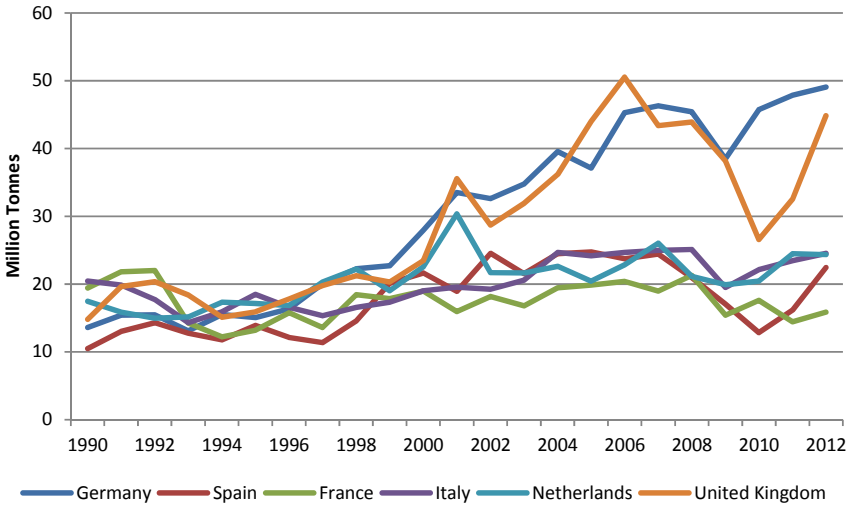
[1] Hard coal is anthracite, coking coal and other bituminous coal.
[2] Not all 28 EU countries were in the EU in 1990, but data is included for them back to 1990
[3] Figures include intra-EU trade

In 1990 Italy was the main importer of hard coal in the EU, importing 20 million tonnes, followed by France with 19 million tonnes, the Netherlands with 17 million tonnes, UK with 15 million tonnes, Germany with 14 million tonnes and Spain with 10 million tonnes. The Netherlands is both a high importer and high exporter, as much coal is in transit through the ports, e.g. Rotterdam. **(Chart 2)**

After 1990 German imports increased rapidly, as less coal was home produced due to costs. Germany is the largest producer of electricity in the EU, and this is predominantly fuelled by coal. In 2002 Germany was the largest importer of coal in the EU with 49 million tonnes.

Since 1990 UK imports of hard coal have also increased as home production fell due to mines closing, although there was a decline in imports between 2007 and 2010 due to less demand by electricity generators. In 2012 UK was the second largest importer of coal with 45 million tonnes. Imports for the other main EU importers have been mainly stable in the last 22 years.

Chart 2: Main EU Importing Countries of Hard Coal

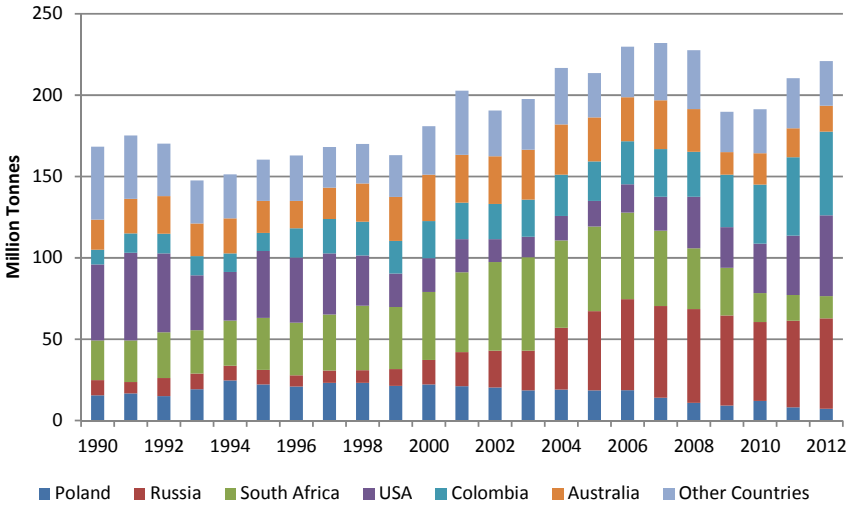


In 1990 just over half of hard coal imported to the EU came from three countries, with 47 million tonnes from the USA (28 per cent), 25 million tonnes from South Africa (15 per cent) and 19 million tonnes from Australia (11 per cent).

During the 1990s, imports from the USA gradually fell, as imports from South Africa, Colombia, Australia and Poland increased. South Africa took over as the main source of imports in 1998 and continued to increase its share, reaching a record high of 57 million tonnes (27 per cent) in 2003. After 2003 imports from South Africa fell sharply, as imports from Russia, Colombia and the USA increased. Imports from Russia had started to increase from 1999 and it took over as the main exporter of hard coal to the EU in 2006. Russian and Colombian imports have increased due to the restructuring of the coal mining industries in these countries which has led to increased production.

In 2012 EU imports of hard coal came mainly from Russia (55 million tonnes; 24 per cent), Colombia (51 million tonnes; 22 per cent) and the USA (50 million tonnes; 22 per cent). In 2012 the USA has used more shale gas for electricity generation meaning that more coal was available to export. **(Chart 3)**

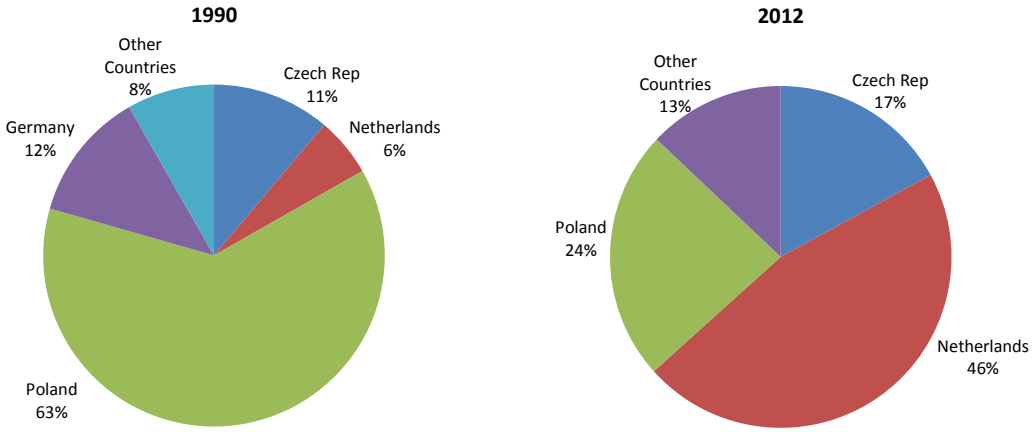
Chart 3: EU (28) Hard Coal Imports By Country Of Origin[4]



EU Coal Exports

In 1990 45 million tonnes of coal were exported from the EU. Of this, 63 per cent came from Poland (28 million tonnes), 12 per cent came from Germany (5 million tonnes), 11 per cent came from the Czech Republic (5 million tonnes) and 6 per cent came from the Netherlands (3 million tonnes). In 2012 EU exports had fallen to 29 million tonnes. The Netherlands was the main exporter with exports of 14 million tonnes (46 per cent), followed by Poland with 7 million tonnes (24 per cent) and Czech Republic with 5 million tonnes (17 per cent). It should be noted though that there is very little coal production in the Netherlands, with exports generally sourced from imports. **(Chart 4)**

Chart 4: EU (28) Exporting Countries Hard Coal



[4] Please note that there might be differences in imports reported by one country compared to exports reported by the partner country

Global

Data on global coal trade is sourced from the International Energy Agency at:
www.wds.iea.org/WDS/Common/Login/login.aspx

Global Coal Imports

In 1990 global imports of hard coal were 491 million tonnes. This had increased to 1,181 million tonnes in 2012.

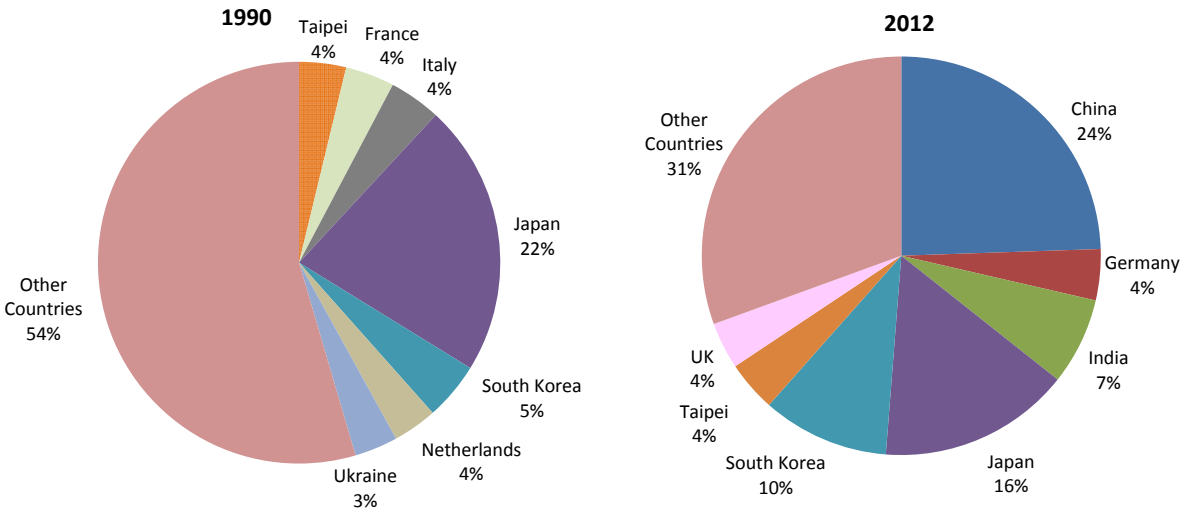
In 1990 Japan was the largest importer of hard coal with 22 per cent of global imports. This was followed by South Korea (5 per cent), Italy, France, Taipei and the Netherlands (4 per cent). China's share of global imports of coal was 0.4 per cent, while India's share was 1 per cent. Coal imports to China and India have grown since 1990 as demand for coal increased.

In 2012 China was the largest importer of hard coal with 24 per cent of global imports. This was followed by Japan (16 per cent), South Korea (10 per cent), India (7 per cent), Taipei (4 per cent) and Germany (4 per cent). The UK was the seventh largest importer of coal in the world.

China, the largest importer of hard coal, is also the largest consumer of coal and in 2012 the largest generator of electricity in the world, but as its coal mines are closing (due to the government crackdown on mines that are unsafe, polluting or wasteful), more coal is being imported to meet this demand.

Japan, which is the second largest importer of hard coal is the third largest generator of electricity in the world and imports the majority of its coal to meet its demand for electricity generation. **(Chart 5)**

Chart 5: Global Imports of Hard Coal



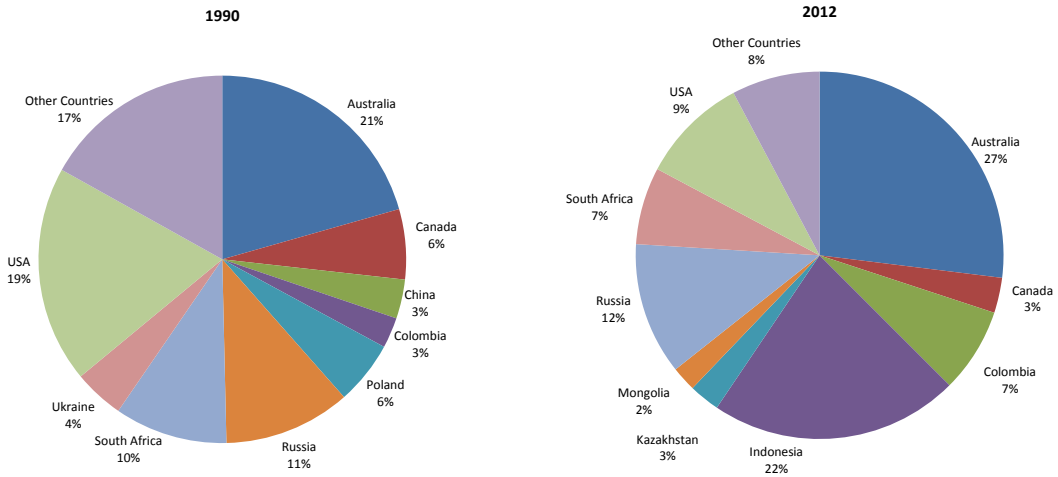
Global Coal Exports

In 1990 Australia was the largest exporter of hard coal with 21 per cent of total world exports. This was followed by the USA (19 per cent), Russia (11 per cent) and South Africa (10 per cent). Indonesia's share of world exports of coal was 1 per cent, but exports have grown since.

In 2012, Australia was the largest exporters of hard coal with 27 per cent of total world imports. This was followed by Indonesia (22 per cent), Russia (12 per cent), USA (9 per cent), Colombia (7 per cent) and South Africa (7 per cent).

The main export markets for the top two exporters of coal, Indonesia and Australia are Japan, India, China and Korea. This is required to meet their large demands of electricity generation. **(Chart 6)**

Chart 6: Global Exports of Hard Coal



Global Coal Production

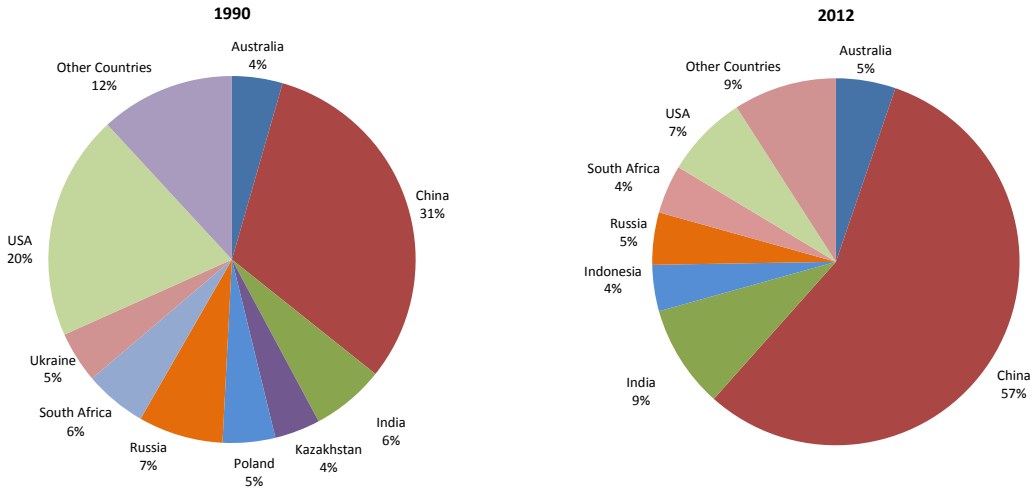
In 1990 global production of hard coal was 3,183 million tonnes. This had risen to 6,039 million tonnes in 2012.

In 1990 China was the largest producer of coal with 31 per cent. This was followed by the USA (20 per cent), Russia (7 per cent), India (6 per cent) and South Africa (6 per cent).

In 2012, 57 per cent of the world's coal production came from China. It was followed by India (9 per cent), USA (7 per cent), Australia (5 per cent) and Russia (5 per cent).

In spite of having large reserves of coal, India is unable to increase its coal production to meet its huge demand. There are various reasons why India is not producing more coal, including the unavailability of the latest technological equipment and the illegal mining and exporting of coal. Therefore, India has to import coal to meet its additional requirements. **(Chart 7)**

Chart 7: Global Production of Coal



Global Coal Used in Electricity Generation

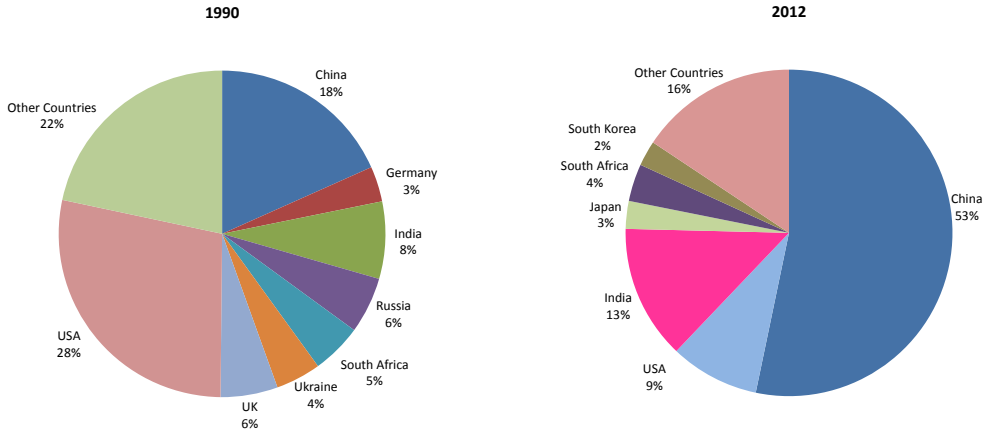
As 55 per cent of hard coal supply was used in electricity generation in 2012, it is a key driver of coal production and trade.

In 1990 global use of hard coal in electricity was 1,485 million tonnes. This had risen to 3,351 million tonnes in 2012.

In 1990 the USA was the largest user of hard coal for electricity generation (28 per cent), followed by China (18 per cent), India (8 per cent), the UK (6 per cent) and Russia (6 per cent).

In 2012 China was the largest user of hard coal for electricity generation (53 per cent), followed by India (13 per cent), the USA (9 per cent) and South Africa (4 per cent). Most of the main coal-fired electricity generators are also amongst the largest importers of coal. Most of the coal that the USA uses for electricity generation is home produced. **(Chart 8)**

Chart 8: Global Hard Coal Used in Electricity Generation



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Feed-in Tariff load factor analysis

Introduction

This article updates the FIT load factor analysis presented in the September 2014 edition of Energy Trends[1] with data for FIT year 4 (financial year 2013/14) and also presents regional analysis of solar PV for the 3 years that data has been published (FIT years 2-4). All the data in this article is also available in excel format at the following link:
www.gov.uk/government/statistics/quarterly-and-annual-load-factors

The data should be treated as provisional, although basic QA has been carried out, a more detailed look at the data needs to carried out, especially on the larger schemes as their data has a bigger impact on the weighted mean load factor. The methodology used was described in detail in the September 2014 article.

Main Findings – FIT year 4 (FY 2013/14)

Table 1 gives the median load factors and the associated percentiles for each technology. Anaerobic digestion is not shown given the small number of installations but had a median load factor of 66.8 in 2013/14.

Table 1: FIT Year 4 (2013/14) load factors by technology, Great Britain

			Percentile				
Technology	Count	Weighted Mean	5th	25th	50th (median)	75th	95th
Hydro	151	42.8	12.0	30.5	41.9	52.1	75.2
MicroCHP	62	15.8	5.9	9.4	14.5	18.0	30.9
Solar PV	155,003	10.2	7.1	9.3	10.4	11.4	12.9
Wind	2,585	27.2	5.7	12.8	20.5	29.8	43.4

Solar PV load factors

The solar PV load factors are linked to the number of sun hours recorded (see Table 2 below).

Table 2: Solar PV load factors and average sun index

Year	Median load factor	Average daily sun hours
2011/12	10.5	4.5
2012/13	9.6	3.7
2013/14	10.4	4.5

Regional load factors

Solar PV load factors for each Government Office Region have also been published for FIT years 2-4.

Solar PV installations in Scotland have lower average load factors compared to England and Wales. The load factors seen in Wales are in line with those seen in England. The average scheme in Scotland would generate enough electricity to receive £348 a year in generation payments compared to £401 a year for the average scheme in England[2].

[1] The article published in September 2014 can be found at the following link: www.gov.uk/government/statistics/energy-trends-september-2014-special-feature-article-analysis-of-feed-in-tariff-generation-data

[2] This is based on a 3Kw scheme, paid at 14.38p/kWh (the tariff from 1st Oct -31st Dec 2014).

Of the English regions London and the North West have the lowest load factors in all three years. The South West, South East and East of England had the highest median load factor in all 3 years. The low load factors seen in London are surprising given that solar radiation in this region is in line with that seen in the South East. Possible reasons for the low load factor include pollution/particles settling on the solar panels or shading from tall buildings nearby.

Table 3: Regional Solar PV load factors for FITs years 2-4

	2011/12		2012/13		2013/14	
Region	Count	Median	Count	Median	Count	Median
East Midlands	855	10.7	7,520	9.6	12,936	10.6
East of England	1,465	11.0	10,521	10.0	16,306	10.9
London	523	9.9	3,283	9.0	4,117	9.7
North East	224	10.5	3,460	9.5	5,805	10.3
North West	718	9.6	8,867	9.1	13,024	9.8
South East	2,764	10.9	17,378	9.9	23,235	10.7
South West	2,649	10.8	24,445	10.2	31,965	11.2
West Midlands	974	10.4	7,139	9.3	11,118	10.2
Yorkshire and The Humber	798	10.3	7,292	9.3	11,299	10.2
Total England	**10,970**	**10.6**	**89,905**	**9.7**	**129,805**	**10.6**
Scotland	**508**	**9.3**	**7,722**	**9.0**	**11,531**	**9.2**
Wales	**645**	**10.2**	**9,882**	**9.6**	**13,643**	**10.4**

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Energy usage in households with Solar PV installations

Background

The National Energy Efficiency Data-Framework (NEED) is produced and published by DECC to provide detailed information on annual electricity and gas usage, and energy efficiency in domestic and non-domestic buildings in Great Britain. The published consumption figures are broken down by property and household attributes, as well as geographic and socio-demographic characteristics. Analyses conducted on a representative sample of households allow DECC to investigate the impact of installing energy efficiency measures on gas consumption. For more information, visit www.gov.uk/government/collections/national-energy-efficiency-data-need-framework.

The Feed-in Tariff (FiT) scheme is a financial incentive mechanism launched in April 2010. Its aim is to encourage the deployment of small-scale (up to 5MW) renewable microgeneration installations, such as wind turbines and solar photovoltaic (PV) panels. Microgenerators receive guaranteed payments from electricity suppliers based on the kilowatt hours (kWh) of electricity produced, along with export tariffs for electricity not used on site but exported to the grid. For more information, visit www.ofgem.gov.uk/environmental-programmes/feed-tariff-fit-scheme.

Information on households that registered for the FiT scheme, and installed solar photovoltaic (PV) panels to generate electricity, has now been combined with NEED. This article describes initial results from analysis of these data. The analysis of their energy consumption habits will allow DECC to gain a better understanding of how the FiT scheme is performing against its objective of helping consumers become active participants in the transition to a low-carbon economy.

This initial analysis addressed the following questions:

- What are the general characteristics of households with solar PV installations?
- How does the installation of solar PV affect a household's energy consumption? Does the potential for savings vary depending on prior energy usage?
- Do households with FiT installations also employ other energy efficiency measures (e.g. cavity wall insulation)?

The findings presented in this article are based on preliminary analysis which will be developed further during 2015. As a result some of the preliminary results and associated messages may change.

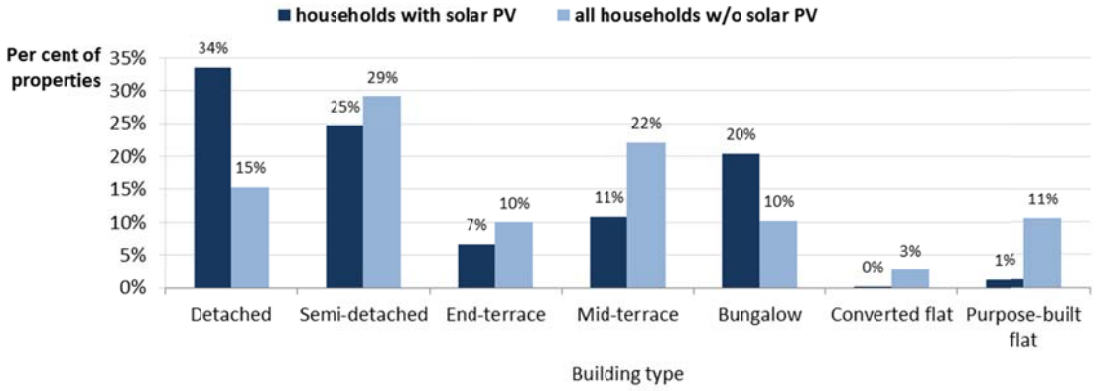
Characteristics of households with FiT installations

A total of 369,700 households in England and Wales that have solar PV installations could be assigned a unique property reference number (UPRN) from AddressBase, which allowed them to be matched with property attribute data from the Valuation Office Agency. This represents approximately 70 per cent of all households in Great Britain with solar PV installations[1]. Based on the sample of data analysed, the comparison of distributions of various property attributes with the entire housing stock revealed that, in general, properties with solar PV installations in this sample tend to be large, relatively new, and have four external walls.

Chart 1 shows that FiT properties are typically detached houses (34%) or bungalows (20%); while flats are underrepresented: only 1.5 per cent of FiT properties are purpose-built or converted flats, even though these two categories make up 14 per cent of the housing stock.

[1] The remaining 30 per cent of properties with a FiT installation which are not included in the analysis will include any installations in Scotland and any properties where address information provided did not allow a match to other information about the property. In particular, flats are often more difficult to match due to the variety of possible ways the address can be written. This means flats – especially converted flats – are underrepresented in the data (both the Fit PV data and the NEED data).

Chart 1: Relative frequency of building types in the whole housing stock and in the subset with solar PV installations



FiT properties are overrepresented among large households: 29 per cent of households with solar PV installations registered on the FiT scheme have 4 or more bedrooms, which is over twice the figure for all properties (14%) (see Chart 2).

Chart 2: Relative frequency of number of bedrooms per property in the whole housing stock and in the subset with solar PV installations

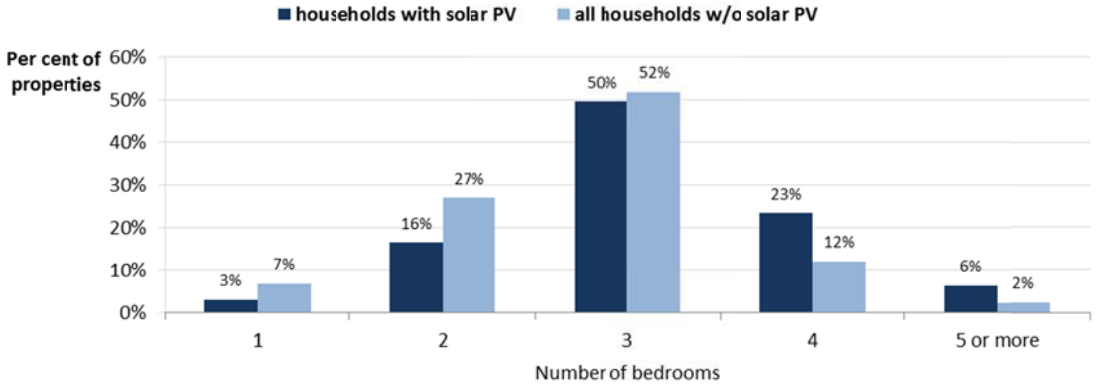
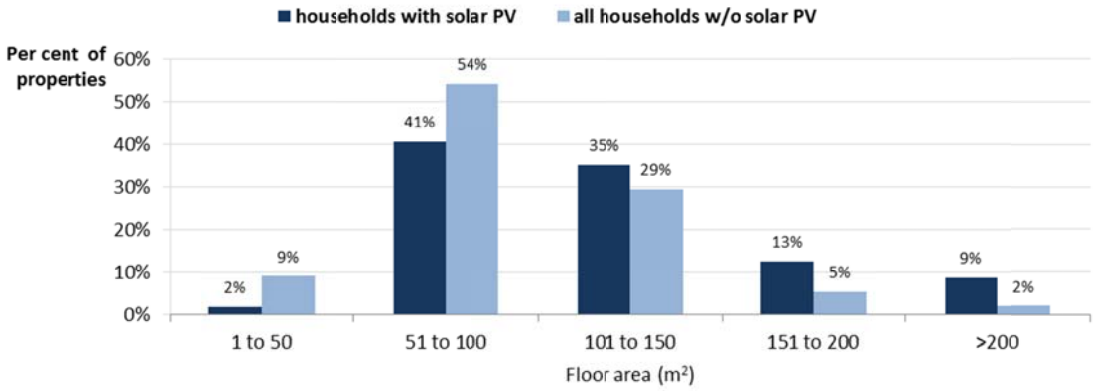


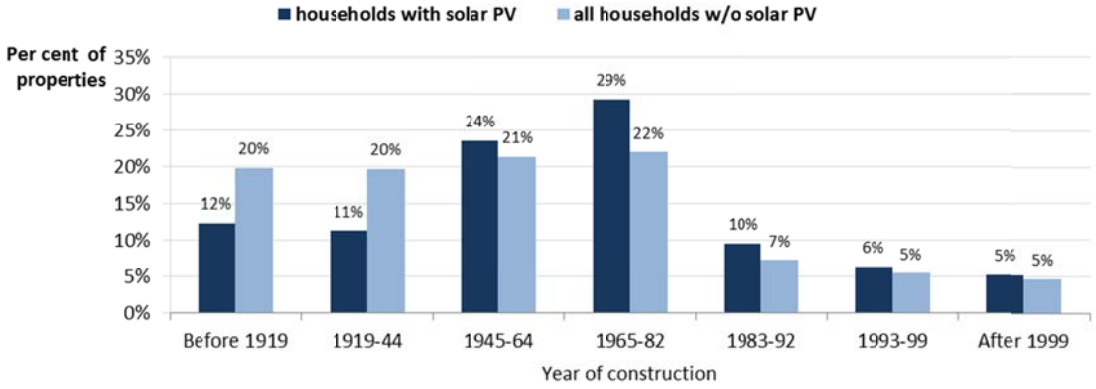
Chart 3 shows that FiT properties are typically large: 56 per cent of them have a floor area of at least 100 m^2, while only 37 per cent of the whole housing stock does. The similar pattern of results is explained by the high level of correlation between floor area and the number of bedrooms in a property.

Chart 3: Relative frequency of floor areas (in m^2) in the whole housing stock and in the subset with solar PV installations



Properties with solar PV installations tend to be relatively new: although nearly four in ten (39%) homes in Britain were built before 1945, these make up less than one in four (24%) of those with solar PVs. The most numerous category is that of buildings erected between 1965 and 1982, which make up 29 per cent of all properties with FiT installations (see Chart 4).

Chart 4: Relative frequency of building ages in the whole housing stock and in the subset with solar PV installations



Overall, these results reveal that households with a solar PV installation registered in the FiT scheme are larger than typical, and are more likely to be detached. Properties of this description generally have higher energy consumption, and also a larger roof area, which might make the installation of solar PV economically more viable.

Electricity and gas consumption in FiT households

In order to gain a better understanding of how the electricity and gas consumption of a household changes as a result of installing solar PV, a subset of properties that had solar PV panels installed in 2011 (181,050 properties or 88 per cent of all solar PV installations in 2011) was selected for further analysis, and their electricity and (weather-corrected) gas usage figures in the full billing years before and after the installation, i.e. in 2010 and in 2012, were compared. In addition, these figures were also compared with the consumption figures for households that do not have solar PV installations registered in the FiT scheme.

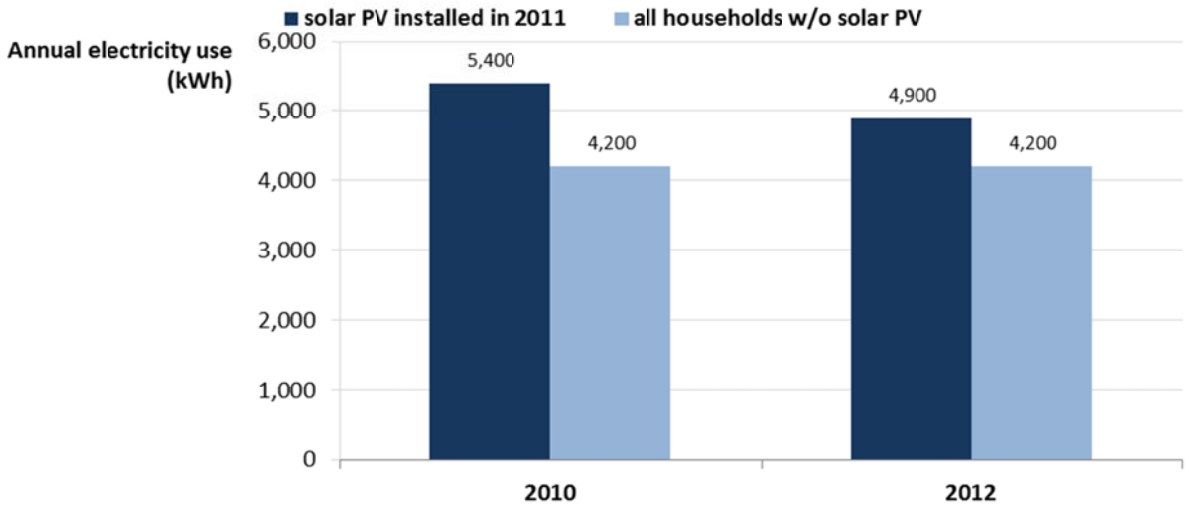
In accordance with NEED methodology, electricity consumption figures below 100kWh or over 25,000kWh, and gas consumption figures below 100 kWh or over 50,000 kWh were deemed invalid, and these records, as well as those with estimated consumption figures were excluded from the analysis. Additionally, consistent with the NEED impact of measures analysis, households whose electricity consumption increased by over 50 per cent or decreased by over 80 per cent between 2010 and 2012 were also excluded, because such a large change is more likely to be the result of something other than the installation of solar PV (e.g. change in occupancy or occupant circumstances). For more details on how electricity and gas usage is calculated in NEED, see www.gov.uk/government/statistics/domestic-national-energy-efficiency-data-framework-need-methodology. The final sample from which electricity consumption was analysed consisted of 129,090 households with solar PV (71% of all properties that installed solar PV in 2011 and were identified with a UPRN).

Households with FiT properties typically use substantially more electricity than those without FiT installations. In 2010, for example, the mean electricity consumption of FiT properties was 5,400 kWh, compared to the national average of 4,200 kWh (i.e. 27% higher). There are several possible reasons for this difference. For example, and as mentioned above, households with solar PV installations tend to be larger and have four external walls, which typically results in a higher electricity use (see Chapter 3 of the NEED Summary of analysis available at www.gov.uk/government/statistics/national-energy-efficiency-data-framework-need-report-summary-of-analysis-2014). There may also be behavioural differences between the occupants of

households that have solar PV installations and those that do not, resulting from socio-demographic characteristics, different attitudes towards energy use, or other factors.

By 2012, i.e. after the installation of solar PV, the gap in electricity consumption between properties with and without solar PV narrowed considerably, to 16 per cent. Between these two years, electricity consumption in FiT households decreased substantially, by an average of 9.5 per cent (median: 13.2 per cent). Although households not registered on the FiT scheme also decreased their electricity usage in the same period, the rate of this decrease was much lower (mean: 1%, median: 5.7%; see Chart 5). In our sample of FiT households, those with higher initial energy consumption achieved a higher reduction in kWh terms, but not as a percentage of initial consumption.

Chart 5. Mean electricity consumption of households that installed solar PV in 2011, and of the entire housing stock

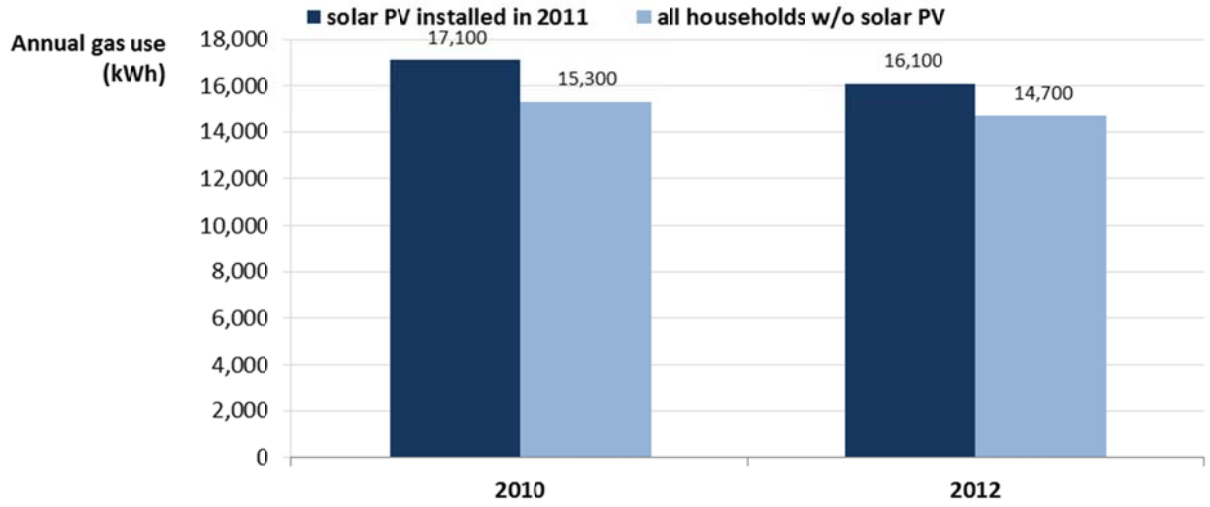


It is important to note that the data used for this analysis does not allow a direct comparison of electricity consumption between households with and without solar PV. As discussed above, the two groups differ substantially on a number of important factors (such as building age and size). Previous analysis of household energy consumption conducted in NEED revealed that property size has an impact on the rate of reduction in consumption: e.g. larger properties had a smaller percentage reduction in consumption between 2005 and 2012 than smaller properties, particularly for gas consumption, but also, to a more limited extent, for electricity. Future work will include drawing up an appropriate comparison group of properties not registered on the FiT scheme to get a better understanding of changes in consumption for similar properties.

The difference between FiT and non-FiT households in terms of gas usage is smaller than for electricity. In 2010, for example, the mean gas consumption of FiT properties was 17,100 kWh (median: 15,600 kWh), compared to 15,300 kWh in the non-FiT group (median: 14,200 kWh), i.e. 11 per cent higher. In 2012, after the installation of PV solar panels in the FiT properties, the gap narrowed slightly to 10 per cent, because gas consumption decreased slightly faster in FiT properties (by 5.5%, compared to 4.5% in the non-FiT group).

Overall, these results suggest that the installation of solar PV panels contributes to a substantial reduction in electricity usage from the grid, in excess of the slight but consistent decreases in year-on-year electricity usage figures that appear in all households. Gas usage, however, did not change to the same extent; it appears that the decrease was electricity-specific, and did not generalise to all forms of energy to the same extent (see Chart 6).

Chart 6: Mean gas consumption of households that installed solar PV in 2011, and of the entire housing stock



Energy efficiency measures installed in properties with a solar PV FIT installation

The next part of this article looks at other energy efficiency measures installed in properties with a Solar PV FiT installation throughout Great Britain (i.e. in England, Scotland, and Wales). The NEED framework contains data on the following energy efficiency measures installed up to the end of 2012: Cavity wall insulation, loft insulation, solid wall insulation, heating management, draught proofing and glazing[2]. The data are based on information from the Homes Energy Efficiency Database and Gas Safe. It includes measures installed through Government schemes, but does not include measures installed when a property is built, or measures people have installed themselves (e.g. DIY loft insulation).

A total of 421,460 properties that had a solar PV panel installed prior to the end of 2013 were successfully matched into the NEED framework (95 per cent) to allow comparison of other energy efficiency measures in the property.

Table 1 shows that just under 60 per cent (245,260) of these properties have at least one other energy efficient measure installed, either before, after or during the year the PV installation was commissioned.

The data were split into FiT cohorts[3] i.e. the year the FiT installation was commissioned. This shows that households who installed solar panels at a later date were slightly more likely to have another energy efficiency measure installed at some point. Table 1 shows that 56 per cent of households that had a solar panel installed in 2010 have an energy efficiency measure compared to 61 per cent of those which had a solar panel installed in 2013.

From December 2012 onwards households needed to have an EPC rating of D or above in order to qualify for the higher solar PV tariffs. As noted earlier the data on energy efficiency measures only goes up to the end of 2012, which may explain why households in the 2013 FIT cohort do not have significantly higher levels of energy efficiency measures.

[2] Some data ends earlier than 2012.
[3] FIT years run from April to March, but for this analysis DECC has used calendar years.

Table 1: Number of properties with a PV installation and at least one other energy efficient measures or PV installation only

FiT Installation Year	Property has both	Property only has a FiT measure	Total	% properties that have both
Pre 2010[4]	1,770	1,660	3,430	52%
2010	11,360	8,870	20,230	56%
2011	101,170	79,340	180,510	56%
2012	83,890	56,550	140,440	60%
2013	47,070	29,780	76,850	61%
Total	**245,260**	**176,200**	**421,460**	**58%**

Table 2 looks at each energy efficiency measure individually. Of the 140,440 properties that adopted a PV installation in 2012, 28 per cent (39,210) had cavity wall insulation, 88 per cent (34,380) of which were adopted before the PV installation was commissioned on the property. For all cohorts the majority of energy efficiency measures were installed before the FiT solar PV installation. However, solid wall insulation was more commonly installed in the same year as the PV installation.

Table 2: Percentage of properties by FiT cohort, non-FiT measure year & type of energy efficiency measure

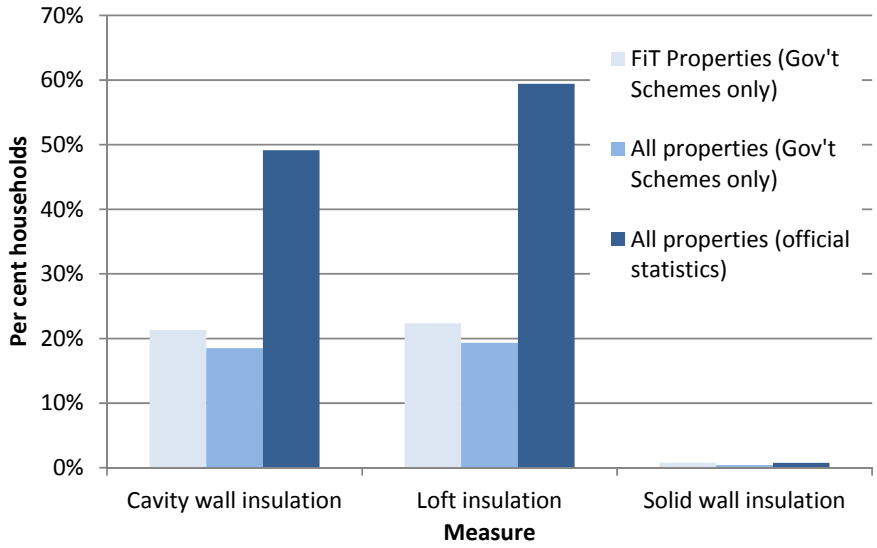
FiT Installation Year	Year non-FiT measure installed	Type of Energy Efficiency Measure				Total FiT installations matched to NEED
		Cavity Wall Insulation	Loft Insulation	Solid Wall Insulation	Other measures*	
2010	Before 2010	20%	15%	0.0%	31%	20,230
	2010	2%	4%	0.4%	4%	
	After 2010	2%	6%	0.2%	2%	
	Total	**24%**	**24%**	**1%**	**38%**	
2011	Before 2011	20%	17%	0.2%	32%	180,510
	2011	3%	5%	0.4%	3%	
	After 2011	2%	4%	0.4%	0%	
	Total	**25%**	**26%**	**1%**	**35%**	
2012	Before 2012	24%	22%	0.2%	36%	140,440
	2012	3%	8%	0.8%	0%	
	Total	**28%**	**30%**	**1%**	**36%**	

*heating management, glazing and draught proofing

The table is based on properties with measures installed through Government schemes, it does not reflect the total number of properties with each measure. In Great Britain as a whole 19 per cent of properties had cavity wall insulation installed through Government schemes (the figure for loft insulation was also 19 per cent). The total percentage of households that had cavity wall insulation in Great Britain (i.e. including an estimate for that installed in new build housing and that installed outside of government schemes) was 49 per cent in 2012 and the percentage of households in GB with insulated lofts was 59 per cent in 2012.

[4] The FIT scheme went live on 1st April 2010. Any properties that had a PV installation commissioned between 15th July 2009 and 31st March 2010 were eligible to apply under the FiT scheme.

Chart 7: Percentage of FiT properties with cavity wall and loft insulation in 2012 compared to Great Britain



Both heating management and glazing are the next biggest energy efficient measure adopted by households, with around 18 per cent of FIT properties having one of these measures, again the majority of these properties adopted them before the PV installation was commissioned.

The percentage of FiT properties with solid wall insulation and draught proofing are small, around 1 per cent, in comparison to other measures that have been analysed. This percentage is in line with non-FIT properties. Ninety per cent of FiT properties implementing the draught proofing measure, did so before they installed a PV installation. FiT properties with solid wall insulation is the only energy efficiency measure, where the majority of properties have been insulated either during the same year as the PV installation or after.

Table 3: Number of non-FIT measures installed in a FIT property

FiT Installation Year	Number of non-FiT measures installed in each property			
	1 non-FiT measure	2 non-FiT measures	More than 2 non-FiT measures	Total
2010	**6,550**	**3,510**	**1,290**	**11,360**
	58%	*31%*	*11%*	*100%*
2011	**58,520**	**31,280**	**11,370**	**101,170**
	58%	*31%*	*11%*	*100%*
2012	**45,850**	**27,510**	**10,520**	**83,890**
	55%	*33%*	*13%*	*100%*

Generally, FiT properties have adopted one other energy efficient measure. Table 3 shows that this is 58 per cent of FiT properties in the 2010 and 2011 cohorts and 55 per cent in the 2012 cohort. Around 30 per cent of FiT properties in 2010, 2011 and 2012 have a combination of 2 non-FiT measures.

Table 4: Percentage of FiT properties adopting a combination of two non-FIT measures

FiT Installation Year	% FiT properties adopting a combination of two non-FiT measures			
	Cavity & Loft Insulation	Loft Insulation & Glazing	Cavity Insulation & Heat Management	Cavity Insulation & Glazing
2010	28%	15%	15%	14%
2011	33%	12%	13%	14%
2012	37%	12%	12%	12%

In the 2010 cohort, 28 per cent of the FiT properties have cavity and loft insulation. This increased by 5 percentage points, to 33 per cent for the 2011 cohort and a further 5 percentage points, to 37 per cent for the 2012 cohort. Some of the other combination of measures that are quite common, are presented in Table 4.

Future directions

This article presents the first findings of a long-term project that will continue to expand the value of NEED, and utilise this unique tool for analysing energy consumption data to evaluate the impact of various DECC policies on consumer behaviour in terms of energy use and energy efficiency.

In the coming months, this work will be taken forward in several ways. For example, this early analysis revealed substantial variation across households in the change in electricity usage from the grid following the installation of solar PV. Further analysis of household-level property attribute information will make it possible to identify the household characteristics that are associated with higher energy usage reduction potential. In addition, this will allow the drawing up of appropriate comparison group of households with no microgeneration installations registered on the FiT scheme so that energy consumption trends can be directly compared between these two groups.

Importantly, the usage figures presented above cover only consumption from the grid, and do not include electricity generated from the solar PV installation that is used on site, by the household itself. Current development work at DECC aims to improve estimates of generation and export meter readings, which would make it possible to investigate the pattern of electricity usage changes more fully.

Feedback on this article is warmly welcomed, and readers are invited to contribute their suggestions on how to develop this research project further, in addition to the planned work outlined above. DECC is also keen to learn about related investigations and research into the impact of microgeneration on energy-related consumer behaviours and attitudes.

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Estimates of heat use in the United Kingdom in 2013

Introduction

This article presents a summary of the latest information on heat use in the United Kingdom. Data from the three non-transport sectors (domestic, services and industrial) are analysed and interpretations on differences between sectors and general trends in heat energy use are highlighted.

The analysis relates to 2013 provisional figures, and is based upon data published in Energy Consumption in the UK (ECUK), which was updated in September 2014, this can be found at: www.gov.uk/government/collections/energy-consumption-in-the-uk

Background

For both the services and industrial sectors, the information regarding the end-use of energy consumption was derived from historic data supplied to DECC by the Building Research Establishment (BRE). For the domestic sector, Cambridge Architectural Research has provided underlying data for 2008 onwards. Prior to this date, information came from BRE. This has resulted in a discontinuity in domestic end-use tables between 2007 and 2008. The article is centred on direct use of fuels and does not include the indirect consumption of fuels as an input to electricity generation. Heat sold and bio-energy & waste are included within overall energy consumption, together with a variety of fossil fuels. The heating purposes vary depending on the consuming sector.

For both the domestic and services sector heat purposes include:

- *space heating;*
- *water heating;*
- *cooking/ catering*.

In the industrial sector heating purposes cover:

- *space heating;*
- *high temperature processes* – including coke ovens, blast furnaces and other furnaces, kilns and glass tanks;
- *low temperature processes* – including process heating and distillation in the chemicals sector; baking and separation processes in food and drink; pressing and drying processes in paper manufacture; and washing, scouring, dyeing and drying in the textiles industry;
- *drying and separation* - which is particularly important in paper-making.

While the data in this article provide a good estimate and overall picture of underlying trends, the data are modelled and therefore it is not possible to confidently report slight movements in year-on-year heat use. As such, the heat estimates provided should only be viewed as indicative.

In 2013, overall final energy consumption was 136,786 thousand tonnes of oil equivalent (ktoe)1. Non-transport energy use was 83,368 ktoe of which 65,363 ktoe (78 per cent) was accounted for by heat usage. This is a 2 per cent increase compared to 2012, the majority of which was in the service and industry sectors, where each grew by 4 per cent. Whilst in the domestic sector, there was 0.4 per cent of growth. This coincided with a 0.6 degree Celsius decrease in average heating season temperature2. The domestic sector did not respond to the same extent suggesting that perhaps this modest change in average temperature was not solely responsible for the growth in the other sectors (see the domestic sector section for further details).

[1] In addition to this, 664 thousand tonnes of oil equivalent was used in construction, 932 thousand tonnes of oil equivalent in agriculture (based on 2012 data), and 3587 thousand tonnes of oil equivalent was used by industry, but where the end use was not known. This consumption is therefore excluded from the remainder of this article.

[2] Heating season is January to March and October to December.

Table 1 provides an overview of energy use by sector. The domestic sector accounted for the largest proportion of non-transport energy use, 53 per cent. This is followed by the service and industry sectors at 24 and 23 per cent. Of the heat total over half (64 per cent) is used on space heating. This is followed by water and process use (14 per cent each). The remaining 8 per cent is split between cooking/catering (5 per cent) and drying/separation (3 per cent).

Table 1: Final energy consumption by sector and end use, 2013

Thousand tonnes of oil equivalent

End use	Domestic	Services	Industry	Transport	Total	Total excluding transport
Space heating	28,728	10,084	3,109	-	41,922	41,922
Water heating	7,494	1,953	-	-	9,447	9,447
Process use	-	-	9,082	-	9,082	9,082
Cooking/catering	1,108	2,042	-	-	3,150	3,150
Drying/separation	-	-	1,762	-	1,762	1,762
Heat total	37,330	14,079	13,954	-	65,363	65,363
Non-heat uses	6,464	6,006	5,535	53,418	71,423	18,005
Total	43,794	20,085	19,489	53,418	136,786	83,368
Percentage used for heating	85%	70%	72%	-	48%	78%

There is a decreasing trend in the amount of energy used for heat in the industrial sector while the services sector energy for heat use remains constant since 2010; this is shown in Chart 1. The domestic sector has fluctuated with the average temperature (see the domestic sector section for further details).

Chart 2 shows non-transport final energy consumption split by sector and end-use for 2013, while Chart 3 displays the end use broken down into fuel types. Within the domestic sector 85 per cent of energy is used for heating purposes. This is the biggest proportion from all three sectors for energy to be used on heating. The majority of heat use in the domestic and service sectors is for space heating, (77 per cent and 72 per cent respectively) whereas most heat consumption in the industrial sector was on heat processes (65 per cent).

Chart 1: Final energy consumption by heat use by sector, 2008 to 2013

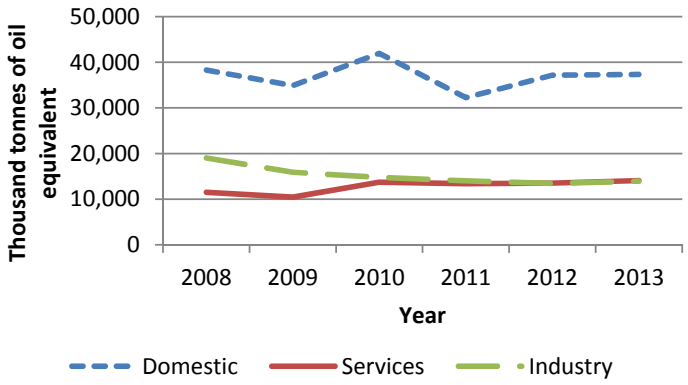


Chart 2: Non-transport final energy consumption by use by sector, 2013

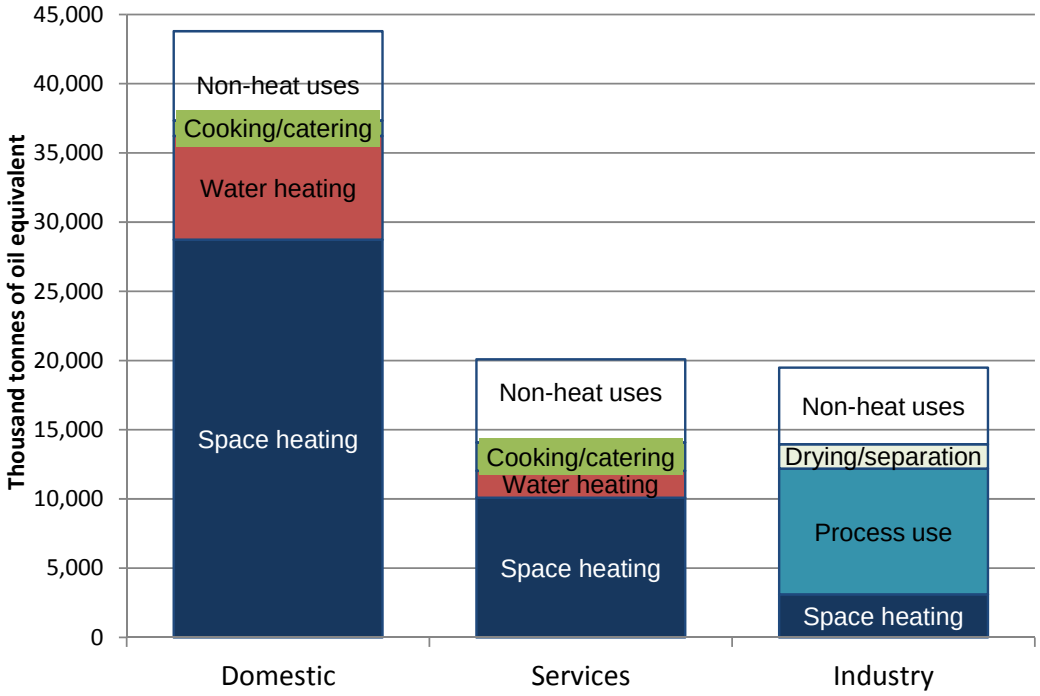
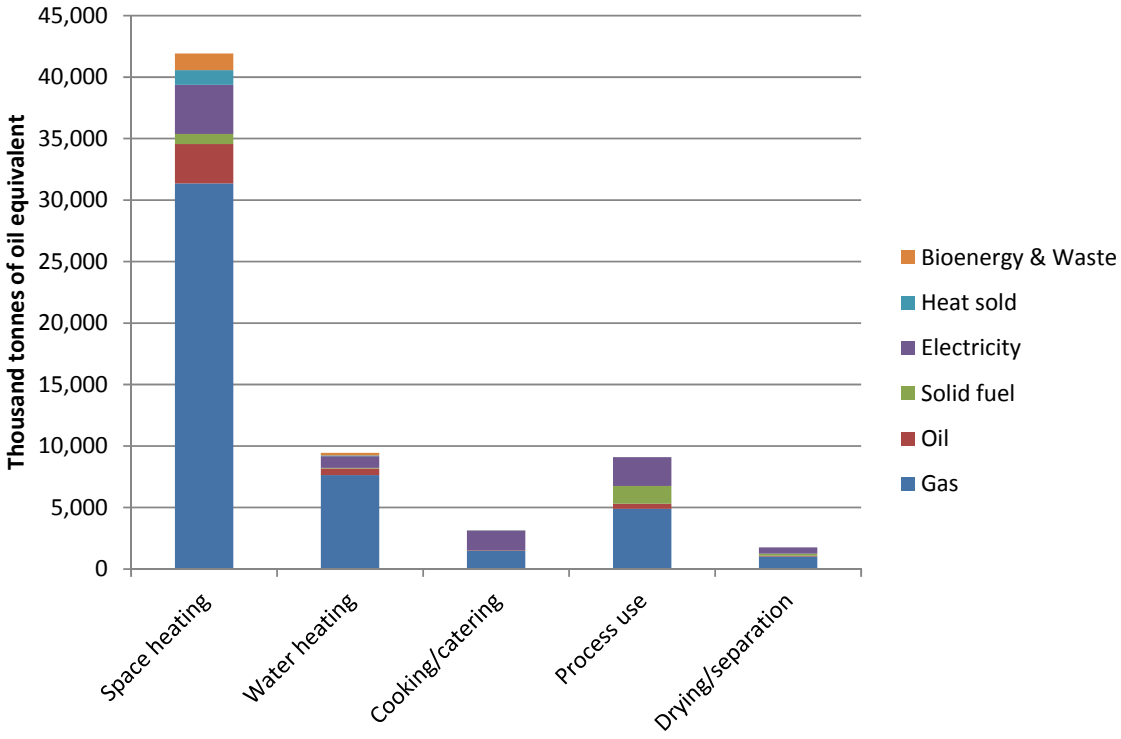


Chart 3 shows that gas dominates space and water heating. In the industrial sector (process use and drying/separation) the proportion of gas used is less and solid fuel and electricity share a greater proportion of the final energy consumption.

Chart 3: Non-transport final energy consumption of heat energy



The following sections provide a more detailed analysis of energy consumption in each of the three non-transport sectors; domestic, industrial and services.

Energy consumption for heating purposes by sector

Domestic Sector:

Gas dominates the fuel mix for heating purposes and end use

Table 2 displays the breakdown in the domestic sector by fuel type and end uses and shows that the majority of heat use, 77 per cent of the heating total is used for space heating. The fuel mix for domestic consumption for heat was dominated by gas which provided 79 per cent (29,622 ktoe). Electricity use was the next biggest energy source responsible for 9 per cent of total heat consumption.

Increase in share of bioenergy and waste

The last two years have seen a marked increase in use (26 per cent between 2011 and 2012, and by 21 per cent from 2012 to 2013) though this is from a relatively low base and its overall contribution to domestic heating remains low at 2 per cent.

Table 2: Domestic energy consumption by fuel and end use, 2013

Thousand tonnes of oil equivalent

End use	Gas	Oil	Solid fuel	Electricity	Heat sold[1]	Bioenergy & Waste[1]	Total
Space heating	22,865	2,314	667	2,148	52	682	28,728
Water heating	6,139	454	45	653	-	203	7,494
Cooking/catering	617	-	-	490	-	-	1,108
Heat total	29,622	2,769	712	3,291	52	884	37,330
Lighting and appliances	-	-	-	6,464	-	-	6,464
Overall total	29,622	2,769	712	9,755	52	884	43,794

[1] Heat sold and waste is included in this table. Assumptions have been made that, in the domestic and industry sector, all uses for these two sources is for space and water heating.

Chart 4 displays the distribution of domestic consumption by the type of end use, clearly identifying space heating as the main end use within the sector. From 2012 to 2013, space heating increased by 0.4 per cent. This coincided with a 0.6 degree Celsius decrease in average heating season temperature3. Domestic heat use did not increase to the same extent as the services and industrial sectors (both grew at 4 per cent); with the additional growth in these sectors perhaps relying on increased economic activity.

[3] Heating season is January to March and October to December.

Chart 4: Domestic sector energy consumption by end use, 2008 to 2013

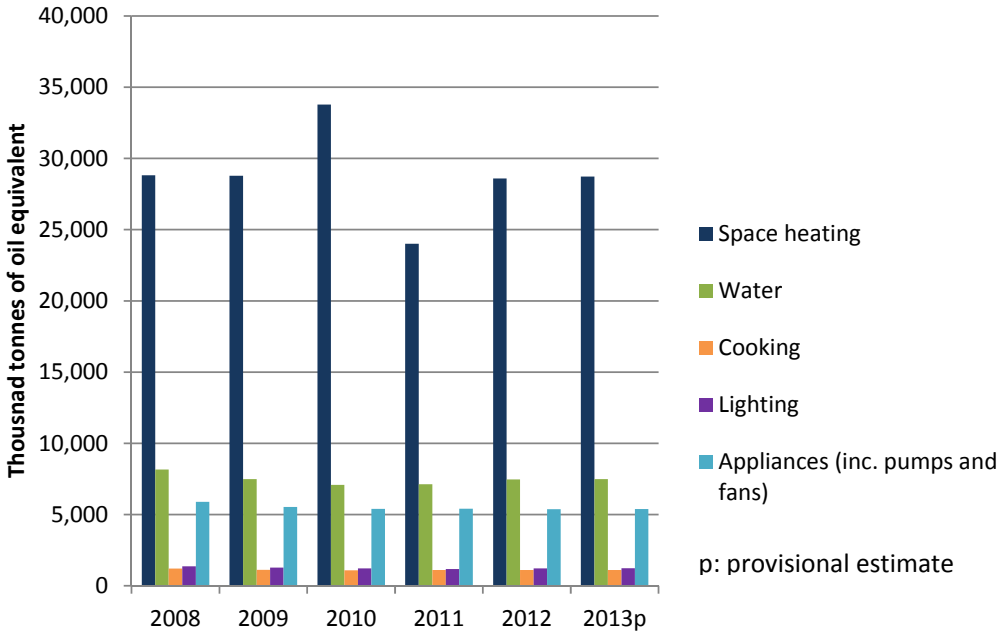
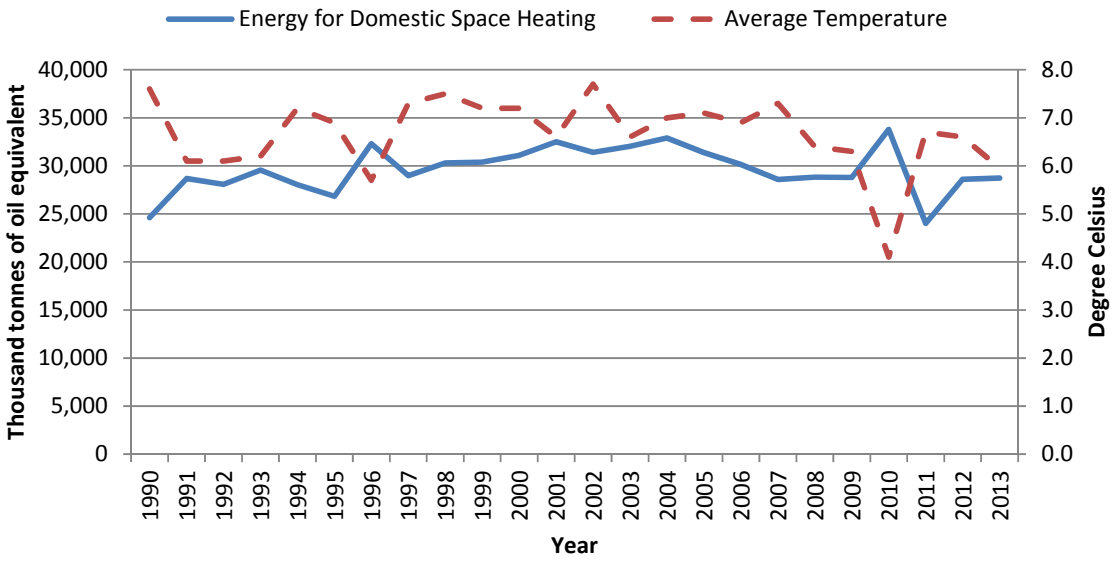


Chart 5 shows that over the longer term it is evident that space heating is negatively correlated with average temperature. When the average temperature is warmer the fuel for space heating decreases, this is highlighted in 2011. Other variables that could have impacted space heating consumption are GDP, salary and wages, and energy prices.

Chart 5: Average temperature and domestic energy consumption



Service Sector

Two thirds of energy consumed in the services sector is for heating purposes

Gas provides 71 per cent of heat to the service sector (excluding agriculture uses of 932 ktoe) compared to 79 per cent for the domestic sector and 48 per cent for industry. Electricity is the next biggest energy source providing 19 per cent of heat, compared to 9 per cent for the domestic heat and 25 per cent for industry. Although oil is used more widely than in the industrial sector, its use is considerably smaller than in the domestic sector and its share of the energy mix for heating is just 6 per cent.

Table 3: Service sector energy consumption by fuel and end use, 2013

Thousand tonnes of oil equivalent

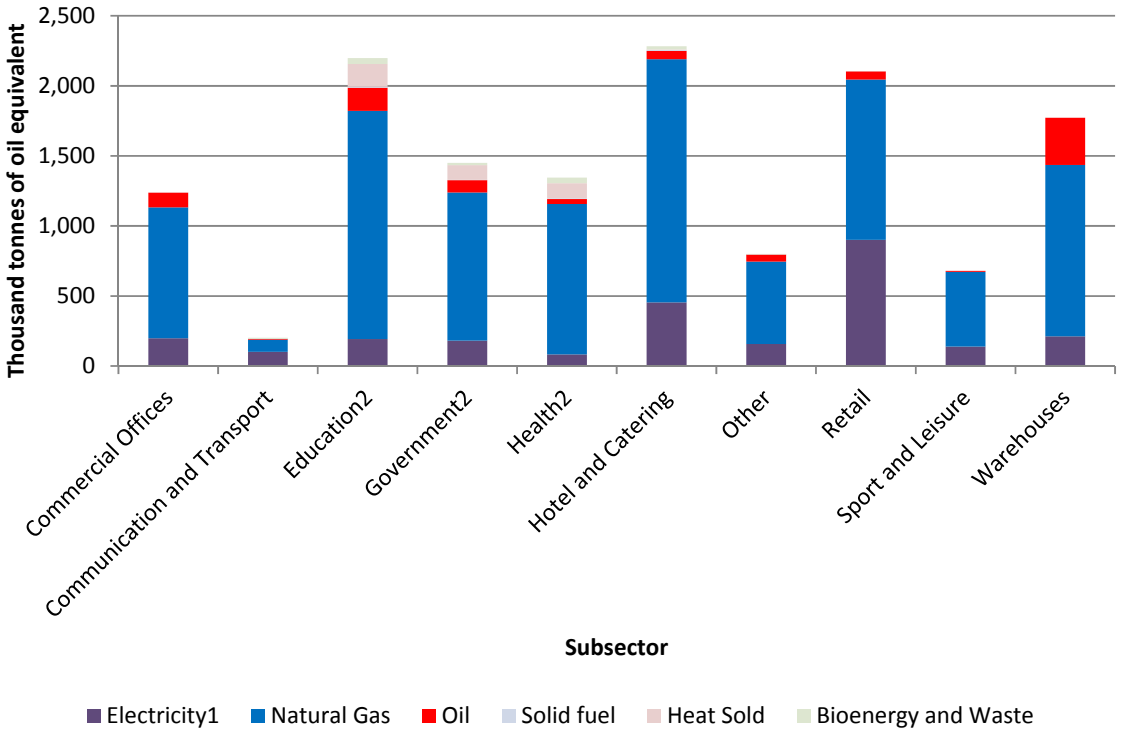
End use	Gas	Oil	Solid fuel	Electricity	Heat sold[1]	Bioenergy & Waste[1]	Total
Space heating	7,649	792	21	1,201	306	116	10,084
Water heating	1,497	84	3	297	56	15	1,953
Cooking/catering	859	34	-	1,124	24	1	2,042
Heat total	10,005	910	24	2,622	386	132	14,079
Non-Heat Total	197	10	-	5,792	7	-	6,006
Overall Total	10,202	920	24	8,414	393	132	20,085

[1] Heat sold and waste is included in this table. Assumptions have been made that, in the domestic and industry sector, all uses for these two sources is for space heating.

In 2013, the four main consumers of heat related energy in the service sector were hotel and catering, education, retail and warehouses in descending order of consumption.

Chart 6 shows how fuel type is distributed for heat uses within the sector. Natural gas is the biggest provider of heat in all subsectors except from communication and transport where electricity provides the most energy.

Chart 6: Final Energy consumption of Heat by subsector and fuel type, 2013



[1]Electricity includes consumption of electricity generated from renewable sources.
[2]Aggregated energy use in the service sub-sectors education; Government and Health have been scaled to the 'Public Administration' energy use as published in the Digest of UK Energy Statistics.

Industry Sector:

High/low temperature Process use is the main consumer of energy

The breakdown of the industrial energy consumption follows in Table 4. Unlike the domestic and services sector, where the majority of energy use is for space heating, 65 per cent of heat energy use in the industrial sector is for high and low temperature processes.

The industrial sector also differs in its fuel mix; 25 per cent of heat energy is sourced form electricity as opposed to 9 per cent in the domestic sector and 19 per cent for services.

Table 4: Industrial energy consumption by fuel and end use, 2013

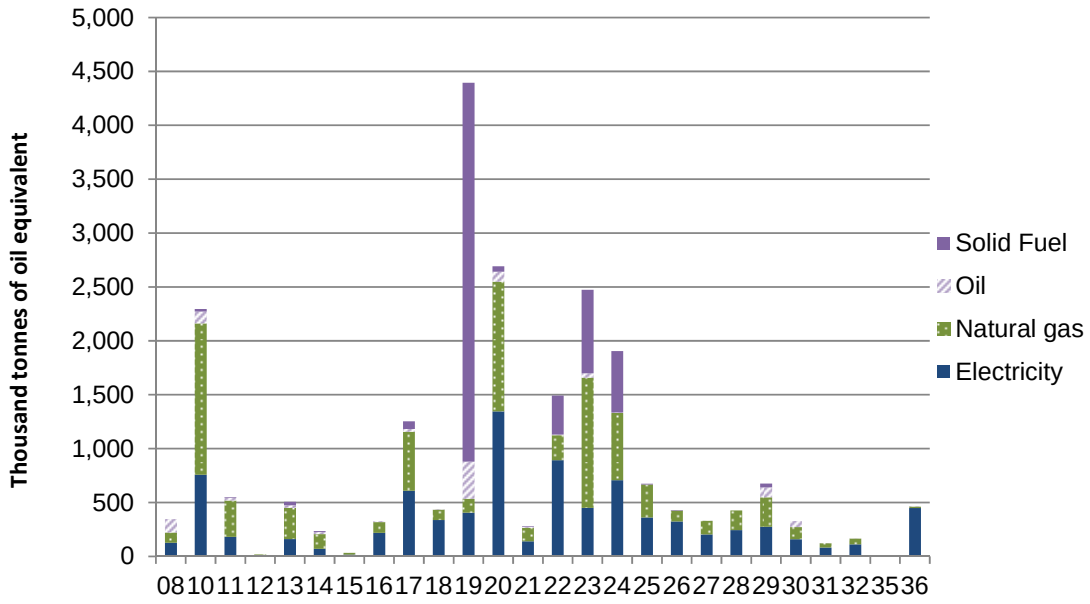
Thousand tonnes of oil equivalent

End use	Gas	Oil	Solid fuel	Electricity	Heat sold[1]	Bioenergy & Waste[1]	Total
Space heating	833	108	127	643	847	550	3,109
High temperature process	1,839	152	1,128	939	-	-	4,057
Low temperature process	3,057	254	324	1,391	-	-	5,026
Drying/separation	1,011	70	176	504	-	-	1,762
Heat total	6,739	584	1,755	3,478	847	550	13,954
Non-Heat Uses	890	71	199	4,375	-	-	5,535
Overall total	7,629	655	1,954	7,853	847	550	19,489

[1] Heat sold and waste is included in this table. Assumptions have been made that, in the domestic and industry sector, all uses for these two sources is for space heating.

Chart 7 shows the use of fuel in all industrial subsectors with the manufacture of coke and refined petroleum products being responsible for using the largest amount of heat energy. The most striking feature of the chart is of the manufacture of coke and refined petroleum products, where 80 per cent of the energy is sourced from solid fuel. This differs to the other subsectors, where either natural gas or electricity dominates the fuel mix.

Chart 7: Fuel energy consumption for heat in the industry sector, 2013



08 Other mining and quarrying
10 Manufacture of food products
11 Manufacture of beverages
12 Manufacture of tobacco products
13 Manufacture of textiles
14 Manufacture of wearing apparel
15 Manufacture of leather and related products
16 Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials
17 Manufacture of paper and paper products
18 Printing and publishing of recorded media and other publishing activities
19 Manufacture of coke and refined petroleum products
20 Manufacture of chemicals and chemical products
21 Manufacture of basic pharmaceutical products and pharmaceutical preparations
22 Manufacture of rubber and plastic products
23 Manufacture of other non-metallic mineral products
24 Manufacture of basic metals
25 Manufacture of fabricated metal products, except machinery and equipment
26 Manufacture of computer, electronic and optical products
27 Manufacture of electrical equipment
28 Manufacture of machinery and equipment n.e.c.
29 Manufacture of motor vehicles, trailers and semi-trailers
30 Manufacture of other transport equipment
31 Manufacture of furniture
32 Other manufacturing
36 Water collection, treatment and supply

Summary

The data presented in this article highlights the significant proportion of energy used for heating purposes. An understanding of the types of fuel used for heating purposes, the specific end uses, as well as the energy efficiency improvements in use of modern heating equipment, are important in order to gain a full knowledge of the heat market.

Fossil fuels are still the main energy source used for generating heat

Primary consumption of fossil fuels (gas, oil and solid fuel) is the main energy source for heating purposes (81 per cent). The use of fossil fuels made up 89 per cent of heat energy consumption in the domestic sector and 78 and 65 per cent in the services and industrial sectors respectively.

Bioenergy and waste energy has increased in the last two years though still accounts for just 2 per cent of heat energy consumption. The majority (86 per cent) is used for space heating and the main consumer is the domestic sector.

Over half of heat was produced from gas

In 2013, gas was the main fuel used for heating purposes in all sectors (71 per cent). In the domestic sector gas provided 79 per cent of heat consumed compared to 71 per cent for the service sector and 48 per cent in the industry sector.

Oil provided 7 per cent of the heating for the domestic sector compared to 6 per cent for the services sector and just 13 per cent in industry. Solid fuels were the least common energy source (4 per cent) in all sectors to generate heat.

Electricity is used more for heating purposes in the service and industry sectors

The industrial sector uses the biggest proportion of electricity for heating purposes as this accounts for 25 per cent of all heat generated. This is followed by the service sector where 19 per cent of the heat total is generated by electricity.

User feedback

We welcome all feedback from the users of this data, therefore if you would like to comment on these or on the content of this article, please contact Vicky Goodright using the details below.

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Renewable Heat Premium Payment scheme

Introduction

The Renewable Heat Premium Payment (RHPP) scheme was a Government financial support scheme which provided one-off grants to help householders and landlords with the cost of installing one of the following renewable heat technologies:

- Ground and water source heat pumps (GSHPs);
- Air source heat pumps (ASHPs);
- Solid biomass boilers; and
- Solar thermal systems.

During the lifetime of the RHPP, financial support was given through a Householder Scheme, a number of competitions for Registered Social Landlords, and a Community Scheme. The RHPP scheme closed on 31 March 2014 and support in the take-up of renewable heat technologies in the domestic sector is now provided by the Domestic Renewable Heat Incentive[1] scheme which was launched on 9 April 2014.

This one-off article provides a statistical summary of the deployment of the RHPP scheme. Statistics are reported on the number of vouchers issued, vouchers claims, installed capacity and estimated heat generated based on data available as at November 2014.

The data used in this article are available at:
www.gov.uk/government/collections/renewable-heat-incentive-renewable-heat-premium-payment-statistics

Further information on the RHPP, and the various eligibility criteria, can be found at:
http://webarchive.nationalarchives.gov.uk/20130109092117/http://www.decc.gov.uk/en/content/cms/meeting_energy/renewable_ener/premium_pay/premium_pay.aspx

RHPP Householders scheme

Vouchers issued and claimed

As at 31 March 2014, when the final phase of the Householder Scheme had concluded, 20,822 vouchers had been issued, of which 15,364 had been claimed (a voucher which has been issued and subsequently, successfully returned and exchanged for its monetary value).2 Phase 1 (1 August 2011 to 31 March 2012) and Phase 2 (1 May 2012 to 31 March 2013) of the householder scheme each had over 7,000 applications and over 5,000 redemptions; Phase 2 extension (1 April 2013 and to 31 March 2014) saw 6,333 vouchers issued and 4,819 claimed.

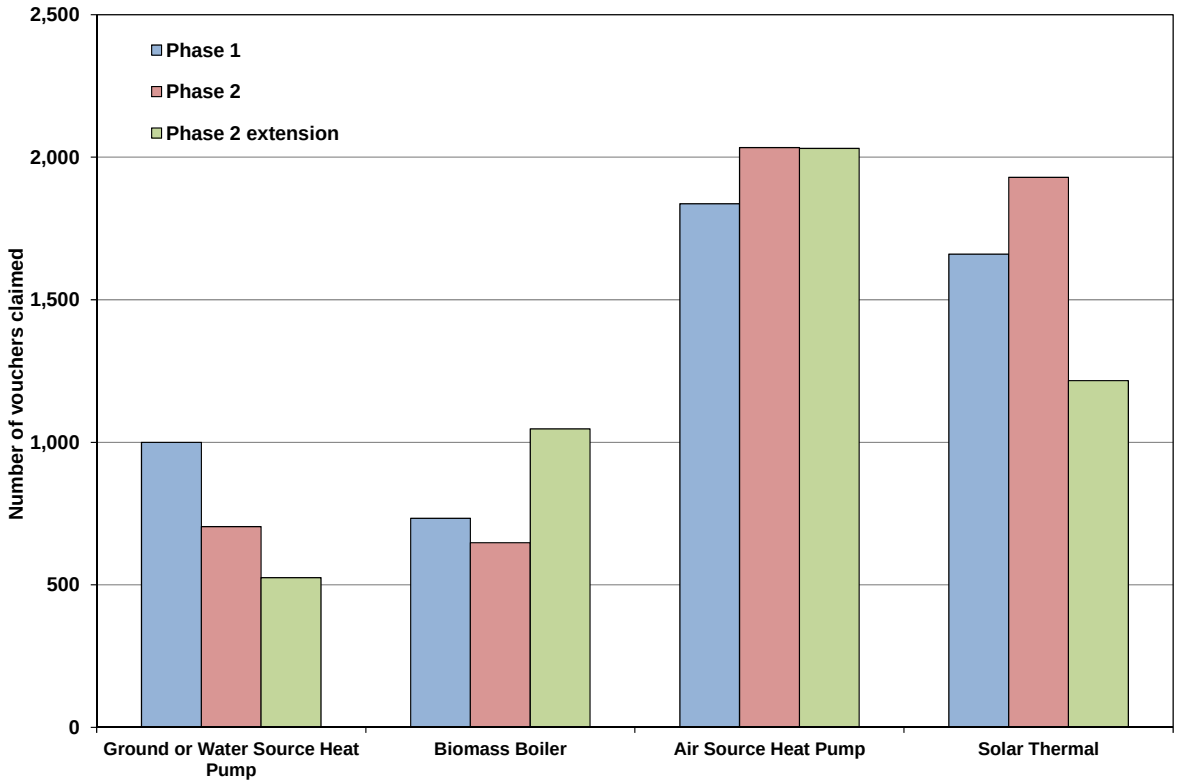
Following the increase in grant levels in May 2013 and the announcement of the domestic RHI policy in July 2013, there was an unexpected fall in numbers of approximately 10 per cent between Phase 2 extension and Phase 1 and 2. Part of this fall may be attributed to a change in eligibility criteria which required applicants to have a Green Deal Assessment before they could lodge a claim for payment.

[1] www.gov.uk/domestic-renewable-heat-incentive.
[2] The discrepancy between issued vouchers and claimed vouchers can be explained by the following three reasons:
- Vouchers expire after certain time (if this happens the applicant can apply for another voucher);
- Some will not have chosen to claim their voucher;
- Some will be ineligible.

Over the three phases of the scheme, ASHPs (5,902 claims paid over the three phases) and solar thermal (4,805) were the most popular technologies, accounting for over two-thirds of vouchers claimed. 2,428 vouchers were for biomass boilers (16 per cent of all claimed vouchers) and a further 2,229 for GSHPs (15 per cent). The proportion of ASHP vouchers claimed increased through the phases from 35 per cent of claimed vouchers in Phase 1, to 38 per cent in Phase 2 and 42 per cent in Phase 2 extension. Conversely, GSHPs decreased through the phases.

Figure 1 illustrates the changing number of claimed vouchers over the three phases by technology.

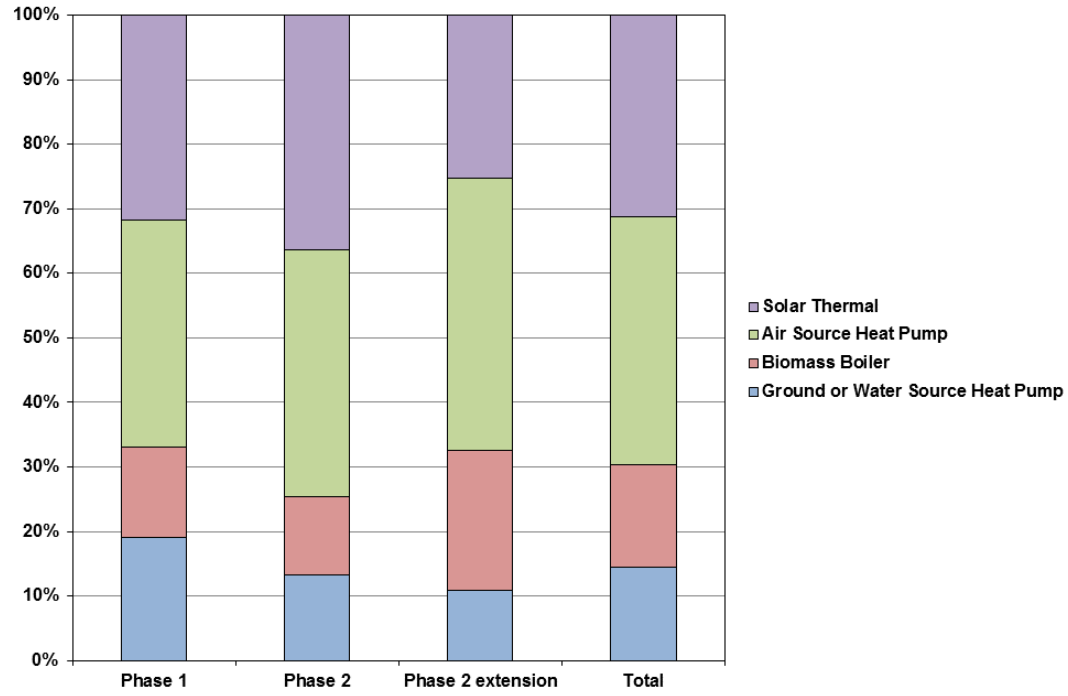
Figure 1 – Claimed vouchers by phase and technology for the Householder Scheme, Great Britain



Source: RHPP Official Statistics

Figure 2 shows the proportional break down by technology for each phase.

Figure 2 – Percentage of total claimed vouchers broken down by technology and phase for the Householder Scheme, Great Britain



Source: RHPP Official Statistics

Table 1 - Number of vouchers issued, claimed and claimed by technology for the Householder Scheme, Great Britain

Tariff Band	Number issued		Number redeemed	
	Number	% of total	Number	% of total
Ground or Water Source Heat Pump	3,115	15%	2,229	15%
Biomass Boiler	3,201	15%	2,428	16%
Air Source Heat Pump	7,864	38%	5,902	38%
Solar Thermal	6,642	32%	4,805	31%
Total	20,822		15,364	

Source: RHPP Official Statistics

A more detailed breakdown of these data can be found in the official statistics reports at: www.gov.uk/government/collections/renewable-heat-incentive-renewable-heat-premium-payment-statistics

Installed capacity

The capacity refers to the maximum power output of the system and depends on the installation's size and technical capability. Capacity relates to GSHPs, biomass boilers and ASHPs only. For solar thermal, the equivalent of capacity is estimated heat generated which is measured in MWh of heat per year. These two measurements are not comparable.

The combined total capacity of GSHPs, biomass boilers and ASHPs over all three phases based on claimed vouchers was 152.2 MW, of which 50.8 MW (33 per cent) was installed under Phase 1 of the scheme, 46.5 MW (31 per cent) under Phase 2 and 54.9 MW (36 per cent) under Phase 2 extension. Of the 152.2 MW, ASHPs contributed 69.2 MW (45 per cent), biomass boilers 56.8 MW (37 per cent) and GSHPs the remaining 26.2 MW (17 per cent). Table 2 and Figure 3 show the installed capacity for each of the three technologies, with total estimated heat generated for solar thermal.

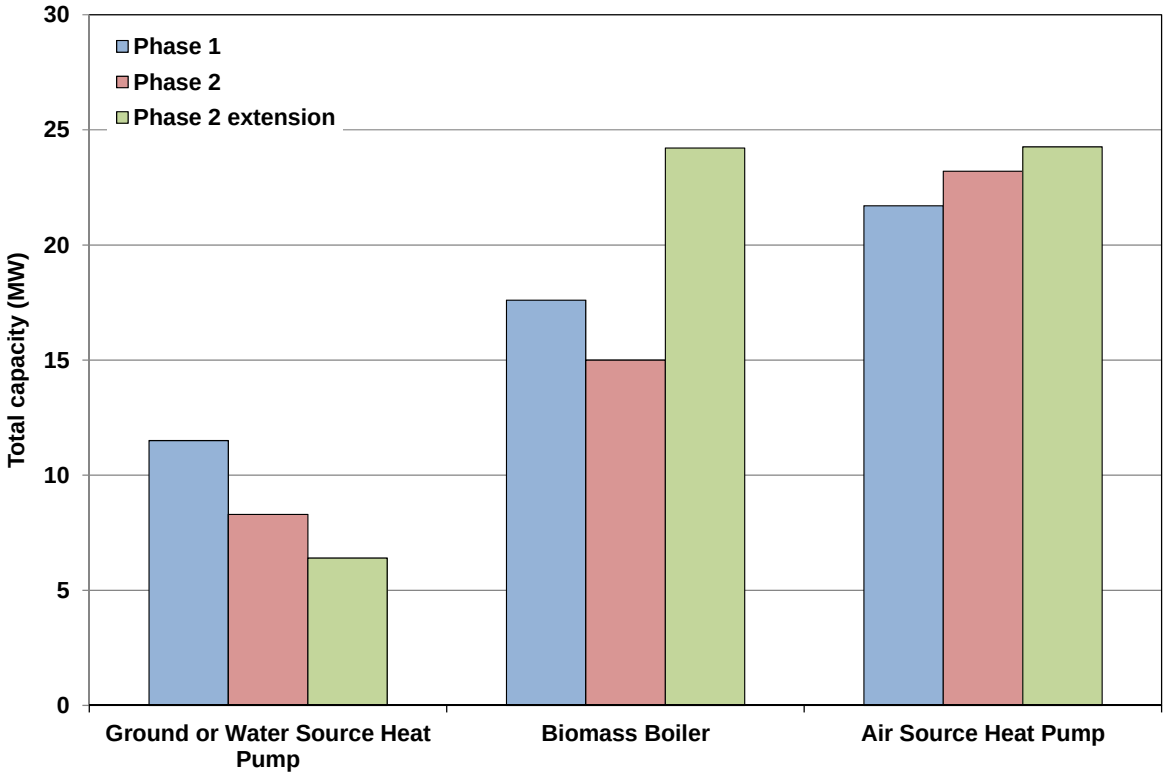
It was estimated that solar thermal systems installed under all three phases of the householder scheme are capable of providing approximately 8,650 MWh of heat per year – 3,600 MWh (42 per cent) of this was installed in phase 1, 3,250 (38 per cent) in phase 2, and 1,800 (21 per cent) in the final phase of the householder scheme.

Table 2 - Installed capacity by technology and phase for the Householder Scheme

Technology	Total capacity (MW)		
	Phase 1	Phase 2	Phase 2 extension
Ground or Water Source Heat Pump	11.5	8.3	6.4
Biomass Boiler	17.6	15.0	24.2
Air Source Heat Pump	21.7	23.2	24.3
Total	50.8	46.5	54.9
	Total estimated heat generated per year (MWh)		
	Phase 1	Phase 2	Phase 2 extension
Solar Thermal	3,609	3,266	1,793

Source: RHPP Official Statistics

Figure 3 – Installed capacity by technology for the Householder Scheme, Great Britain



Source: RHPP Official Statistics

Regional breakdown

Of the total 15,364 claimed vouchers, 12,046 (78 per cent) were claimed in England, 1,933 (13 per cent) were claimed in Scotland and 1,385 (9 per cent) in Wales. These proportions were similar in each of the individual phases. Three of the four technologies were only available to people living in homes off the gas grid, consequently there were a greater number of installations in regions with larger numbers of off grid properties such as the South West where 19 per cent (2,962) of total claimed vouchers were claimed. Conversely, London was responsible for 2 per cent (283). Table 3 shows the distribution by region for all three phases. Figure 4 is a map illustrating the breakdown of all claimed vouchers by local authority.

Table 3 - Total number of vouchers claimed by region for the Householder Scheme, Great Britain

Region	Total	
	Number redeemed	% of total
England	12,046	78%
South West	2,962	19%
South East	2,362	15%
East of England	1,977	13%
West Midlands	1,027	7%
North West	980	6%
Yorkshire and the Humber	970	6%
East Midlands	1,110	7%
North East	375	2%
London	283	2%
Scotland	1,933	13%
Wales	1,385	9%
Total	15,364	

Source: RHPP Official Statistics

Heat generated

As at the 31 March 2014, when the RHPP scheme closed, the 15,364 vouchers claimed the voucher under the households scheme were estimated to be generating 233 GWh of heat per year - 28 per cent of which is being generated from biomass, 47 per cent from ASHP, 22 per cent from GSHP and 4 per cent from solar thermal.

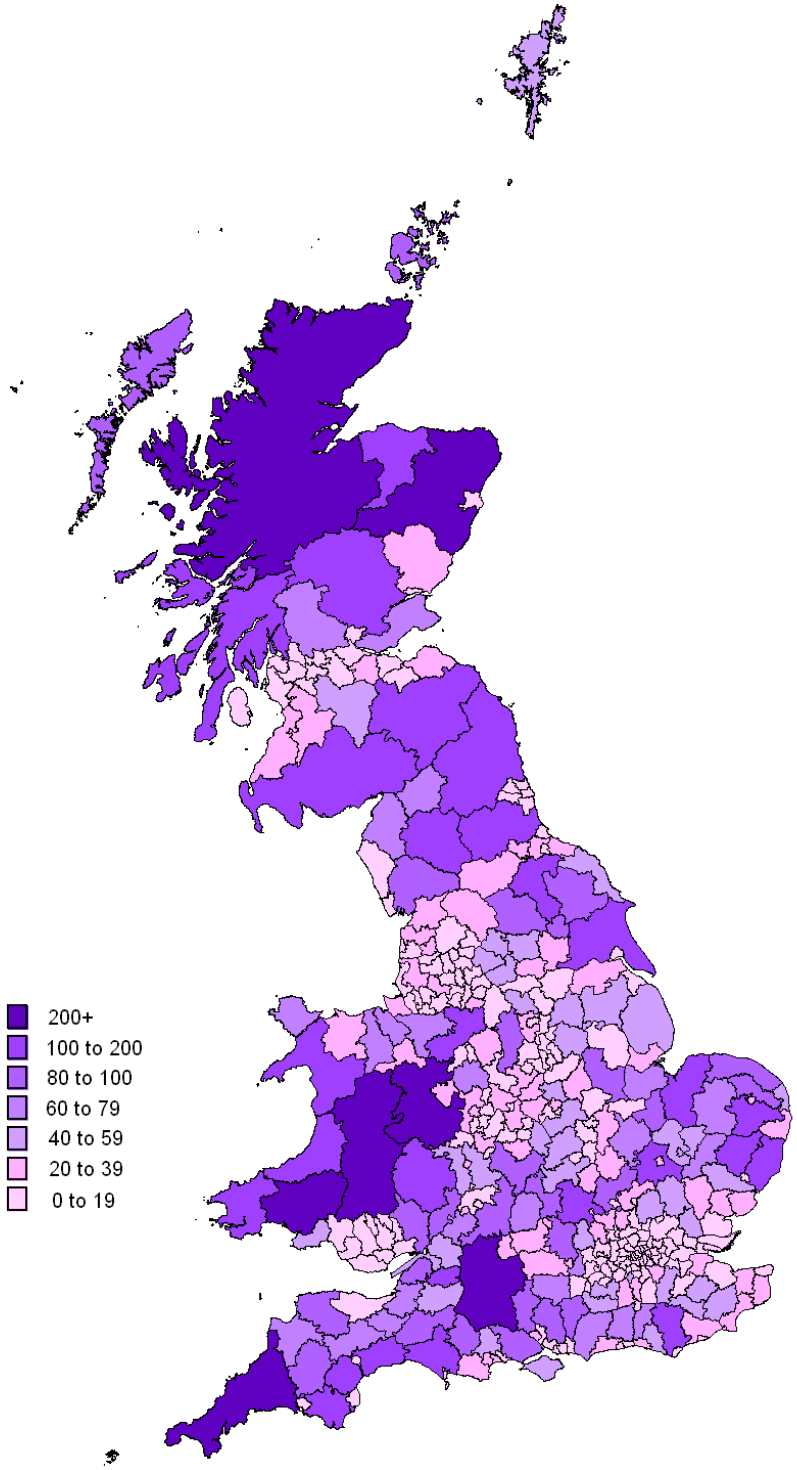
Solar thermal accounts for 31 per cent of the installations receiving payment yet just 4 per cent of the heat paid for. This is because solar thermal is a complimentary heating technology not typically capable of producing heat in the volumes seen from the other technologies.

Table 4 - Forecast annual heat generation by technology for the Householder Scheme, Great Britain

Tariff Band	Estimated annual heat generation		Number of installations	
	MWh	%	Number	%
Air source heat pump	109,115	47%	5,902	38%
Ground source heat pump	50,493	22%	2,229	15%
Biomass systems	64,684	28%	2,428	16%
Solar thermal	8,668	4%	4,805	31%
Total	232,959		15,364	

Source: DECC analysis
Note: In order to estimate the heat generated by RHPP systems, average load factors were calculated for each technology using the annual heat demand of RHPP recipients which have subsequently applied for the domestic RHI.

Figure 4 - Number of vouchers claimed for Phase 1, Phase 2 and Phase 2 extension by local authority for the Householder Scheme, 31 March 2014



Grants

Table 5 below shows the voucher incentive that was paid out for each technology. In May 2013 the grant value nearly doubled. Table 6 shows the value of total vouchers issued and total claims paid.

Table 5 – RHPP grant rates for the Householder Scheme

Technology	Grant value before 20 May 2013	Grant value after 20 May 2013
GSHPs	£1,250	£2,300
ASHPs	£850	£1,300
Solid biomass boiler	£950	£2,000
Solar thermal systems	£300	£600

Table 6 – RHPP claims paid for the Householder Scheme

	Financial year	Vouchers issued (£ million)	Claims paid (£ million)
Phase 1	2011/12	£5.5	£4.0
Phase 2	2012/13	£5.2	£3.8
Phase 2 extension	2013/14	£8.3	£6.3
Total		**£18.9**	**£14.1**

Note: Individual components do not add to the total due to rounding.

RHPP Registered Social Landlord Competition

Vouchers issued and claimed

There were 8 social landlord competitions in all and for the purposes of this report they will be grouped according to the financial year in which they were run:

- 2011/12: Phase 1;
- 2012/13: Phase 2, Phase 2 top up, Phase 3, Phase 3 top up;
- 2013/14: Fast Track, Fast Track top up and Reach Out.

In Phase 1, run during 2011/12, 37 social landlords, representing 38 projects, installed 960 renewable heating technologies in 927 homes. The total installed capacity for biomass boilers, ASHPs and GSHPs from phase 1 was 6.5 MW, with solar thermal systems installed estimated to be capable of providing 121.7 MWh of heat per year.

In 2012/13, 4 competitions were run (some of which ran concurrently) - Phase 2, Phase 2 top up, Phase 3 and Phase 3 top up. These are collectively referred to as Phase 2 competitions. Through these competitions, 79 social landlords, representing 113 projects installed 3,763 renewable heating technologies in 3,591 homes. The total installed capacity for biomass boilers, ASHPs and GSHPs was 20.2 MW and it is estimated that the solar thermal systems installed are capable of providing 833.5 MWh of heat per year.

In 2013/14, 3 competitions were run, some of which ran concurrently – Reach Out, Fast Track and Fast Track top up. Through these competitions 91 social landlords representing 111 projects installed 2,706 renewable heating technologies in 2,519 homes.

In Phase 1 of the social landlord scheme 748 of the 960 (78 per cent) installed renewable technologies were ASHPs, 109 (11 per cent) were GSHPs, 70 (7 per cent) solar thermal and 33 (3 per cent) were biomass boilers.

The distribution of installed renewable technologies for the four competitions run in 2012/13 were different to Phase 1, the distribution was still dominated by ASHPs (70 per cent of install renewable technologies), but followed by solar thermal (20 per cent), biomass boilers (9 per cent) and GSHPs (1 per cent).

In the competitions run during the 2013/14 financial year the distribution of installed technologies was slightly different again. Air source heat pumps accounted for 74 per cent of installations, followed by solar thermal with 17 per cent then GSHPs with 8 per cent and biomass boilers represented just 1 per cent of installations.

Table 7 shows installed renewable systems by technology for each financial year in which competitions were run.

Table 7 - Installations by technology and phase for the Social Landlord Competition, Great Britain

Technology	Phase 1		Phase 2, 2 top-up, 3 and 3 top-up		Reach out, Fast track and Fast track top-up	
	Number	% of total	Number	% of total	Number	% of total
Air source heat pump	748	78%	2,630	70%	2,009	74%
Ground source heat pump	109	11%	37	1%	229	8%
Biomass boiler	33	3%	356	9%	21	1%
Solar thermal	70	7%	740	20%	447	17%
Total	960		3,763		2,706	

Source: RHPP Official Statistics

Table 8 shows the number on installations broken down by region.

The regional spread of installations varies between competitions run in the 3 financial years. The most notable difference is that installations in the South West accounted for over a quarter of installations in 2012/13 and 2013/14 competitions but less than a twentieth of installations in 2011/12.

Table 8 - Installations by region for the Social Landlord Competition, Great Britain

Region	Phase 1		Phase 2, 2 top-up, 3 and 3 top-up		Reach out, Fast track and Fast track top-up	
	Number	% of total	Number	% of total	Number	% of total
England	858	89%	3,243	86%	2,377	88%
South West	35	4%	1,015	27%	709	26%
South East	110	11%	545	14%	352	13%
East of England	87	9%	706	19%	366	14%
West Midlands	174	18%	270	7%	448	17%
North West	100	10%	262	7%	113	4%
Yorkshire and the Humber	106	11%	148	4%	140	5%
East Midlands	177	18%	161	4%	47	2%
North East	68	7%	32	1%	182	7%
London	0	0%	104	3%	20	1%
Scotland	50	5%	473	13%	176	7%
Wales	53	6%	47	1%	153	6%
Total	960		3,763		2,706	

Source: RHPP Official Statistics

Heat generated

As at the 31 March 2014, when the RHPP scheme closed, households funded under the Social Landlord scheme were estimated to be generating 67 GWh of heat per year - 2 per cent of which is being generated from biomass biolers, 85 per cent from ASHPs, 11 per cent from GSHPs and 2 per cent from solar thermal.

Solar thermal accounts for 17 per cent of the installations receiving payment yet just 2 per cent of the heat paid for. This is because solar thermal is a complimentary heating technology not typically capable of producing heat in the volumes seen from the other technologies.

Table 9 - Forecast annual heat generation by technology for the Social Landlord Competition, Great Britain

Tariff Band	Estimated annual heat generation		Number of installations	
	MWh	%	Number	%
Air source heat pump	56,970	85%	5,387	73%
Ground source heat pump	7,323	11%	375	5%
Biomass systems	1,424	2%	410	6%
Solar thermal	1,628	2%	1,257	17%
Total	67,345		7,429	

Source: DECC analysis
Note: In order to estimate the heat generated by RHPP systems, average load factors were calculated for each technology using the annual heat demand of RHPP recipients which have subsequently applied for the domestic RHI.

Grants

Due to the competitive nature of the Social Landlord schemes, different amounts were paid to different projects. Over the course of the Social Landlord scheme, payments totalling £18.6 million were made.

- During Phase 1, £3.7m was paid;
- During Phase 2, Phase 2 Top-up, Phase 3 and Phase 3 Top-Up combined £7.4m was paid;
- During Reach out, Fast track and Fast track top up £7.5m was paid.

RHPP Community Scheme

Installations

The RHPP2 Communities Scheme, launched on 24 July 2012, resulted in participation from twenty-eight community groups, representing 31 projects. These groups managed the installation of 365 renewable heating technologies into 323 homes.

The total installed capacity for biomass boilers, ASHPs and GSHPs is 3.9 MW and it is estimated that the solar thermal systems installed are capable of generating 0.1 MWh of heat per year. Unlike the other RHPP schemes, biomass was the most popular space heating technology with substantially fewer GSHPs installed under the communities scheme than the other eligible technologies (see Table 10).

Table 10 - Installations by technology for the Communities Scheme, Great Britain

Application status	Installations	
	Number	% of total
Air source heat pump	89	24%
Ground source heat pump	5	1%
Biomass boiler	133	36%
Solar thermal	138	38%
Total	365	100%

Source: RHPP Official Statistics
Note: Disaggregated capacity data for installations under the Community Scheme are not available; consequently, estimates for forecast heat generation have not been produced.

Table 11 - Installations by region for the Communities Scheme, Great Britain

Region	Installations	
	Number	% of total
England	250	68%
South West	118	32%
South East	56	15%
East of England	7	2%
West Midlands	3	1%
North West	6	2%
Yorkshire and the Humber	36	10%
East Midlands	18	5%
North East	3	1%
London	4	1%
Scotland	61	17%
Wales	53	15%
Total	365	

Source: RHPP Official Statistics

Grants

Payments totalling £910,089 were paid out over the course of the scheme.

User Feedback

Please send any comments or queries regarding these statistics to the contact details below:

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Smart Meter Energy Demand Research Project: anonymised data release

Introduction to the Energy Demand Research Project

The Energy Demand Research Project (EDRP) was a major set of trials across Great Britain, conducted and co-funded by four energy suppliers and managed by Ofgem on behalf of DECC. It was designed to help better understand how domestic consumers react to improved information about their energy consumption over the long term.

The trials incorporated different combinations of measures (such as energy efficiency advice, clip-on real-time displays and smart gas and electricity meters), and included around 60,000 households, of which approximately 18,000 had smart-type meters. The majority of the trials began in late 2007 or early 2008 and the trials finished towards the end of 2010, with most interventions being monitored for two years post-implementation. In 2010, AECOM conducted an independent evaluation of the trials and provided further analysis of the data collected, resulting in a final report and annexes that were published by Ofgem in June 2011[1].

The findings and conclusions from AECOM's review set out the quantitative savings that were achieved through a range of interventions enabled by early smart-type meters, demonstrating the potential of smart metering as an enabling platform for measures to influence consumer behaviour. Together, with a review of the wider literature, they identified the interventions that had proved most effective in reducing consumption, and drew out a number of findings about how to maximise benefits.

Under the Government's Open Data commitment, DECC considered options for making an anonymised version of the trials data available to researchers. The Centre for Sustainable Energy (CSE) supported Ofgem and DECC in the evaluation and management of the project and also led on the central collection and management of energy data from the individual suppliers. This included the preparation of an anonymised version of the data for publication on behalf of DECC.

Publication of anonymised EDRP Data

Three datasets have been disseminated via the UK Data Archive: The first two are half-hourly smart electricity and gas consumption data between January 2008 and September 2010 for 14,621 households. The third is a dataset containing geographic data (Government Office Region and Local Authority) and ACORN segmentation data[2] which can be linked to the consumption data via an anonymised household ID.

Access conditions

All users are required to agree to the terms and conditions of the UK Data Service and must accept the End User Licence (EUL) agreement which is accessible during the registration process. Further registration details and how to register for access to the anonymised EDRP data can be found at: http://ukdataservice.ac.uk/get-data/how-to-access/conditions.aspx

Smart Metering Programme
E-mail: smartmetering@decc.gsi.gov.uk

[1] www.ofgem.gov.uk/gas/retail-market/metering/transition-smart-meters/energy-demand-research-project
[2] http://acorn.caci.co.uk/what-is-acorn

DECC report on surveys of businesses, local authorities and households - 2013/14

Introduction

All survey activities in the Department of Energy and Climate Change (DECC) are monitored by the Survey Control Unit (SCU) in the department. Burdens imposed by surveys on respondents are measured in terms of compliance costs. In 2013/14 DECC imposed an estimated total burden of £128,000 on its businesses and local authorities data respondents, down 2 per cent on 2012/13. Additionally burdens on households and individuals totalled 6,600 hours.

The SCU in DECC is responsible for compiling and reporting on the compliance costs of all its business and local authority surveys to the Office for National Statistics (ONS), which are then published in the annual Government Statistical Service (GSS) report available at www.ons.gov.uk/ons/publications/all-releases.html?definition=tcm%3A77-210555. The SCU at ONS is responsible for implementing survey controls driven by the UK Statistics Authority Code of Practice for statistics (www.ons.gov.uk/ons/guide-method/method-quality/quality/survey-control/index.html) and for auditing DECC survey control procedures.

This article presents an overview of the survey activities in DECC and their compliance costs.

Survey control in DECC

Survey control is applied to all surveys, conducted by or on behalf of the department. Survey control is the mechanism for the department to oversee the burden its surveys imposed on respondents. It also aims to promote good survey practice, prevents poor quality or unnecessary surveys, and minimise the burden on respondents to DECC's surveys.

DECC is committed to minimising the burden its surveys place on respondents. When a new survey is proposed, DECC assesses its need at the outset by seeking to understand

- How the information collected will be used;
- What the compliance costs will be;
- How the survey will contribute towards achieving DECC priorities, and
- Whether there are alternative ways to obtain the data.

DECC maintains an inventory of all its statistical surveys, ensures that these are systematically reviewed, and annually assesses the compliance costs of running the surveys.

Data collection

Energy statistics published by DECC are based on regular surveys of companies as follows:

Coal : From the Coal Authority, Iron and Steel Statistics Bureau (ISSB) and electricity generators' returns, major coal companies and the two major distributors and from the major and smaller coal companies.

Upstream oil and gas: From individual companies under the Downstream Oil Reporting System (DORS) and Petroleum Production Reporting System (PPRS).

Downstream oil and gas: From National Grid and pipeline operators, gas suppliers and Major Power Producers for electricity generation.

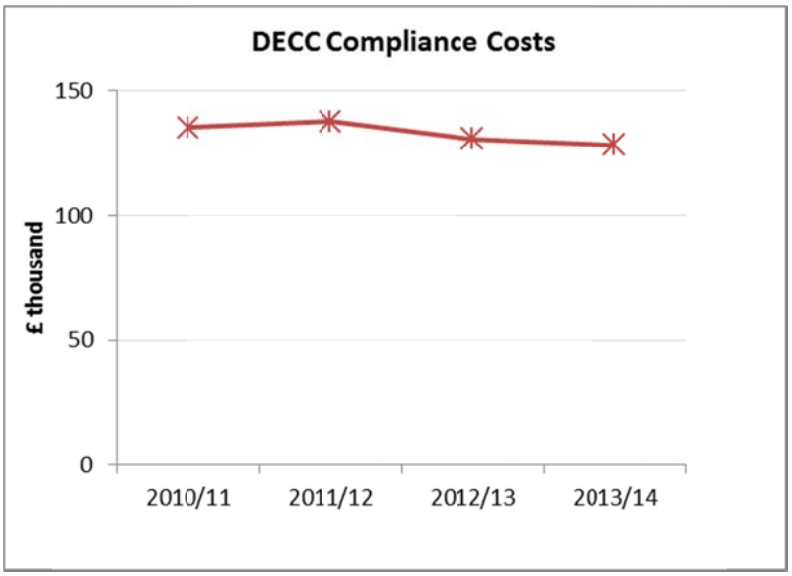
Electricity (including renewables): From inquiries to companies covering generating capacity, fuel use, generation, sales and distribution of electricity and licensed suppliers, ISSB, auto-generators or auto-producers from ONS and small surveys for specific renewable technologies.

Prices: From energy suppliers and manufacturing industries via the ONS.

Compliance costs

Compliance costs are a measure of the cost to respondents for complying with government statistical surveys. For surveys of businesses and local authorities, it is calculated using the product of the number of forms received, average completion time and the average hourly rates of the person compiling the return. The average hourly rates are based on the Annual Survey of Hours and Earnings (ASHE). For surveys of households and individuals, the compliance costs are the total number of hours dedicated to responding to the surveys.

Chart 1



In 2013/14, DECC conducted a total of 40 surveys of businesses and local authorities, 24 of which were statistical surveys which regularly contributed to official statistics (see table 1). The remaining were ad-hoc surveys conducted to provide evidence for the evaluation of policies and policy development; the compliance costs of which rose by 26 per cent. However, the costs of the regular statistical surveys fell by 6 per cent. Overall the total compliance costs in 2013/14, based on the 2013 ASHE rates, were £128,000 down 2 per cent on the previous year (see Chart 1 and table 2). In addition DECC also carried out 8 ad-hoc surveys on households and individuals with a total burden of 6,600 hours.

Burdens across government are published by ONS every year at www.ons.gov.uk/ons/publications/all-releases.html?definition=tcm%3A77-210555. In 2012/13, the latest year for which comparable data are available, DECC's compliance costs of official statistics of businesses and local authorities accounted for less than 0.5 per cent of the total across all government surveys. It is anticipated that a similar proportion will be achieved in 2013/14.

Table 1- List of DECC regular statistical surveys, frequency of data collection and compliance costs in 2013/14.

Surveys	Frequency	Compliance cost (£)
Downstream Oil Reporting System	Monthly	24,130
Liquefied Petroleum Gas Deliveries	Quarterly	100
Hypermarket Petrol and DERV	Monthly	80
Oil Stocking	Monthly	570
A: Coal Producers (Mth)	Monthly	270
B: Coal Producers (Qtr)	Quarterly	170
C: Coal Producers (Yr)	Yearly	30
A: Generators, distributors and suppliers of electricity(Mth)	Monthly	25,340
B: Generators, distributors and suppliers of electricity(Yr)	Yearly	2,110
A: Gas suppliers(Qtr)	Quarterly	1,700
B: Gas suppliers(Yr)	Yearly	90
Electricity Generators Inquiry.	Quarterly	4,940
Renewable Energy Statistics	Yearly	50
New Price Transparency Survey: Non-domestic	Quarterly	2,020
Generators Inquiry	Quarterly	1,890
Quarterly Fuels Inquiry*	Quarterly	33,870
Domestic Fuels Inquiry	Quarterly	2,290
Annual petroleum products prices inquiry	Yearly	60
Crude Oil imports	Monthly	420
Prices paid by final consumers petroleum products	Monthly	360
Weekly oil product prices	Weekly	1,170
Producer Price Index	Monthly	4,380
Social Programme reporting (Company Fuel Poverty Initiatives)	Yearly	220
New Price Transparency Survey : Domestic	Quarterly	940
Total		107,176

Table 2- Achieved sample sizes and compliance costs

	2012/13		2013/14		% change	
	Number of questionnaires returned	Compliance costs (£)	Number of questionnaires returned	Compliance costs (£)	Number of questionnaires returned	Compliance costs (£)
Regular surveys	6,414	113,918	6,085	107,176	-5%	-6%
Ad-hoc surveys	3,554	16,644	1,874	20,899	-47%	26%
Total	9,968	130,562	7,959	128,075	-20%	-2%

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Recent and forthcoming publications of interest to users of energy statistics

UK Energy Sector Indicators

This annual publication aims to provide a headline overview of some of the key developments in the UK energy system: how energy is produced and used and the way in which energy use influence greenhouse gas emissions. The 2014 edition was published on Thursday 30 October 2014 at: www.gov.uk/government/collections/uk-energy-sector-indicators

Smart Meters quarterly statistics

This quarterly publication provides estimates of the number of Smart Meters installed and operating in homes and businesses in Great Britain. The latest release, covering estimates of the number of Smart Meters deployed up to the end of September 2014, was published on 18 December 2014 at: www.gov.uk/government/collections/smart-meters-statistics

Green Deal and ECO monthly and quarterly statistics

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 18 December 2014 at:
www.gov.uk/government/collections/green-deal-and-energy-company-obligation-eco-statistics

Estimates of Home Insulation Levels in Great Britain

This quarterly publication, released alongside the quarterly Green Deal and ECO statistics, 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: September 2014, was published on 18 December 2014 at:
www.gov.uk/government/collections/green-deal-and-energy-company-obligation-eco-statistics

Electricity consumption at local authority level

This factsheet looks at electricity consumption by consuming sector for Great Britain, and Regional/devolved administration areas, together with some commentary relating to local authority trends. The data analysed in this factsheet are based on the aggregation of Meter Point Administration Number (MPAN) readings throughout Great Britain as part of DECC's annual meter point electricity data exercise. The data cover the electricity year between 26 January 2013 and 25 January 2014. These data follow on from the results produced from similar exercises carried out for 2005 to 2012. The latest release was published on 18 December 2014, at:
www.gov.uk/government/collections/sub-national-electricity-consumption-data.

Gas consumption at local authority level

This factsheet looks at gas consumption by consuming sector for Great Britain, and Regional/devolved administration areas, together with some commentary relating to local authority trends. The data analysed in this factsheet are based on the aggregation of Meter Point Reference Number (MPRN) readings throughout Great Britain as part of DECC's annual meter point gas data exercise. The data cover the gas year between 1 October 2012 and 30 September 2013 and are subject to a weather correction factor. In the domestic sector, gas consumption is predominately used for heating purposes and as a result usage is driven by external temperatures and weather conditions. The weather correction factor enables comparisons of gas use over time, controlling for weather changes. These data follow on from the results produced from similar exercises carried out for 2005 to 2012. The latest release was published on 18 December 2014, at:
www.gov.uk/government/collections/sub-national-gas-consumption-data.

Changes to Energy Trends and Quarterly Energy Prices spreadsheets

From December 2014 DECC will be publishing an additional worksheet entitled 'Contents' within the regular suite of weekly, monthly and quarterly Energy Trends and Quarterly Energy Prices spreadsheets published on the DECC section of the gov.uk website. The contents worksheet will include information on:

- Date of publication
- Latest data period and revisions to previous data periods
- Date of next publication
- Index to the worksheets available and their data periods
- Background to data published
- Hyperlinks to relevant publication and website
- Hyperlinks to information on data sources, methodology, revisions policy and a glossary
- Contact details for DECC Press Office and the responsible statistician

Hyperlinks will also be added to existing worksheets to direct users back to the contents worksheet.

These changes are being made as a result of new guidance recently issued by the Government Statistical Service's Good Practice Team on releasing statistics in spreadsheet form.

DECC welcome all feedback from users; therefore, if you have any comments or queries regarding these changes, please contact Kevin Harris.

Explanatory notes

General

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

Symbols used in the tables

.. not available
- nil or not separately available
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
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

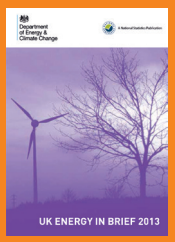
Energy is a major natural resource and a key factor in the economy and environment of the United Kingdom. Data on energy supply and demand, energy prices and values and trade in energy are vital components of this country's main economic and environmental indicators.

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.

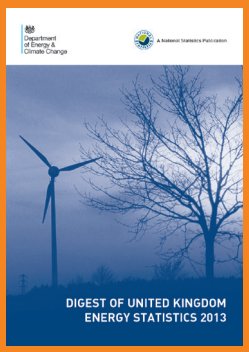
Quarterly Energy Prices and Energy Trends

Subscription available from DECC (0300 068 5056)
Price £40 per annum UK
www.gov.uk/government/collections/quarterly-energy-prices
and
www.gov.uk/government/collections/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/collections/uk-energy-in-brief



Digest of UK Energy Statistics

Available from the Stationery Office (0870 600 5522)
www.gov.uk/government/collections/digest-of-uk-energy-statistics-dukes

Energy Consumption in the UK

Available on the Internet at:
www.gov.uk/government/collections/energy-consumption-in-the-uk

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