A National Statistics Publication

DEPARTMENT OF ENERGY & CLIMATE CHANGE

ENERGY TRENDS

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For enquiries please contact:	Name	Telephone 0300 068	E-mail
General (Helpdesk) enquiries on energy statistics	Clive Sarjantson	5056	Clive.Sarjantson@decc.gsi.gov.uk
Total energy	Anwar Annut	5060	Anwar.Annut@decc.gsi.gov.uk
Coal and other solid fuels	Mita Kerai	5044	Mita.Kerai@decc.gsi.gov.uk
Petroleum production Natural gas production and consumption	Clive Evans	5040	Clive.Evans@decc.gsi.gov.uk
Petroleum consumption and stocks	Mark Williams	6988	Mark.Williams@decc.gsi.gov.uk
Gas and petroleum investment Indicative tariffs	Mike Earp	5784	Mike.Earp@decc.gsi.gov.uk
Electricity	Chris Michaels	5050	Chris.Michaels@decc.gsi.gov.uk
Renewables	James Hemingway	5042	James.Hemingway@decc.gsi.gov.uk
Sub-national energy consumption	Sabena Khan	6909	Sabena.Khan@decc.gsi.gov.uk

All the above can be contacted by fax on 0300 068 5006

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

Designation can be broadly interpreted to mean that the statistics:

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- are well explained and readily accessible
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- are managed impartially and objectively in the public interest

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

Explanatory notes are to be found inside the back cover

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Special feature articles

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

Introduction

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

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

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 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 website. Both sets of tables can be accessed at:
www.decc.gov.uk/en/content/cms/statistics/source/source.aspx

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 website at: www.decc.gov.uk/en/content/cms/statistics/source/source.aspx. Information on Prices can be found in the Quarterly Energy Prices publication and on the DECC website at:
www.decc.gov.uk/en/content/cms/statistics/publications/prices/prices.aspx

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

Kevin Harris
DECC
Energy Statistics Team
6th Floor – Area B
3 Whitehall Place
London SW1A 2AW
E-mail: Kevin.Harris@decc.gsi.gov.uk
Tel: 0300 068 5041

The main points for the second quarter of 2012:

- Total energy production was 10 per cent lower than in the first quarter of 2011. This decline in output is due to falls in petroleum and gas production as a result of maintenance work and slowdowns on a number of fields, which resulted in a rise in net import dependency of total energy to 42 per cent.

- Oil production fell by 12 per cent when compared with the second quarter of 2011.

- Natural gas production was 14 per cent lower than the second quarter of 2011. Gas imports fell by 6 per cent, with shipped imports of LNG falling by 42 per cent, due to increased imports from Norwegian fields.

- Coal production in the second quarter of 2012 was 4½ per cent lower than the second quarter of 2011. Coal imports were 64 per cent higher reflecting generators' demand for coal being up by 60 per cent.

- Total primary energy consumption for energy uses rose by 6½ per cent. However, when adjusted to take account of weather differences between the second quarter of 2011 and the second quarter of 2012, primary energy consumption rose by 1 per cent.

- Final energy consumption was provisionally 5 per cent higher than in the second quarter of 2011. Domestic consumption rose by 33 per cent due to colder weather than in 2011, other final users consumption rose by 10½ per cent, industrial consumption rose by 4 per cent, whilst transport consumption fell by 6 per cent.

- Total deliveries of the key transport fuels were down 6 per cent when compared to the same period last year. Motor spirit deliveries fell by 10½ per cent, with deliveries in April 2012 particularly low following a substantial increase in March 2012 in anticipation of a potential tanker drivers' strike.

- Electricity generated in the second quarter of 2012 fell by ½ per cent, from 84.9 TWh a year earlier to 84.4 TWh, the lowest second quarter level of generation since 1998.

- Of electricity generated in the second quarter of 2012, gas accounted for 29.8 per cent (its lowest second quarter share in the last fourteen years) due to high gas prices, whilst coal accounted for 36.1 per cent (its highest second quarter share in the last fourteen years). Nuclear generation accounted for 21.9 per cent of total electricity generated in the second quarter of 2012, a decrease from the 22.6 per cent share in the second quarter of 2011.

- Coal generation was at its highest second quarter level for at least 14 years.

- Renewables' share of electricity generation increased to 9.6 per cent from the 9.0 per cent share in the second quarter of 2011. Hydro generation decreased by 31 per cent on the second quarter of 2011 as a result of low rainfall. Over the same period, offshore wind generation increased by 46½ per cent, whilst onshore wind generation fell by 11 per cent. Overall renewable generation was up 6½ per cent compared to the same quarter in 2011.

- In the second quarter of 2012, 179 MW of capacity joined the Feed in Tariff scheme, increasing the total confirmed capacity by 16 per cent to 1,269 MW, approximately 9 per cent of all renewable installed capacity. Of this increase, sub-4 kW retrofitted solar PVs contributed 105 MW.

Section 1 - Total Energy

Key results show:

Total energy production was 10.1 per cent lower than in the second quarter of 2011. (**Charts 1.1 & 1.2**)

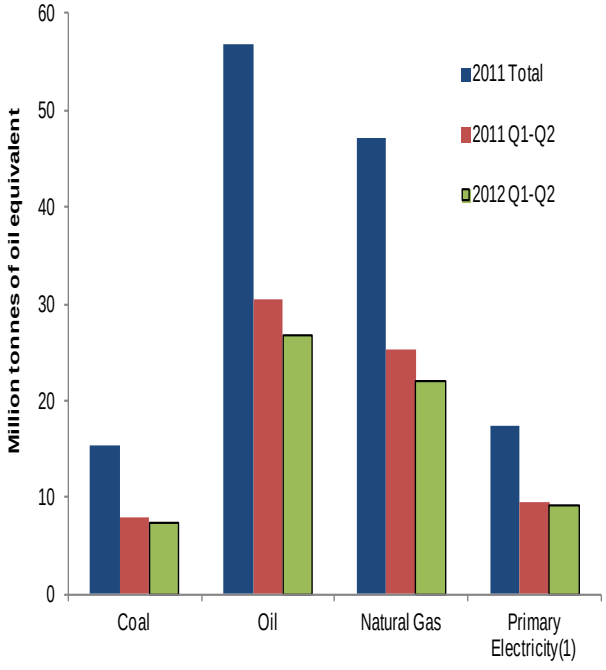
Total primary energy consumption for energy uses rose by 6.3 per cent. However, when adjusted to take account of weather differences between the second quarter of 2011 and the second quarter of 2012, primary energy consumption rose by 0.8 per cent. (**Chart 1.3**)

Final energy consumption provisionally rose by 5.1 per cent compared to the second quarter of 2011. Domestic consumption rose by 32.8 per cent due to colder weather than in 2011, other final users' consumption rose by 10.4 per cent, industrial consumption rose by 3.9 per cent, whilst transport consumption fell by 6.1 per cent. (**Chart 1.4**)

Net import dependency was 42.1 per cent, up 10.3 percentage points from the second quarter of 2011. This rise was due to the fall in oil and gas production. (**Chart 1.6**)

Fossil fuel dependency was 86.1 per cent in the second quarter of 2012. (**Chart 1.7**)

Chart 1.1 Production of indigenous primary fuels



Total production in the second quarter of 2012 stood at 31.5 million tonnes of oil equivalent, 10.1 per cent lower than in the second quarter of 2011.

Production of natural and other gases fell by 12.9 per cent and production of oil by 12.2 per cent compared to the second quarter of 2011, as a result of a general decline and slowdowns on a number of fields.

Primary electricity output in the second quarter of 2012 was 2.4 per cent lower than in the second quarter of 2011, within which nuclear electricity output was 3.3 per cent lower due to maintenance activity, whilst output from wind and natural flow hydro was 6.5 per cent higher than the same period in 2011. The average wind speed was 1.1 knots lower than the same period a year earlier, but wind capacity has increased by 18.5 per cent.

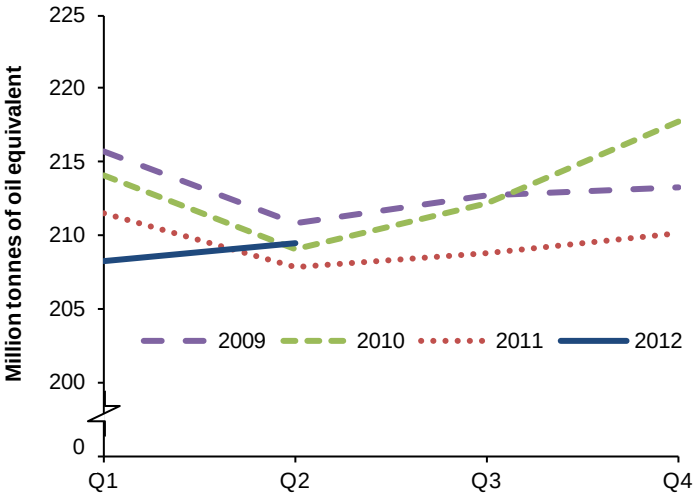
In the second quarter of 2012 production of coal and other solid fuels was 2.9 per cent lower than the corresponding period of 2011. This was due to a decrease in surface mining production.

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

Chart 1.2 UK production (annual growth rate)

In the second quarter of 2012, the annual growth rate of UK production was -10.1 per cent. This was mainly the result of the falls in oil and gas production due to a general decline and slowdowns.

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



(1) Seasonally adjusted and temperature corrected annual rates

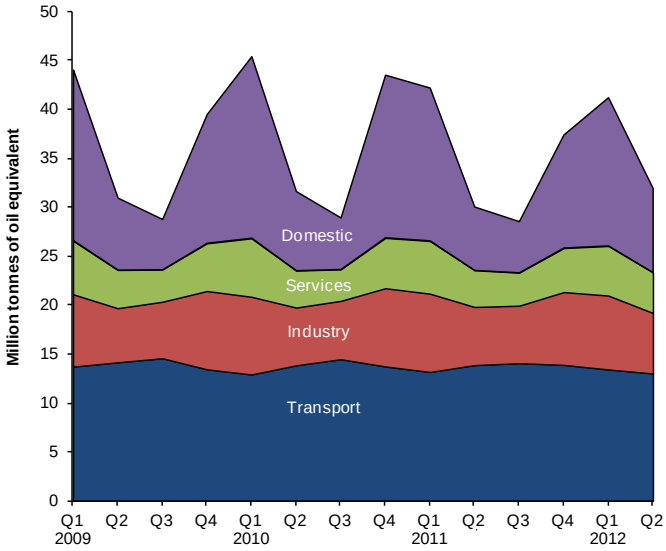
Total inland consumption on a primary fuel input basis (temperature corrected, seasonally adjusted annualised rate), was 209.5 million tonnes of oil equivalent in the second quarter of 2012, 0.8 per cent higher than in the second quarter of 2011. The average temperature in the second quarter of 2012 was 1.8 degree Celsius cooler than the same period a year earlier.

Between the second quarter of 2011 and the second quarter of 2012 (on a seasonally adjusted and temperature corrected basis) coal and other solid fuel consumption rose by 23.9 per cent, driven by increased coal use in electricity generation.

On the same basis, natural gas consumption fell by 6.9 per cent between the second quarter of 2011 and the second quarter of 2012, as higher prices led to less gas being used in electricity generation.

Also on a seasonally adjusted and temperature corrected basis, oil consumption fell by 2.4 per cent between the second quarter of 2011 and the second quarter of 2012.

Chart 1.4 Final energy consumption by user



Total final energy consumption rose by 5.1 per cent between the second quarter of 2011 and the second quarter of 2012.

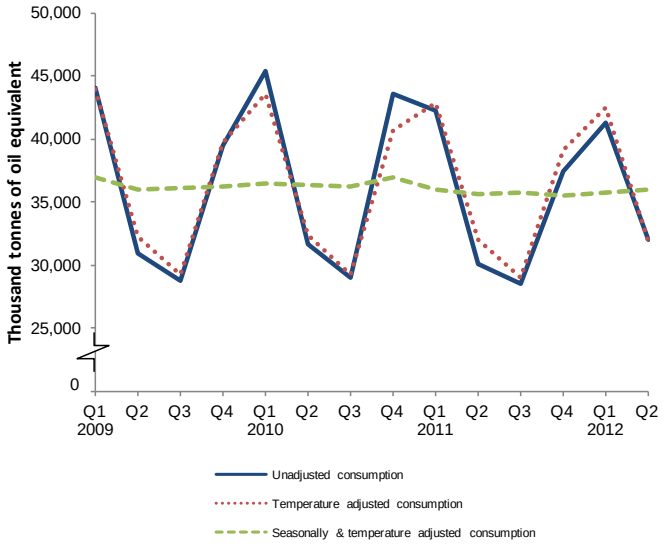
Domestic sector energy consumption rose by 32.8 per cent.; consumption in the second quarter of 2011 was particularly low due to warmer weather last year.

Service sector energy consumption rose by 10.4 per cent.

Industrial sector energy consumption rose by 3.9 per cent.

Transport sector energy consumption fell by 6.1 per cent, reflecting lower purchases of road fuels, as some consumers made advance purchases in March 2012, in anticipation of a tanker drivers strike.

Chart 1.5 Seasonally adjusted and temperature corrected final energy consumption

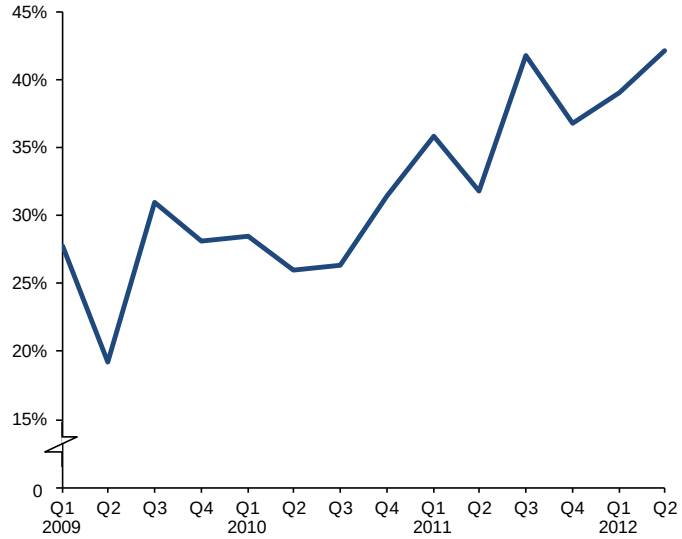


Total unadjusted final energy consumption (excluding non-energy use) rose by 6.3 per cent between the second quarter of 2011 and the second quarter of 2012.

On a seasonally and temperature adjusted basis final energy consumption (excluding non-energy use) rose by 0.9 per cent between the second quarter of 2011 and the second quarter of 2012.

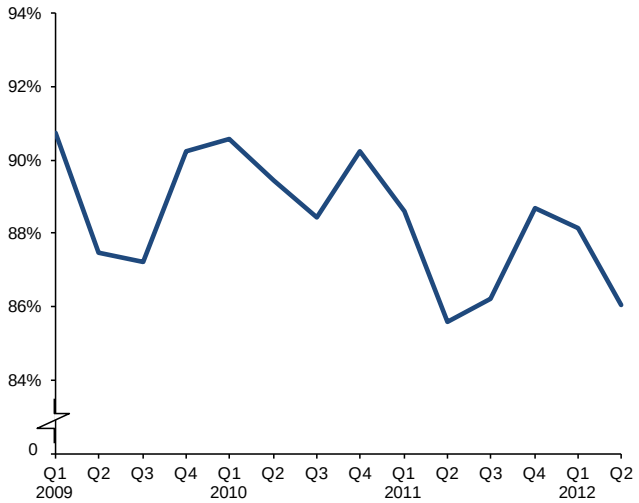
Consumption data by fuel and sector is available in the table ET 1.3c on the DECC website at: www.decc.gov.uk/en/content/cms/statistics/energy_stats/source/total/total.aspx

Chart 1.6 Net import dependency



In the second quarter of 2012 net import dependency rose to 42.1 per cent, up 10.3 percentage points from the second quarter of 2011. This rise was due to falls in oil and gas production as a result of the general decline and slowdowns, resulting in a growth in imports.

Chart 1.7 Fossil fuel dependency



In the second quarter of 2012 fossil fuel dependency was 86.1 per cent, up 0.4 percentage points from the second quarter of 2011.

Relevant tables

Contacts for further information:

Iain MacLeay
Total energy statistics
Tel: 0300 068 5048
E-mail: Iain.MacLeay@decc.gsi.gov.uk

Anwar Annut
Total energy statistics
Tel: 0300 068 5060
E-mail: Anwar.Annut@decc.gsi.gov.uk

1 TOTAL ENERGY

TABLE 1.1. Indigenous production of primary fuels

Million tonnes of oil equivalent

						Primary electricity	
		Total	Coal[1]	Petroleum[2]	Natural gas[3]	Nuclear	Wind and natural flow hydro[4]
2009		166.9	14.1	74.7	61.6	15.2	1.25
2010		157.9	14.7	69.0	59.1	13.9	1.19
2011		137.0	15.4	56.9	47.2	15.6	1.84
Per cent change		*-13.2*	*+4.8*	*-17.5*	*-20.1*	*+12.2*	*+54.7*
2011	Quarter 2	35.1	3.9	14.7	11.7	4.3	0.41
	Quarter 3	29.2	3.8	12.2	9.3	3.6	0.37
	Quarter 4	34.4	3.7	14.2	12.6	3.3	0.67
2012	Quarter 1	33.9	3.7	13.9	11.9	3.9	0.60r
	Quarter 2 p	31.5	3.8	12.9	10.2	4.2	0.43r
Per cent change[5]		*-10.1*	*-2.9*	*-12.2*	*-12.9*	*-3.3*	*+6.5*

1. Includes solid renewable sources (wood, straw and waste), a small amount of renewable primary heat sources (solar, geothermal etc), liquid biofuels and an estimate for slurry.
2. Crude oil, offshore and land, plus condensates and petroleum gases derived at onshore treatment plants.
3. Includes colliery methane, landfill gas and sewage gas. Excludes gas flared or re-injected.
4. Includes generation by solar PV.
5. Percentage change in the second quarter of 2012 compared with a year earlier.

1 TOTAL ENERGY

TABLE 1.2 Inland energy consumption: primary fuel input basis

Million tonnes of oil equivalent

						Primary electricity							Primary electricity		
		Total	Coal[1]	Petroleum[2]	Natural gas[3]	Nuclear	Wind and natural flow hydro[4]	Net imports	Total	Coal	Petroleum	Natural gas	Nuclear	Wind and natural flow hydro	Net imports
		Unadjusted[5]							*Seasonally adjusted and temperature corrected*[6,7] *(annualised rates)*						
2009		211.0	35.3	71.0	87.9	15.2	1.25	0.25	213.1	36.0	71.0	89.4	15.2	1.25	0.25
2010		218.0	37.1	70.3	95.3	13.9	1.19	0.23	213.3	36.0	70.3	91.7	13.9	1.19	0.23
2011		203.0	37.9	68.0	79.1	15.6	1.84	0.53	209.6	40.1	68.0	83.4	15.6	1.84	0.53
Per cent change		*-6.9*	*+2.2*	*-3.2*	*-17.0*	*+12.2*	*+54.7*	*(+)*	*-1.7*	*+11.5*	*-3.2*	*-9.0*	*+12.2*	*+54.7*	*(+)*
2011	Quarter 2	45.1	7.4	16.7	16.1	4.3	0.41	0.13	207.8	37.9	66.8	83.7	16.9	2.12	0.53
	Quarter 3	42.9	7.5	17.1	14.2	3.6	0.37	0.20	208.8	38.4	68.4	84.1	15.4	1.74	0.81
	Quarter 4	54.4	11.6	17.4	21.3	3.3	0.67	0.11	210.2	44.4	69.6	79.5	14.1	2.12	0.44
2012	Quarter 1	59.2	13.2r	16.9	24.5	3.9	0.60r	0.17	208.2	46.2	67.5	77.6	14.2	2.07r	0.68
	Quarter 2 p	47.9r	10.3	16.3r	16.4	4.2	0.43r	0.27	209.5r	46.9r	65.2r	77.9r	16.2	2.30r	1.10
Per cent change[8]		*+6.3*	*+39.2*	*-2.4*	*+1.8*	*-3.3*	*+6.5*	*(+)*	*+0.8*	*+23.9*	*-2.4*	*-6.9*	*-4.2*	*+8.5*	*(+)*

1. Includes solid renewable sources (wood, straw and waste), a small amount of renewable primary heat sources (solar, geothermal, etc.), liquid biofuels and net foreign trade and stock changes in other solid fuels.
2. Inland deliveries for energy use, plus refinery fuel and losses, minus the differences between deliveries and actual consumption at power stations.
3. Includes gas used during production, colliery methane, landfill gas and sewage gas. Excludes gas flared or re-injected and non-energy use of gas.
4. Includes generation by solar PV. Excludes generation from pumped storage stations.
5. Not seasonally adjusted or temperature corrected.
6. Coal and natural gas are temperature corrected; petroleum and primary electricity are not temperature corrected.
7. For details of temperature correction see the June and September 2011 editions of Energy Trends; Seasonal and temperature adjustment factors were reassessed in September 2011 www.decc.gov.uk/en/content/cms/statistics/publications/trends/trends.aspx
8. Percentage change in the second quarter of 2012 compared with a year earlier.

1 TOTAL ENERGY

Table 1.3a Supply and use of fuels

Thousand tonnes of oil equivalent

	2010	2011	*per cent change*	2010 2nd quarter	2010 3rd quarter	2010 4th quarter	2011 1st quarter	2011 2nd quarter	2011 3rd quarter	2011 4th quarter	2012 1st quarter	2012 2nd quarter p	*per cent change*[1]
SUPPLY													
Indigenous production	157,892	136,990	*-13.2*	39,931	35,716	39,490	38,375	34,947	29,208	34,460	34,068r	31,522	*-9.8*
Imports	156,173	162,180	*+3.8*	37,400	33,649	43,713	42,555	37,197	39,037	43,392	44,984r	42,461	*+14.2*
Exports	-91,184	-84,127	*-7.7*	-24,227	-21,339	-23,389	-19,775	-21,936	-20,003	-22,414	-20,825r	-21,114	*-3.7*
Marine bunkers	-2,251	-2,413	*+7.2*	-562	-628	-567	-582	-624	-646	-560	-479	-603	*-3.4*
Stock change[2]	+6,383	-919		-2,492	-1,358	+4,713	+2,414	-2,221	-2,636	+1,524	+3,628r	-2,148	
Primary supply	227,012	211,711	*-6.7*	50,050	46,040	63,959	62,988	47,363	44,959	56,402	61,376r	50,118	*+5.8*
Statistical difference[3]	+130	-598		-187	-92	+149	-46	-321	-357	+126	+123r	+83	
Primary demand	226,882	212,310	*-6.4*	50,237	46,132	63,811	63,034	47,684	45,316	56,276	61,254r	50,035	*+4.9*
Transfers[4]	-6	-14		+11	-51	+19	+28	+10	-10	-42	-27r	-74	
TRANSFORMATION	-49,939	-48,182	*-3.5*	-11,421	-10,648	-13,550	-13,945	-10,937	-10,677	-12,622	-13,442r	-11,704	*+7.0*
Electricity generation	-46,443	-44,978	*-3.2*	-10,430	-10,005	-12,818	-12,990	-10,210	-9,968	-11,810	-12,739r	-10,855	*+6.3*
Heat generation	-1,085	-1,079	*-0.5*	-236	-209	-311	-336	-236	-219	-289	-336	-236	-
Petroleum refineries	-222	-42	*-80.9*	-190	86	116	-85	62	4	-23	63r	-35	*(-)*
Coke manufacture	-356	-333	*-6.4*	-90	-88	-118	-84	-94	-73	-83	-68	-58	*-38.3*
Blast furnaces	-1,828	-1,739	*-4.9*	-475	-415	-421	-445	-461	-429	-404	-343	-518	*+12.4*
Patent fuel manufacture	-5	-10	*(+)*	-1	-18	2	-5	1	7	-13	-20r	-3	*(-)*
Energy industry use	14,238	13,277	*-6.7*	3,576	3,388	3,656	3,490	3,388	3,148	3,252	3,396	3,269	*-3.5*
Losses	4,104	3,825	*-6.8*	1,024	879	994	1,122	910	848	944	1,032r	879	*-3.4*
FINAL CONSUMPTION	158,613	147,012	*-7.3*	34,232	31,171	45,633	44,499	32,462	30,637	39,414	43,352r	34,111	*+5.1*
Iron & steel	1,364	1,311	*-3.9*	349	329	342	321	326	334	330	353r	392	*+20.2*
Other industries	26,326	25,834	*-1.9*	5,519	5,610	7,632	7,651	5,582	5,510	7,091	7,169r	5,746	*+2.9*
Transport	55,154	55,187	*+0.1*	13,895	14,511	13,780	13,223	13,916	14,111	13,937	13,477r	13,068	*-6.1*
Domestic	48,486	38,842	*-19.9*	8,079	5,263	16,604	15,605	6,471	5,226	11,540	15,135r	8,595	*+32.8*
Other Final Users	18,285	17,168	*-6.1*	3,816	3,254	5,189	5,432	3,787	3,409	4,540	5,113r	4,182	*+10.4*
Non energy use	8,999	8,669	*-3.7*	2,574	2,204	2,085	2,267	2,379	2,047	1,976	2,104r	2,128	*-10.6*
DEPENDENCY[5]													
Net import dependency	28.3%	36.5%		26.0%	26.4%	31.5%	35.8%	31.8%	41.7%	36.8%	39.1% r	42.1%	
Fossil fuel dependency	89.8%	87.5%		89.4%	88.4%	90.3%	88.6%	85.6%	86.2%	88.7%	88.1% r	86.1%	

1. Percentage change in the second quarter of 2012 compared with a year earlier.
2. Stock fall (+), stock rise (-).
3. Primary supply minus primary demand.
4. Annual transfers should ideally be zero. For manufactured fuels differences occur in the rescreening of coke to breeze.
   For oil and petroleum products differences arise due to small variations in the calorific values used.
5. See article in the December 2010 edition of Energy Trends at: www.decc.gov.uk/en/content/cms/statistics/publications/trends/articles_issue/articles_issue.aspx

1 TOTAL ENERGY

Table 1.3b Supply and use of fuels

Thousand tonnes of oil equivalent

	2011 Quarter 2									2012 Quarter 2 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	3,007	-	14,697	-	11,281	1,216	4,746	-	-	2,863	-	12,904	-	9,718	1,407	4,630	-	-
Imports	4,756	1	14,990	5,860	10,992	421	-	177	-	7,684	13	17,587	6,119	10,349	421	-	288	-
Exports	-88	-42	-9,099	-8,006	-4,614	-41	-	-45	-	-98	-102	-9,547	-8,133	-3,180	-41	-	-14	-
Marine bunkers	-	-	-	-624	-	-	-	-	-	-	-	-	-603	-	-	-	-	-
Stock change[1]	-1,386	-92	+891	+203	-1,838	-	-	-	-	-1,337	+107	-289	+193	-821	-	-	-	-
Primary supply	6,289	-132	21,479	-2,567	15,821	1,595	4,746	132	-	9,112	17	20,655	-2,424	16,067	1,787	4,630	274	-
Statistical difference[2]	-64	-1	-100	-81	-53	-	-	-23	-	-4	-	+5	-18	+135	-	-	-35	-
Primary demand	6,352	-131	21,579	-2,486	15,874	1,595	4,746	155	-	9,116	+17	20,650	-2,406	15,932	1,787	4,630	309	-
Transfers[3]	-	1	-677	+687	-1	-	-407	+407	-	-	-	-661	+587	-	-	-434	+434	-
TRANSFORMATION	-5,949	544	-20,902	20,750	-7,072	-1,097	-4,339	6,834	295	-8,697	494	-19,989	19,709	-4,890	-1,196	-4,197	6,767	295
Electricity generation	-4,606	-168	-	-198	-6,636	-1,097	-4,339	6,834	-	-7,392	-155	-	-228	-4,454	-1,196	-4,197	6,767	-
Heat generation	-65	-13	-	-16	-437	-	-	-	295	-65	-13	-	-16	-437	-	-	-	295
Petroleum refineries	-	-	-20,902	20,964	-	-	-	-	-	-	-	-19,989	19,954	-	-	-	-	-
Coke manufacture	-1,033	939	-	-	-	-	-	-	-	-993	936	-	-	-	-	-	-	-
Blast furnaces	-188	-273	-	-	-	-	-	-	-	-193	-325	-	-	-	-	-	-	-
Patent fuel manufacture	-58	59	-	-	-	-	-	-	-	-54	51	-	-	-	-	-	-	-
Energy industry use	1	166	-	1,365	1,314	-	-	518	24	1	192	-	1,265	1,236	-	-	551	24
Losses	-	41	-	-	313	-	-	556	-	-	35	-	-	237	-	-	607	-
FINAL CONSUMPTION	402	207	-	17,586	7,174	498	-	6,321	275	418	284	-	16,624	9,568	591	-	6,351	274
Iron & steel	9	114	-	-	120	-	-	83	-	9	185	-	1	112	-	-	85	-
Other industries	264	44	-	1,047	1,864	99	-	2,055	210	284	49	-	1,100	1,956	119	-	2,027	210
Transport	2	-	-	13,575	-	251	-	88	-	3	-	-	12,726	-	252	-	88	-
Domestic	122	49	-	414	3,734	84	-	2,060	8	116	49	-	537	5,595	126	-	2,165	8
Other final users	5	-	-	344	1,283	64	-	2,035	57	6	-	-	306	1,732	94	-	1,987	57
Non energy use	-	-	-	2,206	173	-	-	-	-	-	-	-	1,955	173	-	-	-	-

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

Section 2 - Solid Fuels and Derived Gases

Key results show:

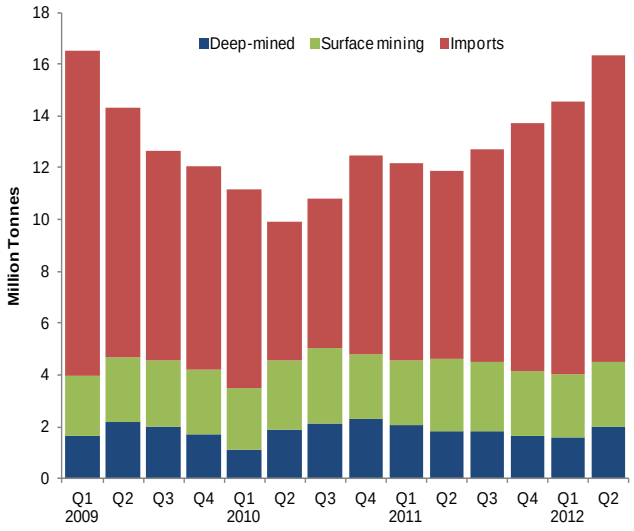
Overall production was down 4.7 per cent (-0.2 million tonnes) compared to quarter 2 2011 with deep-mined output up 7.6 per cent (+0.1 million tonnes) and surface mining output down by 10.4 per cent (-0.3 million tonnes). **(Chart 2.1)**

Coal imports were up 64.3 per cent (+4.6 million tonnes) on levels shown in quarter 2 2011. **(Charts 2.1 and 2.2)**

The demand for coal by electricity generators in the second quarter of 2012, was 60.4 per cent (+4.5 million tonnes) higher than demand in the second quarter of 2011. **(Chart 2.3)**

Total stock levels were down 7.3 per cent (-1.1 million tonnes) to 14.3 million tonnes compared to quarter 2 2011, but were up by 2.1 million tonnes on quarter 1 2012. **(Chart 2.4)**

Chart 2.1 Coal supply



Provisional figures for the second quarter of 2012 show that coal production (including an estimate for slurry) was down 4.7 per cent on the second quarter of 2011 at 4.6 million tonnes. There was a decrease of 10.4 per cent (-0.3 million tonnes) in surface-mined production but an increase of 7.6 per cent (+0.1 million tonnes) in deep-mined production.

Imports of coal in the second quarter of 2012 were 64.3 per cent higher than in the second quarter of 2011 at 11.9 million tonnes. However this level is still below historical trends seen prior to the end of 2008.

In quarter 2 2012, net imports (11.7 million tonnes) made up 82.4 per cent of coal supply, 9.6 percentage points higher compared to the second quarter of 2011 (72.7 per cent).

Table 2A Coal imports by origin

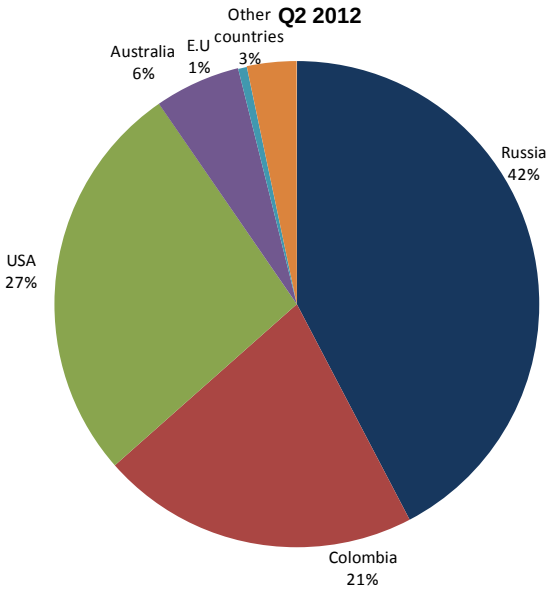
Thousand Tonnes

	2010	2011	2011 Q2	2012 Q2 p
European Union	954	1,155	165	69
Russia	9,585	12,332	2,967	5,016
Colombia	6,317	8,010	1,840	2,506
USA	4,625	6,334	1,245	3,193
Australia	3,449	3,380	703	676
Other Countries	1,611	1,316	294	392
Total imports	26,541	32,527	7,215	11,851

Steam coal, largely for the power stations market, accounted for 88.7 per cent of coal imported in the second quarter of 2012. Steam coal imports increased by 81.3 per cent (4.7 million tonnes) in quarter 2 2012, when compared to the same period a year earlier.

Coking coal imports decreased by 5.5 per cent (-0.1 million tonnes) to 1.3 million tonnes. Imports of anthracite are negligible in comparison with coking coal and steam coal imports.

Chart 2.2 Total coal imports by origin

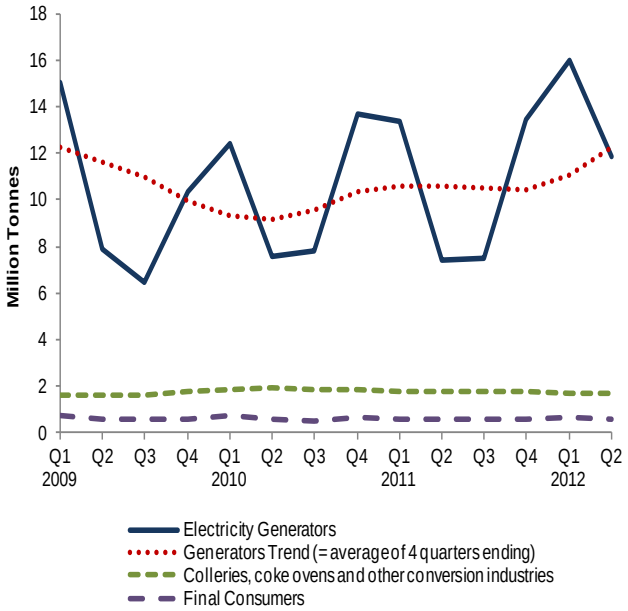


All but 3.5 per cent of UK steam coal imports came from just three countries: Russia (46.1 per cent), the USA (26.5 per cent) and Colombia (23.8 per cent).

Russian and Colombian steam coal imports increased by 65.3 per cent (+1.9 million tonnes) and 36.2 per cent (+0.7 million tonnes), respectively, from quarter 2 2011.

Steam coal imports originating from the USA were more than four times the volumes reported in quarter 2 2011 (0.7 million tonnes).

Chart 2.3 Coal consumption

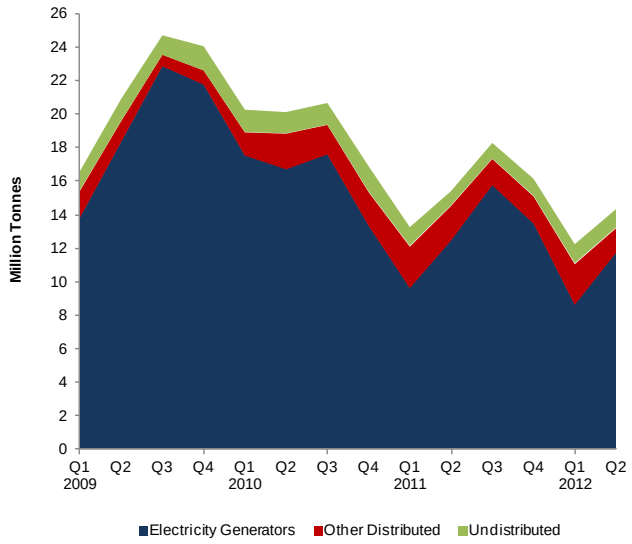


Total demand for coal in the second quarter of 2012, at 14.2 million tonnes, was 45.5 per cent higher than in the second quarter of 2011. Consumption by electricity generators was up by 60.4 per cent to 11.9 million tonnes, reflecting the switch from gas to coal for electricity generation .

Electricity generators accounted for 83.5 per cent of total coal use in the second quarter of 2012; compared with 75.8 per cent a year earlier.

Sales to industrial users increased by 7.5 per cent in quarter 2 2012 while sales to final consumers (as measured by disposals to final consumers) were down by 1.5 per cent.

Chart 2.4 Coal stocks



Coal stocks showed a seasonal rise of 2.1 million tonnes during the second quarter of 2012 and at the end of June 2012 stood at 14.3 million tonnes, 1.1 million tonnes lower than at the end of June 2011.

The level of coal stocks at power stations at the end of the second quarter of 2012 was 11.7 million tonnes, 0.7 million tonnes lower than at the end of June 2011.

Stocks held by producers (undistributed stocks) decreased during the second quarter of 2012 to stand at 1.1 million tonnes, but were 0.1 million tonnes higher than at the end of June 2011.

Relevant tables

Contact for further information:

Mita Kerai
Coal statistics
Tel: 0300 068 5044
E-mail: Mita.Kerai@decc.gsi.gov.uk

Christine Ashworth
Coal statistics
Tel: 0300 068 5046
E-mail: Christine.Ashworth@decc.gsi.gov.uk

2 SOLID FUEL AND DERIVED GASES

Table 2.1 Supply and consumption of coal

Thousand tonnes

	2010	2011	*per cent change*	2010 2nd quarter	2010 3rd quarter	2010 4th quarter	2011 1st quarter	2011 2nd quarter	2011 3rd quarter	2011 4th quarter	2012 1st quarter	2012 2nd quarter p	*per cent change*[1]
SUPPLY													
Indigenous production	18,417	18,627	*+1.1*	4,703	5,164	4,927	4,773	4,835	4,699	4,321	4,155r	4,609	*-4.7*
Deep mined	7,390	7,312	*-1.1*	1,856	2,113	2,284	2,039	1,838	1,793	1,642	1,584	1,978	*+7.6*
Surface mining[2]	10,426	10,580	*+1.5*	2,690	2,894	2,506	2,550	2,805	2,713	2,511	2,458r	2,514	*-10.4*
Other sources	600	735	*+22.5*	157	157	136	184	192	192	167	113	118	*-38.8*
Imports[3]	26,541	32,527	*+22.6*	5,354	5,811	7,692	7,556	7,215	8,199	9,557	10,494	11,851	*+64.3*
Exports[4]	715	491	*-31.3*	160	155	219	133	117	107	135	117	131	*+11.7*
Stock change[5]	+7,206	+836		+142r	-546	+3,786	+3,619	-2,173	-2,888	+2,279	+3,830r	-2,100	
Total supply	51,448	51,500	*+0.1*	10,039	10,274	16,186	15,815	9,760	9,902	16,022	18,363r	14,230	*+45.8*
Statistical difference	-6	-14		-20r	+36	+7	-63	-23	-4	+75	-18r	-8	
Total demand	51,455	51,514	*+0.1*	10,059	10,238	16,178	15,879	9,783	9,906	15,946	18,381r	14,238	*+45.5*
TRANSFORMATION	48,958	49,057	*+0.2*	9,494	9,692	15,524	15,214	9,198	9,323	15,323	17,740r	13,624	*+48.1*
Electricity generation	41,498	41,857	*+0.9*	7,568	7,833	13,695	13,440	7,412	7,481	13,523	16,025r	11,888	*+60.4*
Heat generation[6]	477	477	-	107	97	134	145	106	99	127	145	106	-
Coke manufacture	5,654	5,398	*-4.5*	1,469	1,432	1,389	1,279	1,353	1,428	1,338	1,300	1,301	*-3.8*
Blast furnaces	978	995	*+1.7*	269	221	212	257	246	245	247	199	253	*+2.8*
Patent fuel manufacture	351	331	*-5.7*	81	108	94	93	81	69	87	71r	76	*-6.8*
Energy industry use	5	4		1	1	1	1	1	1	1	1	1	
FINAL CONSUMPTION	2,492	2,453	*-1.6*	564	545	654	664	584	582	623	640r	613	*+4.9*
Iron & steel	60	53		14	15	16	13	13	13	14	12r	13	
Other industries	1,656	1,629	*-1.6*	380	372	438	431	400	393	404	457r	432	*+7.8*
Domestic	718	717	*-0.2*	153	143	186	209	161	159	188	158r	155	*-3.5*
Other final users	58	55	*-5.5*	16	14	14	11	10	17	16	13r	13	*+28.8*
Stocks at end of period													
Distributed stocks	15,366	15,113	*-1.6*	18,849	19,372	15,366	12,186	14,447	17,332	15,113	11,072r	13,214	*-8.5*
Of which:													
Major power producers[7]	13,370	13,496	*+0.9*	16,728	17,613	13,370	9,646	12,484	15,776	13,496	8,656	11,749	*-5.9*
Coke ovens	1,338	1,355	*+1.3*	1,189	1,199	1,338	1,187	1,112	1,324	1,355	1,127	1,018	*-8.5*
Undistributed stocks	1,517	926	*-39.0*	1,274	1,298	1,517	1,071	983	986	926	1,136r	1,096	*+11.4*
Total stocks [8]	16,884	16,039	*-5.0*	20,124r	20,670	16,884	13,257	15,430	18,318	16,039	12,209r	14,309	*-7.3*

1. Percentage change in the second quarter of 2012 compared with a year earlier.
2. The term 'surface mining' has now replaced opencast production. Opencast production is a surface mining technique.
3. For a detailed breakdown of UK Imports by country and grade of coal refer to Table 2.4 Coal imports (internet table only).
4. Trade is counted as an export under three conditions, when it is recorded as an import and is subsequently exported; it enters the UK port with the intention of being imported but due to a change of ownership at the port it is exported without having cleared the port; and when items leave the warehouse and are exported. Trade is not classified as exports when it is resting at a UK port and the UK is not the intended final destination.
5. Stock fall (+), stock rise (-).
6. Heat generation is based on an annual figure and is then split over a quarterly period. The 2012 heat generation will not be published until the end of July 2013. Therefore, the 2011 figure is used as an estimate for 2012.
7. This includes stocks held at ports.
8. For some quarters, closing stocks may not be consistent with stock changes, due to additional stock adjustments

2 SOLID FUEL AND DERIVED GASES

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

Thousand tonnes

	2010	2011	*per cent change*	2010 2nd quarter	2010 3rd quarter	2010 4th quarter	2011 1st quarter	2011 2nd quarter	2011 3rd quarter	2011 4th quarter	2012 1st quarter	2012 2nd quarter p	*per cent change*[3]
SUPPLY													
Indigenous production	4,340	4,342	-	1,113	1,096	1,052	1,029	1,075	1,174	1,064	1,040	1,056	*-1.7*
Coke Oven Coke	3,990	4,021	*+0.8*	1,031	1,011	955	943	991	1,094	993	993	983	*-0.8*
Coke Breeze	32	31	*-3.0*	8	8	8	8	8	8	8	8	8	*-2.7*
Other MSF	318	289	*-8.9*	74	77	89	78	76	73	63	40	66	*-13.8*
Imports	123	47	*(-)*	34	29	39	23	2	3	18	10	17	*(+)*
Exports	518	499	*-3.6*	155	136	94	135	58	112	195	325	143	*(+)*
Stock change[1]	-215	-540		-30	-133	-101	-68	-129	-233	-110	-67	+150	
Transfers	-	-		-	-	-	-	-	-	-	-	-	
Total supply	3,731	3,350	*-10.2*	962	856	895	850	890	833	777	658	1,080	*+21.3*
Statistical difference	-5	-4		-0	4	-7	-6	3r	0	-1	-0	-0	
Total demand	3,735	3,354	*-10.2*	962	852	902	856	888	833	778	658	1,080	*+21.7*
TRANSFORMATION	2,938	2,645	*-10.0*	758	683	696	673	712	660	601	521	857	*+20.3*
Coke manufacture	-	-		-	-	-	-	-	-	-	-	-	
Blast furnaces	2,938	2,645	*-10.0*	758	683	696	673	712	660	601	521	857	*+20.3*
Energy industry use	-	-		-	-	-	-	-	-	-	-	-	
FINAL CONSUMPTION	797	709	*-11.1*	204	169	206	183	175	173	177	137	223	*+27.3*
Iron & steel	423	395	*-6.6*	116	97	100	96	107	99	94	80	147	*+37.7*
Other industries	53	35	*-33.8*	15	7	12	9	6	10	11	5	13	*(+)*
Domestic	321	278	*-13.4*	73	65	95	78	63	65	73	52	64	*+0.9*
Stocks at end of period [2]	719	872	*-10.2*	468	603	719	734	755	773	872	930	793	*+5.0*

1. Stock fall (+), stock rise (-).
2. For some quarters, closing stocks may not be consistent with stock changes, due to additional stock adjustments
3. Percentage change in the second quarter of 2012 compared with a year earlier.

2 SOLID FUEL AND DERIVED GASES

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

GWh

	2010	2011	*per cent change*	2010 2nd quarter	2010 3rd quarter	2010 4th quarter	2011 1st quarter	2011 2nd quarter	2011 3rd quarter	2011 4th quarter	2012 1st quarter	2012 2nd quarter p	*per cent change*[1]
SUPPLY													
Indigenous production	21,923	21,007	*-4.2*	5,835	5,400	5,110	5,183	5,368	5,360	5,096	4,568	5,997	*+11.7*
Coke oven gas	8,822	8,847	*+0.3*	2,331	2,257	2,055	2,103	2,239	2,296	2,209	2,080	2,263	*+1.1*
Blast furnace gas	11,404	10,503	*-7.9*	3,029	2,709	2,672	2,677	2,717	2,645	2,464	2,101	3,315	*+22.0*
Benzole & tars	1,696	1,657	*-2.3*	475	434	383	403	412	419	422	387	419	*+1.5*
Transfers	263	60	*(-)*	28	66	58	32	10	11	7	11	4	*(-)*
Total supply	22,186	21,067	*-5.0*	5,863	5,466	5,168	5,215	5,378	5,371	5,103	4,580	6,001	*+11.6*
Statistical difference	-133	-131		-9	-48	-31	-38	-33	-32	-28	+2	+0	
Total demand	22,318	21,199	*-5.0*	5,871	5,514	5,199	5,253	5,411	5,403	5,131	4,578	6,001	*+10.9*
TRANSFORMATION	8,429	8,038	*-4.6*	2,117	2,131	1,935	2,007	2,103	2,024	1,905	1,226r	1,954	*-7.0*
Electricity generation	7,831	7,441	*-5.0*	1,968	1,981	1,785	1,857	1,953	1,875	1,756	1,077r	1,805	*-7.6*
Heat generation[2]	598	598	-	149	149	149	149	149	149	149	149	149	-
Energy industry use	7,909	7,671	*-3.0*	2,001	1,916	1,922	1,901	1,927	1,967	1,875	1,716	2,234	*+15.9*
Losses	1,953	1,751	*-10.4*	671	495	373	416	477	443	414	190	404	*-15.3*
FINAL CONSUMPTION	4,028	3,739	*-7.2*	1,083	972	969	929	904	969	937	1,446r	1,408	*+55.7*
Iron & steel	2,134	1,883	*-11.8*	563	486	538	479	439	502	462	1,007r	938	*(+)*
Other industries	1,894	1,857	*-2.0*	520	486	431	451	465	466	474	439	470	*+1.1*

1. Percentage change in the second quarter of 2012 compared with a year earlier.

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

Section 3 - Oil and Oil Products

Key results show:

Total indigenous UK production of crude oil and NGLs in the second quarter of 2012 was 12.2 per cent lower than a year ago. (**Chart 3.1**)

Refinery production was lower by 5.1 per cent on last year, with notable decreases in DERV and motor sprit. (**Chart 3.2**)

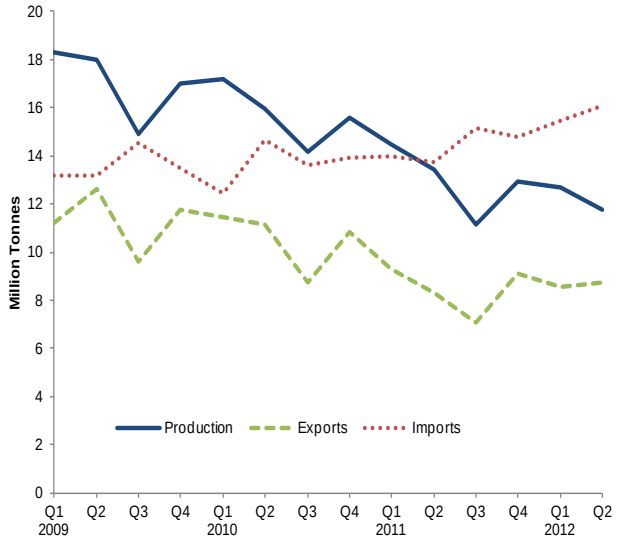
Net imports of crude oil and NGLs in Q2 2012 widened to 6.7 million tonnes, which is the second largest figure since oil production peaked in 1999. This met just over a third of UK's refinery demand. **(Chart 3.3)**

Net exports of petroleum products in Q2 2012 remained high at 1.9 million tonnes, with exports at their highest quarterly level since the third quarter of 2008. **(Chart 3.3)**

Total deliveries of the key transport fuels decreased by 6.3 per cent when compared to the same period last year. In particular, motor spirit decreased by 10.6 per cent in Q2 2012 compared with Q2 2011. Deliveries of motor spirit in April 2012 were particularly low following a substantial increase in March 2012 and reflects the unusual buying pattern in anticipation of the tanker drivers strike in March. **(Chart 3.5)**

Overall stocks of crude oil and petroleum products were down slightly by 0.2 per cent at end of the second quarter of 2012 compared to a year earlier. **(Chart 3.7)**

Chart 3.1 Production and trade of crude oil and NGLs

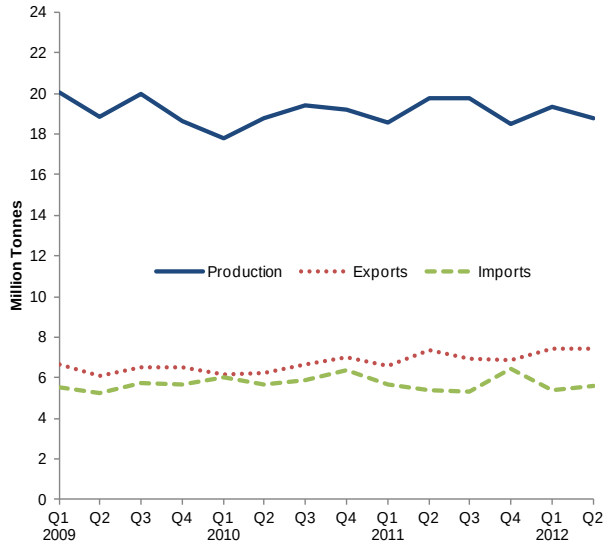


Total indigenous UK production of crude oil and NGLs in the second quarter of 2012 was 12.2 per cent lower than a year earlier. Oil production over the last eighteen months has been impacted by maintenance and other production issues over and above the general decline in North Sea production.

The decrease with indigenous production was accompanied by increased imports in Crude oil and NGL's. Imports increased by 20.2 per cent compared with the same quarter a year earlier. Exports increased by 5.3 per cent.

As a result net imports of crude oil and NGLs widened to 6.7 million tonnes in Q2 2012, the second largest figure since oil production peaked in 1999.

Chart 3.2 Production and trade of petroleum products

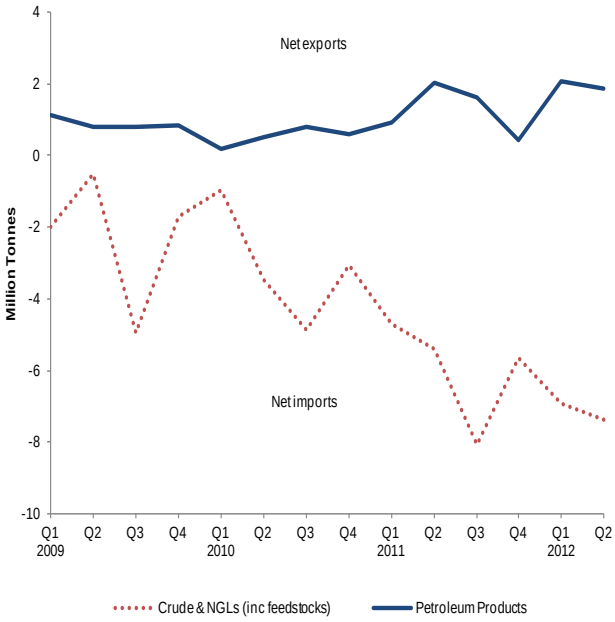


Refinery production in the latest quarter was down 5.1 per cent on the same quarter of last year.

Within this, motor spirit and DERV were showing the largest absolute changes, decreasing by 7.6 and 7.8 per cent respectively.

The decrease in production was accompanied by an increase in imports, up by 4.5 per cent compared with Q2 2011. Within this, motor spirit and DERV were showing the largest absolute increases, up 17.6 and 13.1 per cent respectively. Exports of petroleum products increased by 1.4 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 40 per cent in Q2 2012, an increase from 28 per cent in the same quarter in 2011.

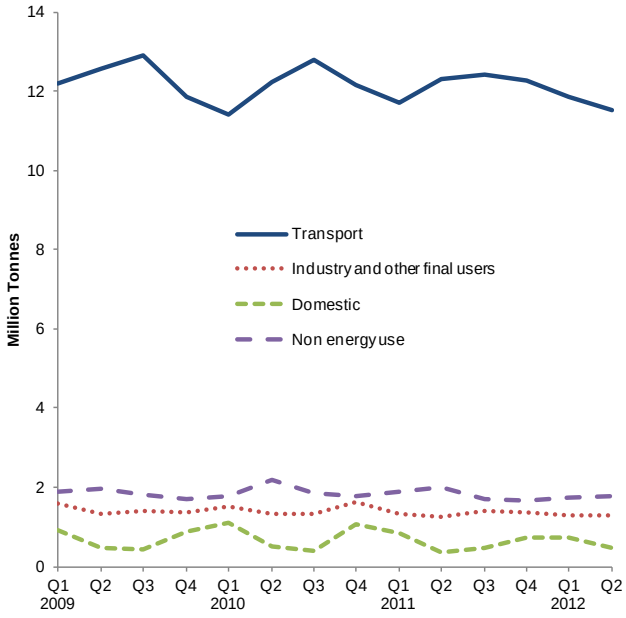
Crude oil import dependence is on an increasing trend as the production from the UKCS declines. This decline has been magnified by ongoing production issues in the North Sea.

The principal source of the UK's crude oil imports is Norway.

Petroleum products net import dependence was minus 11 per cent (net exporter) in Q2 2012, relatively unchanged from the same quarter in 2012.

Whilst the UK remains a net exporter of petroleum products, 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 27 per cent compared with 20 per cent in Q2 2011. Whist the dependence rate for aviation fuel remained unchanged.

Chart 3.4 Final consumption of oil



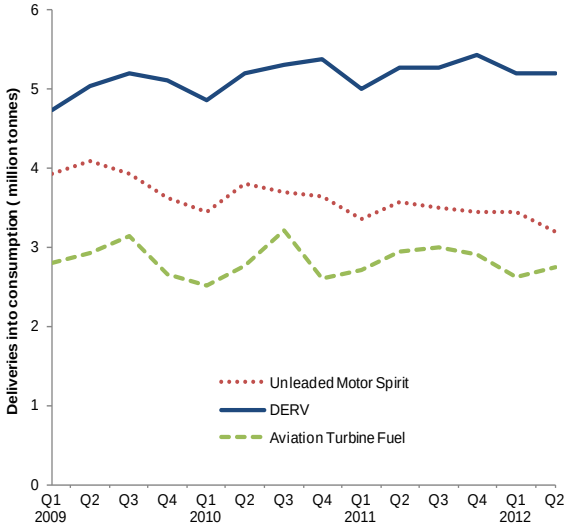
Final consumption in the oil sector is slightly seasonal with different products peaking at different times of the year. Consumption of domestic fuels for heating peaks in Q1 and Q4 each year, and consumption of aviation fuels is higher in Q2 and Q3.

Transport accounts for about three-quarters of the UK final consumption.

Overall final consumption of petroleum products was down by 5.4 per cent on the same quarter of last year. Within this: domestic consumption, primarily used for heating, was higher by almost 30 per cent from a warm spring in 2011 contrasting with a particularly cold 2012.

Transport use was lower by 6.3 per cent. Transport fuels are examined in more detail below.

Chart 3.5 Demand for key transport fuels



As mentioned above, transport fuels decreased by 6.3 per cent. Within this, motor spirit decreased by 10.6 per cent in Q2 2012 compared with Q2 2011. Deliveries of motor spirit in April 2012 were particularly low following a substantial increase in March 2012 and reflects the unusual buying pattern in anticipation of the tanker drivers strike in March.

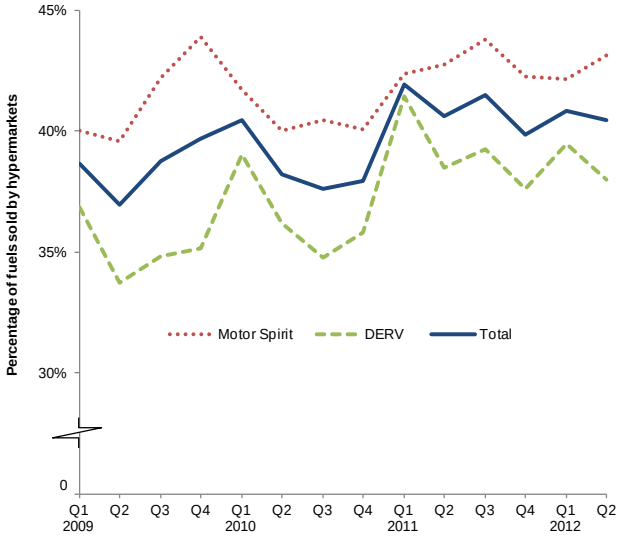
In the first half of 2012, motor spirit deliveries were 4.3 per cent lower compared with the same period a year earlier. This is closer to the long term trend with deliveries decreasing by almost 4 per cent year on year since 2000.

DERV deliveries were down 1.6 per cent in Q2 2012 compared with Q1 2011. As with Motor Sprit, demand during this period was affected in anticipation of a tanker driver's strike**.**

In the first half of 2012, DERV deliveries were 1.2 per cent higher compared with the same period a year earlier - similar to the yearly increase seen in 2011.

Deliveries of aviation fuel were down 6.8 per cent.

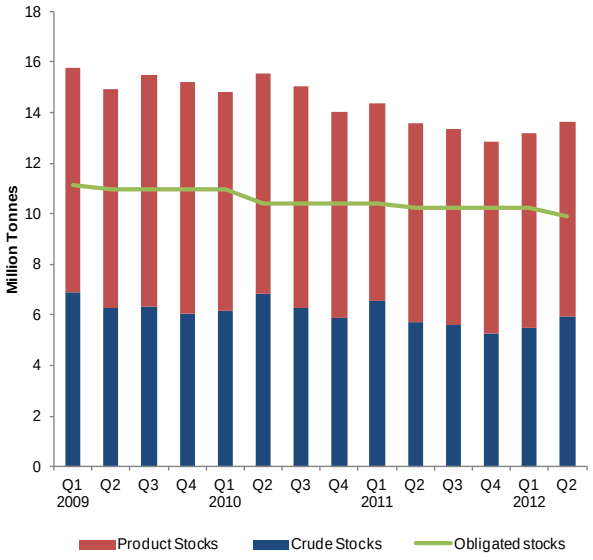
Chart 3.6 Hypermarket share of road fuel sales



The retail share of motor spirit and diesel sold at hypermarkets stood at 43 per cent, and 38 per cent respectively.

Hypermarket sales of motor spirit were lower by 9.8 per cent and DERV sales were 2.7 per cent lower. These decreases are consistent with overall sales being lower in Q2 2012.

Chart 3.7 UK oil stocks



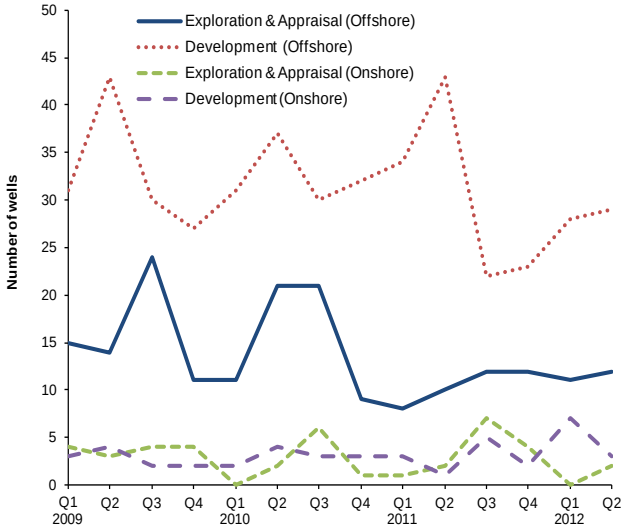
Total stocks for the UK in Q2 2012 were relatively unchanged (down 0.2 per cent) compared with Q2 2011

Chart 3.7 combines stocks of products with the product equivalent of stocks of crude oil to give an overall level of UK stocks of key products. At the end of the second quarter of 2012, the UK had stocks equal to around 84 days of consumption.

On 23 June 2011, the IEA called for the release of emergency oil stocks in reaction to the short-fall in Libyan production. The UK directed petroleum companies to make available to the market some 3 million barrels of oil (400 thousand tonnes). Petroleum companies were not required to restock until January 2012.

Companies also lowered their stocks as the market forecasts for middle distillate products indicated future prices lower than current prices.

Chart 3.8 Drilling activity on the UKCS



There were 12 exploration and appraisal wells started offshore in the second quarter of 2012, compared to 10 in the corresponding quarter of 2011.

There were 29 development wells drilled offshore in the second quarter of 2012, compared to 43 in the corresponding quarter of 2011.

There were 2 exploration and appraisal wells started onshore in the second quarter of 2012, the same number as in the corresponding quarter of 2011.

There were 3 development wells drilled onshore in the second quarter of 2012, compared to 1 in the corresponding quarter of 2011.

Relevant tables

Contacts for further information:

Clive Evans
Oil and Gas Statistics Team
Tel. 0300 068 5040
E-mail: Clive.Evans@decc.gsi.gov.uk

Charanjit Ransi
Oil and Gas Statistics Team
Tel. 0300 068 5055
E-mail: Charanjit.Ransi@decc.gsi.gov.uk

3 OIL AND OIL PRODUCTS

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

Thousand tonnes

	2010	2011	*per cent change*	2010 2nd quarter	2010 3rd quarter	2010 4th quarter	2011 1st quarter	2011 2nd quarter	2011 3rd quarter	2011 4th quarter	2012 1st quarter	2012 2nd quarter p	*per cent change*[8]
SUPPLY													
Indigenous production[2]	62,962	51,972	*-17.5*	15,985	14,185	15,595	14,485	13,423	11,117	12,949	12,690r	11,791	*-12.2*
Crude oil	58,047	48,571	*-16.3*	14,677	13,106	14,447	13,504	12,528	10,445	12,095	11,852r	11,097	*-11.4*
NGLs[3]	4,915	3,401	*-30.8*	1,307	1,079	1,148	981	895	672	854	838r	694	*-22.5*
Imports[4]	54,587	57,586	*+5.5*	14,639	13,617	13,901	13,963	13,717	15,143	14,764	15,452r	16,091	*+17.3*
Crude oil & NGLs	48,081	50,582	*+5.2*	13,050	12,010	11,945	12,034	12,046	13,183	13,319	13,973r	14,481	*+20.2*
Feedstocks	6,505	7,003	*+7.7*	1,588	1,607	1,956	1,929	1,671	1,960	1,444	1,479	1,611	*-3.6*
Exports[4]	42,196	33,745	*-20.0*	11,161	8,742	10,818	9,265	8,319	7,059	9,101	8,535r	8,726	*+4.9*
Crude Oil & NGLs	39,239	29,836	*-24.0*	10,338	8,039	10,086	8,303	7,376	5,988	8,170	7,585r	7,763	*+5.3*
Feedstocks	2,957	3,908	*+32.2*	823	703	732	963	943	1,071	931	949	964	*+2.2*
Stock change[5]	-39	+611		-553	+184	+426	-654	+815	+365	+85	-252r	-266	
Transfers[6]	-2,074	-1,986		-635	-483	-449	-492	-567	-502	-425	-633r	-560	
Total supply	73,239	74,438	*+1.6*	18,274	18,761	18,656	18,036	19,068	19,063	18,271	18,722r	18,330	*-3.9*
Statistical difference[7]	+39	-271		-48	-92	+89	-94	-84	-219	+125	-11r	+11	
Total demand	73,200	74,709	*+2.1*	18,322	18,854	18,566	18,130	19,152	19,282	18,146	18,734r	18,319	*-4.4*
TRANSFORMATION	73,200	74,709	*+2.1*	18,322	18,854	18,566	18,130	19,152	19,282	18,146	18,734r	18,319	*-4.4*
Petroleum refineries	73,200	74,709	*+2.1*	18,322	18,854	18,566	18,130	19,152	19,282	18,146	18,734r	18,319	*-4.4*

1. As there is no use made of primary oils and feedstocks by industries other than the oil and gas extraction and petroleum refining industries, other industry headings have not been included in this table. As such, this table is a summary of the activity of what is known as the Upstream oil industry.
2. Includes offshore and onshore production.
3. Natural Gas Liquids (NGLs) are condensate and petroleum gases derived at onshore treatment plants.
4. Foreign trade as recorded by the Petroleum Industry which may differ from the figures published by HM Revenue and Customs in the Overseas Trade Statistics. Data are subject to further revision as revised information on imports and exports becomes available.
5. Stock fall (+), stock rise (-). Stocks include stocks held at refineries, at oil terminals and also those held in tanks and partially loaded vessels at offshore facilities.
6. Mostly direct disposals to petrochemical plants.
7. Total supply minus total demand.
8. Percentage change in the second quarter of 2012 compared with a year earlier.

3 OIL AND OIL PRODUCTS

Table 3.2 Supply and use of petroleum products

Thousand tonnes

	2010	2011	*per cent change*	2010 2nd quarter	2010 3rd quarter	2010 4th quarter	2011 1st quarter	2011 2nd quarter	2011 3rd quarter	2011 4th quarter	2012 1st quarter	2012 2nd quarter p	*per cent change*[1]
SUPPLY													
Indigenous production[2]	75,177	76,637	*+1.9*	18,807	19,414	19,193	18,585	19,780	19,739	18,533	19,339r	18,778	*-5.1*
Imports[3]	23,979	22,804	*-4.9*	5,690	5,861	6,405	5,678	5,360	5,327	6,440	5,382r	5,602	*+4.5*
Exports[3]	26,065	27,800	*+6.7*	6,200	6,669	7,005	6,613	7,364	6,957	6,867	7,419r	7,464	*+1.4*
Marine bunkers	2,139	2,296	*+7.3*	534	597	539	554	594	615	533	454	572	*-3.6*
Stock change[4]	+603	+188		-43	+75	+268	+224	+183	-21	-199	+263r	+185	
Transfers[5]	-232	-155		-43	-63	-74	-49	-29	-2	-74	+6	-30	
Total supply	71,323	69,378	*-2.7*	17,677	18,022	18,249	17,271	17,336	17,471	17,300	17,117r	16,498	*-4.8*
Statistical difference[6]	+150	-109		-37	+61	-9	+16	-76	+30	-78	-52r	-22	
Total demand	71,173	69,487	*-2.4*	17,714	17,961	18,258	17,255	17,413	17,441	17,378	17,169r	16,519	*-5.1*
TRANSFORMATION	1,211	895	*-26.1*	231	282	322	268	194	205	228	271r	236	*+21.6*
Electricity generation	1,143	832	*-27.2*	215	266	306	252	178	190	213	255r	221	*+23.9*
Heat generation	63	63	*-0.5*	16	16	16	16	16	16	16	16	16	*+0.0*
Blast furnaces	4	0		0	-	-	-	-	-	-	-	-	
Energy industry use	4,967	4,918	*-1.0*	1,243	1,327	1,316	1,203	1,293	1,258	1,164	1,268r	1,211	*-6.3*
Petrolem Refineries	4,474	4,391	*-1.9*	1,120	1,204	1,193	1,072	1,162	1,127	1,030	1,137	1,080	*-7.0*
Blast Furnaces	-	-		-	-	-	-	-	-	-	-	-	
Others	493	527	*+6.9*	123	123	123	131	131	131	134	131	131	-
FINAL CONSUMPTION	64,996	63,674	*-2.0*	16,240	16,353r	16,620r	15,784r	15,926r	15,978r	15,986r	15,631r	15,072r	*-5.4*
Iron & steel	5	4	*-1.9*	1	1	3	1	0	1	2	1	1	*(+)*
Other industries	4,647	4,076	*-12.3*	1,013	1,116	1,309	1,035	943	1,098	1,001	1,011r	995	*+5.6*
Transport	48,580	48,685	*+0.2*	12,245	12,777	12,158	11,706	12,304	12,413	12,262	11,865r	11,535	*-6.3*
Domestic	3,083	2,401	*-22.1*	514	398	1,068	859	370	460	712	734r	480	*+29.7*
Other final users	1,151	1,252	*+8.8*	298	222	322	284	316	299	352	277r	281	*-11.3*
Non energy use	7,529	7,255	*-3.6*	2,169	1,838	1,761	1,900	1,992	1,706	1,656	1,743r	1,780	*-10.7*

1. Percentage change in the second quarter of 2012 compared with a year earlier.
2. Includes refinery production and petroleum gases extracted as products during the production of oil and gas.
3. Foreign trade as recorded by the Petroleum Industry which may differ from the figures published by HM Revenue and Customs in the Overseas Trade Statistics. Data are subject for further revision as revised information on imports and exports becomes available.
4. Stock fall (+), stock rise (-).
5. Mainly transfers from product to feedstock.
6. Total supply minus total demand.

3 OIL AND OIL PRODUCTS

Table 3.3 Supply and use of petroleum products - annual data

Thousand tonnes

	2010									2011								
	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]	75,177	19,918	15,332	9,505	5,781	7,525	7,283	2,570	7,264	76,637	19,856	16,801	8,683	6,411	7,907	7,253	2,377	7,348
Imports [5]	23,979	3,137	7,709	705	7,353	1,020		972	2,721	22,804	3,398	7,806	1,242	6,881	808	195	618	1,858
Exports [5]	26,065	8,619	2,121	4,358	1,487	4,895	732	191	3,662	27,800	9,363	3,127	4,667	1,210	5,140	820	173	3,299
Marine bunkers	2,139	-	-	807	-	1,332	-	-	-	2,296	-	-	753	-	1,543	-	-	-
Stock change [6]	+603	+299	+61	+95	+116	+115	-15	-5	-63	+188	+39	+83	+43	-28	-15	-11	-2	80
Transfers [7]	-232	-30	-180	+81	-649	-15	+0	+655	-94	-155	-39	-510	+441	-518	49	+46	+455	-79
Total supply	71,323	14,705	20,802	5,220	11,114	2,419	6,898	4,000	6,166	69,378	13,891	21,053	4,988	11,535	2,068	6,662	3,274	5,908
Statistical difference [8]	+150	+103	+62	-7	-2	+15	-20	-12	+12	-109	-4	+62	-103	-39	-3	+8	-13	-15
Total demand	71,173	14,602	20,740	5,227	11,116	2,404	6,918	4,012	6,154	69,487	13,895	20,991	5,091	11,574	2,071	6,654	3,288	5,923
TRANSFORMATION	1,211	-	-	73	-	598	331	-	210	895	-	-	63	-	426	358	-	48
Electricity generation	1,143	-	-	67	-	541	325	-	210	832	-	-	58	-	374	353	-	48
Heat generation	63	-	-	5	-	52	5	-	-	63	-	-	5	-	52	5	-	-
Petroleum refineries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coke manufacture	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Blast furnaces	4	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Patent fuel manufacture	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Energy industry use	4,967	-	-	493	-	611	2,462	-	1,401	4,918	-	-	527	-	660	2,308	-	1,423
FINAL CONSUMPTION	64,996	14,602	20,740	4,662	11,116	1,195	4,125	4,012	4,543	63,674	13,895	20,991	4,502	11,574	985	3,988	3,288	4,452
Iron & steel	5	-	-	-	-	5	-	-	-	4	-	-	-	-	4	-	-	-
Other industries	4,647	-	-	2,056	-	463	639	1,489	-	4,076	-	-	1,837	-	121	804	1,314	-
Transport	48,580	14,602	20,740	1,384	11,116	611	106	-	21	48,685	13,895	20,991	1,411	11,574	695	98	-	21
Domestic	3,083	-	-	165	-	-	394	2,523	-	2,401	-	-	142	-	-	286	1,973	-
Other final users	1,151	-	-	915	-	116	120	-	-	1,252	-	-	986	-	165	101	-	-
Non energy use	7,530	-	-	142	-	-	2,865	-	4,522	7,255	-	-	125	-	-	2,699	-	4,431

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

3 OIL AND OIL PRODUCTS

Table 3.4 Supply and use of petroleum products - latest quarter

Thousand tonnes

	2011 2nd quarter									2012 2nd quarter p								
	Total Petroleum Products	Motor spirit	DERV[9]	Gas oil[1]	Aviation turbine fuel	Fuel oils	Petroleum gases[2]	Burning oil	Other products[3]	Total Petroleum Products	Motor spirit	DERV[9]	Gas oil[1]	Aviation turbine fuel	Fuel oils	Petroleum gases[2]	Burning oil	Other products[3]
SUPPLY																		
Indigenous Production[4]	19,780	5,026	4,328	2,153	1,763	2,191	2,049	418	1,852	18,778	4,643	3,990	2,403	1,760	2,064	1,859	448	1,612
Imports[5]	5,360	798	1,915	307	1,448	253	49	66	523	5,602	938	2,166	221	1,379	116	86	93	602
Exports[5]	7,364	2,312	873	1,201	364	1,583	238	13	780	7,464	2,337	765	1,242	371	1,653	365	19	711
Marine bunkers	594	-	-	204	-	389	-	-	-	572	-	-	226	-	346	-	-	-
Stock change[6]	+183	+25	+20	-17	+102	+33	-31	+30	+22	+185	-5	-80	+33	+99	+85	-24	+49	+27
Transfers[7]	-29	+53	-140	+124	-12	+15	+8	-3	-74	-30	-54	-115	+82	-107	+52	-	+98	+14
Total supply	17,336	3,589	5,250	1,162	2,936	520	1,839	498	1,543	16,498	3,185	5,195	1,271	2,760	318	1,556	669	1,544
Statistical difference[8]	-76	+18	-31	-33	-18	+12	+2	-3	-24	-22	-8	-1	-17	+7	+3	+7	+2	-14
Total demand	17,413	3,571	5,282	1,195	2,954	507	1,837	500	1,567	16,519	3,193	5,196	1,288	2,753	315	1,549	667	1,558
TRANSFORMATION	194	-	-	12	-	92	89	-	-	236	-	-	13	-	91	90	-	43
Electricity generation	178	-	-	11	-	79	88	-	-	221	-	-	12	-	78	88	-	43
Heat generation	16	-	-	1	-	13	1	-	-	16	-	-	1	-	13	1	-	-
Petroleum refineries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coke manufacture	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Blast furnaces	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Patent fuel manufacture	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Energy industry use	1,293	-	-	131	-	168	619	-	375	1,211	-	-	131	-	128	546	-	406
FINAL CONSUMPTION	15,926	3,571	5,281	1,052	2,954	247	1,128	500	1,192	15,072	3,193	5,196	1,144	2,753	97	913	667	1,109
Iron & steel	0	-	-	-	-	0	-	-	-	1	-	-	-	-	1	-	-	-
Other industries	943	-	-	424	-	66	254	199	-	995	-	-	547	-	22	158	268	-
Transport	12,304	3,571	5,281	313	2,954	152	26	-	6	11,535	3,193	5,196	309	2,753	56	23	-	5
Domestic	370	-	-	19	-	-	50	301	-	480	-	-	16	-	-	64	399	-
Other final users	316	-	-	267	-	29	21	-	-	281	-	-	237	-	18	26	-	-
Non energy use	1,992	-	-	30	-	-	777	-	1,185	1,780	-	-	35	-	-	641	-	1,104

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

3 OIL AND OIL PRODUCTS

Table 3.5 Demand for key petroleum products[1]

Thousand tonnes

	2010	2011	*per cent change*	2010 2nd quarter	2010 3rd quarter	2010 4th quarter	2011 1st quarter	2011 2nd quarter	2011 3rd quarter	2011 4th quarter	2012 1st quarter	2012 2nd quarter p	*per cent change [2]*
MOTOR SPIRIT													
Total sales	14,602	13,895	*-4.8*	3,802	3,707	3,646	3,363	3,571	3,502	3,458	3,447r	3,193	*-10.6*
By seller:													
Retail sales: [3]	14,082	13,430	*-4.6*	3,661	3,576	3,518	3,269	3,443	3,379	3,340	3,357r	3,078	*-10.6*
hypermarkets [4]	5,710	5,749	*+0.7*	1,466	1,446	1,410	1,386	1,472	1,479	1,412	1,416	1,328	*-9.8*
refiners/other traders	8,372	7,681	*-8.3*	2,195	2,130	2,108	1,883	1,971	1,900	1,928	1,941r	1,750	*-11.2*
Commercial sales [5]	520	465	*-10.5*	141	131	128	95	129	123	119	89r	115	*-11.0*
By grade:													
4-Star/Leaded/LRP [6]	11	12	*+7.2*	3	3	3	2	3	3	3	2r	3	*+5.1*
Super Premium Unleaded	646	560	*-13.4*	138	149	209	114	122	128	196	108r	108	*-11.4*
Premium Unleaded/ULSP [7]	13,944	13,324	*-4.5*	3,661	3,556	3,435	3,247	3,446	3,371	3,260	3,336r	3,082	*-10.6*
GAS DIESEL OIL													
Total sales	25,968	26,082	*+0.4*	6,423	6,694	6,624	6,311	6,477	6,680	6,615	6,563r	6,485	*+0.1*
DERV fuel	20,740	20,991	*+1.2*	5,198	5,305	5,378	4,999	5,282	5,280	5,431	5,209r	5,196	*-1.6*
Retail sales: [3]	13,157	13,549	*+3.0*	3,286	3,536	3,442	2,998	3,459	3,522	3,570	3,223r	3,405	*-1.6*
hypermarkets [4]	4,781	5,300	*+10.9*	1,190	1,228	1,233	1,243	1,331	1,383	1,343	1,272r	1,295	*-2.7*
refiners/other traders	8,376	8,248	*-1.5*	2,096	2,307	2,209	1,755	2,128	2,138	2,226	1,950r	2,110	*-0.9*
Commercial sales [5]	7,583	7,442	*-1.9*	1,912	1,770	1,936	2,001	1,822	1,758	1,861	1,986r	1,792	*-1.7*
Other gas diesel oil [8]	5,228	5,091	*-2.6*	1,225	1,389	1,246	1,312	1,195	1,400	1,184	1,354r	1,288	*+7.8*
AVIATION FUELS													
Total sales	11,137	11,594	*+4.1*	2,776	3,230	2,604	2,722	2,960	3,005	2,907	2,636	2,758	*-6.8*
Aviation spirit	21	21	*-3.2*	6	7	4	4	6	6	4	3	5	*-21.8*
Aviation turbine fuel	11,116	11,574	*+4.1*	2,770	3,223	2,600	2,718	2,954	2,999	2,902	2,633	2,753	*-6.8*
FUEL OIL													
Total Sales	1,793	1,411	*-21.3*	444	318	572	332	340	354	387	310r	187	*-44.8*
Light	685	713	*+4.1*	86	131	335	132	183	176	221	106r	108	*-40.9*
Medium	119	124	*+3.8*	16	37	23	35	28	35	25	34r	21	*-27.1*
Heavy	989	575	*-41.8*	341	150	214	165	128	142	140	169r	58	*(-)*

1. Monthly data for inland deliveries of oil products are available - See DECC website: www.decc.gov.uk/en/content/cms/statistics/source/oil/oil.aspx
2. Percentage change in the second quarter of 2012 compared with a year earlier.
3. Retail sales are those deliveries made to garages etc. mainly for resale to final consumers.
4. Data for sales by hypermarket companies are collected by a separate reporting system, but are consistent with the main data collected from companies.
5. Commercial sales are those deliveries made direct to a consumer for use in their own business, e.g. to bus and coach depots.
6. Sales of leaded petrol ceased from 31st December 1999, with Lead Replacement Petrol being introduced as a replacement fuel.
7. ULSP is Ultra Low Sulphur Petrol introduced during the second half of 2000 and first half of 2001 as a replacement for ordinary Premium grade unleaded petrol.
8. This includes gas diesel oil used for other purposes such as heating and middle distillate feedstock destined for use in the petrochemical industry.

3 OIL AND OIL PRODUCTS

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

Thousand tonnes

		Crude oil and refinery process oil				Petroleum products					Total stocks		
		Refineries[2]	Terminals[3]	Offshore[4]	Total[5]	Light distillates[6]	Kerosene & gas/diesel[7]	Fuel oils	Other products[8]	Total products	Net bilaterals[9]	Stocks in UK[10]	Total stocks
2009		3,848	1,136	682	6,033	1,157	6,256	797	963	9,173	2,728	12,479	15,206
2010		4,110	1,049	520	5,889	1,144	5,415	687	917	8,164	2,563	11,490	14,053
2011		3,889	694	540	5,274	849	5,230	645	845	7,569	2,100	10,743	12,843
Per cent change		*-5.4*	*-33.8*	*+3.7*	*-10.4*	*-25.8*	*-3.4*	*-6.1*	*-7.9*	*-7.3*	*-18.0*	*-6.5*	*-8.6*
2010	2nd quarter	4,283	1,571	449	6,811	1,060	5,904	882	881	8,727	2,858	12,680	15,538
	3rd quarter	4,133	1,327	617	6,257	1,212	5,908	697	948	8,765	2,841	12,181	15,022
	4th quarter	4,110	1,049	520	5,889	1,144	5,415	687	917	8,164	2,563	11,490	14,053
2011	1st quarter	4,402	1,509	553	6,580	1,102	5,231	658	815	7,806	2,516	11,869	14,386
	2nd quarter	3,959	1,093	505	5,707	1,068	5,356	659	806	7,888	2,834	10,761	13,596
	3rd quarter	3,917	818	627	5,574	1,045	5,263	633	848	7,789	2,647	10,715	13,362
	4th quarter	3,889	694	540	5,274	849	5,230	645	845	7,569	2,100	10,743	12,843
2012	1st quarter	4,006	861	543r	5,501r	884	5,291	683	853	7,711	2,277	10,935r	13,212r
	2nd quarter p	3,826	1,223	646	5,942	878	5,288	618	843	7,627	2,431	11,138	13,569
Per cent change[11]		*-3.3*	*+11.8*	*+27.8*	*+4.1*	*-17.7*	*-1.3*	*-6.2*	*+4.7*	*-3.3*	*-14.2*	*+3.5*	*-0.2*

1. Stocks held at refineries, terminals and power stations. Stocks in the wholesale distribution system and certain stocks at offshore fields (UK Continental Shelf [UKCS]), and others held under approved bilateral agreements are also included.
2. Stocks of crude oil, NGLs and process oil at UK refineries.
3. Stocks of crude oil and NGLs at UKCS pipeline terminals.
4. Stocks of crude oil in tanks and partially loaded tankers at offshore field (UKCS).
5. Includes process oils held under approved bilateral agreements.
6. Motor spirit and aviation spirit.
7. Aviation turbine fuel, burning oil, gas oil, DERV fuel, middle distillate feedstock (mdf) and marine diesel oil.
8. Ethane, propane, butane, other petroleum gases, naphtha (ldf), industrial white spirit, bitumen, petroleum wax, lubricating oil, petroleum coke and miscellaneous products.
9. The difference between the stocks held abroad for UK use under approved bilateral agreements and the equivalent stocks held in the UK for foreign use.
10. Stocks held in the national territory or elsewhere on the UKCS.
11. Percentage change in the second quarter of 2012 compared with a year earlier.

3 OIL AND OIL PRODUCTS

Table 3.7 Drilling activity[1] on the UKCS

Number of wells started

		Offshore				Onshore	
				Exploration &		Exploration &	
		Exploration	Appraisal	Appraisal	Development[2]	Appraisal	Development[2]
2009		23	41	64	131	15	11
2010		28	34	62	130	9	12
2011		14	28	42	122	14	11
Per cent change		*-50.0*	*-17.6*	*-32.3*	*-6.2*	*+55.6*	*-8.3*
2010	2nd quarter	8	13	21	37	2	4
	3rd quarter	9	12	21	30	6	3
	4th quarter	4	5	9	32	1	3
2011	1st quarter	3	5	8	34	1	3
	2nd quarter	2	8	10	43	2	1
	3rd quarter	5	7	12	22	7	5
	4th quarter	4	8	12	23	4	2
2012	1st quarter	5	6	11	28r	-	7r
	2nd quarter p	5	7	12	29	2	3
Per cent change[3]		*(+)*	*-12.5*	*+20.0*	*-32.6*	-	*(+)*

1. Including sidetracked wells

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

3. Percentage change in the second quarter of 2012 compared with a year earlier

Section 4 - Gas

Key results show:

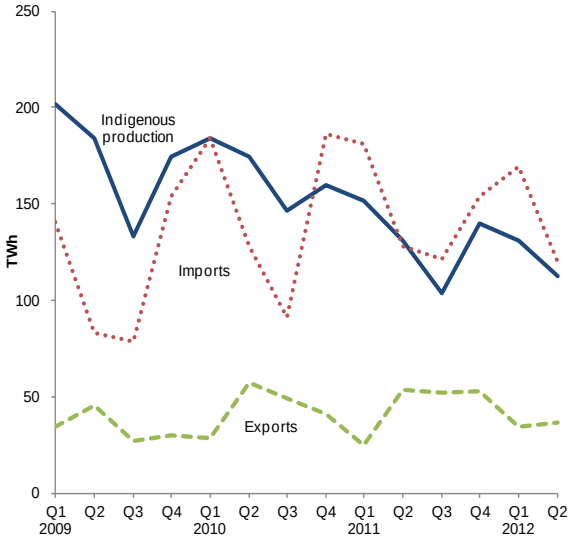
Gross UK production of natural gas in Q2 2012 was 13.9 per cent lower than in Q2 2011 **(Chart 4.1).** Within this, production of associated gas decreased by 25.1 per cent, whilst dry gas production increased by 3.2 per cent. **(Chart 4.2).**

Imports of gas decreased by 5.8 per cent in Q2 2012 compared with the same quarter in 2011, with shipped imports of LNG falling by 42.0 per cent, reflecting the completion of maintenance work on Norwegian pipelines. **(Chart 4.4)**.

Pipeline imports increased by 55.8 per cent and made up 60.2 per cent of all imports. **(Chart 4.5)**

Overall UK gas demand increased slightly by 0.4 per cent in Q2 2012 compared to Q2 2011. Within this, domestic consumption was up 49.8 per cent, whilst electricity generation was lower by 32.9 per cent. **(Chart 4.6)**

Chart 4.1 Production and imports and exports of natural gas

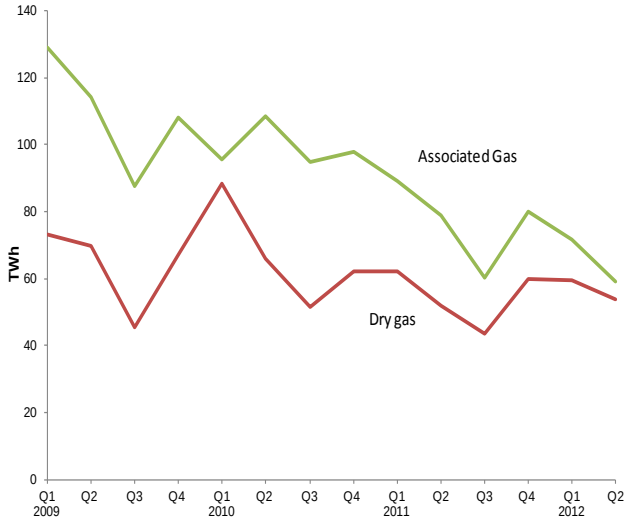


Total indigenous UK production of natural gas in Q2 2012 was 13.9 per cent lower than in the same quarter a year earlier.

Production levels throughout 2011 were significantly lower than anticipated due to an unusual coincidence of planned and unplanned maintenance work. This effect has continued into 2012. In general terms UKCS production is continuing to decline year on year, and over the last ten years UKCS production has decreased by around 8 per cent on average per annum.

Imports fell by 5.8 per cent in Q2 2012 compared with the same quarter in 2011, whilst exports also decreased by 31.1 per cent, the highest quarterly decrease since 2005. As a result, net imports in Q2 2012 increased to 83 TWh, up 12.4 per cent on the same quarter in 2011.

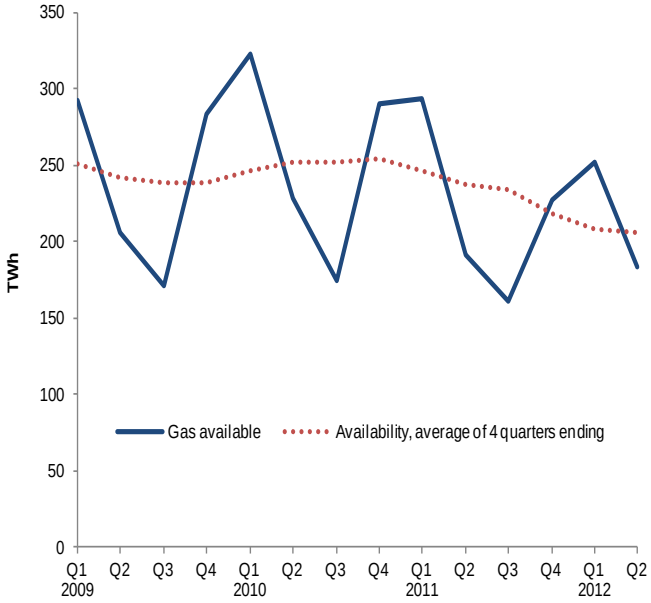
Chart 4.2 Production of dry gas and associated gas



Associated gas production in Q2 2012 decreased by 25.1 per cent from 79TWh in Q2 2011 to 59TWh. The main driver behind this was the gas leak at the Elgin platform.

Dry gas production increased by 3.2 per cent from 52 TWh in Q2 2011 to 54 TWh in Q2 2012.

Chart 4.3 Gas availability

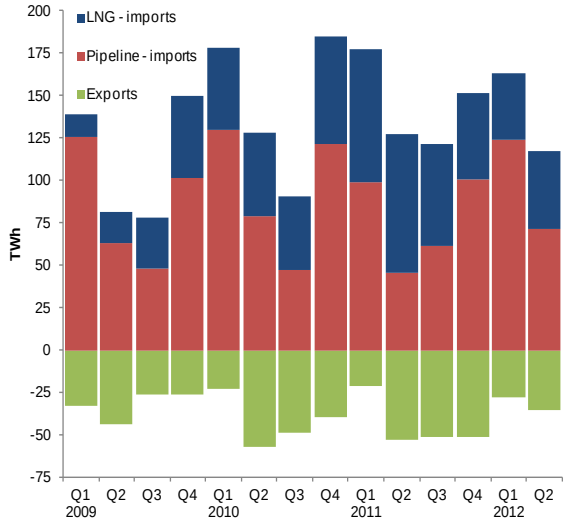


Gas available at terminals is equal to the gross gas production, minus producers own use, plus net imports.

Gas availability is seasonal, mirroring gas demand, and peaks during Q1 and Q4 each year. Gas availability in Q2 2012 fell by 4.4 per cent compared to Q2 2011 to 183 TWh.

The average availability over 4 rolling quarters had remained fairly constant up to 2010. However, in 2011, gas availability was lower than average, reflecting lower gas demand driven by the milder weather in 2011. This trend has continued into the first half of 2012 with gas availability being 10 per cent lower compared with the same period last year, reflecting lower demand from electricity generators.

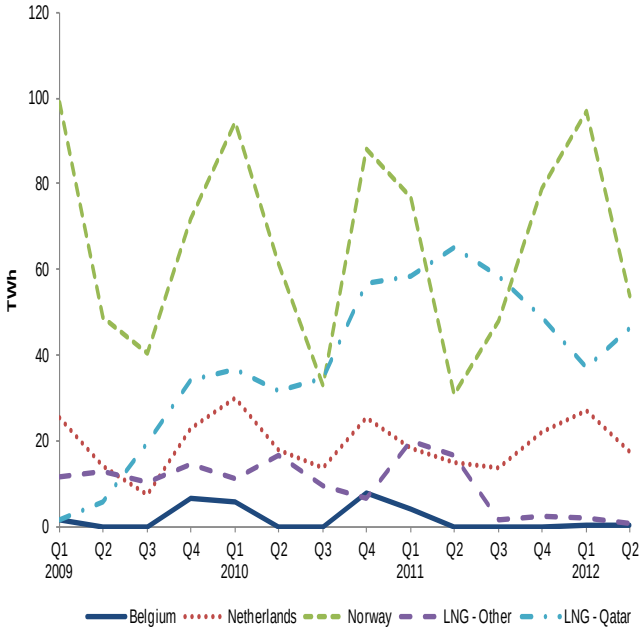
Chart 4.4 Import and exports



Total imports in Q2 2012 decreased by 5.8 per cent compared to the same quarter a year ago. Within this, imports of Liquefied Natural Gas (LNG) decreased sharply by 42.0 per cent. LNG imports accounted for 39.3 per cent of total imports compared with 63.8 per cent a year ago. Pipeline imports increased by 55.8 per cent in Q2 2012. This increase largely reflects maintenance work at terminals in the same period of 2011, and also Norwegian fields increasing production in 2012.

Total exports decreased significantly by 31.1 per cent in Q2 2012. A large majority of this decrease were exports to Belgium which were more than half the level than in Q2 2011 as shown in Energy Trends table 4.3 - Natural Gas imports and exports.

Chart 4.5 Imports by origin



The UK imported 54TWh and 18TWh via pipelines from Norway and the Netherlands, an increase of 56.8 per cent on the levels in Q2 2011. This increase reflects maintenance work being carried out on Norwegian pipelines in 2011.

Since 2009, LNG imports have been mainly sourced from Qatar, these were lower by 28.6 per cent in Q2 2012 compared with the same quarter a year earlier.

Map: UK imports and exports of gas Q2 2012

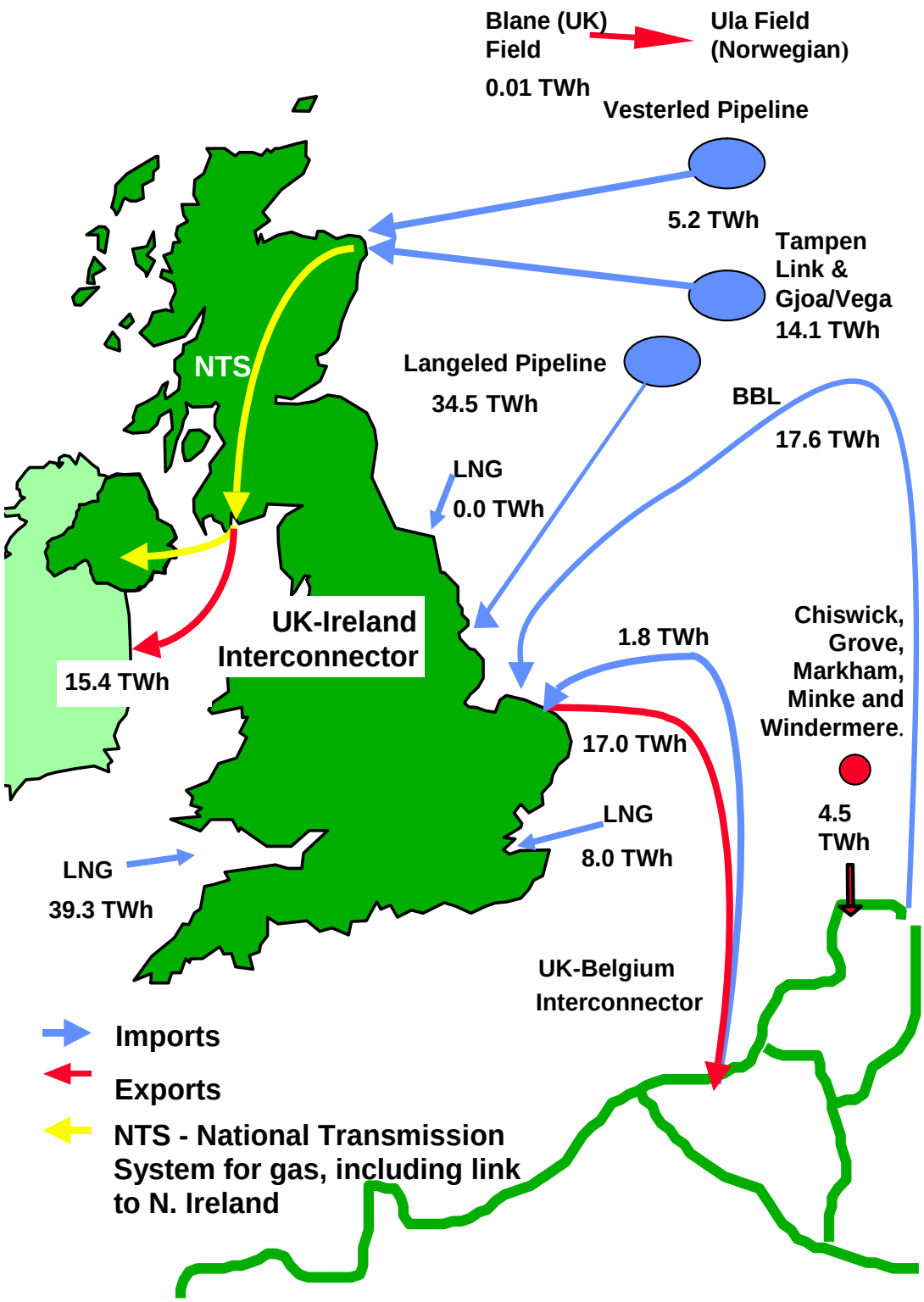
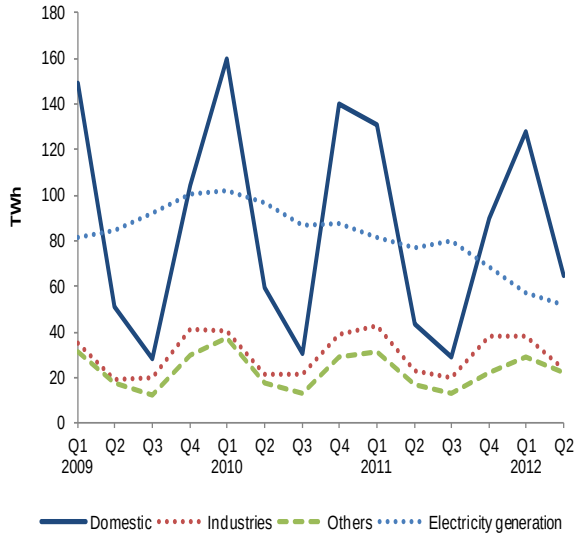


Chart 4.6 UK demand for natural gas



UK overall demand in Q2 2012 increased slightly by 0.4 per cent.

Within this; there was a large increase in domestic demand for gas - increasing by nearly 50 per cent in Q2 2012 compared with Q2 2011. This increase reflects domestic demand in Q2 2011 being exceptionally low rather than any significant trend changes to 2012. Mean temperatures in the second quarter of 2011 were around 1.8 degrees higher compared with Q2 2012, with April 2011 being a record warm month.

The large increases to domestic consumption were somewhat offset by decreased use of gas for electricity generation - down by a 32.9 per cent in Q2 2012 compared with Q2 2011.

Consumption by industries, including Iron and Steel, increased by 4.3 per cent.

Relevant table

Contacts for further information:

Clive Evans
Oil and Gas Statistics Team
Tel. 0300 068 5040
E-mail: Clive.Evans@decc.gsi.gov.uk

Charanjit Ransi
Oil and Gas Statistics Team
Tel. 0300 068 5055
E-mail: Charanjit.ransi@decc.gso.gov.uk

4 GAS

Table 4.1. Natural gas supply and consumption

GWh

	2010	2011	*per cent change*	2010 2nd quarter	2010 3rd quarter	2010 4th quarter	2011 1st quarter	2011 2nd quarter	2011 3rd quarter	2011 4th quarter	2012 1st quarter	2012 2nd quarter p	*per cent change1*
SUPPLY													
Indigenous production	664,353	526,030	*-20.8*	174,405	146,354	159,681	151,607	131,034	103,515	139,874	130,841	112,850	*-13.9*
Imports	589,497	584,414	*-0.9*	128,234	91,049	186,370	181,011	127,837	121,583	153,983	169,560	120,362	*-5.8*
of which LNG	*203,789*	*270,733*	*+32.8*	*48,479*	*43,839*	*63,439*	*78,370*	*81,514*	*59,915*	*50,935*	*39,332*	*47,305*	*-42.0*
Exports	176,399	183,689	*+4.1*	57,615	49,278	41,115	24,866	53,666	51,883	53,275	34,263	36,980	*-31.1*
Stock change[2]	+15,271	-22,623		-21,833	-13,945	+18,491	+6,805	-21,374	-11,109	+3,055	+13,504	-9,544	
Transfers	-263	-60		-28	-66	-58	-32	-10	-11	-7	-11	-4	
Total supply	1,092,459	904,072	*-17.2*	223,164	174,114	323,368	314,526	183,822	162,095	243,629	279,630	186,683	*+1.6*
Statistical difference	-70	-1,687		-47	191	94	411	-614	-801	-684	199	1,565	
Total demand	1,092,529	905,759	*-17.1*	223,211	173,923	323,274	314,115	184,436	162,896	244,313	279,432	185,118	*+0.4*
TRANSFORMATION	396,675	330,377	*-16.7*	102,123	91,050	94,080	88,666	82,109	84,440	75,163	65,012	56,732	*-30.9*
Electricity generation	372,968	306,705	*-17.8*	97,027	86,579	87,225	81,121	77,032	79,774	68,778	57,466	51,655	*-32.9*
Heat generation[3]	23,707	23,672	*-0.1*	5,096	4,471	6,855	7,545	5,077	4,666	6,385	7,545	5,077	-
Energy industry use	69,474	59,940	*-13.7*	18,138	15,151	17,061	16,545	15,264	13,178	14,953	14,731	14,354	*-6.0*
Losses	18,737	14,554	*-22.3*	4,697	3,248	4,310	4,392	3,636	2,856	3,669	3,727	2,761	*-24.1*
FINAL CONSUMPTION	607,643	500,888	*-17.6*	98,253	64,474	207,824	204,511	83,426	62,423	150,528	195,962	111,271	*+33.4*
Iron & steel	5,827	5,758	*-1.2*	1,454	1,435	1,505	1,374	1,398	1,476	1,510	1,368	1,305	*-6.7*
Other industries	115,811	118,672	*+2.5*	20,035	19,682	37,354	41,288	21,667	18,813	36,903	37,176	22,747	*+5.0*
Domestic	389,595	292,971	*-24.8*	59,226	30,519	140,043	130,486	43,430	29,219	89,837	128,064	65,066	*+49.8*
Other final users	88,264	75,432	*-14.5*	15,501	10,800	26,886	29,349	14,918	10,901	20,264	27,340	20,140	*+35.0*
Non energy use[3]	8,147	8,054	*-1.1*	2,037	2,037	2,037	2,014	2,014	2,014	2,014	2,014	2,014	-

1. Percentage change in the second quarter of 2012 compared with a year earlier.

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

3. For Heat generation and non energy use, the 2012 figures currently shown are the 2011 figures carried forward - these will be updated in July 2013.

Section 5 – Electricity

Key results show:

Electricity generated in the second quarter of 2012 fell by 0.5 per cent, from 84.9 TWh a year earlier to 84.4 TWh, the lowest second quarter level of generation since 1998. (**Chart 5.1**).

Renewables' share of electricity generation increased from 9.0 per cent in the second quarter of 2011 to 9.6 per cent in the second quarter of 2012. (**Chart 5.2**).

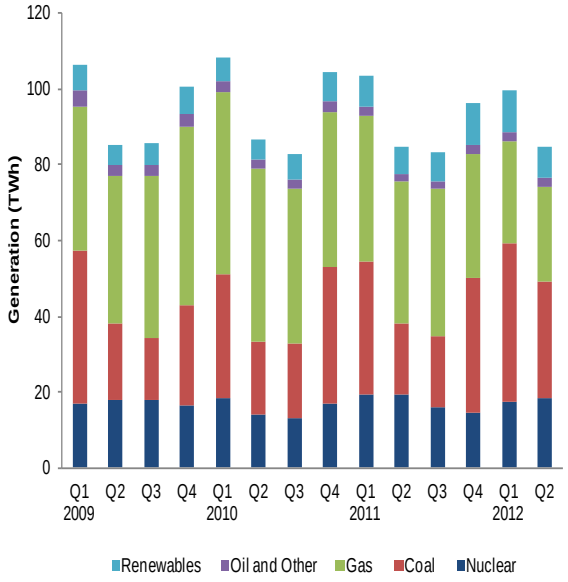
Nuclear's share of generation fell from 22.6 per cent in the second quarter of 2011 to 21.9 per cent in the second quarter of 2012. Wylfa reactor 2 shut during the quarter. (**Chart 5.2**).

Gas's share of generation fell from 43.7 per cent in the second quarter of 2011 to 29.8 per cent in the second quarter of 2012. Gas generation was at its lowest level for at least 14 years, due to high gas prices. Coal's share increased from 22.5 per cent to 36.1 per cent. Coal generation was at its highest second quarter level for at least 14 years. (**Chart 5.2**).

The UK remains a net importer with 3.9 per cent of electricity supplied from net imports in the second quarter of 2012 (**Chart 5.3**).

Final consumption of electricity during the second quarter of 2012, at 73.9 TWh, was provisionally 0.5 per cent higher than in the same period last year. Domestic sales rose by 5.1 per cent, due to the temperature differences between Spring 2011 and 2012. (**Chart 5.4**).

Chart 5.1 Electricity generated by fuel type



In 2012 Q2, total electricity generated fell 0.5 per cent from 84.9 TWh in 2011 Q1 to 84.4 TWh, the lowest level for this quarter since 1998.

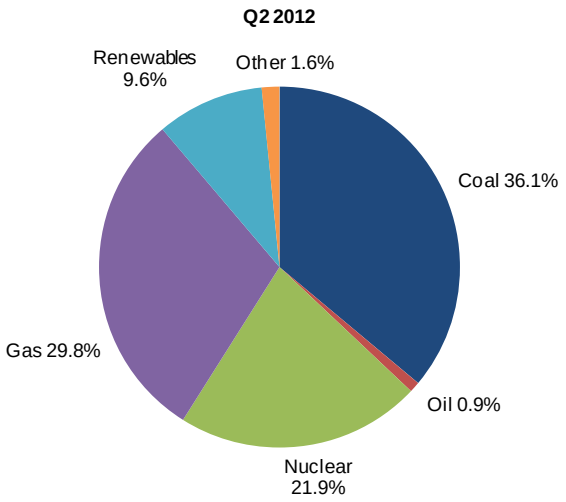
In 2012 Q2, coal fired generation rose by 59.9 per cent from 19.1 TWh to 30.5 TWh, its highest second quarter level for at least 14 years.

In 2012 Q2, gas fired generation fell 32.1 per cent from 37.1 TWh to 25.2 TWh, its lowest level for at least 14 years. This was due to high gas prices, with several gas stations being run at minimal or zero levels as a result.

In 2012 Q2, nuclear generation fell 3.3 per cent from 19.2 TWh to 18.5 TWh. Wylfa reactor 2 shut on 25 April 2012, leaving Wylfa reactor 1 as the sole Magnox reactor in the UK. (Oldbury fully closed in February 2012).

In 2012 Q2, wind and PV generation rose 18.5 per cent from 3.6 TWh to 4.3 TWh, due to increased capacity. Hydro generation fell 31.2 per cent from 1.1 TWh to 0.8 TWh, due to lower rainfall in the main hydro areas (Scotland) compared to the same period last year. It was the driest April for over 12 years.

Chart 5.2 Shares of electricity generation



The share of generation from coal increased from 22.5 per cent in 2011 Q2 to 36.1 per cent in 2012 Q2, its highest second quarter level in the last fourteen years.

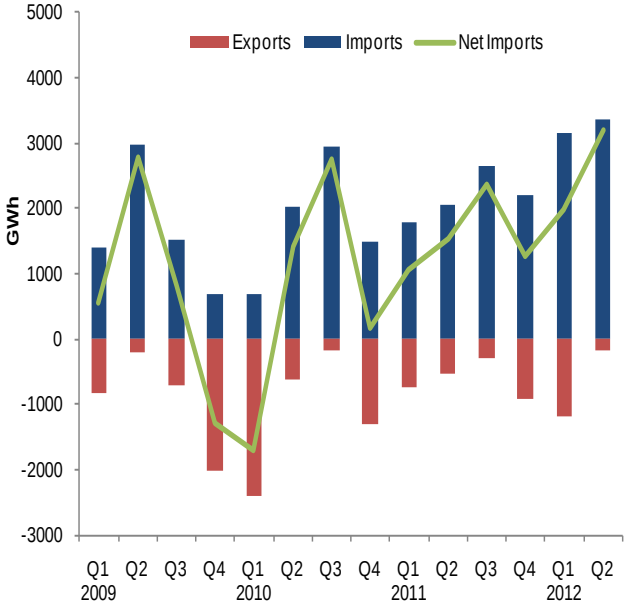
Gas's share of generation decreased from 43.7 per cent in 2011 Q2 to 29.8 per cent in 2012 Q2, its lowest second quarter share in the last fourteen years.

Nuclear's share of generation fell from 22.6 per cent in 2011 Q2 to 21.9 per cent in 2012 Q2.

The share of renewables (hydro, wind and other renewables) increased from 9.0 per cent in 2011 Q2 to 9.6 per cent in 2012 Q2. This was due to greater capacity, especially for wind, where the impact of this on generation exceeded the effects of lower wind speeds.

Low carbon electricity's share of generation remained at 31.6 per cent in 2012 Q2, with reduced nuclear generation being offset by increased generation from renewables.

Chart 5.3 UK trade in electricity



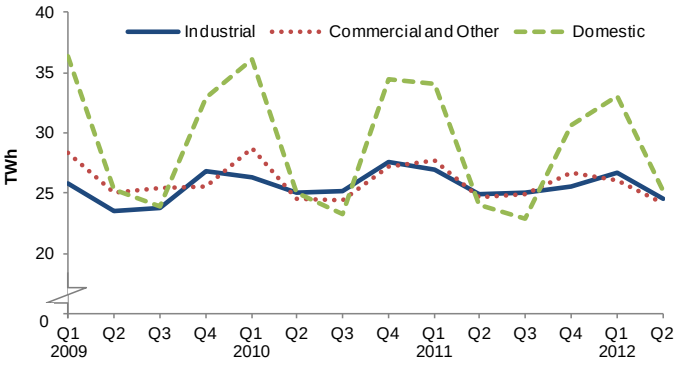
In 2012 Q2, compared with the same period in 2011, imports of electricity rose by 63.1 per cent, to 3.4 TWh, the highest level since 2008 Q3. Meanwhile exports fell by 69.2 per cent, to 0.2 TWh.

For the ninth quarter running, the UK has been a net importer after two quarters of being a net exporter (2009 Q4 and 2010 Q1).

Net imports of electricity, at 3,190 GWh, were double the level of 2011 Q2. This represented 3.9 per cent of electricity supplied in 2012 Q2.

In 2012 Q2, the UK was a net importer from France and the Netherlands (whom the UK started trading with in February 2011) with net imports of 1,698 GWh and 1,579 GWh respectively. The UK was a net exporter to Ireland with net exports of 88 GWh in Q2 2012, after two quarters of being a net importer.

Chart 5.4 Electricity Final Consumption



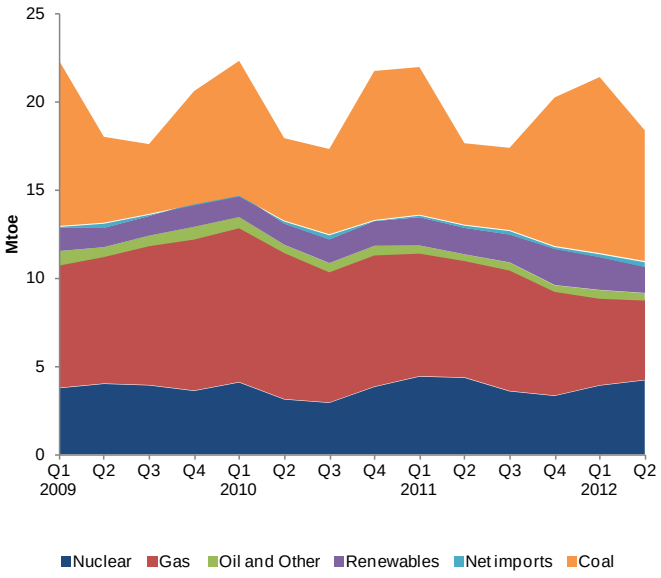
Final consumption of electricity rose by 0.5 per cent in 2012 Q2, from 73.5 TWh in 2011 Q2, to 73.9.

Domestic use rose by 5.1 per cent, from 24.0 TWh to 25.2 TWh, due to colder weather this Spring compared to a year earlier.

Industrial use of electricity fell by 1.2 per cent, from 24.9 TWh to 24.6 TWh, while consumption by commercial and other users [2] fell by 2.3 per cent, from 24.7 TWh to 24.1 TWh.

In 2012 Q2, temperatures were on average 1.8 degrees lower than in 2011 Q2, due partly to the exceptionally warm weather in April 2011, and the coldest April for at least 21 years in 2012. It was also the coldest second quarter since 1996, with the coldest May since 1997 and the coldest June since 1991.[3]

Chart 5.5 Fuel used for electricity Generation



Fuel used by generators in 2012 Q2 rose 4.2 per cent, from 17.6 million tonnes of oil equivalent (mtoe) in 2011 Q2 to 18.3 mtoe in 2012 Q2[1].

Despite this increase in fuel use, generation fell 0.5 per cent. This was due to the large increase in the use of coal to generate electricity, at the expense of gas. Coal stations have a lower thermal efficiency compared with gas, with more fuel required to generate each unit of electricity.

In 2012 Q2, gas use was 31.4 per cent lower than in 2011 Q2, with coal use up 60.6 per cent. Nuclear sources were 3.3 per cent lower.

[1] 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.

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

[3] Temperature data comes from table ET 7.1, at: www.decc.gov.uk/en/content/cms/statistics/energy_stats/source/temperatures/temperatures.aspx

Electricity

Relevant tables

Contacts for further information:

James Hemingway
Electricity Statistics
Tel: 0300 068 5042
E-mail: James.Hemingway@decc.gsi.gov.uk

Chris Michaels
Electricity Statistics
Tel: 0300 068 5050
E-mail: Chris.Michaels@decc.gsi.gov.uk

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Table 5.1. Fuel used in electricity generation and electricity supplied

	2010	2011	*per cent change*	2010 2nd quarter	2010 3rd quarter	2010 4th quarter	2011 1st quarter	2011 2nd quarter	2011 3rd quarter	2011 4th quarter	2012 1st quarter	2012 2nd quarter p	*per cent change* [1]
FUEL USED IN GENERATION													
All generating companies										**Million tonnes of oil equivalent**			
Coal	25.56	26.03	*+1.8*	4.66	4.83	8.44	8.36	4.61	4.65	8.41	9.97	7.40	*+60.6*
Oil	1.18	0.90	*-23.3*	0.23	0.27	0.33	0.26	0.19	0.25	0.20	0.26	0.19	*+1.1*
Gas	32.12	26.42	*-17.8*	8.36	7.46	7.51	6.99	6.64	6.87	5.93	4.95	4.55	*-31.4*
Nuclear	13.93	15.63	*+12.2*	3.11	2.92	3.82	4.41	4.34	3.57	3.31	3.90	4.20	*-3.3*
Hydro	0.31	0.49	*+56.1*	0.06	0.08	0.11	0.11	0.10	0.11	0.17	0.16	0.07	*-31.2*
Wind [2]	0.88	1.35	*+54.2*	0.14	0.24	0.29	0.29	0.31	0.26	0.49	0.44	0.37	*+18.5*
Other renewables [3]	4.36	4.91	*+12.6*	1.07	1.11	1.08	1.20	1.10	1.21	1.39	1.27r	1.05	*-3.8*
Other fuels	0.80	0.77	*-4.4*	0.20	0.20	0.18	0.20	0.19	0.21	0.17	0.23	0.22	*+19.2*
Net imports	0.23	0.53	*(+)*	0.12	0.24	0.02	0.09	0.13	0.20	0.11	0.17	0.27	*(+)*
Total all generating companies	79.37	77.03	*-2.9*	17.95	17.33	21.76	21.91	17.60	17.33	20.19	21.34r	18.33	*+4.2*
ELECTRICITY GENERATED													
All generating companies												**TWh**	
Coal	107.69	108.58	*+0.8*	19.55	19.81	35.71	35.14	19.06	19.12	35.26	42.04r	30.47	*+59.9*
Oil	4.80	3.66	*-23.7*	0.92	1.14	1.31	1.15	0.69	0.96	0.87	1.04	0.79	*+15.8*
Gas	175.65	146.81	*-16.4*	45.46	40.80	41.15	38.33	37.09	38.60	32.79	27.00r	25.17	*-32.1*
Nuclear	62.14	68.98	*+11.0*	13.88	13.02	17.05	19.45	19.15	15.76	14.62	17.20	18.53	*-3.3*
Hydro (natural flow)	3.64	5.69	*+56.1*	0.68	0.88	1.23	1.30	1.15	1.24	2.00	1.84r	0.79	*-31.2*
Wind [2]	10.22	15.75	*+54.2*	1.65	2.74	3.38	3.36	3.59	3.04	5.75	5.09r	4.25	*+18.5*
- of which, Offshore	3.04	5.13	*+68.4*	0.46	0.82	1.10	1.00	1.12	1.10	1.92	1.49	1.64	*+46.7*
Other renewables [3]	11.99	12.97	*+8.2*	2.91	3.08	2.99	3.31	2.89	3.29	3.47	4.01r	3.08	*+6.5*
Pumped Storage	3.15	2.91	*-7.8*	0.76	0.71	0.82	0.77	0.65	0.70	0.78	0.79	0.67	*+3.2*
Other fuels	2.48	2.44	*-1.5*	0.65	0.63	0.58	0.59	0.59	0.62	0.65	0.62	0.66	*+11.5*
Total all generating companies	381.77	367.80	*-3.7*	86.48	82.80	104.21	103.41	84.87	83.34	96.19	99.63r	84.42	*-0.5*
ELECTRICITY SUPPLIED [4]													
All generating companies												**TWh**	
Coal	102.27	103.13	*+0.8*	18.56	18.82	33.90	33.37	18.10	18.17	33.49	39.90r	28.92	*+59.8*
Oil	4.31	3.31	*-23.1*	0.83	1.03	1.16	1.04	0.62	0.87	0.78	0.94	0.72	*+15.7*
Gas	172.45	144.11	*-16.4*	44.66	40.08	40.34	37.62	36.41	37.91	32.17	26.51r	24.71	*-32.1*
Nuclear	56.44	62.66	*+11.0*	12.61	11.82	15.49	17.67	17.40	14.31	13.28	15.62	16.83	*-3.3*
Hydro	3.62	5.65	*+56.2*	0.68	0.87	1.22	1.29	1.14	1.23	1.99	1.83r	0.78	*-31.3*
Wind [2]	10.22	15.75	*+54.2*	1.65	2.74	3.38	3.36	3.59	3.04	5.75	5.09r	4.25	*+18.5*
- of which, Offshore	3.04	5.13	*+68.4*	0.46	0.82	1.10	1.00	1.12	1.10	1.92	1.49	1.64	*+46.7*
Other renewables [3]	10.88	11.54	*+6.1*	2.64	2.79	2.71	2.95	2.57	2.93	3.09	3.57r	2.74	*+6.4*
Pumped Storage (net supply) [5]	-1.07	-0.95		-0.27	-0.23	-0.28	-0.26	-0.22	-0.23	-0.24	-0.26	-0.24	
Other fuels	2.35	2.30	*-1.8*	0.61	0.59	0.55	0.56	0.56	0.58	0.61	0.58	0.62	*+11.5*
Net imports	2.66	6.22	*(+)*	1.42	2.76	0.18	1.06	1.53	2.36	1.27	1.99	3.19	*(+)*
Total all generating companies	364.12	353.73	*-2.9*	83.40	81.28	98.64	98.66	81.70	81.18	92.18	95.78r	82.52	*+1.0*

1. Percentage change in the second quarter of 2012 compared with a year earlier.

2. Includes solar PV and wave/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

	2010	2011	*Per cent change*	2010 2nd quarter	2010 3rd quarter	2010 4th quarter	2011 1st quarter	2011 2nd quarter	2011 3rd quarter	2011 4th quarter	2012 1st quarter	2012 2nd quarter p	*Per cent change*[1]
SUPPLY													
Indigenous production	381,772	367,801	*-3.7*	86,476	82,795	104,209	103,406	84,866	83,340	96,189	99,634r	84,417	*-0.5*
Major power producers[2 3]	344,499	329,406	*-4.4*	77,549	73,796	94,712	93,508	75,619	74,088	86,191	89,487r	74,957	*-0.9*
Auto producers	34,123	35,490	*+4.0*	8,164	8,294	8,680	9,128	8,594	8,550	9,218	9,353r	8,786	*+2.2*
Other sources[4]	3,150	2,906	*-7.8*	763	705	818	770	654	702	780	794	675	*+3.2*
Imports	7,144	8,689	*+21.6*	2,025	2,943	1,479	1,787	2,054	2,656	2,192	3,169	3,352	*+63.1*
Exports	4,481	2,467	*-44.9*	610	184	1,303	723	525	297	922	1,182	162	*-69.2*
Transfers	-	-		-	-	-	-	-	-	-	-	-	
Total supply	384,436	374,023	*-2.7*	87,891	85,554	104,385	104,470	86,396	85,699	97,458	101,621r	87,607	*+1.4*
Statistical difference	-377	-320		-317	-422	71	-312	-268	-188	449	-34r	-403	
Total demand	384,813	374,343	*-2.7*	88,208	85,976	104,314	104,783	86,664	85,887	97,009	101,656r	88,010	*+1.6*
TRANSFORMATION	-	-		-	-	-	-	-	-	-	-	-	
Energy industry use[5]	28,993	28,153	*-2.9*	6,644	6,470	7,882	7,755	6,679	6,503	7,217	7,853r	7,082	*+6.0*
Losses	27,037	28,181	*+4.2*	6,537	6,480	6,881	8,243	6,472	6,567	6,899	8,085r	7,063	*+9.1*
FINAL CONSUMPTION	328,784	318,009	*-3.3*	75,027	73,026	89,551	88,785	73,513	72,818	82,893	85,718r	73,865	*+0.5*
Iron & steel	3,842	3,842	-	955	974	939	967	964	962	949	960	987	*+2.4*
Other industries	100,678	98,554	*-2.1*	24,298	24,467	26,537	25,969	23,897	24,034	24,654	25,734r	23,579	*-1.3*
Transport	4,076	4,079	*+0.1*	1,019	1,019	1,019	1,020	1,020	1,020	1,020	1,020	1,020	-
Domestic	118,820	111,585	*-6.1*	25,060	23,200	34,488	34,088	23,963	22,895	30,639	33,011	25,174	*+5.1*
Other final users	101,367	99,948	*-1.4*	23,696	23,367	26,568	26,742	23,669	23,907	25,630	24,993r	23,105	*-2.4*
Non energy use	-	-		-	-	-	-	-	-	-	-	-	

1. Percentage change in the second quarter of 2012 compared with a year earlier.

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

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

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

4. Gross supply from pumped storage hydro

5. Includes electricity used in generation and for pumping

Section 6 – Renewables

Key results show:

Renewables' share of electricity generation was 9.6 per cent in 2012 Q2, up 0.6 percentage points on the share in 2011 Q2, reflecting increased capacity levels. This was a 2.1 percentage point fall on 2011 Q4's record high share of 11.7 per cent, reflecting lower hydro generation. **(Chart 6.1)**

Renewable electricity generation was 8.1 TWh in 2012 Q2, an increase of 6.5 per cent on the 7.6 TWh in 2011 Q2, but a fall of 28 per cent on the peak quarterly generation of 2011 Q4. **(Chart 6.2)**

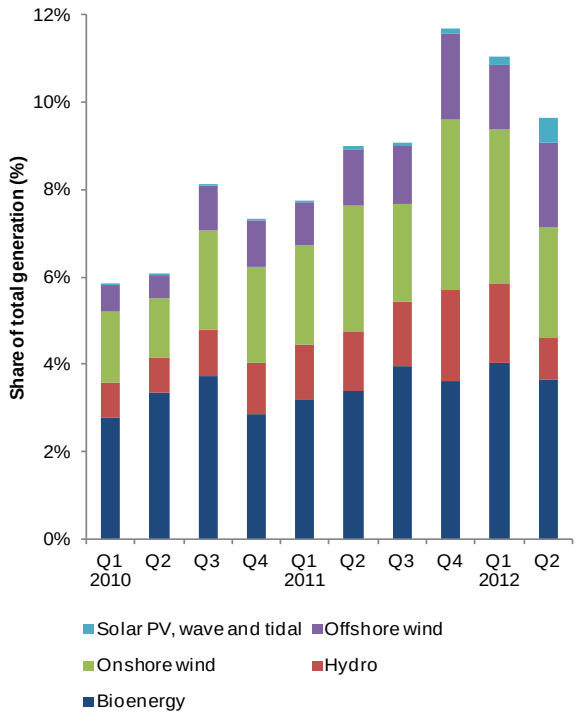
Offshore wind showed the highest absolute increase in generation in 2012 Q2, increasing by 46.7 per cent, from 1.1 TWh in 2011 Q2 to 1.6 TWh, as a result of much increased capacity. However, generation from onshore wind fell by 11.4 per cent (due to lower wind speeds) and hydro by 31.3 per cent (due to much lower rainfall). **(Chart 6.2)**

Renewable electricity capacity was 14.2 GW at the end of 2012 Q2, a 42.4 per cent increase (4.2 GW) on a year earlier, and 6.8 per cent increase (0.9 GW) on the previous quarter, with onshore wind contributing almost half of the capacity installed during the quarter. **(Chart 6.3)**

In 2012 Q2, 179 MW of capacity joined the Feed in Tariff scheme, increasing the total confirmed by 16 per cent, to 1,269 MW, approximately 8.9 per cent of all renewable installed capacity. Of this increase, sub-4 kW retrofitted solar PVs contributed 105 MW. **(Chart 6.5)**

Liquid biofuels consumption rose by 22.4 per cent, from 354 million litres in 2011 Q2 to 433 million litres in 2012 Q2, but 4.6 per cent less than the record 454 million litres in 2011 Q4. In 2012 Q2, they represented 3.8 per cent of petrol and diesel consumed in road transport. **(Chart 6.6)**

Chart 6.1 Renewables' share of electricity generation



Renewables' share of electricity generation increased from 9.0 per cent in 2011 Q2 to 9.6 per cent in 2012 Q2. However, this was a 2.1 percentage point fall on 2011 Q4's record high share of 11.7 per cent. [1]

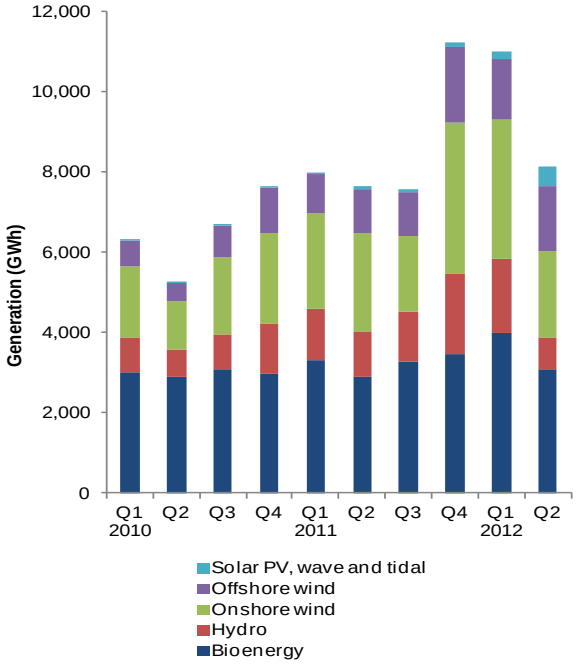
The increase on a year earlier reflects increased capacity, particularly in onshore and offshore wind and solar photovoltaics. Offsetting this, however, were lower wind speeds, as well as lower hydro generation after much lower rainfall levels.

Overall electricity generation (84.4 TWh) in 2012 Q2 was down 0.5 per cent on a year earlier (84.9 TWh), which contributed less than 0.1 percentage points of the 0.6 percentage point increase in renewables' share.

Total electricity generated from renewables in 2012 Q2 was up by 6.5 per cent on 2011 Q2, from 7.6 TWh to 8.1 TWh. This was, however, 3.1 TWh (28 per cent) lower than the record 11.2 TWh in 2011 Q4.

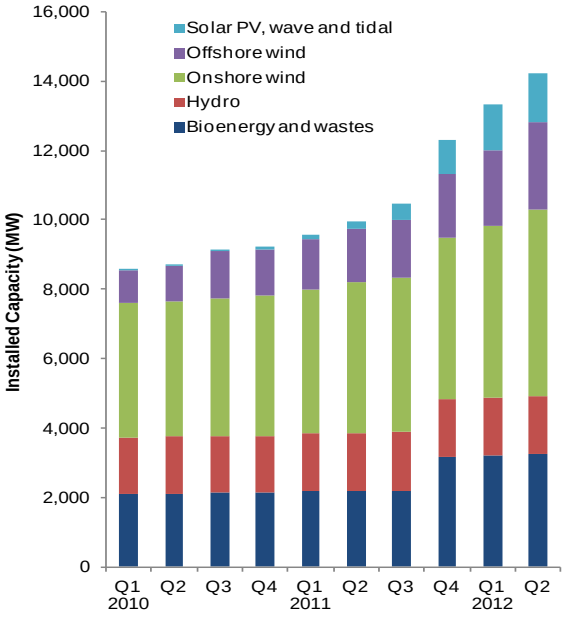
[1] Total electricity generation figures (all generating companies) can be found in table ET 5.1, at: www.decc.gov.uk/en/content/cms/statistics/energy_stats/source/electricity/electricity.aspx

Chart 6.2 Renewable electricity generation



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

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



In 2012 Q2, hydro generation fell by 31.3 per cent on a year earlier, from 1.2 TWh to 0.8 TWh. Following 2011's record rainfall levels for the second quarter, rainfall in 2012 Q2 was down 26 per cent, although only slightly less than the ten year average for the second quarter. Whilst it was the wettest June for ten years, it was the driest April for five years, with rainfall in May less than half of that a year earlier.

Electricity generated from onshore wind fell by 11.4 per cent in 2012 Q2, from 2.4 TWh to 2.1 TWh, while generation from offshore wind increased by 46.7 per cent on a year earlier, from 1.1 TWh to 1.6 TWh. Whilst both onshore and offshore wind have seen much growth in capacity over the last year, for onshore wind, the effect of this on generation was exceeded by that of lower wind speeds.

Although wind speeds in April and June were up on a year earlier, in May they were 3.7 knots lower than the 11.1 knots of May 2011 (the highest for at least ten years). Average wind speeds for 2012 Q2 were 7.8 knots, 1.1 knots lower than a year earlier.[2]

Generation from bioenergy [3] in 2012 Q2 increased by 6.5 per cent on a year earlier, from 2.9 TWh to 3.1 TWh, However, this was a fall of 23.1 per cent on the 4.0 TWh in 2012 Q1, largely due to Tilbury B biomass power station being closed for much of the quarter following a fire at the end of February.

In 2012 Q2, bioenergy had the largest share of generation (38 per cent) with 26 per cent from onshore wind, 20 per cent from offshore wind, and 17 per cent from hydro.

At the end of 2012 Q2, the UK's renewable electricity capacity totalled 14.2 GW, an increase of 6.8 per cent (0.9 GW) on that installed at the end of 2012 Q1, and 42.4 per cent (4.2 GW) on that installed a year earlier.

Of the 0.9 GW increase during 2012 Q2, almost half (442 MW) came from onshore wind, with several new sites opening, including much of the Clyde Central site. Almost one third (316 MW) came from the continued expansion of the Greater Gabbard and Sheringham Shoal offshore wind farms.

Solar photovoltaics (PV) capacity increased by 101 MW in 2012 Q2, due to the continued high uptake of the GB Feed in Tariff scheme. Solar PV capacity stood at 1.4 GW at the end of 2012 Q2, 10 per cent of all renewable electricity capacity.

At the end of 2012 Q2, onshore wind had the highest share of capacity (38 per cent), followed by bioenergy (23 per cent) and offshore wind (18 per cent).

[2] Statistics on weather (temperature, wind speeds, rainfall and sun levels) can be found in tables ET 7.1 – 7.4, at: www.decc.gov.uk/en/content/cms/statistics/energy_stats/source/temperatures/temperatures.aspx

[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

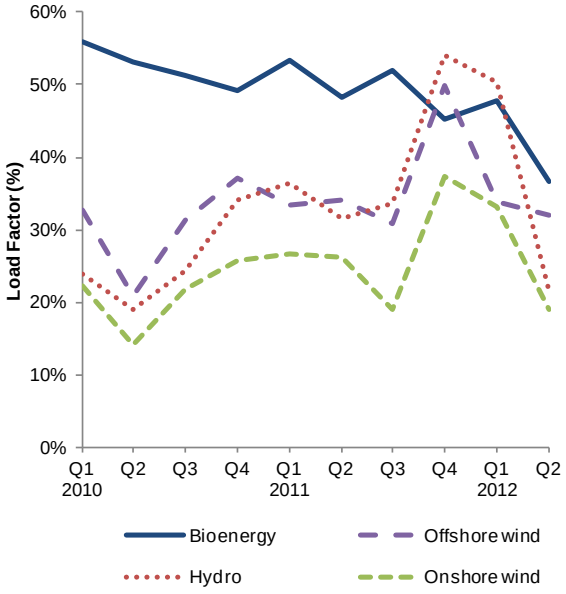
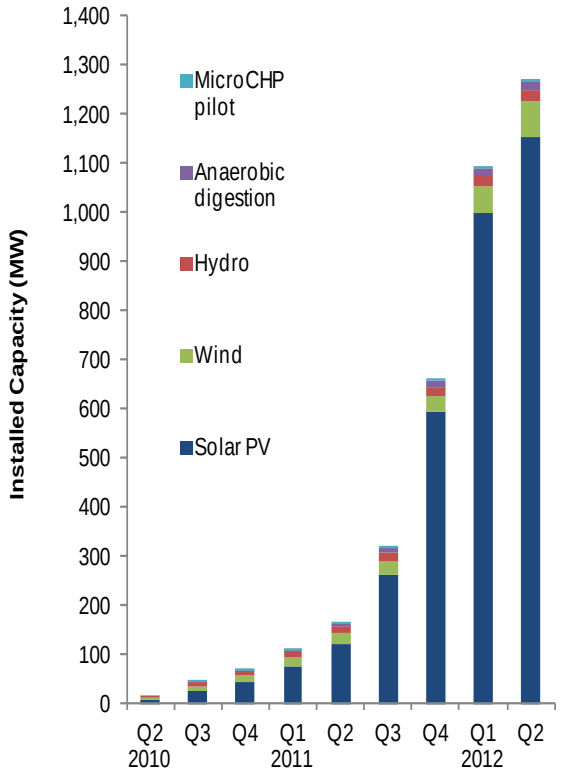


Chart 6.5 Feed in Tariffs: installed capacity (*confirmed* on FiTs, as at end of quarter)



In 2012 Q2, onshore wind's load factor decreased by 7.2 percentage points, from 26.2 per cent in 2011 Q2 to 19.0 per cent. Meanwhile, offshore wind's load factor fell by 2.3 percentage points, from 34.2 per cent to 31.9 per cent. This reflects the lower wind speeds in the quarter. [4]

Onshore and offshore wind's load factors, compared with 2012 Q1, were both down, by around 14.1 and 2.0 percentage points respectively, with wind speeds 1.2 knots lower than in 2012 Q1.

Hydro's load factor in 2012 Q2 fell by 10 percentage points, from 31.6 per cent in 2011 Q2 to 21.6 per cent, due to low rainfall in the quarter (as well as the previous quarter) compared with a year earlier.

Compared with 2012 Q1, hydro's load factor in 2012 Q2 was less than half the level, falling from 50.3 per cent to 21.6 per cent. Although rainfall in 2012 Q1 was only 21 per cent higher than 2012 Q2, reservoirs would have remained at high levels in 2012 Q1 following the record rainfall in 2011 Q4.

For bioenergy, the reduction in load factor in 2012 Q2 was due to the closure of Tilbury B (the largest biomass station) for most of the quarter.

At the end of 2012 Q2, 1,269 MW of capacity was confirmed on the GB Feed in Tariff (FiTs) scheme. This was a 16 per cent increase on the 1,090 MW confirmed on the scheme at the end of 2012 Q1, and over six times the amount confirmed at the end of 2011 Q2. [5]

In terms of number of installations, at the end of 2012 Q2, there were 285,565 confirmed on the FiT scheme, a 15 per cent increase on the 247,844 confirmed at the end of the previous quarter.

Solar photovoltaics (PVs) represent the majority of both installations and installed capacity confirmed on FiTs, with, respectively, 99 per cent and 91 per cent of the total. The majority of PV installations are sub-4 kW retrofitted schemes, which increased by 35,033 (105 MW) in 2012 Q2. [6]

Renewable installations confirmed on FiTs (all except MicroCHP) represented 8.9 per cent of all renewable installed capacity.

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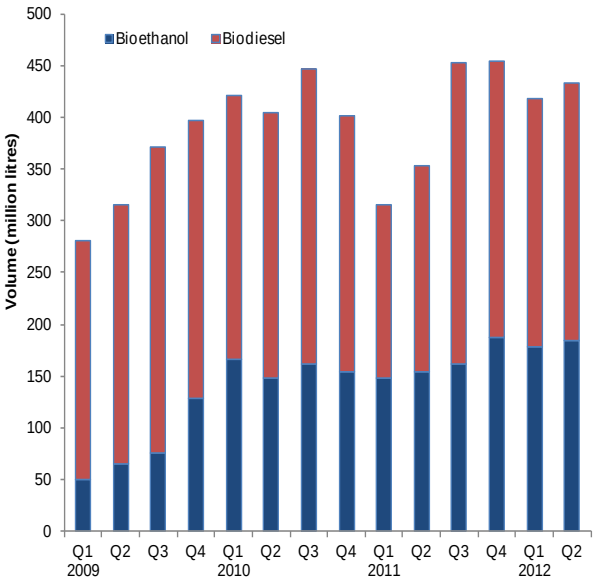
[4] Load Factors are calculated using an average of capacity at the start and end of the quarter. Therefore, they can be influenced by the time in the quarter when any new capacity came online.

[5] Statistics on Feed in Tariff uptake can be found in the monthly central Feed-in-Tariff register table, at: www.decc.gov.uk/en/content/cms/statistics/energy_stats/source/fits/fits.aspx

[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 2012 Q2, 433 million litres of liquid biofuels were consumed in transport, a rise of 22.4 per cent on the total in 2011 Q2, but a 4.6 per cent fall on 2011 Q4's record high of 454 million litres.

In 2012 Q2, biodiesel accounted for 3.8 per cent of diesel, and bioethanol 3.8 per cent of motor spirit. The combined contribution of the two fuels was 3.8 per cent, slightly lower than the 3.9 per cent in the previous three quarters.

Bioethanol consumption rose by 20.1 per cent, from 154 million litres to 185 million litres. Biodiesel consumption rose by 24.2 per cent, from 200 million litres in 2011 Q2 to 248 million litres in 2012 Q2.

In 2012 Q2, as has been the case since 2006 Q1, biodiesel had the highest share of total biofuels consumption, with 57 per cent, compared with 43 per cent from bioethanol.

Relevant tables

Contacts for further information:

James Hemingway
Renewables Statistics
Tel: 0300 068 5042
E-mail: James.Hemingway@decc.gsi.gov.uk

Julian Prime
Renewables Statistics
Tel: 0300 068 5054
E-mail: Julian.Prime@decc.gsi.gov.uk

6 RENEWABLES

Table 6.1. Renewable electricity capacity and generation

	2010	2011	*per cent change*	2010 2nd quarter	2010 3rd quarter	2010 4th quarter	2011 1st quarter	2011 2nd quarter	2011 3rd quarter	2011 4th quarter	2012 1st quarter	2012 2nd quarter p	*per cent change*
Cumulative Installed Capacity [1]												**MW**	
Onshore Wind	4,037	4,650	*+15.2*	3,877	3,981	4,037	4,142	4,333	4,448	4,650	4,944r	5,386	*+24.3*
Offshore Wind	1,341	1,838	*+37.0*	1,041	1,341	1,341	1,427	1,564	1,650	1,838	2,192r	2,508	*+60.4*
Shoreline wave / tidal	3	3	*+22.0*	2	3	3	3	3	3	3	4r	4	*+51.4*
Solar photovoltaics	77	976	*(+)*	39	55	77	137	212	489	976	1,286r	1,387	*(+)*
Small scale Hydro	188	205	*+9.0*	188	188	188	198	201	203	205	208r	209	*+4.0*
Large scale Hydro	1,453	1,471	*+1.2*	1,453	1,453	1,453	1,471	1,471	1,471	1,471	1,471	1,471	-
Landfill gas	1,025	1,067	*+4.1*	1,024	1,024	1,025	1,067	1,067	1,067	1,067	1,067	1,067	-
Sewage sludge digestion	186	198	*+6.4*	186	186	186	195	195	198	198	198	198	*+1.2*
Municipal solid waste combustion	461	577	*+25.2*	461	461	461	448	448	448	577	605r	605	*+35.1*
Animal Biomass (non-AD) [2]	111	111	-	111	111	111	111	111	111	111	111	111	-
Anaerobic Digestion	28	55	*+96.9*	22	26	28	39	42	53	55	62r	69	*+63.3*
Plant Biomass [3]	330	1,159	*(+)*	328	329	330	327	328	330	1,159	1,160	1,193	*(+)*
Total	9,238	12,310	*+33.2*	8,731	9,156	9,238	9,563	9,974	10,471	12,310	13,306r	14,206	*+42.4*
Co-firing [4]	266	338	*+27.0*	266	266	266	338	338	338	338	191r	191	*-43.5*
Generation [5]												**GWh**	
Onshore Wind [6]	7,137	10,372	*+45.3*	1,188	1,903	2,272	2,350	2,423	1,855	3,744	3,476r	2,147	*-11.4*
Offshore Wind [6, 7]	3,044	5,126	*+68.4*	456	821	1,100	997	1,117	1,096	1,916	1,493	1,638	*+46.7*
Shoreline wave / tidal [6]	2	1	*-61.2*	1	1	0	0	0	0	0	1	0	*-78.9*
Solar photovoltaics [6]	33	252	*(+)*	10	11	8	18	48	93	92	198r	468	*(+)*
Hydro [6]	3,644	5,686	*+56.1*	681	880	1,236	1,299	1,151	1,239	1,998	1,843r	791	*-31.3*
Landfill gas [6]	5,014	4,979	*-0.7*	1,264	1,268	1,191	1,329	1,130	1,323	1,197	1,330r	1,240	*+9.7*
Sewage sludge digestion [6]	698	755	*+8.2*	185	179	160	188	189	189	189	197r	190	*+0.5*
Biodegradable municipal solid waste combustion [8]	1,597	1,739	*+8.9*	399	399	399	355	344	355	686	459r	453	*+31.6*
Co-firing with fossil fuels	2,332	2,964	*+27.1*	443	656	664	822	586	768	787	677r	510	*-13.0*
Animal Biomass (non-AD) [6, 9]	627	614	*-2.1*	161	144	156	159	154	154	148	162r	128	*-17.1*
Anaerobic Digestion	92	239	*(+)*	23	29	23	50	52	71	67	77r	69	*+31.5*
Plant Biomass [6, 10]	1,624	1,683	*+3.6*	435	401	392	409	437	434	403	1,105r	493	*+12.8*
Total	25,845	34,410	*+33.1*	5,246	6,692	7,602	7,974	7,632	7,576	11,228	11,018r	8,126	*+6.5*
Non-biodegradable wastes [11]	924	1,005	*+8.8*	231	231	231	205	199	205	396	315r	311	*+56.4*
Load Factors [12]													
Onshore Wind	21.7%	27.3%		14.1%	21.9%	25.7%	26.6%	26.2%	19.1%	37.3%	33.2%	19.0%	
Offshore Wind	30.4%	36.8%		21.0%	31.2%	37.1%	33.3%	34.2%	30.9%	49.8%	33.9%	31.9%	
Hydro	25.4%	39.2%		19.1%	24.3%	34.1%	36.3%	31.6%	33.5%	54.0%	50.3%	21.6%	
Landfill gas	57.0%	54.4%		56.8%	56.1%	52.7%	58.8%	48.5%	56.2%	50.8%	57.1%	53.2%	
Sewage sludge digestion	46.5%	45.0%		45.8%	43.6%	39.1%	45.7%	44.3%	43.7%	43.4%	45.6%	44.0%	
Biodegradable municipal solid waste combustion	41.5%	38.2%		39.7%	39.2%	39.2%	36.1%	35.2%	35.9%	60.6%	35.6%	34.3%	
Animal Biomass (non-AD)	64.8%	63.4%		66.6%	58.8%	63.9%	66.5%	63.7%	63.1%	60.5%	67.2%	52.8%	
Anaerobic Digestion	57.2%	65.6%		52.6%	54.7%	39.0%	68.2%	59.0%	67.1%	55.8%	60.0%	48.4%	
Plant Biomass	58.9%	25.8%		60.8%	55.3%	53.9%	57.7%	61.1%	59.6%	24.5%	43.6%	19.2%	
Total (excluding co-firing and non-biodegradable wastes)	31.0%	33.3%		25.4%	30.6%	34.2%	35.2%	33.0%	30.2%	41.5%	37.0%	25.3%	

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

6 RENEWABLES

Table 6.2. Liquid biofuels for transport consumption

	2010	2011	*per cent change*	2010 2nd quarter	2010 3rd quarter	2010 4th quarter	2011 1st quarter	2011 2nd quarter	2011 3rd quarter	2011 4th quarter	2012 1st quarter	2012 2nd quarter p	*per cent change*
Volume												**Million litres**	
Bioethanol	631	652	*+3.4*	149	161	153	148	154	162	188	178	185	*+20.1*
Biodiesel	1,045	925	*-11.5*	256	286	249	168	200	291	266	240	248	*+24.2*
Total biofuels for transport	1,676	1,577	*-5.9*	405	447	402	316	354	453	454	418	433	*+22.4*
Energy												**Thousand tonnes of oil equivalent**	
Bioethanol	355	367	*+3.4*	84	91	87	83	87	91	106	100	104	*+20.1*
Biodiesel	859	760	*-11.5*	211	235	204	138	164	239	219	197	204	*+24.2*
Total biofuels for transport	1,214	1,128	*-7.2*	294	326	291	221	251	331	325	298	308	*+22.8*
Shares of road fuels													
Bioethanol as per cent of Motor Spirit	3.1%	3.3%		2.8%	3.1%	3.0%	3.1%	3.1%	3.3%	3.8%	3.9%	3.8%	
Biodiesel as per cent of DERV	4.1%	3.6%		4.0%	4.3%	3.7%	2.7%	3.1%	4.4%	4.0%	3.8%	3.8%	
Total biofuels as per cent of road fuels	3.6%	3.5%		3.4%	3.8%	3.4%	2.9%	3.1%	3.9%	3.9%	3.9%	3.8%	

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

Renewable electricity in Scotland, Wales, Northern Ireland and the regions of England in 2011

Background

This article updates that presented in the September 2011 edition of *Energy Trends* on the amount of electricity from renewable sources disaggregated below the national level. As before, it has been necessary to combine renewable sources into categories so that information about individual sites provided to AEA and the Department of Energy and Climate Change (DECC) in confidence is not disclosed.

As in previous years, a regional breakdown of non-FiTs micro-wind has not been included in the tables because, at present, they are estimated on a UK-wide basis that cannot readily be further sub-divided. Non-FiTs micro-wind in 2011 amounts to 20.4 MW of capacity and 24.7 GWh of generation (less than one third of one per cent of total wind capacity and generation). Otherwise, figures in tables 2 and 3 correspond to the totals shown in table 6.4 of the Digest of United Kingdom Energy Statistics 2012 (DUKES). Thus the data in this article cover all renewables, including renewables that are not eligible for the Renewables Obligation (RO) or Feed in Tariff (FIT), such as large-scale hydro commissioned before 1 April 2002. Offshore wind has been allocated to the region to which its output is connected[1].

What the figures show

Table 1 and chart 1 show that there were 2,288 non-PV sites in England generating electricity from renewable sources, with 1,494 non-PV sites in Scotland, 348 in Wales and 162 in Northern Ireland. In addition there were 174,988 PV sites reported for England with 15,438 for Wales and 12,808 for Scotland based on FITs data. PV uptake for Northern Ireland (204) was based on data from the Micro-generation Certification Scheme and the Renewables Obligation. No geographical information was available for a further 30,758 PV schemes.

In capacity terms, including PV, England for the first time had more (18 per cent) renewable electricity capacity than Scotland (table 2 and chart 3). This is because of England's considerable bioenergy resource (91 per cent of the UK's total bioenergy capacity), and results from the conversion of Tilbury B power station to dedicated biomass during 2011. Hydro accounted for 39 per cent of generation from renewables in Scotland (table 3 and chart 7). However, because bioenergy based capacity was used more intensively than hydro (which is subject to seasonal precipitation variation in the catchment areas) generation from renewable sources in England during 2011 was 27 per cent higher than generation in Scotland.

[1] With the exception of Robin Rigg which comes ashore at Seaton, Cumbria but whose generation is associated with Scotland

Table 1: Number of sites generating electricity from renewable sources, 2011[1]

	Hydro	Wind and wave[2]	Landfill gas	Sewage gas	Other bioenergy[3]	Total excluding PV	Solar PV	**Total**
England	**175**	**1,425**	**378**	**162**	**148**	**2,288**	**174,988**	**177,276**
East Midlands	21	144	43	15	15	238	18,870	19,108
East	5	247	70	14	18	354	23,383	23,737
North East	9	121	20	8	7	165	6,673	6,838
North West	31	175	63	25	22	316	16,614	16,930
London	-	18	1	4	6	29	5,628	5,657
South East	9	83	70	32	23	217	33,710	33,927
South West	74	269	39	19	14	415	36,844	37,259
West Midlands	10	78	30	21	23	162	14,128	14,290
Yorkshire and the Humber	16	290	42	24	20	392	19,138	19,530
Wales	91	209	23	15	10	348	15,438	15,786
Scotland	315	1,109	43	8	19	1,494	12,808	14,302
Northern Ireland	44	101	6	3	8	162	204	366
Other Sites							30,758	30,758
UK Total	**625**	**2,844**	**450**	**188**	**185**	**4,292**	**234,196**	**238,488**

Components may not add exactly to totals because of rounding.

For notes to Table 1 see below Table 3.

Table 2: Installed capacity of sites generating electricity from renewable sources, 2011[1]

	Hydro	Wind and wave[2]	Landfill gas	Sewage gas	Other bioenergy[4]	Solar PV	**MW Total**
England	**28.4**	**2,469.8**	**897.7**	**177.2**	**1,734.1**	**573.3**	**5,880.4**
East Midlands	4.8	319.7	68.3	17.6	45.2	61.7	**517.3**
East	0.1	550.9	205.5	26.3	926.9	75.7	**1,785.2**
North East	7.1	156.5	42.3	15.6	71.1	20.2	**312.7**
North West	5.5	708.2	173.9	23.7	70.3	52.5	**1,034.0**
London	-	3.7	0.3	20.6	151.7	17.5	**193.8**
South East	0.1	467.6	168.6	27.4	255.6	105.9	**1,025.2**
South West	8.8	143.9	95.7	13.7	11.9	126.5	**400.3**
West Midlands	0.7	0.9	60.8	23.4	127.8	48.1	**261.7**
Yorkshire and the Humber	1.3	118.4	82.4	9.1	73.5	65.3	**350.1**
Wales	149.9	582.4	45.2	11.9	21.2	46.3	**856.8**
Scotland	1,489.2	3,016.0	113.1	8.2	142.3	41.2	**4,810.1**
Northern Ireland	8.2	402.8	10.7	0.2	4.9	0.7	**427.6**
Other Sites						314.3	**314.3**
Total	**1,675.6**	**6,471.1**	**1,066.7**	**197.5**	**1,902.5**	**975.8**	**12,289.2**
Micro wind turbines		20.4					**20.4**
UK Total	**1,675.6**	**6,491.5**	**1,066.7**	**197.5**	**1,902.5**	**975.8**	**12,309.6**
Co-firing[4]					338.2		**338.2**

Table 3: Generation of electricity from renewable sources, 2011

	Hydro	Wind and wave[2]	Landfill gas	Sewage gas	Other bioenergy[5]	Solar PV	GWh **Total**
England	**67.7**	**6,158.1**	**4,208.9**	**683.9**	**6,150.3**	**129.3**	**17,398.3**
East Midlands	10.3	920.4	314.2	76.4	300.4	13.1	**1,634.9**
East	0.0	1,422.7	990.5	57.2	652.2	17.3	**3,139.9**
North East	22.7	323.1	181.4	61.1	335.5	3.4	**927.3**
North West	13.4	1,723.9	790.4	112.7	278.6	9.6	**2,928.5**
London	-	7.9	1.7	45.1	558.7	4.1	**617.6**
South East	0.1	1,270.2	836.6	114.8	781.6	25.3	**3,028.7**
South West	16.8	247.7	409.7	54.3	38.7	28.9	**796.2**
West Midlands	1.5	0.6	301.7	122.5	432.0	10.6	**868.8**
Yorkshire and the Humber	3.0	241.5	382.7	39.9	2,772.4	16.9	**3,456.4**
Wales	268.4	1,438.5	204.7	34.9	203.4	8.5	**2,158.5**
Scotland	5,331.8	6,984.3	506.5	35.3	862.6	7.6	**13,728.1**
Northern Ireland	18.5	892.6	59.1	0.8	22.4	0.4	**993.8**
Other Sites						106.1	**106.1**
Total	**5,686.5**	**15,473.6**	**4,979.3**	**755.0**	**7,238.7**	**251.8**	**34,384.8**
Micro wind turbines		24.7					**24.7**
UK Total	**5,686.5**	**15,498.3**	**4,979.3**	**755.0**	**7,238.7**	**251.8**	**34,409.6**

Components may not add exactly to totals because of rounding.

Notes to Tables 1 to 3
- Nil or less than half the final digit shown.
1 At the 31 December 2011.
2 Wind Offshore is allocated to regions/countries according to where the cabling comes ashore.
3 13 of these sites are sites that co-fire renewables with fossil fuels (see also note 4, below).
4 This is the proportion of non-fossil fuelled capacity used for co-firing of renewables based on the proportion of generation accounted for by the renewable source. This estimate has not been disaggregated into region values because to do so could disclose data that relate to individual companies.
5 Includes bioenergy sources co-fired with fossil fuels.

In England the number of sites (excluding PV) varies from 29 in London to 415 in the South West (table 1 and chart 2). The highest capacity in England (including PV) is in the East of England, followed by the North West and the South East (table 2 and chart 4). In the East of England, 52 per cent of this capacity is from other bioenergy (primarily one large bioenergy scheme) and 31 per cent from wind (mostly from three large offshore wind farms); in the North West, 68 per cent of capacity is from wind (more than half from two offshore wind farms). In the South East, 46 per cent of capacity is from wind and 25 percent from other bioenergy. The East of England has 19 per cent of the UK's landfill gas capacity, 13 per cent of the UK's sewage gas capacity and 12 per cent from other bioenergy. The North West (with 16 per cent of the UK's landfill gas capacity), and the South East (with 16 per cent of the UK's landfill gas capacity), are the other English regions with notably large shares. The East of England, North West and the South East regions together accounted for 53 per cent of UK generation from landfill gas.

Chart 1: Number of sites by country[1]

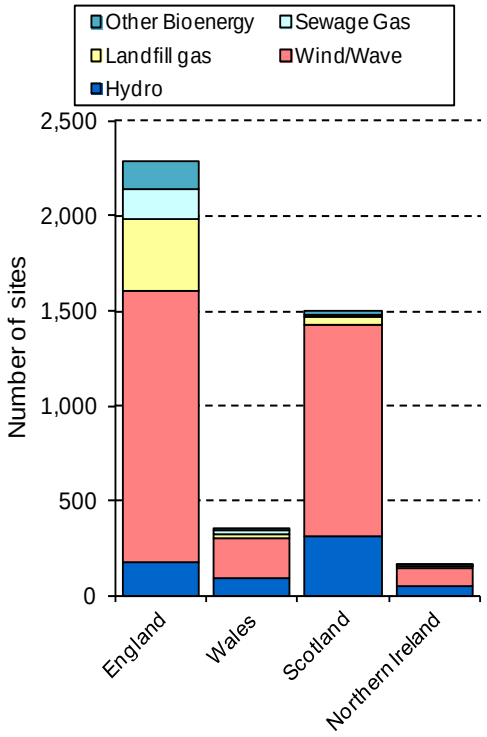
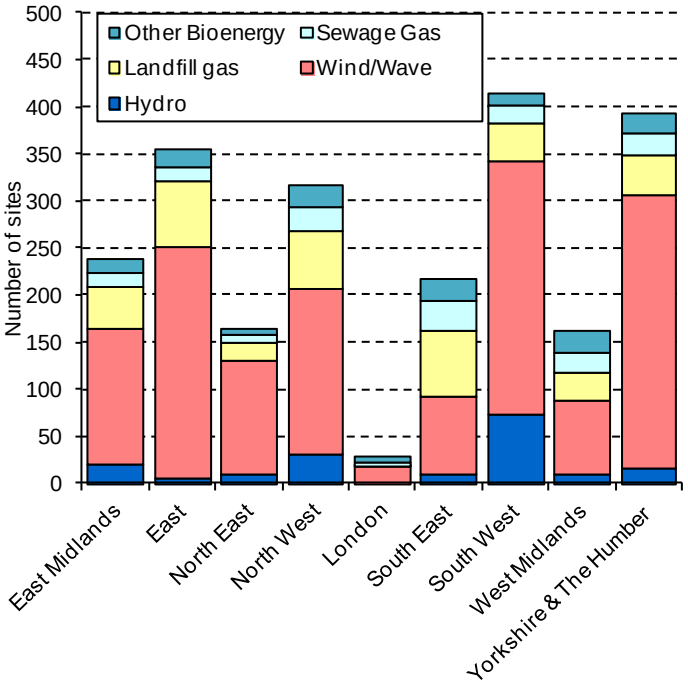


Chart 2: Number of sites by English region[1]



1. Excludes the large numbers of small Solar PV schemes as the inclusion of these would swamp all other technologies and misrepresent its overall contribution to UK renewables

In 2011, Scotland had 46 per cent of the UK's wind capacity and produced 45 per cent of the output (tables 2 and 3; charts 5 and 9). The North West has the next largest (11 per cent of capacity and 11 per cent of generation) followed by Wales (9 per cent of the capacity and 9 per cent of the output) and the East of England (8 per cent of capacity and 9 per cent of generation) (tables 2 and 3; charts 3 to 10)[2].

[2] A map of wind farm installed capacities in the UK at the end of 2011 was published in the renewables chapter of the 2012 edition of the Digest of UK Energy Statistics, and is also available on the RESTATS web site (https://restats.decc.gov.uk/).

Chart 3: Renewable capacity by country

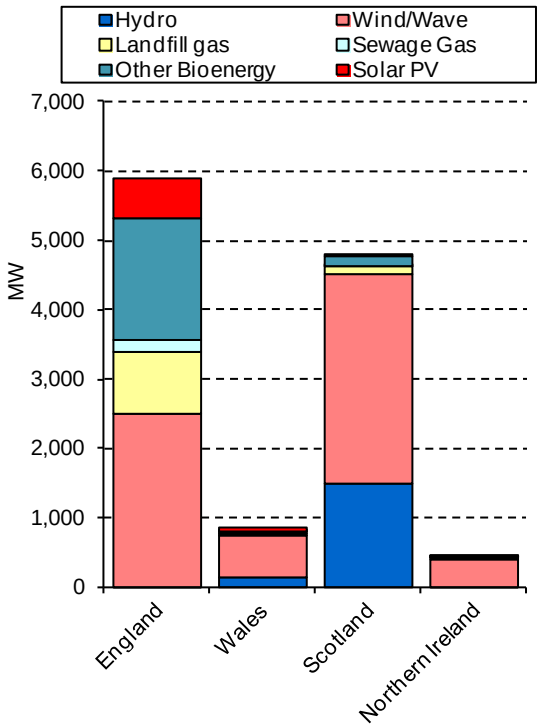


Chart 4: Renewable capacity by English region

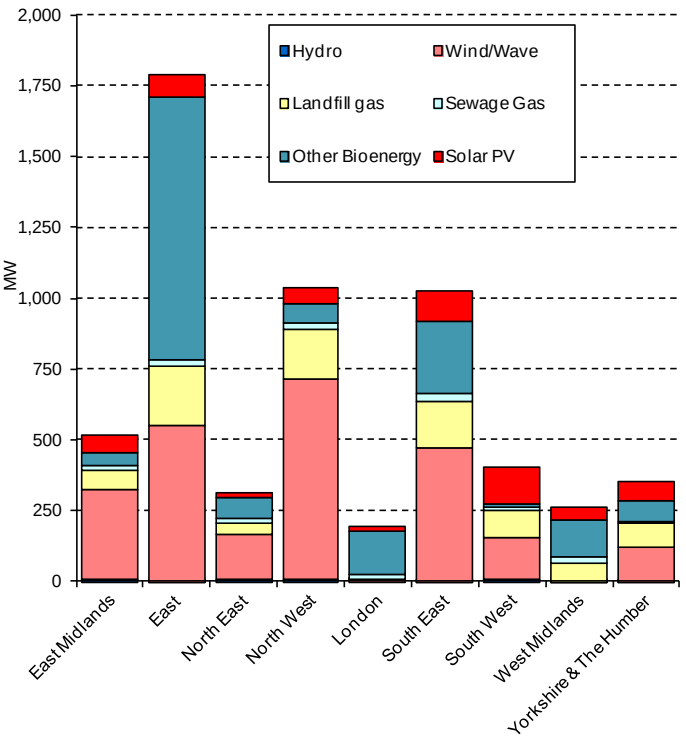
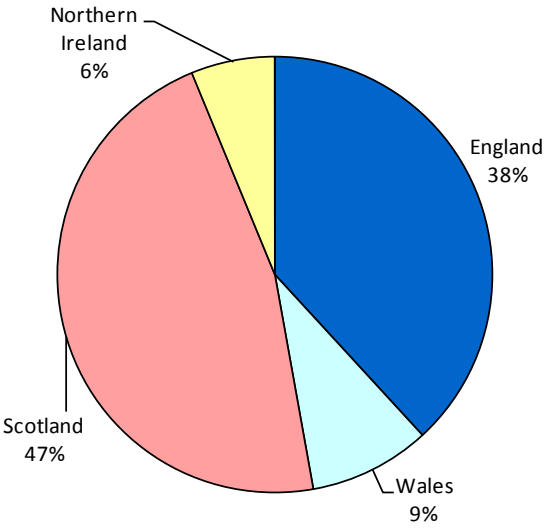
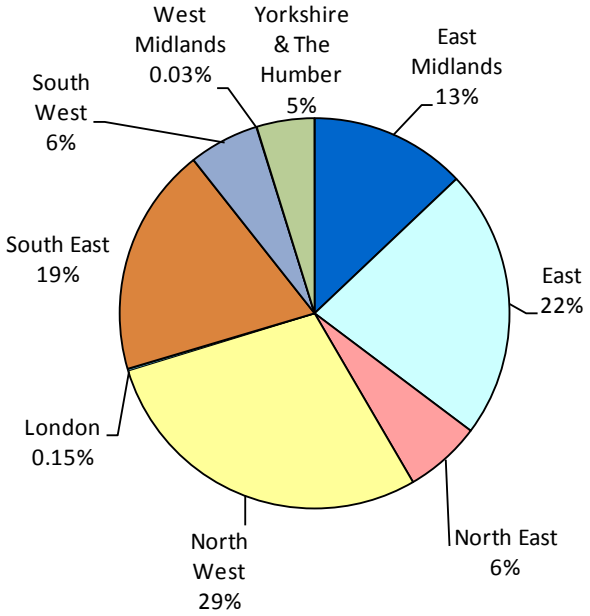


Chart 5: Wind capacity by country



Total capacity allocated: 6,471MW

Chart 6: Wind capacity by English region



Total capacity allocated: 2,470MW

Chart 7: Renewable generation by country

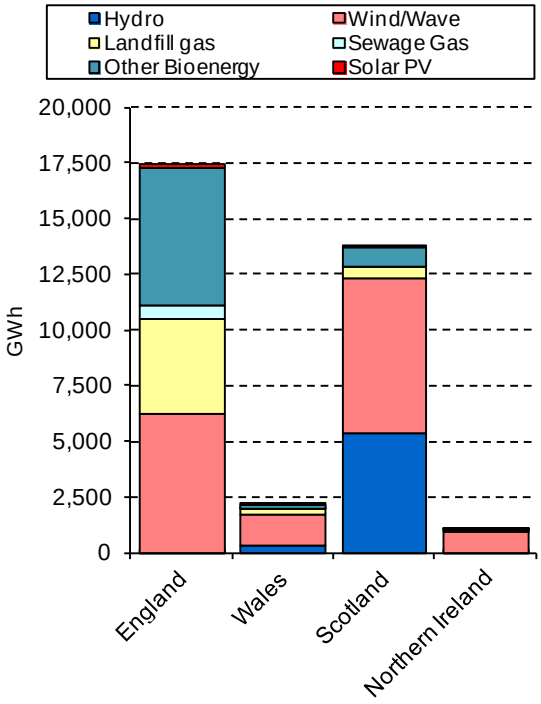


Chart 8: Renewable generation by English region

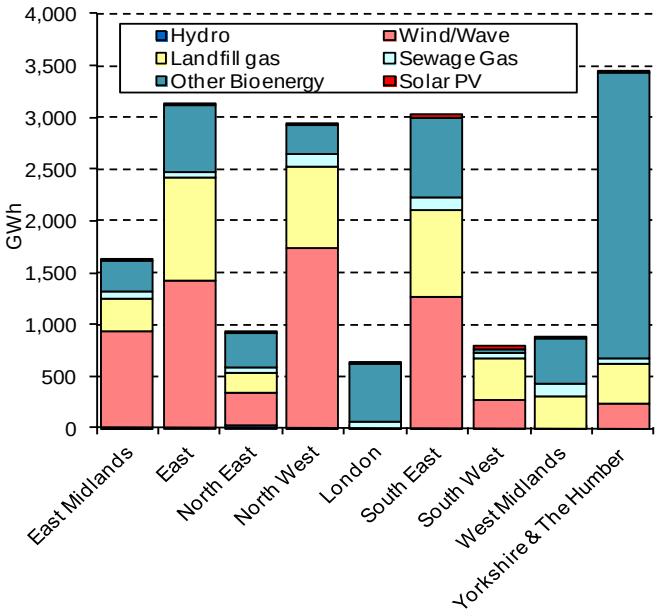
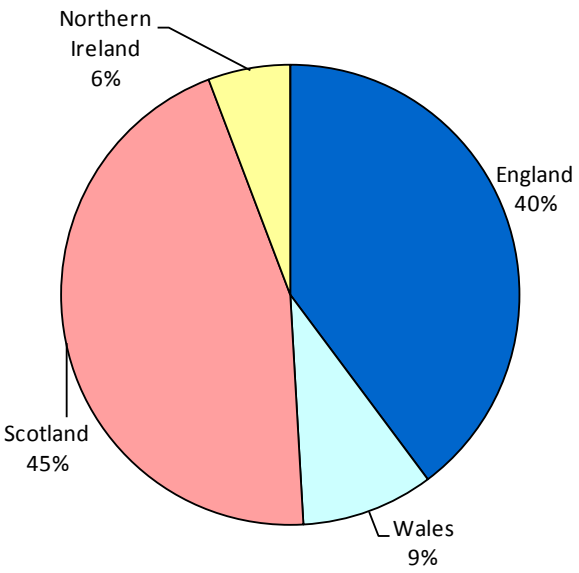
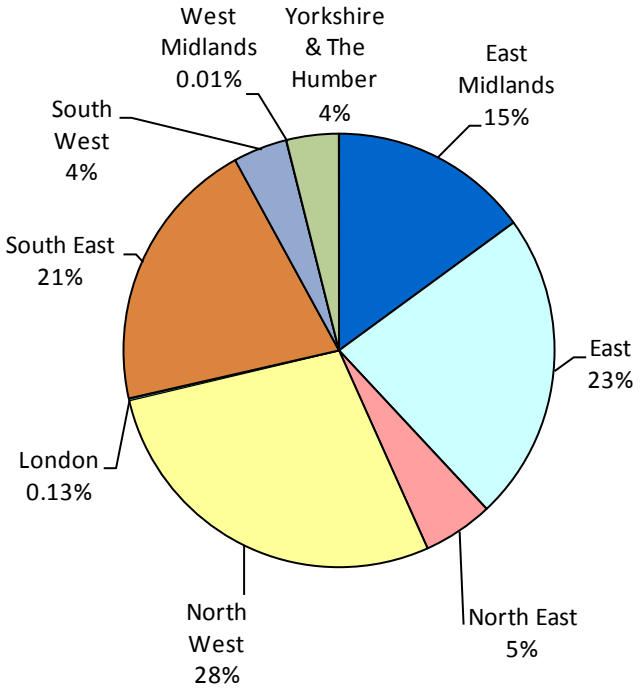


Chart 9: Wind generation by country



Total generation allocated: 15,474GWh

Chart 10: Wind generation by English region



Total generation allocated: 6,158GWh

Ninety-one per cent of the generation from sewage and 85 per cent of the generation from other bioenergy (including that used for co-firing) took place in England. The West Midlands (16 per cent), South East and North West (15 per cent each) and East Midlands (10 per cent) were the major sewage gas areas, whilst in the other bioenergy category, Yorkshire and the Humber (38 per cent) was the largest, followed by the South East (11 per cent) and the East of England (9 per cent) followed closely by the London (8 per cent). Excluding bioenergy sources used for co-firing (which cannot be allocated to regions – see note 4 to table 2), the East of England has the largest

capacity to generate from bioenergy (49 per cent of the UK total) followed by the South East (13 per cent), London (8 per cent) and jointly West Midlands and Scotland (7 per cent).

In terms of total renewables generating capacity, the East of England (+1,090 MW), Scotland (+445 MW) and the North West (+420 MW) have shown considerable growth this year. This growth has primarily come from other bioenergy (+531 MW) and Wind (+192 MW) in the East of England, Wind in Scotland (+369 MW) and the North West (+329 MW), PV in the South West (+115 MW) and PV (+94 MW) and other biomass (+79 MW) in the South East.

Comparison with economic activity

Economic activity in each country or region can be measured in terms of Gross Value Added (GVA). Table 4 shows that Scotland still has the largest generating capacity from renewables in terms of capacity per unit of GVA and generation per unit of GVA. Looking at these two measures, on aggregate England was below the UK average, whilst Wales, Scotland and Northern Ireland were above. Among the English regions the East of England is highest in generating capacity per unit of GVA terms followed by the North West then the North East. In terms of Generation/GVA, Yorkshire and the Humber is the highest followed by the East of England, North West and North East.

Table 4: Density of renewables generation in different areas

	Electrical generating capacity from renewable sources kW/GVA (£million)[1,2]	Electricity generated from renewable sources kWh/GVA (£million)[1]
England	**5.37**	**15,880**
East Midlands	6.38	20,167
East	16.11	28,342
North East	7.62	22,595
North West	8.58	24,293
London	0.71	2,253
South East	5.49	16,208
South West	4.07	8,087
West Midlands	2.81	9,336
Yorkshire and the Humber	3.90	38,542
Wales	18.82	47,405
Scotland	45.55	130,014
Northern Ireland	15.18	35,289
UK total	**9.39**	**26,888**

1. GVA is gross value added in 2010 (workplace based) as published in Regional, sub-regional and local Gross Value Added 2010, Summary table NUTS1 Regional GVA 2010 at:
www.ons.gov.uk/ons/rel/regional-accounts/regional-gross-value-added--income-approach-/december-2010/sbd-regional-gva-dec-2011.pdf
2. Excludes capacity attributable to co-firing of bioenergy which has not been allocated to regions (see footnote 4 to table 2).

Comparison with earlier years

As in the September 2011 article, DECC and AEA have compiled for each year from 2003 to 2010, the number, installed capacity and generation data comparable to that shown in Tables 1 to 3. These data are available for download as Excel spreadsheets from the following location: https://restats.decc.gov.uk/cms/historic-regional-statistics/. The *Energy Trends* articles in previous editions were snapshots of the position as seen at the time and so the headline data in those articles do not constitute a time series. This is because in each year there have been revisions due to an improved statistical base as well as later information on generation and capacity. In addition, non-biodegradable wastes were included in the figures prior to 2002, but the international definition of renewables being used both here and in the Digest of UK Energy Statistics excludes non-biodegradable wastes.

Between 2003 and 2011 there was a 225 per cent increase in generation from renewables in the UK, but faster rates of growth were recorded in Northern Ireland (853 per cent), Yorkshire and The Humber (431 per cent), South East (282 per cent), East Midlands (278 per cent), Scotland (269 per cent) and North East (260 per cent) (see charts 11 and 12). For the individual technology groups some very large increases are recorded in percentage terms because in 2003 there was very little use of some of the technologies in various regions.

Chart 11: Trends in generation from renewables by country

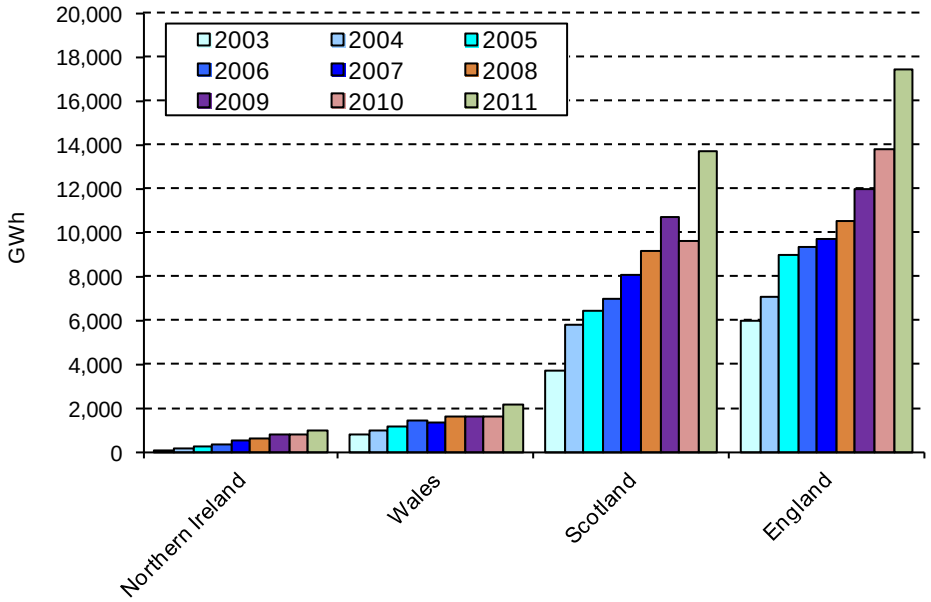
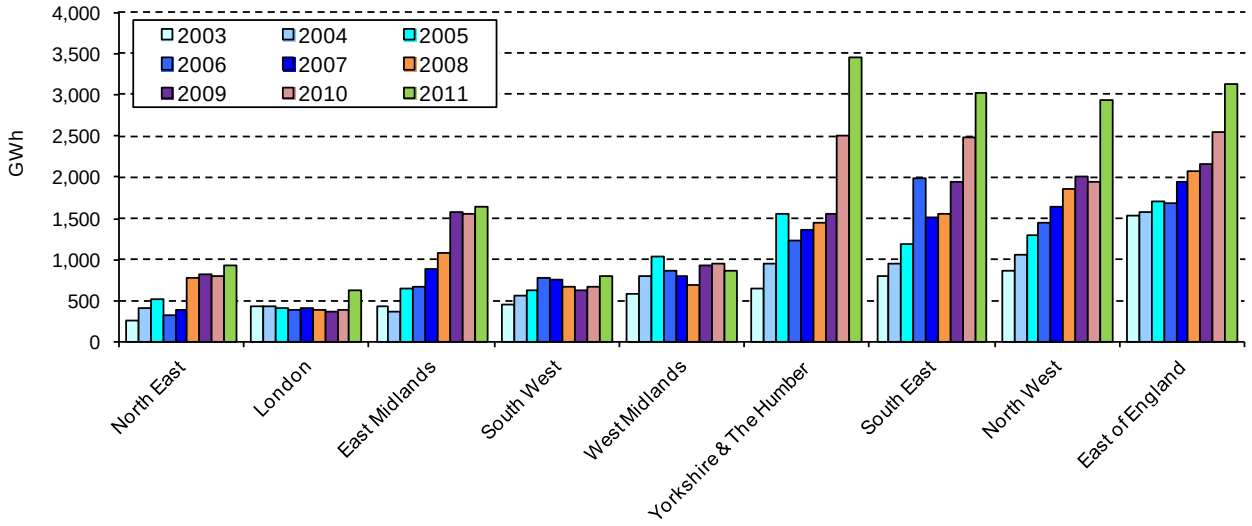


Chart 12: Trends in generation from renewables by English region



Load factors

Load factors for the various technologies have been calculated in Table 5 from data provided in Tables 2 and 3 of this article.

Table 5: Load factors, 2011

	Wind Offshore	Wind Onshore	Landfill gas	Sewage Gas	Other bioenergy (ex cofiring & sewage)	Hydro (large-scale)	Hydro (small-scale)	Hydro
England	**37.2%**	**26.1%**	**54.7%**	**44.2%**	**31.0%**	**31.8%**	**27.1%**	**28.1%**
East Midlands	37.5%	26.7%	51.9%	49.6%	47.3%		24.6%	24.6%
East of England	39.5%	25.8%	55.6%	27.0%	14.2%		0.3%	0.3%
North East	15.4%	24.2%	50.7%	44.7%	49.5%	31.8%	101.4%	38.8%
North West	41.5%	27.8%	52.2%	54.6%	29.9%		27.9%	27.9%
London		24.5%		25.1%	52.8%			
South East	31.7%	27.7%	57.7%	45.1%	40.8%		10.4%	10.4%
South West		26.2%	50.4%	45.7%	38.8%		22.5%	22.5%
West Midlands		14.5%	58.2%	59.6%	40.5%		25.8%	25.8%
Yorkshire and the Humber		24.4%	58.5%	49.7%	39.1%		26.9%	26.9%
Wales	**34.6%**	**27.3%**	**51.3%**	**48.2%**	**68.2%**	**18.3%**	**32.1%**	**20.5%**
Scotland	**35.8%**	**27.6%**	**52.1%**	**49.4%**	**65.1%**	**40.9%**	**45.2%**	**41.4%**
Northern Ireland		**28.2%**	**64.6%**	**42.5%**	**47.7%**		**23.2%**	**23.2%**
UK AVERAGE	36.8%	27.3%	54.4%	44.6%	35.0%	39.0%	40.6%	39.1%
MEDIAN	35.8%	26.5%	52.2%	47.0%	44.1%	31.8%	25.8%	24.6%

The load factors for hydro range from 0.3 per cent in the East of England (due to FiTs sites coming on line at the end of the year) to 41.4 per cent in Scotland, with mean and median values of 39.1 and 24.6 per cent, respectively. For landfill, the load factors vary from 50.4 per cent for South West to 64.6 per cent for Northern Ireland, with mean and median values of 54.4 and 52.2 per cent, respectively.

For offshore wind, load factors varied from 15.4 per cent in the North East to 41.5 per cent in the North West. The low load factor calculated for the North East is based on data from a 4MW experimental facility and, as such, is therefore unrepresentative of what might be expected for this technology in this region. For wind onshore, load factors varied from 14.5 per cent in the West Midlands to 28.2 per cent Northern Ireland This load factor measure does not take into account the

impact of new schemes being constructed but not operating fully in the year. A better measurement of load factors is discussed on the following page.

The term "load factor on an unchanged configuration basis" describes the amount of electricity generated from schemes that have been operating throughout the whole of the calendar year with the same installed capacity configuration. It is calculated as follows:

$$\frac{\text{Electricity generated during the year (MWh)}}{\text{Installed capacity of schemes operating throughout the year with an unchanged capacity configuration (MW)} \times 8760 \text{ hours}}$$

In view of the interest shown nationally in this measure for onshore wind, regional average load factors on an unchanged configuration basis are also calculated; this approach has, for the first time this year, been extended to other renewable technologies. These data are only reported where the region contains three or more operational schemes. The England figure includes data from all English schemes regardless of how many were operational within each region of England.

Table 6: Regional load factors[1] on an unchanged configuration basis, 2011

	Wind Offshore	Wind Onshore	Landfill gas	Sewage gas	Other bioenergy (ex cofiring & sewage)	Hydro (large scale)	Hydro (small scale)	Hydro
England	34.9%	26.3%	59.0%	53.4%	64.6%	31.8%	34.5%	33.6%
East Midlands	37.5%	25.9%	56.6%	49.6%	62.1%		28.1%	28.1%
East of England	35.5%	26.4%	62.8%	64.0%	68.3%			
North East	15.4%	24.4%	51.7%	50.0%	48.9%		69.7%	36.9%
North West	38.9%	27.6%	53.9%	53.6%	50.4%		40.4%	40.4%
London		24.7%		31.0%	66.2%			
South East	31.7%	28.2%	62.8%	55.1%	63.5%			
South West		27.0%	51.6%	53.1%	55.8%		29.3%	29.3%
West Midlands			65.8%	60.3%	74.7%		27.3%	27.3%
Yorkshire and the Humber		25.1%	65.1%	52.9%	66.4%		32.1%	32.1%
Wales	**34.6%**	**26.2%**	**56.6%**	**33.0%**	**55.0%**	**18.3%**	**34.3%**	**20.3%**
Scotland	**35.8%**	**27.4%**	**63.0%**	**57.7%**	**55.1%**	**44.0%**	**46.0%**	**44.1%**
Northern Ireland		**29.8%**	**66.8%**		**11.6%**		**40.5%**	**40.5%**
UK AVERAGE	35.0%	27.2%	59.5%	53.5%	63.3%	41.5%	43.2%	41.7%
MEDIAN	35.5%	26.4%	62.8%	53.1%	59.0%	31.1%	34.3%	32.1%

[1] FITs data are excluded from all load factor on an unchanged configuration basis calculations because the fine detail about them (start dates, completeness of generation data, etc) is currently not available.

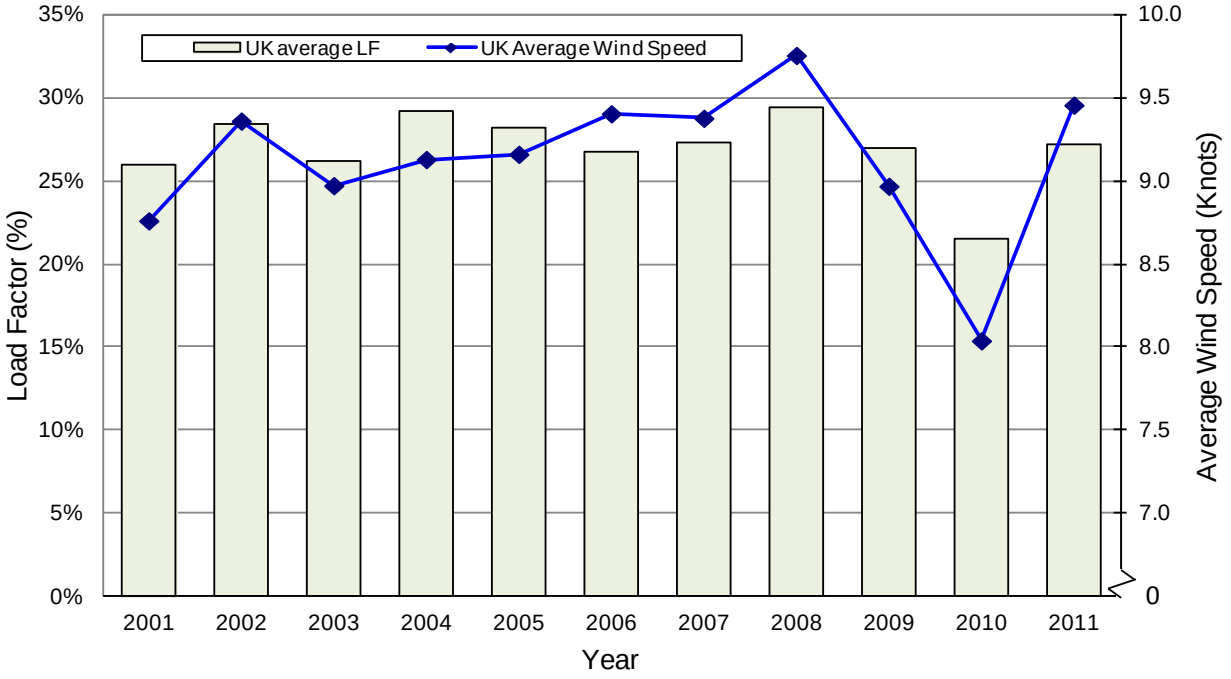
These data show that for onshore wind, the unchanged configuration load factors range from 24.4 per cent in the North East to 29.8 per cent in Northern Ireland with East of England and the South West occupying the median region at 26.7 per cent [3].

[3] Regional wind speed data are aggregated according to wind electricity generating capacity. Further information on the methodology used is give It is recognised that one of the shortcomings of the differences in the reporting periods for the data contained in the Digest of UK Energy Statistics and in this article (end of calendar year) and Ofgem's finalised ROCs data (end of financial year), is that the finalised Ofgem figures are not available for use during the compilation process for the former analysis. The Digest and this article utilise ROCs data as reported in April 2012, when 2011 data were still provisional. In particular this can have an impact on the schemes included in the unchanged configuration definition as new data could include or remove particular schemes. This should be kept in mind if users wish to reanalyse these results.

Chart 13 shows the annual variation in load factor and wind speed. This uses a wind speed index[4] that provides an indication of the mean wind speed relative to that of the UK long-term average.

Over the 11-year period from 2001 to 2011, 2008 was the windiest year with 2010 being the least windy year since 2003. Average wind speeds rose again in 2011 and were comparable with previous good years.

Chart 13: Annual variation in load factor on an unchanged configuration basis and wind speed



The unchanged configuration load factor ranges for other renewable energy technologies are as follows:

- Landfill gas: 66.8 per cent in Northern Ireland to 51.6 per cent in the South West compared with a UK figure of 59.5 per cent
- Sewage gas: 60.3 per cent in the West Midlands to 49.6 per cent in the East Midlands, with a UK figure of 53.5 per cent
- Hydro: 44.1 per cent in Scotland to 20.2 per cent in Wales with a UK figure of 41.7 per cent

Further information

For further details on the sub-national renewable analysis in this article please contact:

Steve Dagnall and Ben Kiff
AEA
Tel: 0870 190 6092
E-mail steve.dagnall@aeat.co.uk
https://restats.decc.gov.uk/

Julian Prime
DECC Energy Statistics Team
Tel: 0300 068 5054
E-mail julian.prime@decc.gsi.gov.uk

James Hemingway
DECC Energy Statistics Team
Tel: 0300 068 5042
E-mail james.hemingway@decc.gsi.gov.uk

www.decc.gov.uk/en/content/cms/statistics/statistics.aspx

[4] Based on data provided by the Meteorological Office. Regional wind speed data are aggregated according to wind electricity generating capacity. Further information on the methodology used is given in Energy Trends, September 2008, page 44: www.decc.gov.uk/en/content/cms/statistics/publications/trends/trends.aspx

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

Background

Combined Heat and Power (CHP) is the simultaneous generation of usable heat and power (usually electricity) in a single process. CHP data for the UK as a whole are updated annually and published in the Digest of United Kingdom Energy Statistics (DUKES), the latest edition of which was published on 26 July 2012. This article updates statistics published in the September 2011 edition of Energy Trends, which provided a breakdown of CHP in the Devolved Administrations and English regions[1] in 2010. This update is based upon data for 2011. Since the last article was published, the Good Quality CHP capacity in the UK has increased from 6,053 MWe (revised 2010 figure) to 6,111 MWe in 2011.

The data presented in this paper originates from a CHP database maintained by AEA on behalf of DECC. Data relating to the overwhelming majority of CHP electrical capacity (over 99 per cent of total capacity) is received annually from the Combined Heat and Power Quality Assurance (CHPQA) programme, the Iron and Steel Statistics Bureau (ISSB) and from Ofgem's Renewable Obligations Certificates (ROCs) returns. A small number of anaerobic digestion sites, obtained via a targeted survey, were added in 2010. The 2011 data also includes small schemes reported by suppliers but not registered under CHPQA. Data from CHP schemes not covered by the above are extrapolated from historic data.

During 2011, 140 new CHP schemes came into operation and registered with CHPQA while 31 CHP schemes, which were operating in 2010, subsequently closed and did not operate in 2011. The data also includes an additional 194 small scale schemes (ranging from 30 to 600 kWe) reported by suppliers but not registered under CHPQA, a net increase of 303 schemes. During 2011 there was a net increase in capacity of 58 MWe, made up of 108 MWe of new capacity (either through new schemes or an increase in capacity of existing schemes) and a loss of 50 MWe (either through schemes closing or a reduction of capacity due to a reduction in heat supplier loads at schemes that remained operational).

Table 1: Overview of CHP schemes in 2011

	Number of schemes	Electrical capacity∗ MWe	Heat capacity MWth	Fuel used∗ GWh	Electricity generated∗ GWh	Heat generated GWh	Load Factor ** (%)
England	**1,586**	**5,323**	**7,187**	**92,815**	**23,208**	**38,773**	54.6%
East Midlands	98	234	348	4,544	1,247	1,819	57.0%
Eastern	130	285	344	4,218	1,233	1,864	49.9%
London	212	126	249	2,139	409	1,074	38.8%
North East	101	910	1,169	16,073	3,121	6,312	37.5%
North West	257	739	1,609	17,951	3,631	9,508	55.8%
South East	322	889	1,615	17,934	4,221	8,526	54.6%
South West	129	80	68	1,394	321	608	48.2%
West Midlands	161	104	101	1,795	408	719	37.2%
Yorkshire/Humberside	176	1,956	1,684	26,767	8,617	8,342	71.5%
Scotland	116	529	2,827	13,902	2,864	6,813	59.1%
Wales	119	210	299	5,278	962	2,585	49.3%
Northern Ireland	59	49	92	863	157	456	39.9%
UK Total	**1,880**	**6,111**	**10,405**	**112,858**	**27,191**	**48,627**	**54.6%**

∗This represents Good Quality CHP capacity, Good Quality CHP power output and the fuel associated with the Good Quality CHP outputs.

** These load factors are based on the total power output (TPO) and total power capacity (TPC) of the CHP (for partially and fully qualified schemes) and are not derived from the Electrical Capacity and Electricity Generated in this table. This gives the true utilization of the power generating plant.

[1] Similar articles on CHP have appeared in previous Energy Trends publications. However, the figures within any one article are a snapshot of the position as seen at the time and therefore figures between articles do not constitute a time series.

Regional Trends[2]

Table 1 shows an overview of CHP plant data broken down between the English regions and Devolved Administrations. The degree to which the CHP capacity installed in the regions is utilised can be expressed by the Load Factor (LF). The LF is the actual generation as a proportion of the theoretical maximum power that can be generated for a given total installed capacity (TPC). The power output that is actually generated is the total power output (TPO). For example, a CHP with a TPC of 10 MWe has a maximum TPO of 87,600 MWh, i.e. if it ran for all hours in the year (8,760 hours). However, if the TPO was actually 52,560 MWh, it would have a LF of 60 per cent.

Higher LF values tend to be found in industrial uses where the demand for heat extends over a greater proportion of the year than for space heating applications (where the heat demanded from the CHP is mostly confined to the heating season). In 2011, the overall LF value (54.6 per cent) was the same as in 2010, attributed to the fact that the LF in England (the location of 87 per cent of UK CHP capacity), remained relatively constant between 2010 and 2011. The small reduction in LF in Wales and Northern Ireland was balanced by an increase in LF in Scotland. The region with the highest LF in 2011 was Yorkshire/Humberside, followed by Scotland and then the East Midlands. Yorkshire and Humberside has a much higher LF than the other regions because many of its plants are heavy industry plants with 24 hour operation. In 2011, several of these plants operated at LF above 70%, with a few operating at LF above 80%. Some regions (e.g. West Midlands and North East) have low load factors because many schemes in these regions did not operate in 2011, thus reducing the average load factor for the region.

Table 2 shows a comparison of the number of schemes and electrical capacity in the regions for the period 2009 to 2011. During this time, the total number of schemes increased from 1,485 to 1,880, while capacity increased from 5,573 MWe to 6,111 MWe. In England, Wales and Northern Ireland both the number of schemes and electrical capacity have increased between 2009 and 2011. In Scotland, however, while the number of schemes has increased, the total capacity between 2009 and 2011 has decreased. The biggest increase in capacity between 2009 and 2011 was in Yorkshire and Humberside.

Table 2: Number and electrical capacity of CHP schemes, 2009 to 2011

	Number of schemes			Electrical capacity (MWe)		
	2009	**2010**	**2011**	**2009**	**2010**	**2011**
England	**1,263**	**1,333**	**1,586**	**4,870**	**5,266**	**5,323**
East Midlands	76	78	98	223	228	234
Eastern	103	119	130	261	275	285
London	152	158	212	141	122	126
North East	78	80	101	898	905	910
North West	205	216	257	778	783	739
South East	283	294	322	890	884	889
South West	102	112	129	55	68	80
West Midlands	122	131	161	93	99	104
Yorkshire/Humberside	142	145	176	1,531	1,902	1,956
Scotland	85	93	116	536	527	529
Wales	88	97	119	136	213	210
Northern Ireland	49	54	59	31	48	49
UK Total	**1,485**	**1,577**	**1,880**	**5,573**	**6,053**	**6,111**

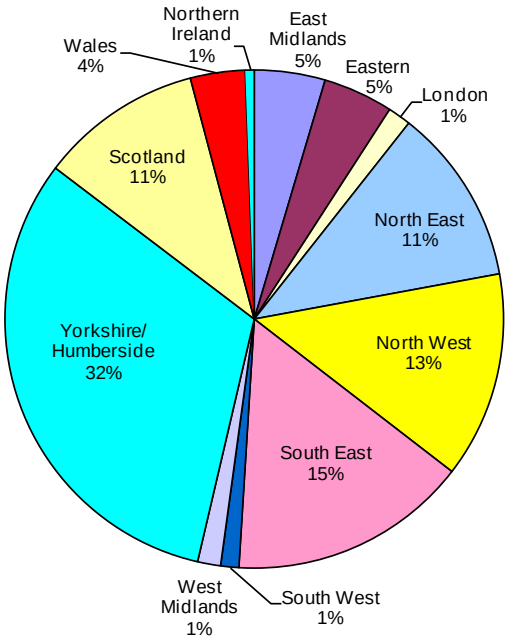
[2] Note: The figures for previous years are revised on an annual basis to account for late information submitted after the publication date of the article. This is to ensure that the true trends are captured in the data. The figures herein therefore supersede the previous articles published.

Special feature - CHP

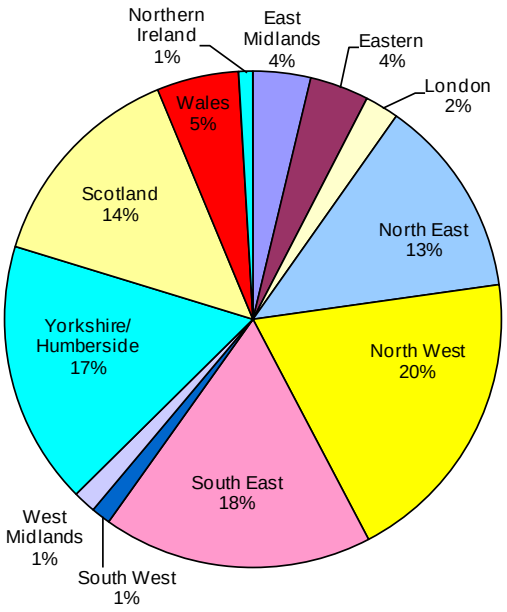
In 2011, as in the previous two years, most of the UK's installed CHP electrical capacity was in England. The region with the highest proportion of the UK's capacity was the Yorkshire and Humberside region with a 32 per cent share. The fact that only 9.3 per cent of the total number of schemes in 2011 came from the Yorkshire and Humberside region is an indication of the large capacities of schemes in this region, particularly in the refineries sector.

Chart 1 shows the distribution of electricity and heat generation from CHP in 2011 across the English regions and the Devolved Administrations. The largest contribution to electricity generation remains that of the Yorkshire and the Humber region (32 per cent), followed by the South East (15 per cent), the North West (13 per cent) and the North East (11 per cent). This ranking is the same as in 2010.

Chart 1: CHP generation by area in 2011



By Electricity Generation



By Heat Generation

The region with the greatest share of heat generation in 2011 was the North West (20 per cent), followed by the South East (18 per cent), Yorkshire and Humberside (17 per cent) and then Scotland (14 per cent). The North West has had the single largest regional share of overall CHP heat generated since at least 2007.

Importance of CHP in the Regional Economies

Chart 1 portrays only a limited picture as it does not account for the varying size of each region. To allow for this, CHP heat capacity and electrical capacity have been compared with the level of economic activity in each region as measured by Gross Value Added (in £ million) in Table 3 and in Charts 2 and 3.

The North East and Scotland have the highest heat capacity density by a large margin followed by Yorkshire and the Humber and the North West. In these regions, industries using CHP play an important part of the economy as represented by the high heat capacity to GVA ratio. The high value of heat capacity per unit of GVA in Scotland, compared to electrical capacity per unit GVA, is a reflection of the high average heat to power ratio of the CHP schemes in Scotland, which in turn is driven by a large Back Pressure Steam Turbine (BPST) capacity in this region[3]. The relatively

[3] Most of this BPST capacity is contained within schemes classified as Gas Turbines in this paper, on account of the fact that the schemes also include gas turbines and operate in CCGT mode.

high values per unit GVA for both heat and electrical capacity in the North East and Yorkshire and the Humber are a reflection of the relative prominence of CHP in the economies of those regions, in particular the use of CHP in refinery and chemical processing activities. In both of these regions, about 90 per cent of the CHP capacity is within the chemical and refineries industry.

Table 3: Density of CHP in different areas, ordered by heat capacity

	Heat capacity kWt/GVA (£million)*	Electrical capacity kWe/GVA (£million)*
North East	28.48	22.17
Scotland	26.77	5.01
Yorkshire/Humberside	18.78	21.81
North West	13.35	6.15
South East	8.64	4.76
Wales	6.56	4.61
East Midlands	4.29	2.89
Northern Ireland	3.27	1.75
Eastern	3.11	2.57
London	1.16	0.51
West Midlands	1.08	1.17
South West	0.69	0.82
UK total	28.48	22.17

*GVA is provisional gross value added in 2010 (workplace based)[4]

The distribution of CHP capacity across the regions and economic sectors is summarised in Table 4, which shows the proportion of total CHP capacity in a particular economic sector that resides in each region. Sixty per cent of all CHP capacity in the oil refineries and oil and gas terminals sector can be found in the Yorkshire and Humber region. Other notable concentrations of CHP capacity are in the North East, North West and Yorkshire and Humberside regions for the chemicals sector, in the South East for the paper and printing sector and in the East region for the food and beverages sector.

[4] www.ons.gov.uk/ons/rel/regional-accounts/regional-gross-value-added--income-approach-/december-2010/stb-regional-gva-dec-2011.html. (Regional, sub-regional and local Gross Value Added 2010, Office of National Statistics, Statistical Bulletin, December 2011)

Table 4: Distribution of CHP capacity across the regions and economic sectors

Region	Sector									
	Iron and Steel and Non-ferrous Metals	Chemicals	Oil Refineries and Oil and Gas Terminals	Paper, Publishing and Printing	Food, Beverages and Tobacco	Metal Products, Machinery and Equipment	Mineral Products	Other Industrial Branches	Transport, Commerce and Administration	Other
England	**80.7%**	**91.2%**	**84.5%**	**80.1%**	**92.0%**	**83.2%**	**100.0%**	**78.2%**	**84.0%**	**94.2%**
East Midlands	*0.0%*	*5.1%*	*0.0%*	*0.0%*	*7.4%*	*45.1%*	*6.1%*	*2.9%*	*6.4%*	*13.1%*
East	*7.0%*	*0.4%*	*0.0%*	*0.0%*	*48.8%*	*0.0%*	*0.0%*	*9.5%*	*5.9%*	*8.5%*
London	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*4.7%*	*0.0%*	*0.0%*	*7.8%*	*14.9%*	*11.2%*
North East	*49.2%*	*38.0%*	*4.2%*	*0.0%*	*0.0%*	*0.0%*	*27.9%*	*7.5%*	*4.8%*	*2.7%*
North West	*0.0%*	*20.5%*	*4.8%*	*16.5%*	*19.4%*	*1.1%*	*43.7%*	*10.1%*	*9.9%*	*4.0%*
South East	*6.1%*	*4.6%*	*15.2%*	*58.4%*	*5.4%*	*5.5%*	*0.0%*	*17.4%*	*16.7%*	*24.8%*
South West	*0.0%*	*0.4%*	*0.0%*	*1.4%*	*2.0%*	*4.4%*	*12.8%*	*5.5%*	*4.9%*	*5.7%*
West Midlands	*0.0%*	*0.0%*	*0.0%*	*2.1%*	*0.7%*	*27.3%*	*0.0%*	*14.5%*	*9.6%*	*2.9%*
Yorkshire and Humber	*18.4%*	*22.1%*	*60.3%*	*1.7%*	*3.6%*	*0.0%*	*9.6%*	*3.0%*	*10.9%*	*21.2%*
Scotland	**0.0%**	**6.5%**	**12.4%**	**11.2%**	**2.3%**	**1.5%**	**0.0%**	**10.5%**	**8.8%**	**2.9%**
Wales	**17.6%**	**1.7%**	**3.1%**	**8.7%**	**1.4%**	**9.0%**	**0.0%**	**11.1%**	**4.9%**	**1.3%**
Northern Ireland	**1.7%**	**0.6%**	**0.0%**	**0.0%**	**4.3%**	**6.2%**	**0.0%**	**0.1%**	**2.3%**	**1.6%**
Total	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*

Chart 2: Map of CHP density in terms of electrical capacity and gross value added

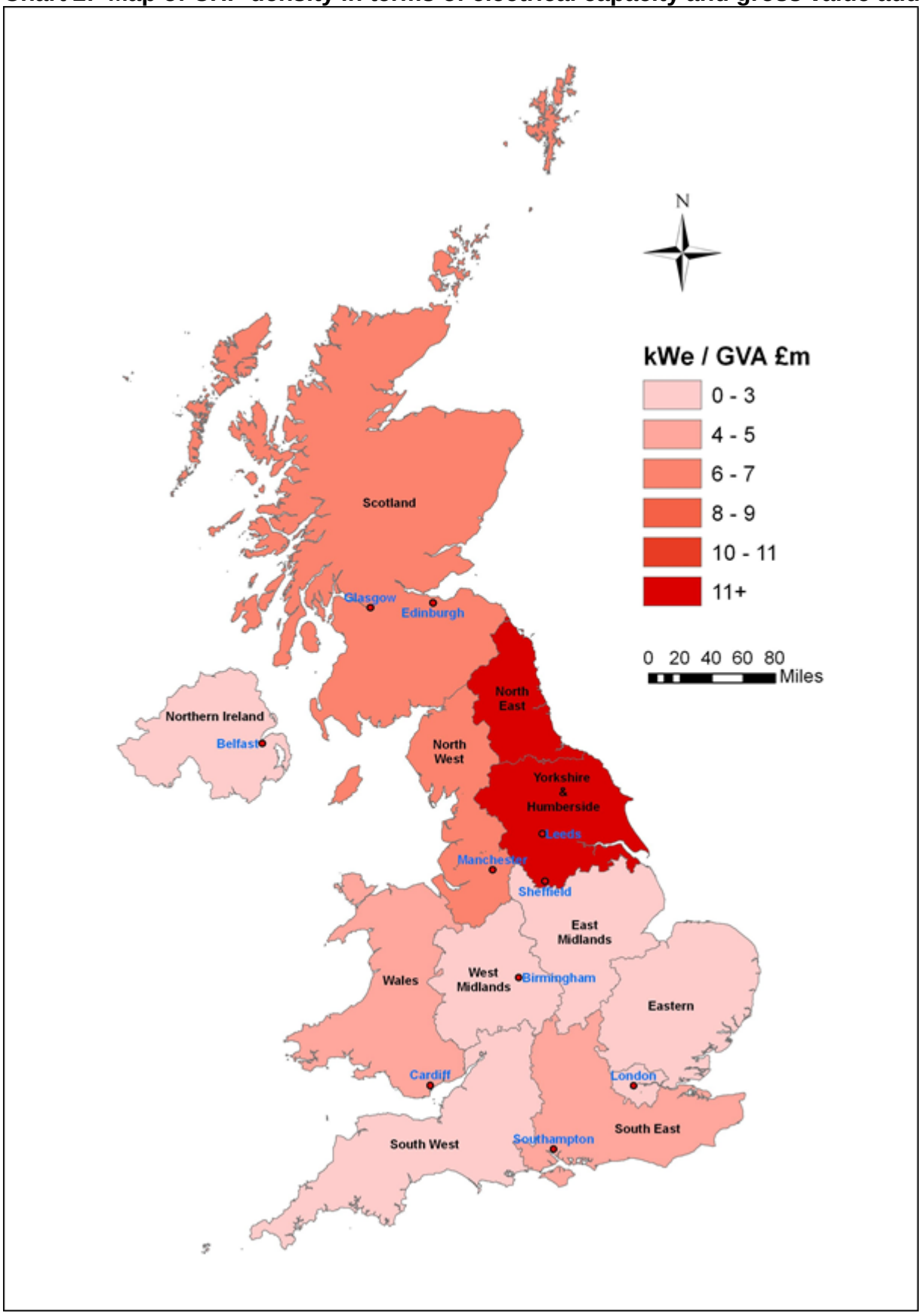
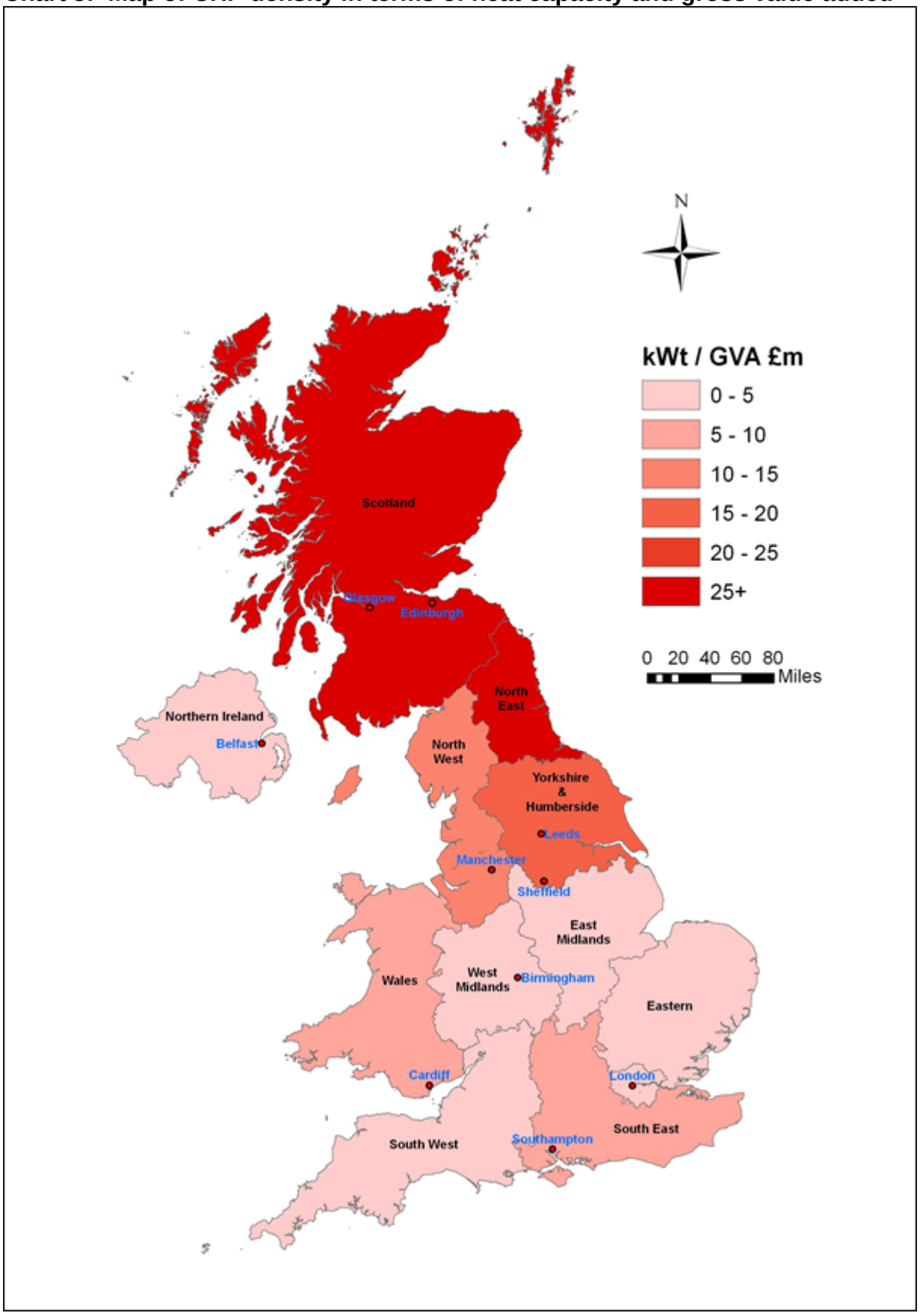


Chart 3: Map of CHP density in terms of heat capacity and gross value added



Technology type and size

Tables 5 and 6 show the regional split of installed electrical capacity (that qualifies as Good Quality CHP capacity) by prime mover type and by size range, respectively. In a number of regions, disaggregation of the data by prime mover type or size category could result in the disclosure of confidential information and so, for these areas, only totals are shown. The following conclusions can be drawn from the tables:

- Gas turbines, whether on their own or as part of Combined Cycle Gas Turbines (CCGT), continue to dominate the CHP market. In 2011, CCGT accounted for around two-thirds of total CHP capacity while accounting for just 2.1 per cent of the total number of CHP schemes (40 CCGT schemes out of a total of 1,880 CHP schemes).

- Only in the North East and North West regions is there a significant presence of steam turbine-based CHP plant, which helps to explain the relatively high ratio of heat to power generated observed for the North West region (H:P = 2.62).

- As CCGT CHP plant has the lowest heat to power ratios of all the CHP technologies, the large amount of CCGT capacity in the Yorkshire and Humber region helps to explain why this region generated 31 per cent of all CHP electricity but only 16 per cent of all CHP heat in 2011. The heat to power ratio in the Yorkshire and Humber region fell from 1.01 in 2010 to 0.97 in 2011, due to reduced heat output from the large schemes in the region.

Table 5: CHP electrical capacity (MWe) by area and prime mover in 2011

	Gas Turbines*	Steam Turbines	Reciprocating Engines	Total
England	**4,060**	**495**	**768**	**5,323**
East Midlands	146	46	42	234
Eastern		285		285
London		125		126
North East	588	255	66	910
North West	513	128	98	739
South East		889		889
South West		80		80
West Midlands		104		104
Yorkshire/Humberside	1,829	41	85	1,956
Scotland	440	44	45	529
Wales		210		210
Northern Ireland		49		49
Grand Total	**4,632**	**589**	**889**	**6,111**

*Includes Combined Cycle Gas Turbines (CCGT)

While the CHP market in total is dominated by large-scale (>10MWe) plant, with 81.8 per cent of installed capacity being in this size range, two regions in 2011 have no capacity above 10MWe (West Midlands and the South West), as shown in Table 6.

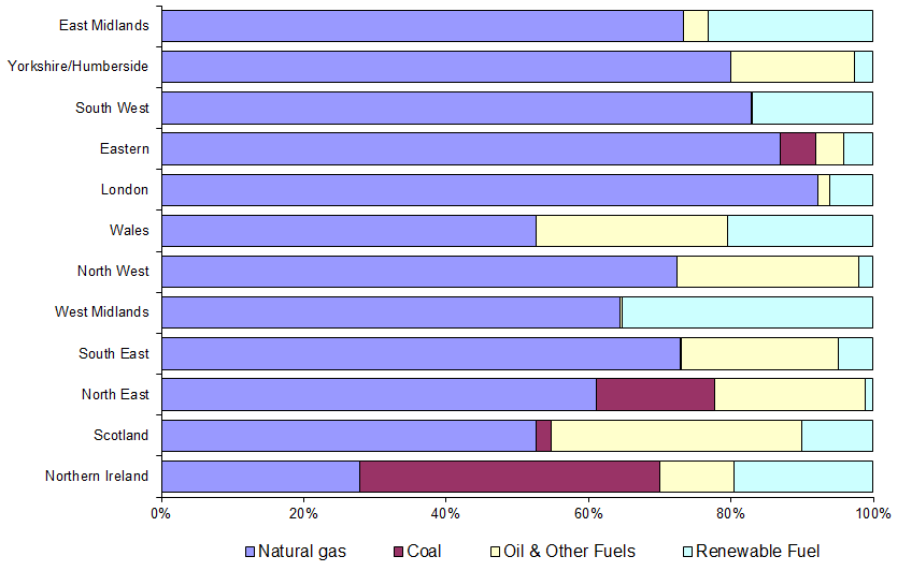
Table 6: CHP electrical capacity (MWe) by area and size in 2011

	Less than 100 kWe	100 kWe but less than 1 MWe	1 MWe but less than 10 MWe	10 MWe and greater	Total
England	**28**	**213**	**695**	**4,387**	**5,323**
East Midlands	2	13	31	189	234
Eastern	2	20	64	198	285
London	4	29	93		126
North East	2	8	51	849	910
North West	5	34	102	598	739
South East	5	47	837		889
South West	2	20	58	0	80
West Midlands	3	20	81	0	104
Yorkshire/Humberside	4	21	76	1,855	1,956
Scotland	1	15	61	452	529
Wales	3	14	194		210
Northern Ireland	1	8	40		49
UK Total	**33**	**250**	**828**	**5,000**	**6,111**

The fuel mix

The proportion of coal, gas, renewable fuels and 'oil and other fuels' (comprising oil products, refinery gases, blast furnace gas and other industrial wastes) in the fuel mix for each region is shown in Chart 4.

Chart 4: Proportion of different fuels in the fuel mix for CHP in 2011 for each region



Natural gas represents at least half of all fuel burned in CHP in all regions except Northern Ireland, where the relatively limited extent of the gas grid continues to suppresses gas use. Northern Ireland is unique in that coal represents the single largest fuel used in CHP (about 47 per cent).

Coal plays a relatively minor role in all other regions (except North East where it accounts for about 17 per cent) and is not used at all in CHP in six regions (East Midlands, South West, London, Wales, North West and West Midlands).

In 2011, the region where renewable fuels constituted the largest share for total CHP fuel input was the West Midlands where renewables accounted for 34 per cent of total fuel used in the region. This was followed by the East Midlands (23 per cent), Wales (24 per cent), Northern Ireland (20 per cent) and the South West (17 per cent). The use of renewable fuel in Northern Ireland fell from 26 per cent in 2010 to 20 per cent in 2011, mainly due to an increase in the use of natural gas. Renewable fuels' relatively large proportion of total fuel consumption in the West Midlands and South West is principally due to the use of sewage gas. Renewable fuels' share of total fuel use in CHP plant rose from 5.8 per cent in 2010 (revised) to 6.2 per cent in 2011.

Summary

After taking into account the installation of new schemes, the decommissioning of old schemes and a fall in capacity at some schemes that remain operational, there was a 9.7 per cent increase in UK CHP capacity over the three year period 2009 to 2011. However, capacity was broadly unchanged between 2010 and 2011.

The Yorkshire and the Humberside region continues to be the region of the UK with the greatest level of installed capacity and electricity generation. Other regions with high levels of CHP capacity (North East, South East and North West) are those with significant presence of heat intensive industry, such as oil refining, chemicals production and paper and printing. About 88 per cent of all refinery CHP capacity is located in the regions of Yorkshire and the Humber, the South East and Scotland, while about 81 per cent of CHP capacity at chemical works is located in the three regions of the North East, the North West and Yorkshire and Humber. About 58 per cent of the paper and printing CHP capacity, on the other hand, is located in the South East.

The region with the highest heat capacity density is the North East, followed by Scotland, Yorkshire and Humberside and the North West. The North East also has the highest electrical capacity density, followed by Yorkshire and Humber. This is a reflection of the relative prominence of CHP in the economies of these regions, in particular the use of CHP in the refinery and chemical sectors. The low electrical capacity per unit GVA for Scotland in comparison to the high heat capacity per unit GVA is a reflection of the high heat-to-power ratio of CHP schemes in Scotland due to a large capacity of Back Pressure Steam Turbines in the region.

The region with the highest proportion of renewable fuel use is the West Midlands, followed by East Midlands and then Wales.

For further information on UK CHP statistics, please contact:

Naser Odeh
AEA Energy & Environment
Tel: 0870 190 6811
E-mail: naser.odeh@aeat.co.uk

Laura Williams (Statistician)
Department of Energy and Climate Change (DECC)
Tel: 0300 068 5045
E-mail: laura.williams@decc.gsi.gov.uk

Running hours during winter 2011/12 for plants opted-out of the Large Combustion Plant Directive (LCPD)

The Large Combustion Plant Directive (LCPD) is a European directive aimed at controlling emissions of sulphur dioxide, nitrogen oxides and dust from large combustion plants. The directive imposes emissions limits on new plants (those licensed after 1st July 1987). Plants licensed before this date have three options.

1) Meet new emission limits which will require retrofitting of flue gas treatment equipment (i.e. opt-in).
2) Opt out limited life derogation – 20,000 hours of operation between 1st Jan 2008 and 31st Dec 2015.
3) Close before 1st Jan 2008.

Of the 16 coal fired power stations currently operating in Great Britain, 6 have opted out along with the 3 oil fired stations. A list of these plants is given in table 1. Peterhead power station (which is predominantly gas fired) is also affected by the directive as it was built prior to 1987 but has chosen to opt-in.

In 2009, the Balancing and Settlement Code was modified to increase the information made publically available about plants affected by the directive. This data can be downloaded from the following website www.bmreports.com/bsp/bes.php?prefix=LCPD .

This data has been used to produce Table 1 which shows the hours run during winter 2011/12 by plants which chose to opt-out of the directive (winter is defined as beginning October 2011 – end March 2012).

Table 1: Hours run during winter 2011/12 by plants opted-out of LCPD

Plant	Capacity[1] (MW)	Hours run during winter 10/11	Hours run during winter 11/12	Hours remaining	Hours remaining (%)
Cockenzie units 1 & 2	1,152	1,972	3,080	792	4%
Cockenzie units 3 & 4		2,824	2,859	1,961	10%
Didcot A	1,958	2,332	3,439	6,378	32%
Ferrybridge (1&2)	1,960	2,463	3,186	6,693	33%
Ironbridge	940	1,578	803	11,081	55%
Kingsnorth	1,940	2,644	3,021	3,037	15%
Tilbury (7 & 8)	750	1,921	1,056	6,778	34%
Tilbury (9 &10)		2,051	955	6,491	32%
Total (coal)[2]	**8,700**	**17,785**	**18,399**	**43,211**	**27%**
Fawley*	968	47	16	9,182	92%
Grain*	1,300	54	4	8,721	87%
Littlebrook*	1,370	53	22	8,708	87%
Total (oil)	**3,638**	**154**	**42**	**26,611**	**89%**

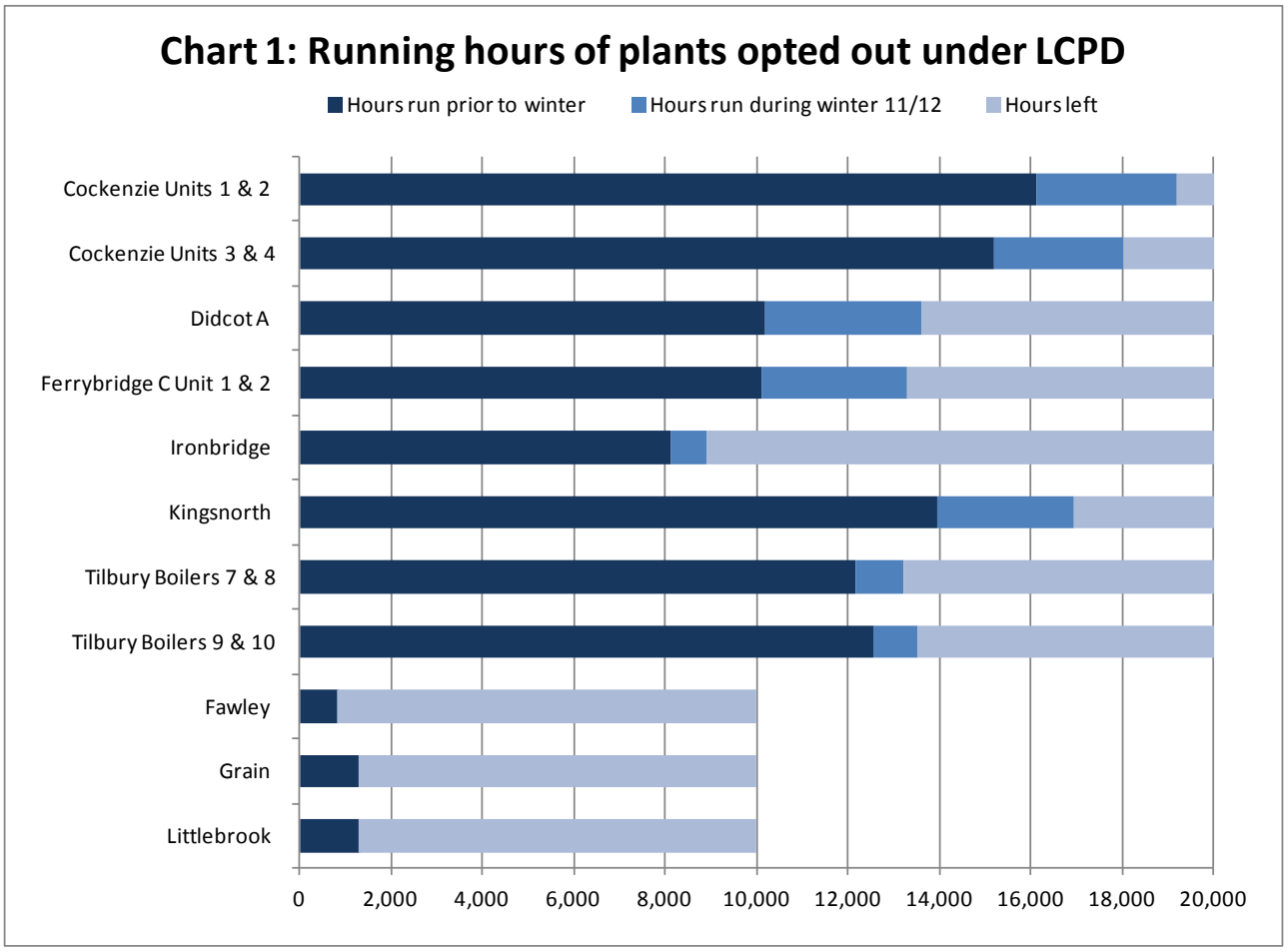
* These plants are oil fired and have taken the option of limiting running hours to 10,000. Under this option plants only need to provide sample measurements of SO2 rather than continuous measurements.

[1] Sourced from DUKES 2012 Table 5.11

[2] Coal total includes Tilbury, which converted from coal to biomass during 2011 and continues to be opted-out. Although biomass produces almost no CO2 emissions the plant will not be exempt from closure at the end of 2015 as the LCPD relates to particulate matter and sulphur dioxide/nitrogen oxide emissions.

In total the plants opted-out of the LCPD ran for 18,441 hours during winter 2011/12. Of which 29 per cent occurred in February (5,343 hours). This compares to 17,939 hours during the winter of 2010/11.

Didcot A and Ferrybridge ran the most hours during winter 2011/12. Both power stations have now used about two thirds of their allowance. Of the coal fired plants, Ironbridge has the most hours remaining with over half of its allowance left to use (55 per cent), and has not been running since February 2012, as it is being converted to run on biomass instead of coal. Tilbury converted to biomass from coal during 2011 and so was not generating from March 2011 onwards. After conversion it only exported to the grid for one month in the winter of 2011/12, before closing due to fire damage. Cockenzie (units 1-4) has used over 90 per cent of its allowance. As oil fired power stations tend to be used infrequently they still have a high proportion of their hours remaining despite only having an allowance of 10,000 hours.



When will the plants use up all their hours?

The hours left at the end of each month were plotted for each station, a line of best fit was drawn and an equation used to calculate when the plant would use up its allocated hours. An example for Ironbridge and Cockenzie 1&2 is shown in Chart 2. Data are not available prior to July 2009 so the trend line only looks at hours run since then.

The trend line for Ironbridge suggests that the plant is running for an average of 174 hours each month – extending this forward from the end of March 2012 means that Ironbridge is estimated to run out of hours in 64 months (this will take it beyond the deadline of December 2015).

Kingsnorth is using up its hours at a faster rate (on average 294 hours per month); if it keeps running at the same rate it will run out of hours during May 2013. Table 2 gives the estimated end date for each of the coal fired plants.

Chart 2: Running hours remaining at the end of each month

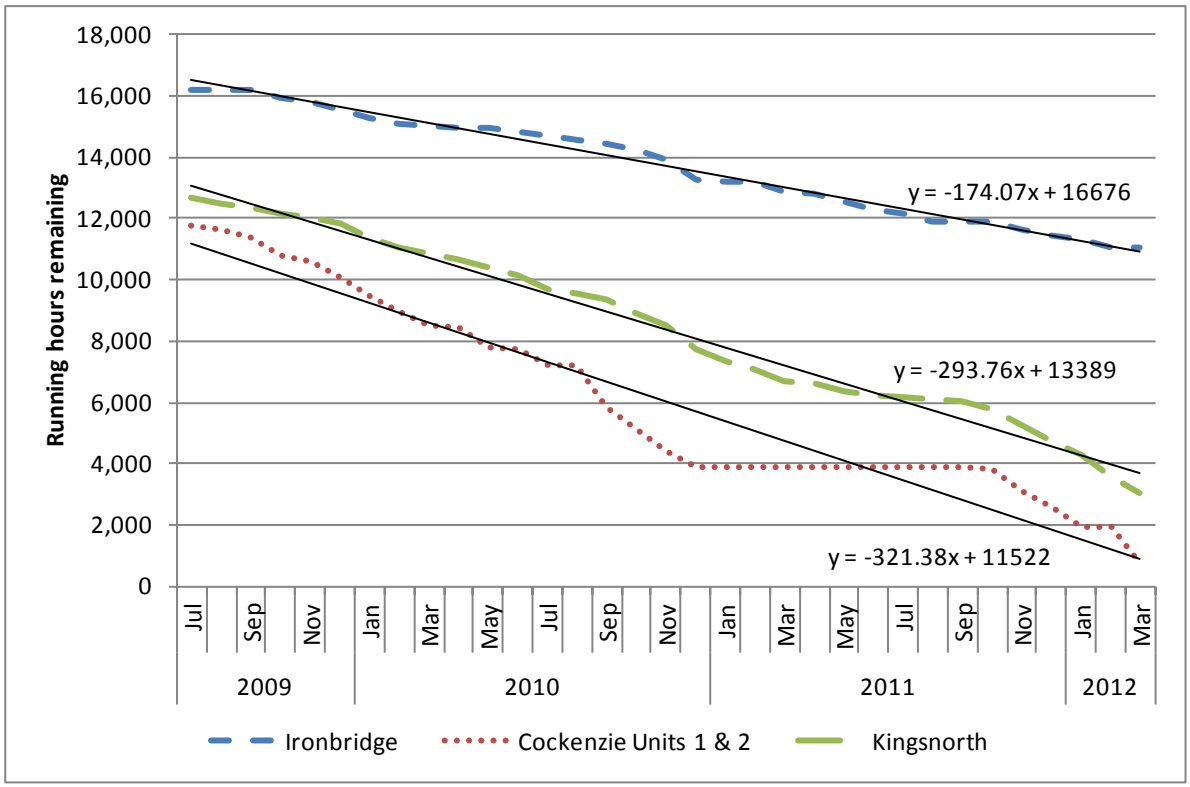


Table 2: Estimated end date (based on historic running pattern)

Plant	Estimated end date
Cockenzie units 1 & 2	July 2012
Cockenzie units 3 & 4	November 2012
Kingsnorth	May 2013
Tilbury (9 &10)	December 2014
Tilbury (7 & 8)	September 2014
Ferrybridge (1&2)	August 2014
Ironbridge	End 2015
Didcot A	September 2015

Limitations of the analysis

It is important to note that this analysis assumes that the plants will keep running at the same rate in the future as they have in the past. However, this is unlikely to be the case as the running of a plant is a commercial decision. For example, as shown in Chart 2, although Cockenzie 1&2 used its hours steadily between July 2009 and December 2010 (at an average rate of around 464 hours per month), between January and September 2011 it did not run at all. It then started to run again in October 2011 (at an average rate of 513 hours per month between October 2011 and March 2012). These short term changes make estimation of end dates very difficult and explain why, when similar analysis was carried out on this data last year (see article in the September 2011 edition of Energy Trends), it was estimated that Cockenzie 1&2 would close in November 2011, which did not happen. Although this year's modelling suggested an closure date of July 2012 for Cockenzie 1&2, this power station is still operational. The latest data, correct at the end of July 2012, indicated that the power station still had 172 hours remaining.

The latest data on electricity supplied by coal fired plants (see Energy Trends Table 5.1), shows that almost 29TWh of electricity was provided by coal plants in Q2 2012. This is substantially higher than the approx. 19TWh in the same quarter in each of the last three years (2009 to 2011). This would imply that coal plants in Q2 2012 have been running longer hours than historically and, as such, this will affect the estimated end dates (as these are based on modelling of the historic data).

Tilbury converted to biomass from coal during 2011. Although biomass produces almost no CO2 emissions the plant will not be exempt from closure at the end of 2015 as the LCPD relates to particulate matter and sulphur dioxide/nitrogen oxide emissions. If the biomass trial is seen to result in a reduction of these emissions Tilbury will need to apply to Europe for permission to extend its lifetime.

User feedback

We welcome all feedback from users, therefore if you have any comments or queries regarding this analysis, please contact either Chris Michaels or Laura Williams using the contact details below.

Chris Michaels
Energy Statistics
Tel : 0300 068 5050
E-mail: chris.michaels@decc.gis.gov.uk

Laura Williams
Energy Statistics
Tel: 0300 068 5045
E-mail: laura.williams@decc.gsi.gov.uk

Estimates of heat use in the United Kingdom in 2011

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 article begins with analysis of heat use compared to overall energy consumption and energy consumption excluding transport by sector and end use. Each sector is then analysed in turn, followed by comparisons of fuel use for heating within the three sectors and is concluded with a short summary. A short methodology note can be found at the end of this article.

The analysis relates to 2011 provisional figures, and is based upon data published in Energy Consumption in the UK, which was updated in July 2012:
www.decc.gov.uk/en/content/cms/statistics/publications/ecuk/ecuk.aspx

Heat data analysis

In 2011, total final energy consumption in the UK was 134,320[1] thousand tonnes of oil equivalent, with consumption for heating purposes at 44 per cent of the total (59,474 thousand tonnes of oil equivalent). Excluding final energy consumption used for transport (55,187 thousand tonnes of oil equivalent), 75 per cent of the remaining final energy consumption was for heating purposes with 25 per cent used for non-heating purposes; for example lighting and appliances, computing and cooling. Of the 79,133 tonnes of oil equivalent used for non-transport final energy consumption; 40 per cent was consumed for heating by the domestic sector, 13 per cent was consumed by the service sector and 22 per cent was consumed by the industrial sector. The following analysis explores further how consumption is split by sector, end use and fuel type.

Energy consumption for heating purposes by sector and end use

Of the 59,474 thousand tonnes of oil equivalent used for heating purposes in the UK in 2011, across the non-transport sectors, the domestic sector was responsible for 53 per cent, followed by the industrial sector 30 per cent and the services sectors 17 per cent. Space and water heating were the largest contributing purposes of heat use in both the domestic (96 per cent of heat demand) and services sector (84 per cent). However, in the industrial sector, processing (high temperature process and low temperature process combined) was the principal purpose of heat use, contributing 64 per cent of heat energy consumed.

Table 1 and Chart 1 show the consumption split by sector and end-use for 2011.

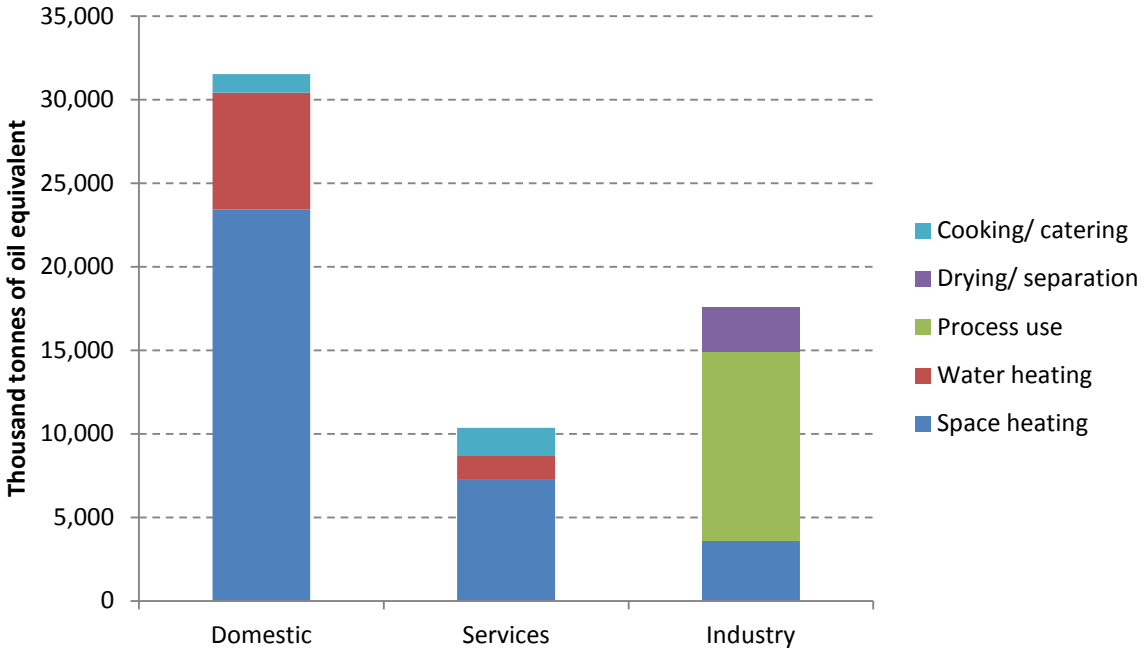
[1] Excludes all energy consumption in the agriculture sub-sector, 444ktoe of energy used in construction and 2,590ktoe of fossil fuels where the final consuming sector is unclassified.

Table 1: Energy consumption by sector and end use 2011

Thousand tonnes of oil equivalent

End use	Domestic	Services	Industry	Transport	Total	Total excluding transport
Space heating	23,424	7,291	3,640	-	34,354	34,354
Water heating	6,987	1,382	-	-	8,370	8,370
Process use	-	-	11,263	-	11,263	11,263
Drying/ separation	-	-	2,684	-	2,684	2,684
Cooking/ catering	1,117	1,686	-	-	2,803	2,803
Heat total	**31,528**	**10,359**	**17,587**	**-**	**59,474**	**59,474**
Other uses	7,314	5,821	6,524	55,187	74,846	19,659
Total	**38,842**	**16,181**	**24,110**	**55,187**	**134,320**	**79,133**
Percentage used for heating	**81%**	**64%**	**73%**	**-**	**44%**	**75%**

Chart 1: Final energy consumption by use by sector, UK, 2011



The following section provides a more detailed analysis of energy consumption in each of the three non-transport sectors, demonstrating the degree to which fossil fuels are consumed for heating purposes.

Domestic sector

In 2011 energy consumption from the domestic sector was 38,842 thousand tonnes of oil equivalent. Of this it is estimated that 81 per cent (31,528 thousand tonnes of oil equivalent) was used for heating purposes (space heating, water heating and cooking/catering) and the remaining 7,314 thousand tonnes of oil equivalent for lighting and appliances.

The fuel mix for domestic consumption for heat purposes is dominated by gas which was the source of 80 per cent (25,191 thousand tonnes of oil equivalent) of heat consumption. This was the equivalent of 65 per cent of the overall domestic consumption (Table 2). Electricity provided 7 per

cent of total heat consumption. Electricity for lighting and appliances accounted for 19 per cent of total domestic consumption.

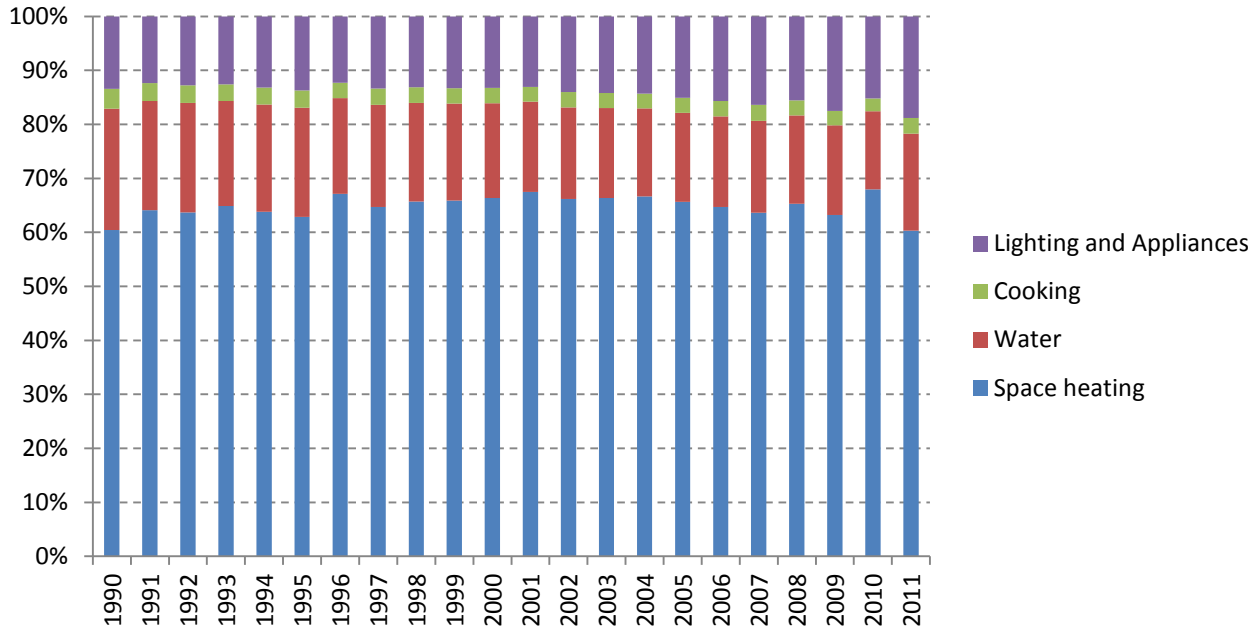
Table 2: Domestic energy consumption by fuel and end use: 2011

Thousand tonnes of oil equivalent

End use	Gas	Oil	Solid fuel	Electricity	Heat sold	Bio-energy & Waste	Total
Space heating	18,697	2,188	704	1,216	52	567	23,424
Water heating	5,901	492	53	541	-	-	6,987
Cooking/catering	593	-	-	524	-	-	1,117
Heat total	**25,191**	**2,681**	**756**	**2,281**	**52**	**567**	**31,528**
Lighting and appliances	-	-	-	7,314	-	-	7,314
Overall total	**25,191**	**2,681**	**756**	**9,595**	**52**	**567**	**38,842**

Chart 2 displays the distribution of domestic consumption by purposes between 1990 and 2011, clearly identifying space heating as the dominate heat purpose in the domestic sector, however in recent years there has generally been a decreasing trend partly due to the introduction of energy efficiency measures.

Chart 2: Breakdown of domestic sector fuel by end use, UK, 1990 to 2011



Service sector

In 2011, energy consumption in the services sector was 16,181 thousand tonnes of oil equivalent, with 64 per cent (10,359 thousand tonnes of oil equivalent) of this used for heating purposes.

Similar to the domestic sector, space heating dominated energy consumption for heat purposes, being responsible for 70 per cent of energy consumed (Table 3). Gas was used to deliver 60 per cent of total heat used in the services sector with electricity a further 25 per cent. Lighting remains the main non heating use.

Table 3: Service sector energy consumption by fuel and end use: 2011

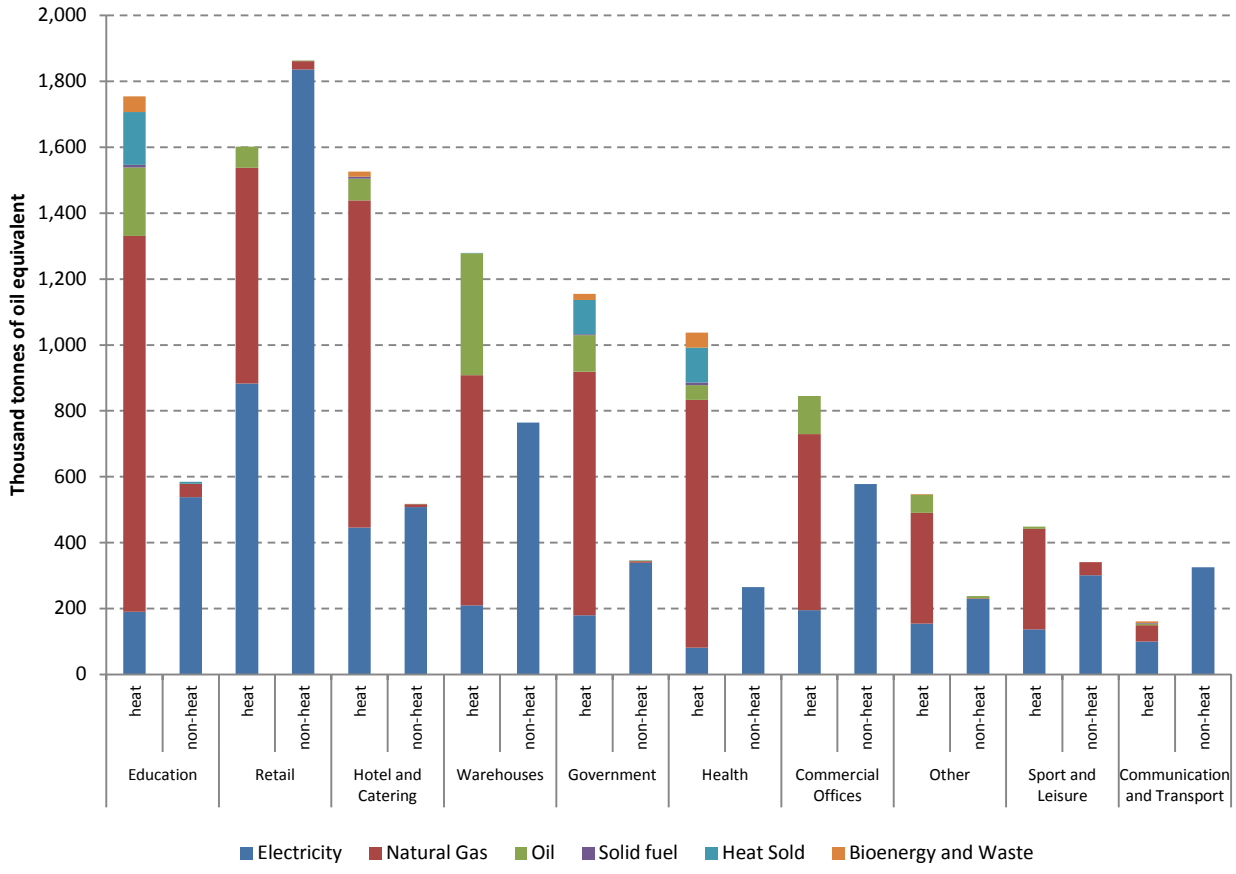
Thousand tonnes of oil equivalent

End use	Gas	Oil	Solid fuel	Electricity	Heat sold	Bio-energy & Waste	Total
Space heating	4,759	914	23	1,179	296	121	7,291
Water heating	927	94	3	292	54	12	1,382
Cooking/catering	521	39	0	1,102	23	1	1,686
Heat total	**6,207**	**1,046**	**27**	**2,572**	**373**	**134**	**10,359**
Computing	-	-	-	499	-	-	499
Cooling and ventilation	20	-	-	734	-	-	754
Lighting	-	-	-	3,365	-	-	3,365
Other	101	11	-	1,084	7	-	1,203
Overall total	**6,329**	**1,057**	**27**	**8,255**	**379**	**134**	**16,181**

In 2011, the four main heat energy consumers in the service sector were Education, Retail, Hotel and Catering and Warehouses who between them consumed 59 per cent of heat consumption within the sector. For space heating the four main consumers were Education, Government, Retail and Warehouses who between them consumed 58 per cent of total space heating consumption.

Chart 3 shows the distribution of energy consumed for heat in the services sector for each sub-sector by fuel.

Chart 3: Final energy consumption of the service sector by use: 2011



Industrial sector

In 2011, industrial consumption accounted for 24,110 thousand tonnes of oil equivalent, of which 73 per cent (17,587 thousand tonnes of oil equivalent) was consumed for heating purposes.

Thirty nine per cent of heat consumption was for low temperature process, with high temperature process accounting for a further 25 per cent, space heating 21 per cent and drying/separation 15 per cent.

Direct consumption of fossil fuels provided 71 per cent of heat consumption in the industrial sector; with gas consumption dominating the fuel mix for heat, 53 per cent of consumption, followed by electricity (22 per cent), oil (10 per cent) and solid fuel (8 per cent). Three per cent of heat generated within the sector was attributable to bio-energy and wastes.

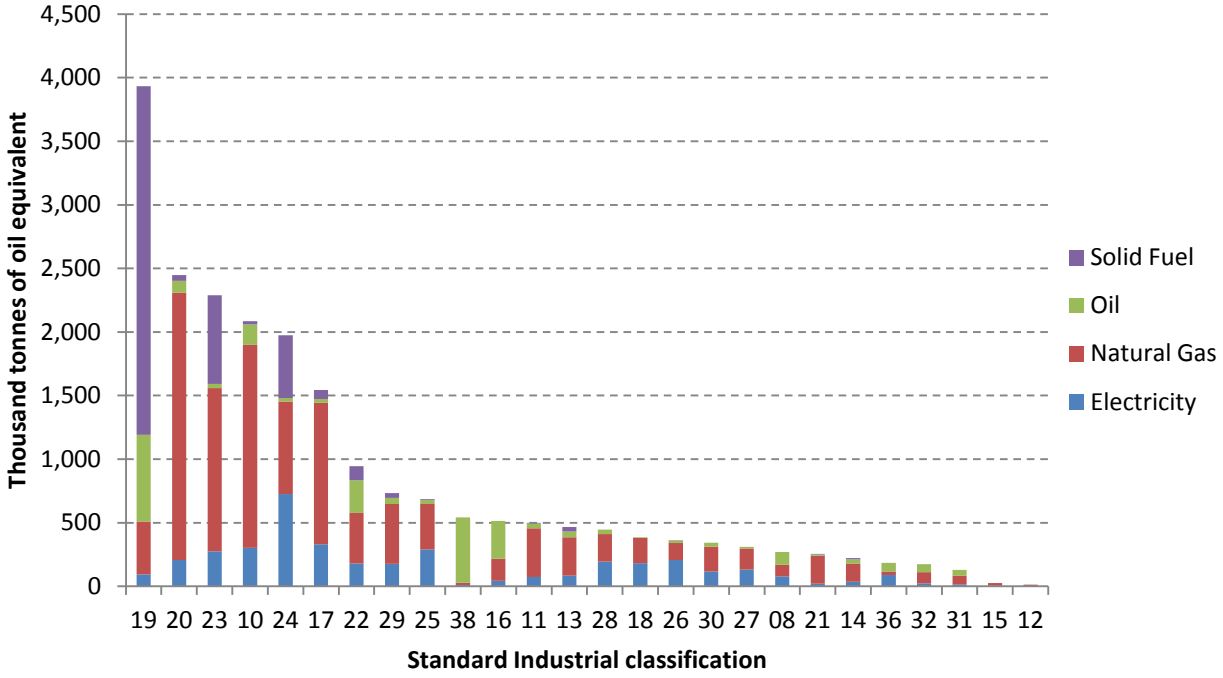
Table 4: Industrial energy consumption by fuel and end use: 2011

Thousand tonnes of oil equivalent

End use	Gas	Oil	Solid fuel	Electricity	Heat sold	Bio-energy & Waste	Total
Space heating	1,172	335	82	676	839	535	3,640
High temperature process	2,162	160	998	1,127	-	-	4,448
Low temperature process	4,222	919	200	1,474	-	-	6,815
Drying/separation	1,683	352	117	533	-	-	2,684
Heat total	**9,239**	**1,766**	**1,397**	**3,810**	**839**	**535**	**17,587**
Motors	-	-	-	2,873	-	-	2,873
Compressed air	-	-	-	810	-	-	810
Lighting	-	-	-	250	-	-	250
Refrigeration	-	-	-	492	-	-	492
Other	1,266	244	151	439	-	-	2,100
Overall total	**10,506**	**2,010**	**1,548**	**8,672**	**839**	**535**	**24,110**

The fuel mix of heat consumption varies between the different sub-sectors within the industrial sector as displayed in Chart 4. Chart 4 also identifies the sectors that are more heat intensive. Just over 69 per cent of total energy consumption for heat purposes comes from 7 of the 26 industry sub–sectors at two digit SIC (2007) level.

Chart 4: Fuel energy consumption for heat in the industry sector: 2011



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
38	Waste collection, treatment and disposal activities; materials recovery

Comparison of the sectors

In 2011, gas was the main fuel used for heating purposes in all sectors. In the domestic sector gas for heating contributed to 65 per cent of energy consumption. The respective proportions for the services and industry sectors were both 38 per cent.

Use of oil for heating comprised 7 per cent of total energy consumption in both the domestic and industrial sectors and 6 per cent in service and industry sectors respectively. Solid fuels were the least common energy source in all sectors but were mainly used by the domestic and industrial sectors accounting for 2 and 6 per cent of total energy used for heat within each sector respectively.

In general primary consumption of fossil fuels (gas, oil and solid fuel) were the main energy sources for heating purposes. The use of those fuels made up 91 per cent of heat energy consumption in the domestic sector, 70 per cent in the services sector and 71 per cent in the industrial sector.

Use of electricity made up 7 per cent of heat energy consumption in the domestic sector. The respective figures for services and industry sectors were 25 and 22 per cent.

Ninety seven per cent of gas consumption, 96 per cent of oil, 94 per cent of solid fuel and 33 per cent of electricity was used for heating purposes.

Total renewable final energy consumption (bio-energy and wastes) was 2,364 thousand tonnes of oil equivalent in 2011, which accounted for 2 per cent of total energy consumption. Heating use of bio-energy and wastes accounted for half, 52 per cent, of the total. Table 5 shows the split of bio-energy and waste consumption for each sector. Nearly all bio-energy and waste heat is used for space heating across the three sectors.

Table 5: Bio-energy and Waste consumption by sector: 2011

Thousand tonnes of oil equivalent

	Domestic	Services	Industry
Bio-energy & Waste	567	134	535
Percentage of total heating demand	*2%*	*1%*	*3%*
Percentage of total energy consumption	*1%*	*1%*	*2%*

Summary

The data presented in this article highlight the significant role of heat use within overall energy consumption. An understanding of the fuel used for heating purposes as well as the energy efficiency improvements is important in order to gain a full knowledge of the heat market. Important factors are not only the amount of energy consumed, but also the type of fuel used.

Methodology

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 have provided the modelled data since 2009. This has resulted in a discontinuity in all domestic end-use tables between 2008 and 2009 due to some different modelling assumptions. The article is centred around the end use of fuels and does not include the consumption of fuels as an input to electricity generation. Direct consumption refers to the fuels being consumed directly for heating purposes and not those that were consumed to make electricity. Heat sold and bio-energy & waste are specifically identified within overall energy consumption. The heating purposes vary depending on the sector.

For both the domestic and services sectors heat purposes include:

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

In the industrial sector heating purposes cover:

- *space heating;*
- *high temperature processes* - coke ovens, blast furnaces and other furnaces, kilns and glass tanks;

- *low temperature processes* - 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 important in paper-making.

Industrial sector heat purposes do not include water heating as the focus is on industrial usage and not office usage.

While the data in this article provide a good estimate of the main trends in heat use, 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.

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 Victoria Thompson using the contact details below.

Victoria Thompson
Heat Statistics
Tel: 0300 068 5815
E-mail: Victoria.Thompson@decc.gsi.gov.uk

Home insulation levels in Great Britain – methodological changes

Introduction

DECCs Experimental Statistics[1] series on the number of insulated homes in Great Britain was first published in November 2010 covering cavity wall and loft insulation, and was expanded in June 2011 to include solid wall insulation. The latest estimates were published on 25 September 2012 covering the period to the start of July 2012. This article summarises the changes that have been made to the way the estimates are produced for the September 2012 publication, following consultation with users in March and June 2012.

The publication includes estimates of the number of homes with cavity wall insulation, loft insulation and solid wall insulation, as well as, for the first time in the latest publication, estimates of remaining potential for insulation within the GB housing stock. Headline results show that, at the start of July 2012:

- 15.2 million homes had loft insulation of at least 125mm (65 per cent of homes with lofts).
- 12.9 million homes had cavity wall insulation (68 per cent of homes with cavity walls).
- 144,000 homes had solid wall insulation (2 per cent of homes with solid walls).

These estimates are an important indicator of progress made to improve the energy efficiency of homes and are one of DECC's 2012-15 Business Plan indicators[2]. DECC's forthcoming Green Deal finance mechanism and new Energy Company Obligation (ECO)[3] means this statistical series will remain important.

The latest publication and full methodology can be found on the DECC website at: www.decc.gov.uk/en/content/cms/statistics/energy_stats/en_effic_stats/home_ins_est/home_ins_est.aspx.

Revised methodology

The most recent publication of home insulation levels contained changes to the methodology used in previous releases. The most significant revision is to the number of properties with cavity wall insulation, which results from changes to the way the 2008 cavity wall insulation baseline is constructed.

Previously, cavity wall insulation figures in 2008 for England and Scotland were taken from the English Housing Survey (EHS) and Scottish House Condition Survey (SHCS) respectively. Figures for Wales were derived using the number of dwellings in Wales and assuming the same percentage coverage as England. A limitation to using the housing surveys alone to estimate the number of properties with cavity wall insulation is that there is likely to be an under reporting of the number of properties of cavity wall construction which have cavity wall insulation. This under reporting is mainly a result of properties with cavities filled when built which means when the property survey is carried out there are no visible signs of the property having cavity wall insulation. When a property has its cavity walls filled after it has been built (retro-fitting) the insulation material is injected through holes made in the wall – these holes are the most common indicator looked for by surveyors to assess whether cavity wall insulation has been retro-fitted, however, over time these injection holes fade, and this can be another possible cause of under reporting in the housing surveys.

[1] Experimental Statistics are produced in accordance with the Code of Practice for Official Statistics but have not yet been assessed by the UK Statistics Authority to be designated as National Statistics. They are experimental in nature while the methodology is developed and tested further. The accuracy of the estimates will continue to be assessed against other data sources.

[2] www.decc.gov.uk/en/content/cms/about/our_goals/our_goals.aspx

[3] www.decc.gov.uk/en/content/cms/tackling/green_deal/green_deal.aspx

The 2008 baseline is now constructed using the housing surveys combined with information from building regulations and assumptions made for Reduced Data SAP[4] (RdSAP) calculations. This should help categorise properties more accurately and reduce under reporting. This new approach along with the move to report remaining potential has led to additional breakdowns of cavity wall properties being included in the publication:

Category		Description
Insulated	Insulated	Properties with retro-fit cavity wall insulation based on the housing surveys (includes a five percent uplift to survey data to account for unobserved retro-fit insulation).
	Insulated or meet equivalent standard	Properties built post-1995 (post-1991 in Scotland); these properties may not all have cavity wall insulation, but building regulations in at the time of construction mean they should have a thermal performance at least equivalent to a property with insulated cavity walls.
Uncertainty		This is included to account for uncertainty resulting from potential under reporting in the housing surveys. It is estimated that the EHS under reports insulation levels by between five and ten percent. Five percent is included in the insulated category and the further five percent is included as uncertainty. There is also an element of uncertainty included as a result of non-new build changes to the housing stock. Due to lack of information on the dwelling stock changes (e.g. demolitions, conversions etc) it is not possible to accurately assess whether these properties are insulated.
Remaining potential	Limited potential	Properties built between 1983 and 1995 (inclusive) (1984 and 1991 in Scotland) classified as un-insulated in the housing surveys. These properties could still benefit from further insulation, but any gain would be small as thermal performance of the walls should already be good in order to comply with building regulations at the time of construction.
	Not insulated	Properties built pre-1983 (1984 in Scotland) and not reported as having insulation in the housing surveys (less ten percent which is included in the insulated and uncertainty categories).

As a result of the review of the methodology there are also a number of other changes to the methodology, in all cases the changes lead to smaller revisions than the change outlined above. The other changes include:

- Use of the Living in Wales 2008 Property Survey data for properties in Wales; Welsh estimates had previously been derived based on the percentage coverage in England applied to the Welsh housing stock.
- Applying the assumption that ten per cent of lofts insulated through the Carbon Emissions Reduction Target (CERT) are top ups to insulations installed through the Community and Energy Saving Programme (CESP) and Warm Front top up insulations.
- Revising house building data for England back to April 2008, in line with the Department for Communities and Local Government's (DCLG) revisions back to June 2007. These now include house building completions certified by independent approved inspectors, in addition to data from local authorities and the National-Building Council.
- Including Warm Front measures without a time lag and improving assumption about Warm Front activity traded with CERT.

[4] Reduced Data SAP (RdSAP) was been developed for use in existing dwellings based on a site survey of the property, when the complete data set for a SAP calculation is not available, and will be used to inform recommendations for measures to be installed through the Green Deal, the full RdSAP methodology can be found here: www.bre.co.uk/filelibrary/accreditation/scheme_standards/SAP_2009_9-91_Appendix_S_January_2012.pdf

- Revising the assumption on the number of new build flats which have a loft, to bring it in line with the EHS.

Impact of changes

The impacts of these changes on estimates of the number of dwellings in Great Britain with insulation are summarised below.

Loft insulation

- The April 2008 baseline estimate is now 230,000 higher than using the previous methodology, suggesting that more properties have loft insulation of at least 125mm. The biggest contribution to this change is the use of the Living in Wales survey to produce the estimate.
- In April 2012 the new methodology estimates 260,000 more properties have loft insulation of at least 125mm compared to the previous methodology. The primary driver of this additional 30,000 difference is the change to the methodology for estimating how many new build flats have lofts.

Cavity wall insulation

- The April 2008 baseline estimate shows 1.28 million more properties have cavity wall insulation than previously estimated (i.e. are in the "Insulated" or "Insulated or meet equivalent standard" category). The main cause of this change is the reallocation of data from housing surveys in line with RdSAP and Building Regulations, so all cavity wall properties built post 1995 (post 1991 in Scotland) are assumed to be insulated. Other contributing factors are the change to using the Living in Wales survey for Wales and the change to the way survey data are calibrated to DCLG dwelling stock estimates.
- In April 2012 the new methodology gives an estimate 1.31 million higher than the estimate based on the previous methodology. The increase in this difference compared with the 2008 baseline is primarily due to revisions to DCLG dwelling stock estimates which have also been taken on this quarter.

Solid wall insulation

- The new methodology does not impact on the estimate of the number of homes with solid wall insulation; which is solely based on the number of properties insulated through Government schemes.

More details of the impact of the revisions is available as an annex to the methodology note which is published alongside the latest publication on the DECC website, see link above.

Future updates

Estimates of home insulation levels in Great Britain are published quarterly. The next release will be published at 9:30am on Wednesday 5 December 2012.

Contacts

If you have any questions or feedback on this article please contact either:

Claire Pini
Energy Efficiency Statistics
Tel: 0300 068 6289
E-mail: claire.pini@decc.gsi.gov.uk

Mary Gregory
Energy Efficiency Statistics
Tel: 0300 068 5856
E-mail: mary.gregory@decc.gsi.gov.uk

Feed-in Tariff statistics

Introduction

The purpose of this article is to help users understand the suite of Feed-in Tariff statistics currently published by the Department of Energy and Climate Change.

The government introduced the Feed in Tariff scheme (FiTs) on 1st April 2010 in order to promote the uptake of a range of small-scale renewable and low-carbon electricity generation technologies across Great Britain.

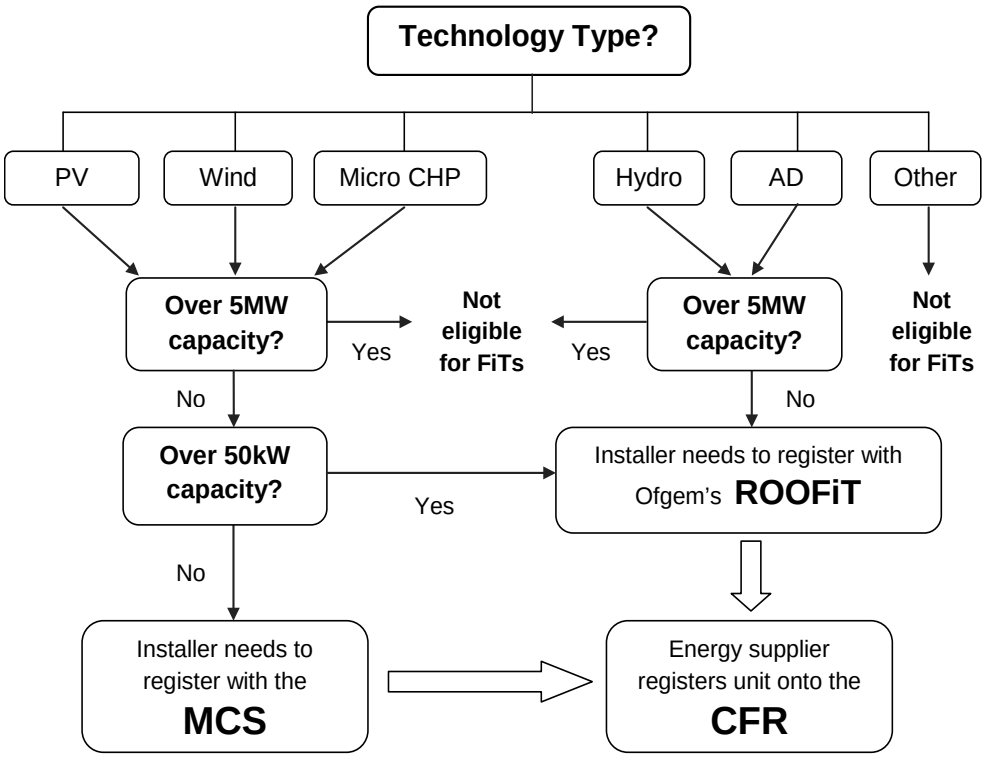
The scheme covers the following five technologies:

- Solar Photovoltaics (PV) up to a maximum total installed capacity[1] of 5MW
- Wind up to 5MW
- Hydro up to 5MW
- Anaerobic Digestion up to 5MW
- Micro CHP[2] plants with a maximum total installed capacity of up to 2kW are also supported.

Applications for the FiTs must come through one of two routes depending on the technology and the size of the installation. The larger installations (i.e. greater than 50kW) and all hydro and anaerobic digestion (AD) must apply for accreditation via Ofgem's ROOFiT process. Smaller schemes (including all Micro CHP) must apply for accreditation via the Microgeneration Certification Scheme (MCS). Note that not all of the installations on the MCS will be eligible for, or decide to apply for, the Feed-in Tariff scheme.

The flow chart in Figure 1 shows the two different routes, both of which result in the installation being registered on Ofgem's Central FiTs Register (CFR). This is the point at which the installation is fully registered on the Feed-in Tariff scheme.

Figure 1: FiTs process flow chart



[1] Total Installed Capacity is the maximum capacity at which an installation could be operated for a sustained period (assuming the source of power used by it to generate electricity was available to it without interruption).
[2] Combined Heat and Power.

Weekly statistics

DECC publishes statistics on the number and capacity of sub 50kW solar photovoltaic (PV) installations on the MCS according to week of registration on the MCS database. The statistics are compiled using weekly MCS data extracts which are delivered to DECC by Gemserv. The extracts contain data on all solar PV installations registered on the MCS database from January 2012 and the latest week ending Sunday. In addition to the date of first registration for each installation, the data extract includes information on the date the installation was commissioned[3], Declared Net Capacity (DNC)[4] for each installation, as well as the postcode of the installation's location. The statistics are aggregated to weekly from 23rd January 2012 to the latest week ending Sunday. For example, the statistics published on the 12th September 2012 cover sub-50kW solar PV installations registered up to Sunday 9th September 2012.

Weekly statistics prior to April 2012, which are based on the date the installation was commissioned are available up to the week ending 9th September 2012. These are located in the 'Archive' section on the FiT statistics webpage, www.decc.gov.uk/en/content/cms/statistics/energy_stats/source/fits/fits.aspx.
For further information on the reasons for changing the weekly time series from counting on date of commission to date of first registration, refer to the 'User survey on the future of the weekly solar PV statistics', also found on the FiT statistics webpage.

Monthly statistics

The two sets of monthly statistics (as described below) are published at least five working days before the end of each month. The release dates for these statistics are published in 'DECC's timetable of statistical releases for twelve months ahead' on the DECC website at: www.decc.gov.uk/en/content/cms/statistics/governance/governance.aspx.

Monthly central Feed-in Tariff register statistics

The statistics presented in this set of tables, which are designated as National Statistics, are mostly compiled using monthly data extracts from the Central Feed-in Tariff Register (CFR) maintained by Ofgem. The data extract contains information on all installations that have gone through the FiTs scheme process (via either of the two routes) and have been confirmed on the CFR since the start of the FiT scheme in April 2010, regardless of technology or size.

The monthly CFR statistics based on confirmation date cover all installations (across all technologies) confirmed on the CFR since April 2010. The total number of installations and total installed capacity are shown as cumulative totals for each month by tariff code (with totals by technology type at the bottom of the table). Installations are attributed to the month in which they were registered (i.e. confirmed) on to the CFR. For example, an installation could have a commission date of 23rd July but have only been registered on the CFR sometime later, say 30th September. In this case, this installation would appear in the total for September but not July.

The monthly CFR statistics based on eligibility date is an alternative to the 'Month CFR – Confirmation date' table in that, at the end of the latest month. The cumulative total number and capacity of installations by technology should be identical in both tables. However, users should note that the eligibility date based table presents the data as in-month totals rather than cumulative totals. The main difference between the two tables is in the distribution of installations across the months. In 'Month CFR – Confirmation date' the installations are recorded according to the month in which it was registered on the CFR. In 'Month CFR – Eligibility Date' the installations are recorded according to the month from which the generator is entitled to receive FiTs payments, i.e. the month of the eligibility date. The month of the eligibility date and the month of the confirmation date are frequently different since there is usually a lag between installations becoming eligible for Feed-in Tariffs and being confirmed on the CFR.

[3] The date of commission is the date the technology was physically installed and deemed to be up and running.
[4] Note that Total Installed Capacity (TIC) is not available on the MCS.

Monthly MCS and ROOFiT statistics

This is the new monthly table showing the deployment of installations in the MCS and ROOFiT stages of the process, i.e. the installations in the accreditation stage before being confirmed on to the FiTs scheme. These are the deployment statistics that are used in determining the tariffs for the next period via the degression mechanism. Degression is essentially a periodic reduction in tariffs, the size of which being dependent on the amount of deployment in the preceding period. The degression mechanisms for each technology type are described in more detail in the following documents:

- Phase 2A: Solar cost control
- Phase 2B: Tariffs for non-PV technologies and scheme administration issues

Both of these documents can be found on the DECC website, www.decc.gov.uk/en/content/cms/meeting_energy/renewable_ener/feedin_tariff/fits_review/fits_review.aspx .

Quarterly sub-regional statistics

Once a quarter[5], using data from the latest monthly CFR extract, DECC publishes cumulative counts of installations by technology at both a Local Authority (LA) and a Parliamentary Constituency (PC) level for the latest quarter.

Annual generation statistics

This table shows, for each tariff type, the total amount of electricity generated and the total amount of electricity exported to the public distribution system in the financial year 2010/11. The table also shows the number of installations contributing to this generation (as these are different to the figure reported in the CFR statistics – see paragraph below on data issues). Data for 2011/12 is due to be published in March 2013.

The data used to compile this table is sourced from Ofgem's levelisation process. All licensed electricity suppliers (regardless of FIT participation status) are required to make payments into Ofgem E-Serve's levelisation fund, based on their market share of the Great Britain electricity supply market and any FiT payments made to accredited installations under the FiT scheme. The fund is then redistributed to FiT licensees that have made more payments to accredited installations than they would be required to by their market share contribution. Currently this process occurs on a quarterly basis. However, Ofgem only collect actual electricity generation data (as opposed to data on payments made to generators) once a year. The lag between the end of the financial year and publication of generation statistics by DECC a year later in March is due to Ofgem's collection, verification and reconciliation of the data collected, which is a complex procedure.

Further information

Additional information on FiT statistics can be found in the 'Feed-in Tariff statistics user guide: data sources and methodologies' on the FiT statistics webpage:
www.decc.gov.uk/en/content/cms/statistics/energy_stats/source/fits/fits.aspx

Mita Kerai
DECC FiT Statistics
Tel: 0300 068 5044
E-mail: mita.kerai@decc.gsi.gov.uk

[5] These statistics are published in January (Q4 data for the previous year), April (Q1 data), July (Q2 data) and October (Q3 data).

National Grid operational metering data and renewables

Introduction

This article provides an overview of National Grid's publically available half-hourly electricity generation data, and outlines how it can be used to examine shorter term trends in electricity generation than those covered by DECC's monthly and quarterly Energy Trends statistics. It also describes the limitations of using the data (particularly with regard to renewables) since it is in examining these more intermittent sources of generation where the National Grid data can be of most value.

Data source

National Grid uses half-hourly operational metering of generation units (including imports via interconnectors) in order to assist in balancing the Great Britain transmission network. The metering data are aggregated by fuel type, with the sum of each providing the total Transmission System Demand (TSD, i.e. the demand met by the Great Britain transmission system, including demand from the generation units themselves, pumping and exports).

The real-time data can be found on the "NETA" website at:
www.bmreports.com/bsp/bsp_home.htm[1].

Data coverage

National Grid is the transmission network operator for Great Britain. Therefore, generation units connected to the transmission network in Northern Ireland (which is integrated with the Republic of Ireland network as part of a single electricity market for Ireland as a whole) are not included. However, imports, via the Northern Ireland-Scotland interconnector, are included.

Operationally metered sites are typically larger sites, connected directly to the high voltage (HV) transmission system. With the exception of some key larger sites, generation units connected to the low voltage distribution system ("embedded" generation) are excluded from operational metering. For some fuel types, where sites are typically large and directly connected to the HV network, operational metering will have almost full or full coverage of generation capacity in Great Britain. This is the case for nuclear (100 per cent coverage), and coal and gas (around 90 per cent, with the main exclusions being smaller 'auto-generators', i.e. businesses who generate electricity primarily for their own consumption). However, for renewables, which are often on a smaller scale and embedded, far less of total generation capacity is covered by operational metering.

A list of the units covered by operational metering, by fuel type, can be found on the NETA website under: *'Generation by fuel type (table)' -> BMU fuel type EXCEL spreadsheet.* However, for wind, there are several sites listed that are not yet included under operational metering – a definitive list of the current sites (and capacity) covered can be found on the website under:
'Peak Wind Generation Forecast' –>Power Park Modules EXCEL spreadsheet.

Coverage of renewables

When using operational metering data for examining the contribution of fuels, and particularly renewables, to UK generation, the limited coverage of renewable generation should be taken into account. Table 1 compares the coverage of UK electricity generation (in 2011) from renewables, as reported in DECC's quarterly and monthly Energy Trends statistics, with that obtained from National Grid's operational metering.

[1] Generation data can be downloaded from 'Generation by fuel type (graph)' -> current/historic.

Table 1: Comparisons of UK renewables coverage (based on *generation* in 2011) – DECC quarterly and monthly data, and National Grid operational metering data

	Energy Trends Quarterly - 2011 (tables 5.1 & 6.1) [2]	Energy Trends Monthly (Major Power Producers only) – 2011 (table 5.4)		Operational metering data - 2011
Onshore wind	100%	73%	80%	63%
Offshore wind	100%	100%		
Hydro	100%	81%		65%
Bio-energy	100%	35%		0%
Solar Photovoltaics, Wave & Tidal	100%	0%		0%
TOTAL	100%	63%		39%

Unlike in DECC's statistics, operational metering does not distinguish between onshore and offshore wind generation (although the capacity can be separated by using the Power Park Modules spreadsheet). Prior to 2012, operational metering did not include any generation from bio-energy, as the majority of this is embedded. Since early 2012, two dedicated plant biomass stations have been included: Tilbury B (which has been converted to biomass from a chiefly coal-fired station) and Steven's Croft. Generation from co-firing, however, is included within the fuel with which it is co-fired (usually coal). No generation from landfill gas, sewage gas, anaerobic digestion, animal biomass or energy from waste is included in operational metering, as these sites are entirely embedded. The same applies to wave, tidal and solar photovoltaics (and the majority of installations on the GB Feed in Tariff scheme).

Using operational metering data for examining wind generation's contribution to the fuel mix

Operational metering data can be used for estimating the half-hourly contribution of fuel types to the overall electricity fuel mix. This can provide a more up to date picture of the contribution of renewables, as well as demonstrating the variability of the contribution of intermittent technologies, such as wind, where generation levels can vary considerably from one hour to the next. However, the results should be used with caution.

Table 2 shows how the contribution of wind to the operationally metered fuel mix can differ substantially from the contribution to the UK's fuel mix. Wind's proportion (and renewables as a whole) of the fuel mix will be under-estimated using operational metering due to the lower coverage of these technologies. However, offsetting this slightly will be the denominator, TSD (the sum of operationally metered generation), which is lower than total UK electricity generation.

In addition, the number of existing wind sites included in operational metering has increased over the past few years, which should be considered when comparing contributions from operationally metered wind from one year to the next. Using the 'Power Park Modules' list, Table 3 compares the amount of wind capacity covered by operational metering with that for the UK as a whole.

[2] Quarterly and monthly electricity/renewables Energy Trends tables can be found at: www.decc.gov.uk/en/content/cms/statistics/energy_stats/source/electricity/electricity.aspx and www.decc.gov.uk/en/content/cms/statistics/energy_stats/source/renewables/renewables.aspx

Table 2: Wind generation's contribution to total electricity fuel mix (GWh)

	2010			2011		
	Wind	Total fuel mix	Wind generation share	Wind generation	Total fuel mix	Wind generation share
Operational metering	3,683	334,349	1.1%	9,717	319,848	3.0%
UK generation (ET tables 6.1 / 5.1)	10,181	381,772	2.7%	15,498	367,802	4.2%
Difference % difference	6,498 64%	47,423 12%	1.6 pp	5,781 37%	47,954 13%	1.2 pp

Table 3: Operationally metered wind capacity compared with total UK/GB installed wind capacity (MW) [3]

	End-December 2010			End-June 2012		
	Onshore	Offshore	Total	Onshore	Offshore	Total
Total UK wind capacity (Energy Trends table 6.1)	4,037	1,341	5,378	5,386	2,508	7,894
Total GB wind capacity (Energy Trends table 6.1)	3,715	1,341	5,056	4,937	2,508	7,445
Operationally metered wind capacity	1,930	500	2,430	2,657	2,029	4,686
Operationally metered wind capacity as per cent of total UK wind capacity	47.8%	37.3%	45.2%	49.3%	80.9%	59.4%
Operationally metered wind capacity as per cent of total GB wind capacity	51.9%	37.3%	48.1%	53.8%	80.9%	62.9%
Notable GB wind farms not covered by operational metering [4]	Scout Moor; Little Cheyne; Arecleoch	Kentish Flats; Scroby Sands; Gunfleet Sands; Inner Dowsing; North Hoyle; Rhyl Flats		Fullabrook; Scout Moor; Little Cheyne	Kentish Flats; Scroby Sands	

[3] Operationally metered capacity is measured on a Transmission Entry Capacity (TEC) basis, which is often different (less) than total installed capacity, and is therefore another reason for the difference between the capacity coverage figures.

[4] These sites do not yet have suitable operational metering equipment fitted (but are hoped to have in the future).

Wind generation's contribution to half-hourly Transmission System Demand

Operationally metered data can provide data on the half hours when there was most generation from wind, and when wind's contribution to TSD was highest. Table 4 shows this for 2011 and for 2012 (so far). In 2012, wind's highest share of TSD in a half-hour was 14.1 per cent (occurred on 14 May between 12:30am and 1am) and wind's maximum generation was a half-hour earlier on the same day. Again, when analysing wind's contribution to TSD, consideration should be given to the fact that not all wind generation capacity is included and that the coverage of operationally metered wind may have increased compared with previous years.

Table 4: Operationally metered wind and Transmission System Demand [5]

	Maximum operationally metered wind generation (half-hour ending)			Maximum operationally metered wind *contribution* to Transmission System Demand (half-hour ending)			Maximum Transmission System Demand (half hour ending)			Wind's contribution to maximum Transmission System Demand	
	MW	Date	Time	%	Date	Time	MW	Date	Time	MW	%
2011	3,331	24-Nov	20:00	12.2	28-Dec	05:30	56,108	6-Jan	17:30	534	1.0
2012 (to 23 August)	3,585	14-May	00:30	14.1	14-May	01:00	59,105	8 Feb	18:00	1,581	2.7

Half-hourly wind generation load factors

Operationally metered data, in combination with the capacity listed in the Power Park Modules, can also be used to show variation in wind generation load factors. However, this should be used with extreme caution since not all of the sites listed may have been included in operational metering for each of the half-hourly periods examined.

James Hemingway
Energy Statistics
Tel: 0300 068 5042
E-mail: James.Hemingway@decc.gsi.gov.uk

[5] The maximum demand/wind contribution will differ according to time-period selected, e.g. half-hour, hour or day

New Renewables Obligation Certificates (ROCs) table

Introduction

In August 2012, in addition to existing quarterly and annual tables on renewable energy, DECC published a table on the number of certificates issued for generation under the Renewables Obligation (RO) for the first time. This monthly table will provide an indication of the levels of support for renewables under the RO and the amount of equivalent generation. These data are published three months in arrears in the new table 'ET 6.3' at:
www.decc.gov.uk/en/content/cms/statistics/energy_stats/source/renewables/renewables.aspx

Data Source

The RO is administered by the Office of Gas and Electricity Markets (OFGEM) on behalf of DECC. Generation data are collected on a monthly basis from renewable generators accredited under the RO, with certificates (ROCs) issued to the generators. The number of ROCs issued for each MWh of generation depends on the tariff paid for schemes in the particular technology band. In order to allow DECC to produce this new table, Ofgem provide a report from their internal database on a monthly basis. An external version can also be found on the Ofgem website at:
www.renewablesandchp.ofgem.gov.uk/Public/ReportManager.aspx?ReportVisibility=1&ReportCategory=0

Methodology

Installation level ROCs data are collected by Ofgem on a monthly basis and include the following variables:

- Technology
- Output period, i.e. month of generation
- Generation type (which gives further detail on fuel used for thermal renewables)
- Number of certificates awarded for the period
- MWh per certificate

Data on the number of certificates are aggregated by output period, technology and generation type and are published in the 'Month' worksheet of ET 6.3 (the data is also further aggregated in the 'Quarter', 'Annual', 'Financial Year' and 'Main Table' worksheets). However, there are some older, smaller sites that only report on a financial year basis and the aggregated data covering these are shown in the 'FY-only sites' worksheet of ET 6.3. These data are also included in the 'Financial Year' and (financial year totals in the) 'Main Table' worksheets but are not included in the monthly and quarterly figures.

The worksheets also include 'equivalent generation estimates'. These are calculated by multiplying the number of certificates by MWh per certificate for each installation and aggregating by output period, technology and generation type.

Data intricacies

Due to ROCs banding reviews, there are often more than one 'tariff' for a particular technology group. In other words, it is possible that two different installations of the same technology will receive a different number of certificates per MWh generated depending on what tariff was in place when a site first became eligible for ROCs. This is known as 'grandfathering'. There are also some tariffs that are specific to a country, for example the hydro, wind and solar PV sub-50 kW tariffs are specific to Northern Ireland (as Northern Ireland installations are not eligible for support under the Feed-in Tariff scheme).

Note that the total number of ROCs issued to generators during a year will differ from the number presented by suppliers (to meet their obligation). This is because suppliers are able to 'bank' ROCs for use in subsequent years.

Latest statistics

Provisional figures show that, in 2011/12, the number of ROCs issued to accredited generators was 34.5 million, an increase of 38 per cent compared to 2010/11. This equates to an increase of 33 per cent in generation, from 23,249 GWh in 2010/11 to 30,819 GWh in 2011/12.

There were just over 10 million ROCs issued to accredited generators in the first quarter of 2012, an increase of 42 per cent on the first quarter in 2011. This equates to an increase of 32 per cent in generation over the same period, from 6,620 GWh to 8,712 GWh.

User feedback

We welcome all feedback from users, therefore if you have any comments or queries regarding this new monthly table, please contact James Hemingway using the contact details below.

James Hemingway
Energy Statistics
Tel: 0300 068 5042
E-mail: James.Hemingway@decc.gsi.gov.uk

Number of properties benefitting through receipt of insulation measures and energy efficiency products from Energy Supplier obligations

Introduction

This article estimates the number of properties in Great Britain which have benefitted from 'Supplier Obligations' through the receipt of insulation measures and energy efficiency products since the introduction of the Energy Efficiency Commitment (EEC) in 2002 to the current day through the Carbon Emissions Reduction Target (CERT) and the Community Energy Saving Programme (CESP). It also considers the number of additional properties expected to benefit to the end of CERT/CESP and through the Energy Company Obligation, that would not already have benefitted from EEC/CERT/CESP.

Two levels of benefit are considered:

1. Properties that have benefitted from receiving at least one major insulation measure (Cavity Wall Insulation, Loft Insulation or Solid Wall Insulation)
2. Properties that have benefitted from an insulation measure or other products delivered through EEC/CERT (such as energy efficient appliances, energy efficient lighting, heating controls, boilers, real time displays etc)

This is the first attempt to provide an estimate of the overall reach of supplier obligations to individual properties in the domestic sector. Previously estimates were limited to the number of individual measures delivered or were related to a specific policy.

As a provisional estimate with a number of assumptions, these may be subject to revision if better evidence becomes available. Users are encouraged to use the scenario tool to test their own assumptions and feedback on any points for improvement.

Key messages

At the start of April 2012, we estimate that 9.7 million properties have benefitted from at least one major insulation measure under EEC/CERT/CESP.

By the end of 2022, we estimate that an additional 4.8 million properties (that have not already received at least one insulation measure through EEC/CERT/CESP) would receive one or more major insulation measures.

This would mean 14.5 million properties will have benefitted from at least one major insulation measure through supplier obligations. Note this excludes any properties not already included that benefit from measures installed under Green Deal without ECO.

Four million of the 14.5 million properties will have benefitted from both wall and loft insulation over this period.

With 30 million new energy efficient appliances being subsidised through EEC, and nearly 450 million energy efficient light bulbs being delivered under EEC and CERT it is likely that nearly every property in Great Britain has received something through the supplier obligations, however small.

Data collection and methodology

The data used in this analysis is based on the following sources:

- Review of the EEC 2002-2005 (Office of Gas and Electricity Markets, August 2005) www.ofgem.gov.uk/Sustainability/Environment/EnergyEff/PrevSchemes/Pages/PrevSchemes.aspx
- The EEC Annual Report 2008 (Office of Gas and Electricity Markets, August 2008) – also available through link above
- CERT Update (OFGEM, June 2012) www.ofgem.gov.uk/Sustainability/Environment/EnergyEff/CU/Pages/CU.aspx

- Estimates of Home Insulation levels in Great Britain (DECC, June 2012) www.decc.gov.uk/en/content/cms/statistics/energy_stats/en_effic_stats/home_ins_est/home_ins_est.aspx
- Green Deal and ECO final impact assessment (DECC, June 2012) www.decc.gov.uk/assets/decc/11/consultation/green-deal/5533-final-stage-impact-assessment-for-the-green-deal-a.pdf

We have had to make a number of assumptions to estimate the overlap between delivery of major insulation measures to properties. The main assumptions are:

- For EEC, properties receiving a professionally installed major insulation measure received on average 1.3 professionally installed major insulation measures (generally cavity wall insulation and loft insulation) – this is based on assumptions used in the EEC impact assessment, and is similar to that recorded in HEED for CERT (see below).
- For CERT, this average was 1.2 – this is based on analysis of property level data within the Homes Energy Efficiency Database, held by the Energy Savings Trust.
- 10 per cent of DIY loft insulation was fitted in properties which had wall insulation fitted sometime during EEC/CERT. We have no direct evidence on which to base this assumption, but is based on the assumption that DIY loft insulation was not taken out at the same time as CWI/SWI, and therefore would be randomly distributed through the housing stock that had not already had loft insulation prior to EEC. More detail on the underlying assumptions and calculations are included in Annex A.
- No significant overlap between EEC/CERT (i.e. a property receiving a major measure in EEC did not then get a different major measure in CERT) – this was tested with available property data in the Homes Energy Efficiency Database and suggested between 0.2 to 0.5 million properties may have received major measures under both EEC and CERT (this analysis was limited due to the lack of data on measures installed under EEC in the HEED database and some of this overlap may actually be due to the date being recorded for measures which were carried over from EEC to CERT). An overlap of 1.05 measures per property has been used (which reduces the number of properties to date by 0.2m)
- Given the number of properties which have received measures through EEC/CERT, we assume a more significant overlap between EEC/CERT and ECO periods. This is outlined in Annex B. Twenty per cent of loft insulations, and 35 per cent of cavity and solid wall insulations are assumed to be in properties which received a major measure during EEC/CERT.

All of these assumptions can be tested for sensitivity in an excel workbook using a scenario testing tool which can be found under the related documents section on the following link: www.decc.gov.uk/en/content/cms/statistics/energy_stats/en_effic_stats/en_effic_stats.aspx

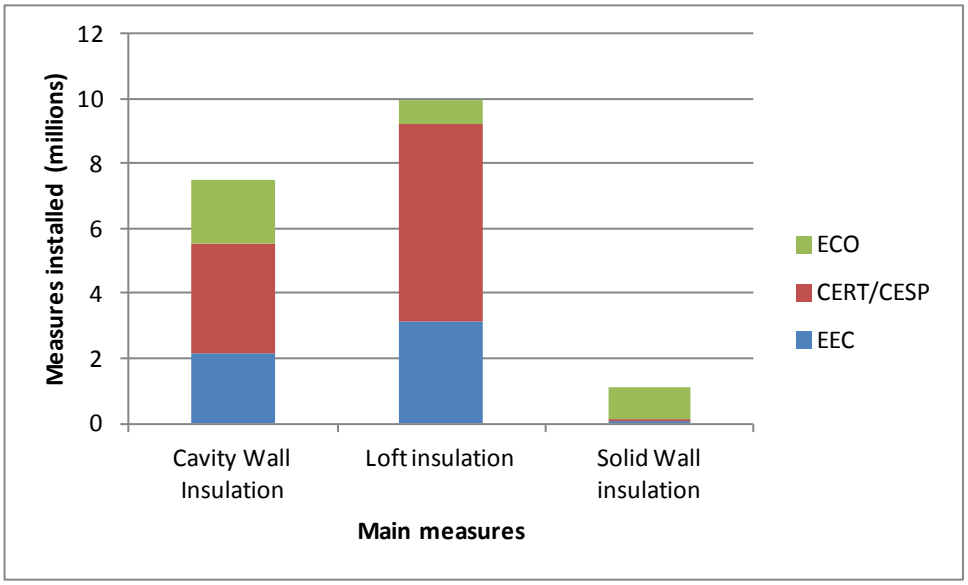
Other points for information

- During each phase of EEC, some of the measures were carried over to count against the next phase of the policy – for the purposes of this analysis, they have been assigned to the period in which they were installed, rather than the period they counted towards the suppliers obligations.
- Delivery numbers between April 2012 and end 2012 (end of CERT/CESP) are based on assumption that suppliers meet their obligations.
- ECO numbers are sourced from projections in the Green Deal/ECO final impact assessment, and based on the main measure to be installed (i.e. we do not need to apply the 1.2 or 1.3 measures per home factor used for EEC and CERT)
- No assessment has been made of the contributions of the Energy Efficiency Standard of Performance, the obligation which ran prior to EEC from the mid 1990's to 2002 due to a lack of available evidence.

Summary of Measures delivered

Chart 1 shows the number of measures delivered or projected to be delivered under each supplier obligation. Note, CERT/CESP figures includes assumed delivery in the rest of 2012 based on the assumption that suppliers will meet their targets. ECO figures are based on data from the final Green Deal/ECO impact assessment and include delivery to 2022.

Chart 1 – Main insulation measures installed under supplier obligations between 2002-2022



Number of loft insulations under ECO referred to in the chart relate only to properties where wall insulation would not also be installed

As at the start of April 2012, 7.7 million lofts; 4.2 million cavity walls and 120,000 solid walls have been insulated through these supplier obligations. Based on the assumptions above, we estimate that 9.7 million properties have benefitted from at least one major insulation measure under EEC/CERT/CESP to April 2012.

Based on projections of delivery to the end of the CERT/CESP schemes and through ECO, we estimates that by 2022 10.0 million lofts; 7.5 million cavity walls and 1.1 million solid walls will have been insulated through supplier obligations. This leads to an additional 4.8 million properties benefitting (that have not already received at least one insulation measure through EEC/CERT/CESP). In total this leads to an estimate of 14.5 million properties benefitting from at least one major insulation measure through supplier obligations between 2002 and 2022.

Note that these estimates exclude properties that receive measures only through Green Deal (i.e. with no ECO contribution).

The detailed calculations can be seen in the scenario testing tool linked above.

<u>Sensitivity testing the number of properties benefitting from major measures</u>

By applying a number of tests on the assumptions used, we estimate that there is a range of broadly +0.5 million to -1.0 million properties on the 9.7 million estimate as at April 2012, and a range of +0.7 million to -1.5 million properties on the estimate of 14.8 million properties benefitting by 2022. There is greater uncertainty in the 2022 estimate due to the increased likelihood of assumptions of overlap between the EEC/CERT period and the ECO period being incorrect.

Properties benefitting from insulation measures or wider measures

Beyond the major insulation measures (Cavity and Solid Wall insulation and Loft insulation), a range of other measures and products were supported through EEC and CERT including: energy efficient appliances, energy efficient lighting, heating controls, boilers, real time displays etc.

Table 1 shows the numbers of these main other measures/products delivered through EEC and CERT.

Table 1 – number of other measures/products delivered through EEC and CERT

Measure/product	EEC1	EEC2	CERT	Total
Energy efficient light bulbs	39,738,000	101,876,000	303,555,000	445,169,000
Heating controls	2,366,000	2,236,000	0	4,603,000
New boilers	366,000	2,083,000	0	2,449,000
Energy efficient products/appliances	6,602,000	22,855,000	55,000	29,512,000
Real time displays	0	0	2,413,000	2,413,000

Again, there are a number of assumptions needed to convert these numbers of products/measures into numbers of properties benefitting:

- Energy efficient light bulbs. These were given out in batches of 4 or 6 at a time to households. However, it is likely that some households did not use these bulbs. Given the overall numbers of energy efficient bulbs delivered though, it is reasonable to assume that nearly every property in the country would have had the chance to benefit.
- Heating controls. Evidence from review of EEC suggests that in general, these were delivered at the same time as a major insulation measure so will not add to the number of properties benefitting.
- New/energy efficient boilers. No evidence available on whether these were delivered at same time as insulation measures, but no reason to assume they would be, therefore assume a random distribution across all properties.
- Energy efficient appliances/TV's. These were mainly available through discounts in stores, so no reason to assume they were linked with insulation measures. Therefore, assume a random distribution across all properties. The main unknown here would be how many energy efficient appliances would have been purchased per household that bought at least one. There is no evidence available, but given the range of products covered it is likely that a property would have replaced some white goods at the same time, and a significant number of new televisions were purchased over the EEC/CERT period. We therefore assume an average of 3 products per property.
- Real time displays. From CERT reports, it seems these were not linked to insulation measures being delivered, so assume a random distribution.

Even accounting for the assumptions above (and significant likely error in the assumptions), with 30 million new energy efficient appliances being subsidised through EEC, and nearly 450 million energy efficient light bulbs being delivered under EEC and CERT it is likely that nearly every property in Great Britain has received some form of benefit from these policies, however small.

Supplier Obligations

A brief summary of the supplier obligations included in this analysis is included below.

Energy Efficiency Commitment (EEC)

EEC required gas and electricity suppliers to achieve energy savings in domestic households in Great Britain. EEC ran in two stages: EEC1 from 2002-2005 and EEC2 from 2005-2008. Overall reduction targets of 62 TWh and 130 TWh were set respectively. In addition half of these targets had to met by delivery to priority group customers (defined as those in receipt of certain income related benefits and tax credits).

Carbon Emissions Reduction Target (CERT)

CERT requires all domestic energy suppliers with a customer base in excess of 250,000 customers to make savings in the amount of CO_2 emitted by householders in Great Britain. Suppliers meet this target by promoting the uptake of low carbon energy solutions to household energy consumers, thereby assisting them to reduce the carbon footprint of their homes. This policy, originally scheduled to run from the end of EEC in 2008 to March 2011, was extended to run to December 2012 with a greater focus on insulation. This policy also requires delivery through priority and super priority groups.

Communities Energy Savings Programme (CESP)

CESP targets households across Great Britain, in areas of low income, to improve energy efficiency standards, and reduce fuel bills. There are 4,500 areas eligible for CESP. CESP is funded by an obligation on energy suppliers and electricity generators. CESP promotes a “whole house” approach i.e. a package of energy efficiency measures best suited to the individual property. The programme is delivered through the development of community-based partnerships between Local Authorities (LAs), community groups and energy companies, via a house-by-house, street-by-street approach.

Energy Company Obligation (ECO)

ECO will begin in October 2012 and will be the new supplier obligation (taking over from CERT and CESP), but will also integrate with the Green Deal allowing supplier subsidy and Green Deal finance to come together in one seamless offer to the consumer.

For further information on insulation statistics please contact:

Mary Gregory
Energy Efficiency Statistics
Tel: 0300 068 5856
E-mail:Mary.Gregory@decc.gsi.gov.uk

Ian Knowles
Energy Efficiency Statistics
Tel: 0300 068 5540
E-mail:Ian.Knowles@decc.gsi.gov.uk

Annex A – Detailed calculations on DIY loft insulation assumption

There are a number of different assumptions to cover here.

Loft size
Data for DIY loft insulation is reported in terms of square meters of loft insulation material sold.

This is converted into number of lofts treated using an estimated square meterage per loft.

In EEC this was assumed to be $40m^2$; CERT assumed this to be $50m^2$

This assumption has not been tested – but the impact of increasing the EEC m^2 per loft to $50m^2$ would be to reduce the number of DIY lofts by 0.25m.

Distribution of DIY loft insulation
Note for simplicity there is a degree of rounding throughout these calculations.

The housing stock (in Great Britain) at start April 2012 was 26.7 million.

4.3 million properties have received CWI/SWI during EEC/CERT to April 2012.

By assuming an average overlap across EEC/CERT of 1.25 professionally installed measures per property, we estimate ¼ of these 4.2 million properties also had professionally installed loft insulation through EEC/CERT period.

Therefore there are roughly 3 million properties that had CWI/SWI during the EEC/CERT period that did not get professionally installed loft insulation in that period.

Of the 23.3 million properties that have lofts, removing those that already had loft insulation prior to EEC, and those professional installed during EEC/CERT, there are roughly 12m properties where this DIY insulation could have been fitted.

Of the 3 million properties that got wall insulation but not professionally installed loft installation during EEC/CERT, assuming these were randomly distributed between properties which had/had not already had loft insulation, then roughly half of them may have uninsulated lofts.

If we assume that the DIY loft insulation was randomly distributed between cavity wall and solid wall properties, then the proportion of DIY loft insulation going into properties which also got wall insulation during EEC/CERT would be 1.5/12.

This can be rounded to roughly 1/10 of DIY loft insulation could be expected to go into properties which had wall insulation under EEC/CERT.

By adjusting this assumption to be 2/10, it would reduce the number of properties benefitting by 0.3 million; by adjusting to 3/10, it would reduce the number by 0.6 million.

Annex B – Detailed calculations of overlap between EEC/CERT and ECO periods

Note for simplicity there is a degree of rounding throughout these calculations.

At the end of CERT/CESP we assume 67% of cavity wall properties will have wall insulations, and 68% of properties with lofts will have loft insulation. 2% of solid wall properties will have wall insulation.

Of these percentages, 29 percentage points of 67 per cent of cavity walls would have been insulated in the EEC/CERT period. Likewise, 39 percentage points of the 68 per cent of properties with lofts would have been insulated in the EEC/CERT period. Nearly all the solid wall insulation would have been delivered in the EEC/CERT period.

We therefore expect that (again assuming a random distribution of the measures) for the loft only insulations installed under ECO going into cavity wall homes, 29 per cent will be in properties which already received CWI under EEC/CERT. For the loft insulations going into solid wall homes, 2 per cent will be in properties that already received SWI under EEC/CERT. This gives an estimate of 21 per cent of lofts installed under ECO will be in properties that already had wall insulation under EEC/CERT. This is rounded to 20 per cent for simplicity.

For cavity wall insulation under ECO, considering 39 per cent of properties with lofts received loft insulation during EEC/CERT, and adjusting this for the 3.3 million properties that do not have lofts. We assume that 35 per cent of cavity walls insulated under ECO will be in properties which had loft insulation under EEC/CERT.

For solid wall insulation under ECO, we assume the same as for cavity walls.

Amended and corrected tables from the Digest of United Kingdom Energy Statistics 2012

Following the release of the internet content only and long-term trends elements of the Digest of United Kingdom Energy Statistics 2012 on 26 July 2012, a couple of errors within the tables have come to light. These have been corrected on the web site's "Excel" versions of the tables, as well as in the associated PDF files. The Excel package's "comments" facility has been used to indicate the cells where changes have been made.

In the internet content only table J.1, heat sold reallocation, all of the 2011 figures have been corrected as incorrect data was published on 26 July.

The web address for this table is:
www.decc.gov.uk/en/content/cms/statistics/energy_stats/source/total/total.aspx

In the long-term trends table 6.1.1, renewable sources used to generate electricity and heat; electricity generated from renewable sources, the offshore wind figure for 2010 has been corrected, which in turn has led to total 2010 annual figures also being corrected.

The web address for this table is:
www.decc.gov.uk/en/content/cms/statistics/energy_stats/source/renewables/renewables.aspx

Recent and forthcoming publications of interest to users of energy statistics

Energy Trends and Quarterly Energy Prices: December 2012

Energy Trends and Quarterly Energy Prices are normally published concurrently on the last Thursday of March, June, September and December. Given that the last working Thursday of December, the 27 December, will fall between Christmas and New Year it has been decided that the publication date for the December 2012 editions of the publications will be brought forward to Thursday 20 December 2012. Hard copies of the publications will be posted to subscribers on the day of publication, but there is a possibility that subscribers may not receive their copies until after Christmas due to the high level of post over the holiday period. PDF versions of the publications and data in excel format will however be available to download from the DECC website from 9.30am on Thursday 20 December 2012.

Estimates of home insulation levels in Great Britain

On 25 September 2012 the latest estimates of homes in Great Britain with loft, cavity wall and solid wall insulation were published. These estimates were based on the new methodology proposed alongside the previous publication. Data can be accessed on the DECC website at: www.decc.gov.uk/en/content/cms/statistics/energy_stats/en_effic_stats/home_ins_est/home_ins_est.aspx

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 2012 edition will be released at 9.30am on Thursday 25 October 2012 on the DECC website at:
www.decc.gov.uk/en/content/cms/statistics/publications/indicators/indicators.aspx.

National Energy Efficiency Data-Framework (NEED)

Results of the latest statistical analysis from the National Energy Efficiency Data-Framework (NEED) will be published in November 2012. The analyses cover impacts of energy efficiency measures and consumption for different types of property. The report will be published on the DECC website at:
www.decc.gov.uk/en/content/cms/statistics/energy_stats/en_effic_stats/need/need.aspx

List of special feature articles published in Energy Trends between September 2011 and June 2012

Energy

September 2011	Estimates of heat use in the United Kingdom
	Running hours during winter 2010/11 for plants opted-out of the Large Combustion Plant Directive (LCPD)
	Temperature adjustment of DECC energy statistics
December 2011	DECC Statistical surveys
	Revisions to quarterly total energy data
	New weather tables: sources and methodology
June 2012	DECC report on surveys of business in 2011/12

Combined Heat and Power (CHP)

September 2011	Combined Heat and Power in Scotland, Wales, Northern Ireland and the regions of England in 2010
	Grades and quantities of heat generated by CHP in the UK

Electricity

December 2011	Electricity generation and supply figures for Scotland, Wales, Northern Ireland and England, 2007 to 2010

Energy efficiency

September 2011	Energy use in English homes: English Housing Survey energy tool

Energy prices

March 2012	Domestic energy bills in 2011
June 2012	Estimates of domestic dual fuel energy bills in 2011
	Industrial energy prices

Feed-in Tariffs

March 2012	Feed in Tariffs: 2010/11 generation data
June 2012	Identifying trends in the deployment of domestic solar PV under the Feed-in Tariff scheme

Fuel Poverty

December 2011	Sub-regional fuel poverty data for England, 2009
June 2012	Fuel Poverty levels in England, 2010

Gas

December 2011	Physical gas flows across Europe and security and diversity of gas supply in 2010

Petroleum (oil and oil products)

March 2012	Comparison of M-1 and M-2 oil data

Renewables

September 2011	Renewable electricity in Scotland, Wales, Northern Ireland and the regions of England in 2010
June 2012	Renewable energy in 2011

Sub-national energy consumption

December 2011	Sub-national electricity consumption statistics for 2010 Sub-national gas consumption statistics for 2010 Sub-national estimates of non gas, non electricity and non road transport fuels for 2009 Sub-national total energy consumption statistics for 2009 Sub-national electricity and gas consumption statistics analysis tool Sub-national non-domestic electricity consumption in Northern Ireland for 2010 Sub-national domestic electricity consumption in Northern Ireland for 2009
March 2012	Sub-national electricity consumption statistics and household energy distribution analysis for 2010 Gas and electricity consumption data below Local Authority level Identifying local areas with higher than expected domestic gas use
June 2012	Sub-national road transport fuel consumption statistics for 2010 and analysis of national trends in diesel and petrol use

UK Continental Shelf (UKCS)

March 2012	UKCS capital expenditure survey 2011

PDF versions of the special feature articles appearing in Energy Trends since 2010 can now be accessed on the Internet at:
www.decc.gov.uk/en/content/cms/statistics/publications/trends/articles_issue/articles_issue.aspx
(articles by issue) or
www.decc.gov.uk/en/content/cms/statistics/publications/trends/articles_sub/articles_sub.aspx
(articles by subject).

Explanatory notes

General

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

Symbols used in the tables

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

Notes to tables

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

Conversion factors

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

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

Conversion matrices

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

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

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

Note that all factors are quoted to 5 significant figures

Abbreviations

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

Sectoral breakdowns

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

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

ENERGY TRENDS

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

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

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

Quarterly Energy Prices and Energy Trends

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Price £40 per annum UK
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www.decc.gov.uk/en/content/cms/statistics/publications/trends/trends.aspx
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.decc.gov.uk/en/content/cms/statistics/publications/brief/brief.aspx

Digest of UK Energy Statistics

Available from the Stationery Office (0870 600 5522)
www.decc.gov.uk/en/content/cms/statistics/publications/dukes/dukes.aspx

Energy Consumption in the UK

Available on the Internet at:
www.decc.gov.uk/en/content/cms/statistics/publications/ecuk/ecuk.aspx

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