



A National Statistics Publication



ENERGY TRENDS

JUNE 2012

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This is a National Statistics publication

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

Designation can be broadly interpreted to mean that the statistics:

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

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

Explanatory notes are to be found inside the back cover

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

Introduction

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

Energy Trends includes information on energy as a whole and by individual fuels. The text and charts provide an analysis of the data in the tables. The tables are mainly in commodity balance format, as used in the annual Digest of UK Energy Statistics. The 2011 edition of the Digest was published on 28 July 2011. Printed and bound copies of the 2011 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

Annual data for 2011 included within this edition is on a provisional basis. New data are continually received and revisions to previous data made. Finalised figures for 2011 will be published on the 26 July 2012 in the annual Digest of UK Energy Statistics.

Energy Trends does not contain information on Foreign Trade, Weather (temperature, wind speed, sun hours and rainfall) and Prices. Foreign Trade, and Weather tables are, however, available on the DECC 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

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The main points for the first quarter of 2012:

- Total energy production was 11½ 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 net import dependency of total energy of 38 per cent. In addition nuclear output was down but there was strong growth in renewables.
- Oil production fell by 13 per cent when compared with the first quarter of 2011.
- Natural gas production was 14 per cent lower than the first quarter of 2011. Gas imports fell by 6 per cent, reflecting lower demand, with shipped imports of LNG falling by 50 per cent, due to increased production from Norwegian fields.
- Coal production in the first quarter of 2012 was 12 per cent lower than the first quarter of 2011. Coal imports were 21 per cent higher and generators' demand for coal was up by 19 per cent.
- Total primary energy consumption for energy uses fell by 2½ per cent. However, when adjusted to take account of weather differences between the first quarter of 2011 and the first quarter of 2012, primary energy consumption fell by 1 per cent.
- Final energy consumption was provisionally 2½ per cent lower than in the first quarter of 2011. Transport consumption rose by 1½ per cent, whilst industrial consumption fell by 8½ per cent, domestic consumption fell by 2½ per cent and other final users consumption fell by 1½ per cent.
- Total deliveries of the key transport fuels were up 1 per cent when compared to the same period last year. In particular, sales of DERV and motor spirit both increased, which reflects increased demand in March in anticipation of a potential tanker drivers' strike.
- Electricity generated in the first quarter of 2012 fell by 3½ per cent, from 103.1 TWh a year earlier to 99.5 TWh, the lowest first quarter level of generation since 1998.
- Of electricity generated in the first quarter of 2012, gas accounted for 27 per cent (its lowest share in the last fourteen years) due to high gas prices, whilst coal accounted for 42 per cent. Nuclear generation accounted for 17 per cent of total electricity generated in the first quarter of 2012, a decrease from the 19 per cent share in the first quarter of 2011.
- Renewables' share of electricity generation increased to 11 per cent from the 8 per cent share in the first quarter of 2011. Hydro generation increased by 43 per cent on the first quarter of 2011 as a result of very high winter rainfall. Over the same period, offshore wind generation increased by 50 per cent, whilst onshore wind generation rose by 51 per cent due to higher wind speeds on average than the same quarter in the previous year. Overall renewable generation was up 39 per cent.
- In the first quarter of 2012, 432 MW of capacity joined the Feed in Tariff scheme, increasing the total by two-thirds, to 1,091 MW, approximately 8½ per cent of all renewable installed capacity. Of this increase, sub-4 kW retrofitted solar PVs contributed 279 MW.

Section 1 - Total Energy

Key results show:

Total energy production was 11.6 per cent lower than in the first quarter of 2011. (Charts 1.1 & 1.2)

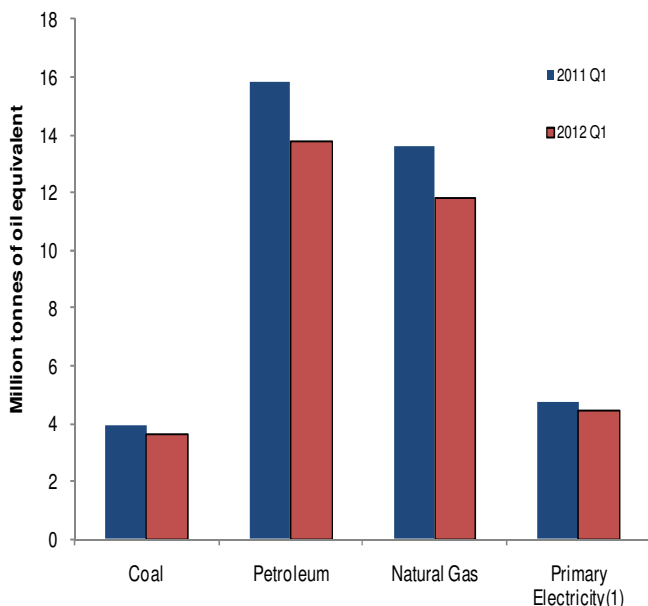
Total primary energy consumption for energy uses fell by 2.3 per cent. However, when adjusted to take account of weather differences between the first quarter of 2011 and the first quarter of 2012, primary energy consumption fell by 1.1 per cent. (Chart 1.3)

Final energy consumption provisionally fell by 2.7 per cent compared to the first quarter of 2011. Transport consumption rose by 1.6 per cent, whilst industrial consumption fell by 8.5 per cent, domestic consumption fell by 2.5 per cent and other final users' consumption fell by 1.7 per cent. (Chart 1.4)

Net import dependency was 38.1 per cent, up 2.2 percentage points from the first quarter of 2011. This rise was due to the fall in oil and gas production. (Chart 1.6)

Fossil fuel dependency was 88.0 per cent in the first quarter of 2012. (Chart 1.7)

Chart 1.1 Production of indigenous primary fuels



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

Total production in the first quarter of 2012 stood at 33.7 million tonnes of oil equivalent, 11.6 per cent lower than in the first quarter of 2011.

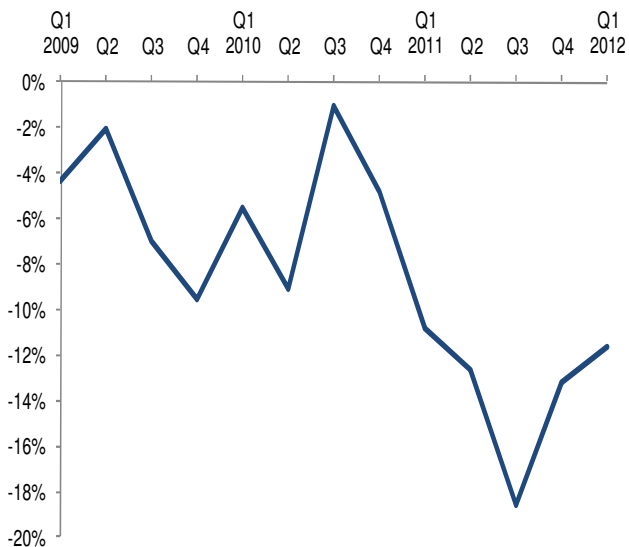
Production of natural and other gases fell by 13.2 per cent and production of petroleum by 13.0 per cent compared to the first quarter of 2011, as a result of maintenance work and slowdowns on a number of fields.

Primary electricity output in the first quarter of 2012 was 6.7 per cent lower than in the first quarter of 2011, within which nuclear electricity output was 11.6 per cent lower due to maintenance activity and output from wind and natural flow hydro was 46.6 per cent higher than the same period in 2011. The average wind speed was 0.7 knots higher than the same period a year earlier, and wind capacity increased by 24 per cent.

In the first quarter of 2012 production of coal and other solid fuels was 6.8 per cent lower than the corresponding period of 2011. This was due to a decrease in deep-mined production.

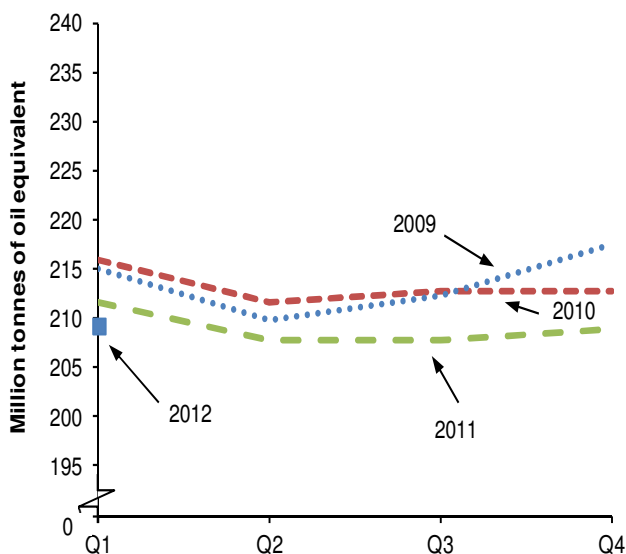
Total Energy

Chart 1.2 UK production (annual growth rate)



In the first quarter of 2012, the annual growth rate of UK production was -11.6 per cent. This was mainly the result of the falls in oil and gas production due to maintenance activity and slowdowns.

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



Total inland consumption on a primary fuel input basis (temperature corrected, seasonally adjusted annualised rate), was 209.3 million tonnes of oil equivalent in the first quarter of 2012, 1.1 per cent lower than in the first quarter of 2011. The average temperature in the first quarter of 2012 was 0.5 degree Celsius warmer than the same period a year earlier.

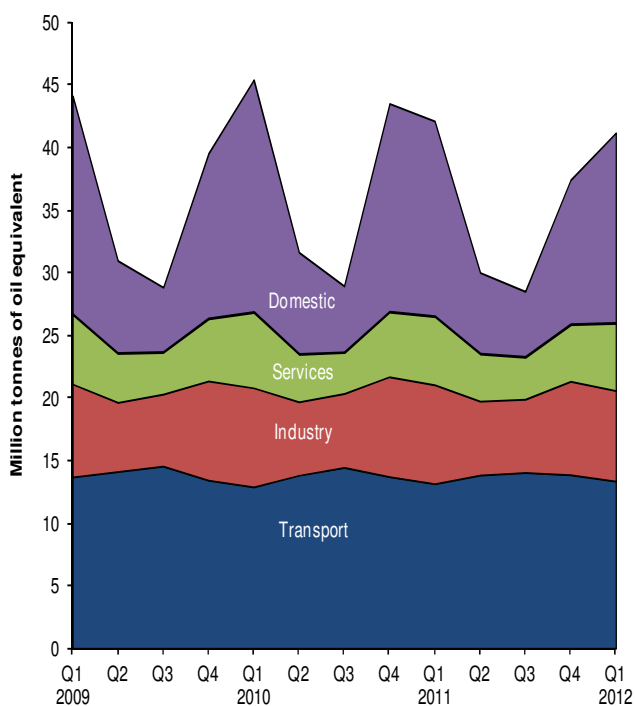
Between the first quarter of 2011 and the first quarter of 2012 (on a seasonally adjusted and temperature corrected basis) coal and other solid fuel consumption rose by 16.5 per cent, with more coal being used in electricity generation.

Also on a seasonally adjusted and temperature corrected basis, oil consumption rose by 1.4 per cent between the first quarter of 2011 and the first quarter of 2012.

On the same basis, natural gas consumption fell by 10.4 per cent between the first quarter of 2011 and the first quarter of 2012, as higher prices led to less gas being used in electricity generation.

(1) Seasonally adjusted and temperature corrected annual rates

Chart 1.4 Final energy consumption by user



Total final energy consumption fell by 2.7 per cent between the first quarter of 2011 and the first quarter of 2012.

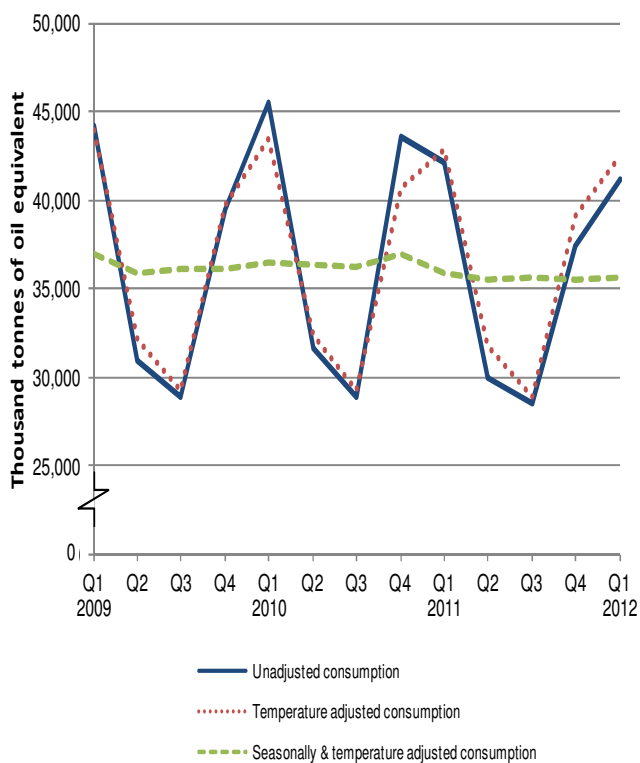
Transport sector energy consumption rose by 1.6 per cent, reflecting increases in motor fuel purchases.

Industrial sector energy consumption fell by 8.5 per cent.

Domestic sector energy consumption fell by 2.5 per cent.

Service sector energy consumption fell by 1.7 per cent.

Chart 1.5 Seasonally adjusted and temperature corrected final energy consumption



Total unadjusted final energy consumption (excluding non-energy use) fell by 2.2 per cent between the first quarter of 2011 and the first quarter of 2012.

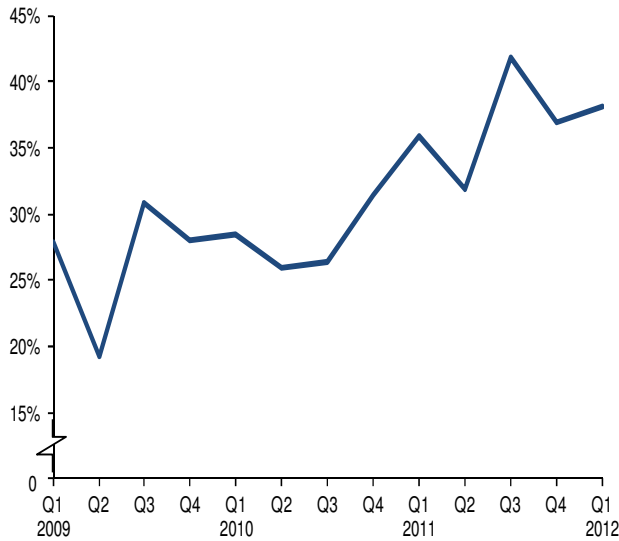
On a seasonally and temperature adjusted basis final energy consumption (excluding non-energy use) fell by 0.8 per cent between the first quarter of 2011 and the first quarter of 2012.

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

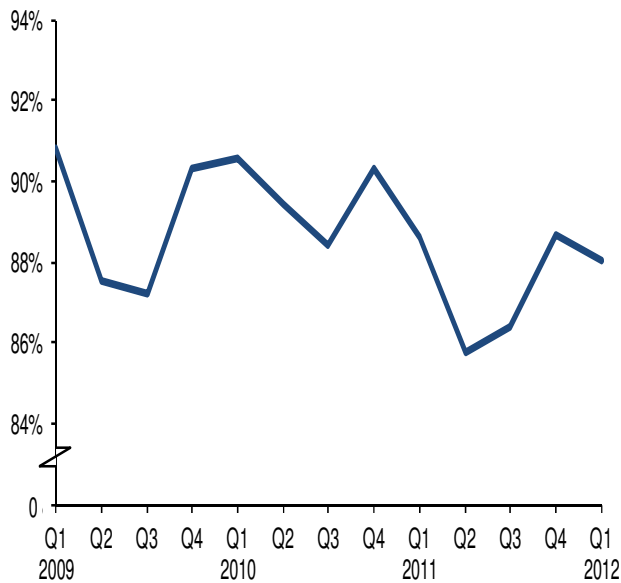
Total Energy

Chart 1.6 Net import dependency



In the first quarter of 2012 net import dependency was 38.1 per cent, up 2.2 percentage points from the first quarter of 2011. This rise was due to falls in oil and gas production as a result of maintenance activity and slowdowns, resulting in a growth in imports.

Chart 1.7 Fossil fuel dependency



In the first quarter of 2012 fossil fuel dependency was 88.0 per cent, down 0.6 percentage points from the first quarter of 2011.

Relevant tables

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

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1 TOTAL ENERGY

TABLE 1.1. Indigenous production of primary fuels

Million tonnes of oil equivalent

		Primary electricity					
		Total	Coal ¹	Petroleum ²	Natural gas ³	Nuclear	Wind and natural flow hydro ⁴
2009		167.0	14.1	74.7	61.6	15.2	1.25
2010		158.1	14.8	69.0	59.2	13.9	1.19
2011 p		136.6	15.0	56.9	47.3	15.5	1.85
<i>Per cent change</i>		<i>-13.6</i>	<i>+1.0</i>	<i>-17.5</i>	<i>-20.0</i>	<i>+11.1</i>	<i>+54.9</i>
2011	Quarter 1	38.2	3.9	15.9	13.6	4.4	0.40
	Quarter 2	34.9r	3.8	14.7	11.7	4.3	0.41
	Quarter 3	29.1	3.7	12.2	9.4	3.5	0.37
	Quarter 4	34.3	3.6	14.2	12.6	3.3	0.67
2012	Quarter 1 p	33.7r	3.7	13.8r	11.8	3.9	0.59
<i>Per cent change⁵</i>		<i>-11.6</i>	<i>-6.8</i>	<i>-13.0</i>	<i>-13.2</i>	<i>-11.6</i>	<i>+46.6</i>

1. Includes solid renewable sources (wood, straw and waste), a small amount of renewable primary heat sources (solar, geothermal etc), liquid biofuels and an estimate for slurry.

2. Crude oil, offshore and land, plus condensates and petroleum gases derived at onshore treatment plants.

3. Includes colliery methane, landfill gas and sewage gas. Excludes gas flared or re-injected.

4. Includes generation by solar PV.

5. Percentage change in the first quarter of 2012 compared with a year earlier.

1 TOTAL ENERGY

TABLE 1.2 Inland energy consumption: primary fuel input basis
Million tonnes of oil equivalent

		Unadjusted ⁵							Seasonally adjusted and temperature corrected ^{6,7} (annualised rates)						
		Total	Coal ¹	Petroleum ²	Natural gas ³	Primary electricity		Net imports	Total	Coal	Petroleum	Natural gas	Primary electricity		Net imports
						Nuclear	Wind and natural flow hydro ⁴						Nuclear	Wind and natural flow hydro	
2009		211.0r	35.4	71.0r	87.9	15.2	1.25	0.25	213.2r	36.0	71.0r	89.5	15.2	1.26	0.25
2010		218.4	37.5	70.3	95.3	13.9	1.19	0.23	213.6	36.4	70.3	91.6	13.9	1.19	0.23
2011 p		202.5r	37.6	68.0r	79.1	15.5	1.85	0.53	209.0r	39.7	68.0r	83.4	15.5	1.85r	0.53
<i>Per cent change</i>		-7.3	+0.2	-3.3	-17.0	+11.1	+54.9	(+)	-2.2	+9.3	-3.3	-9.0	+11.1	+54.9	(+)
2011	Quarter 1	60.5r	11.4	16.8r	27.4	4.4	0.40	0.09	211.6r	40.2	67.3r	86.6	15.8	1.39r	0.37
	Quarter 2	45.0r	7.4	16.7r	16.1	4.3	0.41	0.13	207.7r	37.8	66.7r	83.6	17.0	2.09	0.53
	Quarter 3	42.8r	7.4	17.1r	14.2	3.5	0.37	0.20	207.9r	37.8	68.3r	84.0	15.2	1.73	0.81
	Quarter 4	54.2	11.4	17.4	21.3	3.3	0.67	0.11	208.8	43.2	69.6r	79.6	13.9	2.19r	0.44
2012	Quarter 1 p	59.2r	13.1r	17.1	24.4	3.9	0.59	0.17	209.3r	46.8r	68.2	77.6	14.0	2.04	0.68
<i>Per cent change⁸</i>		-2.3	+14.5	+1.4	-11.0	-11.6	+46.6	+86.8	-1.1	+16.5	+1.4	-10.4	-11.5	+46.7	+86.8

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 first 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 p	per cent change	2010 1st quarter	2010 2nd quarter	2010 3rd quarter	2010 4th quarter	2011 1st quarter	2011 2nd quarter	2011 3rd quarter	2011 4th quarter	2012 1st quarter p	per cent change ¹
SUPPLY													
Indigenous production	157,884r	136,811r	-13.3	42,753r	39,930r	35,714r	39,488r	38,332r	34,899r	29,160r	34,420r	33,903	-11.6
Imports	156,117r	162,176r	+3.9	41,397r	37,386r	33,635r	43,699r	42,555r	37,195r	39,035r	43,390r	44,686	+5.0
Exports	-91,184r	-84,128r	-7.7	-22,230r	-24,227r	-21,339r	-23,389r	-19,775r	-21,936	-20,003r	-22,414r	-21,139	+6.9
Marine bunkers	-2,251	-2,413r	+7.2	-494	-562	-628	-567	-582r	-624	-646	-560	-479	-17.6
Stock change ²	+6,383r	-968r		+5,521r	-2,492r	-1,358r	+4,713	+2,440r	-2,216r	-2,632r	+1,440r	+4,421	
Primary supply	226,949r	211,478r	-6.8	66,947r	50,034r	46,024r	63,944r	62,969r	47,318r	44,914r	56,276r	61,393	-2.5
Statistical difference ³	+127r	-345r		+247r	-194r	-84r	+158r	+113r	-261r	-297r	+100r	+289	
Primary demand	226,821r	211,823r	-6.6	66,700r	50,228r	46,108r	63,786r	62,856r	47,579r	45,211r	56,176r	61,104	-2.8
Transfers ⁴	-6r	-14r		+14r	+11r	-51r	+19r	+28r	+10r	-10r	-42r	-47	
TRANSFORMATION													
Electricity generation	-46,444r	-44,979r	-3.2	-13,195r	-10,428r	-10,004r	-12,816r	-12,975r	-10,240r	-9,983r	-11,781r	-12,695	-2.2
Heat generation	-1,069r	-1,068r	-0.1	-321r	-234r	-209r	-304r	-344r	-233r	-226r	-264r	-343	-0.2
Petroleum refineries	-222	-42r	-80.9	-234	-190	86	116	-85r	62r	4r	-23	22	(-)
Coke manufacture	-356r	-280r	-21.3	-59r	-90r	-88r	-119r	-78r	-73r	-54r	-74r	-68	-13.0
Blast furnaces	-1,828r	-1,739r	-4.9	-518r	-475r	-415r	-421r	-445r	-461r	-429r	-404r	-343	-23.0
Patent fuel manufacture	-5	11r	(-)	11	-1	-18	2	6r	3	7r	-5	13	(+)
Energy industry use	14,230r	13,288r	-6.6	3,615r	3,574r	3,385r	3,655r	3,491r	3,371r	3,153r	3,274r	3,409	-2.3
Losses	4,104	3,645r	-11.2	1,201	1,041	874	989	1,067	869	806	903	1,006	-5.7
FINAL CONSUMPTION													
Iron & steel	1,364r	1,337r	-2.0	343r	349r	330r	342r	315r	325r	354r	343r	299	-5.1
Other industries	26,307r	25,763r	-2.1	7,564r	5,506r	5,593r	7,644r	7,582r	5,576r	5,488r	7,117r	6,925	-8.7
Transport	55,154r	55,189r	+0.1	12,967r	13,895r	14,511r	13,780r	13,223r	13,916r	14,112r	13,937r	13,439	+1.6
Domestic	48,485r	38,714r	-20.2	18,540r	8,079r	5,263r	16,604r	15,563r	6,448r	5,201r	11,502r	15,170	-2.5
Other Final Users	18,249r	17,105r	-6.3	6,030r	3,804r	3,254r	5,161r	5,451r	3,765r	3,362r	4,527r	5,356	-1.7
Non energy use	8,999r	8,669r	-3.7	2,136r	2,574r	2,204r	2,085r	2,267r	2,379r	2,047r	1,976r	2,035	-10.3
DEPENDENCY⁵													
Net import dependency	28.3% r	36.5% r		28.4% r	26.0%	26.4%	31.5%	35.8% r	31.8% r	41.8% r	36.9%	38.1%	
Fossil fuel dependency	89.8% r	87.5% r		90.6% r	89.4%	88.4% r	90.3% r	88.6% r	85.8% r	86.4% r	88.7% r	88.0%	

1. Percentage change in the first 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 1									2012 Quarter 1 p								
	Coal	Manufactured fuels ⁴	Primary oil	Petroleum Products	Natural gas ⁵	Renewables & waste ⁶	Primary electricity	Electricity	Heat sold	Coal	Manufactured fuels ⁴	Primary oil	Petroleum Products	Natural gas ⁵	Renewables & waste ⁶	Primary electricity	Electricity	Heat sold
SUPPLY																		
Indigenous production	2,915	-	15,861	-	13,050	1,697	4,807	-	-	2,557	-	13,797	-	11,218	1,826	4,505	-	-
Imports	4,971	17	15,259	6,218	15,564	372	-	154	-	5,942	7	17,622	5,703	14,580	560	-	273	-
Exports	-100	-96	-10,138	-7,204	-2,138	-36	-	-62	-	-88	-231	-9,660	-8,093	-2,946	-17	-	-102	-
Marine bunkers	-	-	-	-582	-	-	-	-	-	-	-	-	-479	-	-	-	-	-
Stock change ¹	+2,368	-45	-714	+246	+585	-	-	-	-	+3,288	-47	-341	+360	+1,161	-	-	-	-
Primary supply	10,154	-124	20,268	-1,323	27,061	2,033	4,807	91	-	11,699	-272	21,418	-2,510	24,012	2,368	4,505	171	-
Statistical difference ²	+116	+1	-110	+23	+41	-	-	+41	-	+111	-	+194	+50	-30	-	-	-35	-
Primary demand	10,038	-125	20,378	-1,345	27,020	2,033	4,807	50	-	11,589	-271	21,225	-2,560	24,042	2,368	4,505	206	-
Transfers ³	-	3	-591	+620	-3	-	-401	+401	-	-	1	-749	+701	-1	-	-609	+609	-
TRANSFORMATION	-9,617	530	-19,786	19,424	-7,630	-1,250	-4,406	8,394	420	-11,161	615	-20,476	20,220	-5,547	-1,469	-3,896	7,879	420
Electricity generation	-8,316	-155	-	-261	-6,981	-1,250	-4,406	8,394	-	-9,913	-137	-	-261	-4,899	-1,469	-3,896	7,879	-
Heat generation	-86	-13	-	-17	-649	-	-	-	420	-86	-13	-	-17	-649	-	-	-	420
Petroleum refineries	-	-	-19,786	19,701	-	-	-	-	-	-	-	-20,476	20,498	-	-	-	-	-
Coke manufacture	-964	886	-	-	-	-	-	-	-	-992	924	-	-	-	-	-	-	-
Blast furnaces	-196	-249	-	-	-	-	-	-	-	-152	-190	-	-	-	-	-	-	-
Patent fuel manufacture	-55	61	-	-	-	-	-	-	-	-18	31	-	-	-	-	-	-	-
Energy industry use	1	163	-	1,277	1,424	-	-	601	23	1	148	-	1,336	1,289	-	-	611	23
Losses	-	36	-	-	378	-	-	654	-	-	16	-	-	320	-	-	670	-
FINAL CONSUMPTION	420	208	-	17,421	17,585	783	-	7,590	393	427	181	-	17,025	16,885	900	-	7,413	393
Iron & steel	-	111	-	1	118	-	-	85	-	-	99	-	1	114	-	-	84	-
Other industries	288	37	-	1,145	3,551	183	-	2,167	210	300	42	-	995	3,212	191	-	1,974	210
Transport	3	-	-	12,911	-	222	-	88	-	3	-	-	13,051	-	298	-	88	-
Domestic	120	60	-	960	11,220	253	-	2,929	21	115	40	-	821	11,015	285	-	2,871	21
Other final users	9	-	-	310	2,524	125	-	2,321	162	9	-	-	294	2,369	126	-	2,395	162
Non energy use	-	-	-	2,094	173	-	-	-	-	-	-	-	1,862	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. Includes 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:

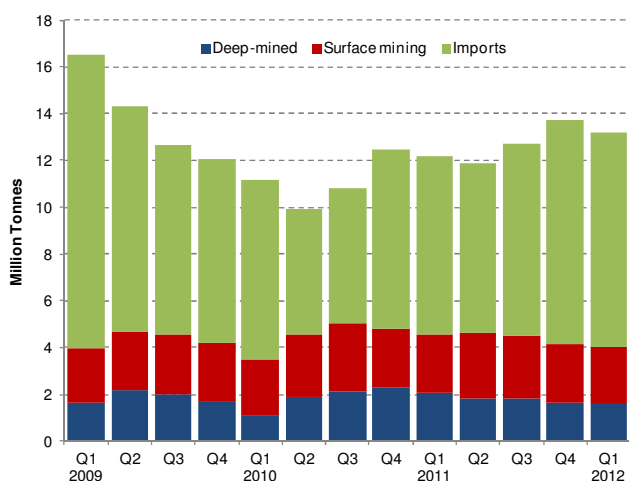
Overall production was down 12.3 per cent (-0.6 million tonnes) compared to quarter 1 2011 with deep-mined output down 22.3 per cent (-0.5 million tonnes) and surface mining output down by 4.9 per cent (-0.1 million tonnes). **(Chart 2.1)**

Coal imports were up 20.8 per cent (+1.6 million tonnes) on levels shown in quarter 1 2011. **(Charts 2.1 and 2.2)**

The demand for coal by electricity generators in the first quarter of 2012, was 19.0 per cent (+2.5 million tonnes) higher than demand in the first quarter of 2011. **(Chart 2.3)**

Total stock levels were down 16.4 per cent (-2.2 million tonnes) to 11.1 million tonnes compared to quarter 1 2011 and were down by 5.1 million tonnes on quarter 4 2011. **(Chart 2.4)**

Chart 2.1 Coal supply



Provisional figures for the first quarter of 2012 show that coal production (including an estimate for slurry) was down 12.3 per cent on the first quarter of 2011 at 4.1 million tonnes. The decrease was largely due to a fall of 22.3 per cent (-0.5 million tonnes) in deep-mined production from 2.0 million tonnes in the first quarter of 2011 due to a significant reduction in the tonnage of coal produced by some major coal producers, for commercial reasons.

Imports of coal in the first quarter of 2012 were 20.8 per cent higher than in the first quarter of 2011 at 9.2 million tonnes. However this is still below historical trends seen prior to the end of 2008.

In quarter 1 2012, net imports (9.0 million tonnes) made up 49.6 per cent of coal supply, 2.5 percentage points higher compared to the first quarter of 2011 (47.1 per cent).

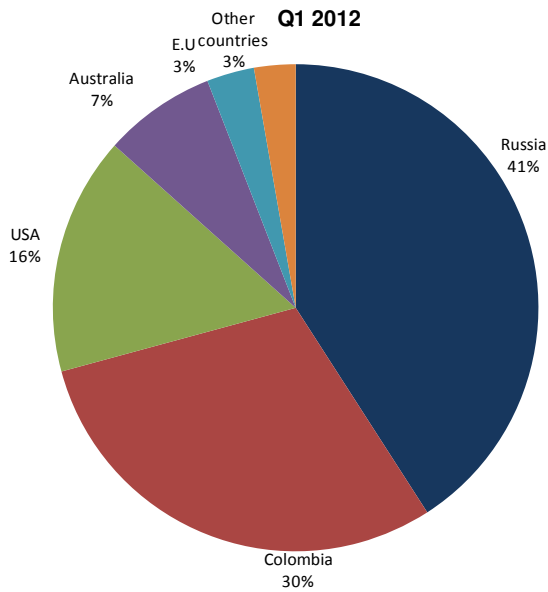
Table 2A Coal imports by origin

	Thousand Tonnes			
	2010	2011p	2011 Q1	2012 Q1 p
European Union	954	1,155	436	288
Russia	9,750	12,567	2,799	3,746
Colombia	6,437	8,176	2,138	2,735
USA	4,522	6,283	1,324	1,451
Australia	3,247	3,127	734	685
Other Countries	1,611	1,303	149	252
Total imports	26,521	32,610	7,579	9,157

Steam coal, largely for the power stations market, accounted for 88.4 per cent of coal imported in the first quarter of 2012. Steam coal imports increased by 28.7 per cent in quarter 1 2012, when compared to the same period a year earlier.

Coking coal imports decreased by 16.4 per cent (-0.2 million tonnes) to 1.1 million tonnes. Imports of anthracite are negligible in comparison with coking coal and steam coal imports.

Chart 2.2 Total coal imports by origin

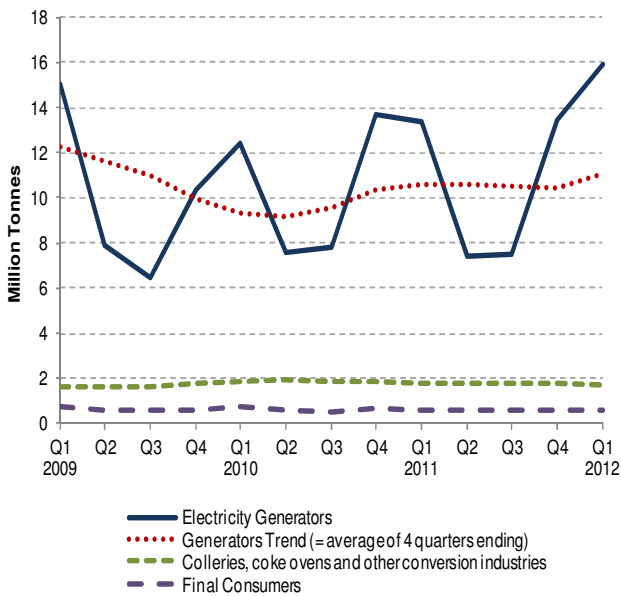


All but 6.0 per cent of UK steam coal imports came from just three countries: Russia (46.3 per cent), Colombia (33.8 per cent) and the USA (13.9 per cent).

Russian and Colombian steam coal imports increased by 37.6 per cent (+1.0 million tonnes) and 27.9 per cent (+0.6 million tonnes), respectively, from quarter 1 2011.

Steam coal imports originating from the USA were 16.0 per cent (+0.2 million tonnes) higher than the levels shown in quarter 1 2011.

Chart 2.3 Coal consumption

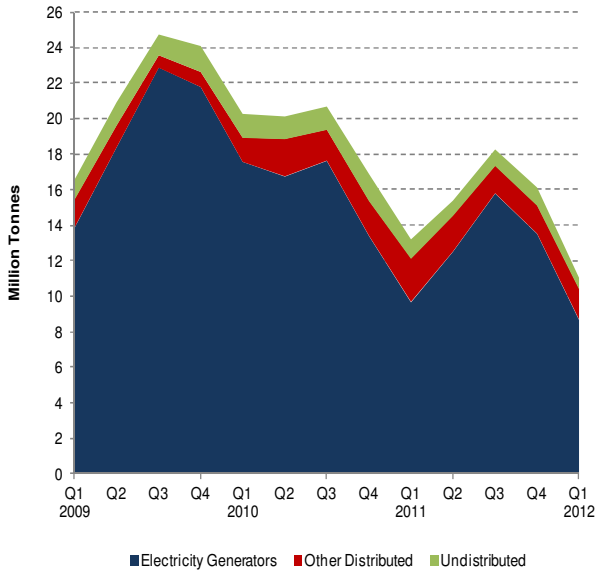


Total demand for coal in the first quarter of 2012, at 18.2 million tonnes, was 15.8 per cent higher than in the first quarter of 2011. Consumption by electricity generators was up by 19.0 per cent to 15.9 million tonnes.

Electricity generators accounted for 87.4 per cent of total coal use in the first quarter of 2012; compared with 85.1 per cent a year earlier.

Sales to industrial users increased by 3.9 per cent in quarter 1 2012 while sales to final consumers (as measured by disposals to final consumers) was down by 1.1 per cent.

Chart 2.4 Coal stocks



Coal stocks showed a seasonal fall of 5.1 million tonnes during the first quarter of 2012 and stood at 11.1 million tonnes, 2.2 million tonnes lower than at the end of March 2011. They were also the lowest stock levels recorded since the first quarter of 2005 (10.2 million tonnes).

The level of coal stocks at power stations at the end of the first quarter of 2012 was 8.7 million tonnes, 1.0 million tonnes lower than at the end of March 2011.

Stocks held by producers (undistributed stocks) decreased during the first quarter of 2012 to stand at 0.7 million tonnes, 0.5 million tonnes lower than at the end of March 2011.

Relevant tables

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

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2 SOLID FUEL AND DERIVED GASES

Table 2.1 Supply and consumption of coal

<i>Thousand tonnes</i>													
	2010	2011 p	<i>per cent change</i>	2010 1st quarter	2010 2nd quarter	2010 3rd quarter	2010 4th quarter	2011 1st quarter	2011 2nd quarter	2011 3rd quarter	2011 4th quarter	2012 1st quarter p	<i>per cent change¹</i>
SUPPLY													
Indigenous production	18,417	18,342	-0.4	3,623	4,703	5,164	4,927	4,701	4,761	4,624	4,256	4,121	-12.3
Deep mined	7,390	7,312	-1.1	1,138	1,856	2,113	2,284	2,039	1,838	1,793	1,642	1,584	-22.3
Surface mining ²	10,426	10,580	+1.5	2,336	2,690	2,894	2,506	2,550	2,805	2,713	2,511	2,424	-4.9
Other sources	600	450	-25.0	150	157	157	136	113	118	118	102	113	-
Imports ³	26,521	32,610	+23.0	7,679	5,349	5,806	7,687	7,579	7,235	8,219	9,577	9,157	+20.8
Exports ⁴	715	491	-31.3	181	160	155	219	133	117	107	135	117	-11.6
Stock change ⁵	+7,206	+752		+3,824	+142	-546	+3,786	+3,654	-2,162	-2,886	+2,146	+5,069	
Total supply	51,429	51,213	-0.4	14,945	10,034	10,269	16,181	15,801	9,718	9,850	15,844	18,230	+15.4
Statistical difference	-35	+93		-42	-25	+30	+2	+56	+39	-5	+3	-5	
Total demand	51,464	51,121	-0.7	14,986	10,059	10,239	16,179	15,745	9,679	9,855	15,841	18,235	+15.8
TRANSFORMATION	48,968	48,796	-0.4	14,256	9,494	9,692	15,526	15,132	9,121	9,290	15,253	17,606	+16.4
Electricity generation	41,505	41,739	+0.6	12,408	7,568	7,834	13,695	13,393	7,376	7,487	13,482	15,942	+19.0
Heat generation ⁶	480	480	-	142	107	97	135	142	107	97	135	140	-1.0
Coke manufacture	5,654	5,282	-6.6	1,363	1,469	1,432	1,390	1,263	1,314	1,392	1,314	1,300	+2.9
Blast furnaces	978	995	+1.7	275	269	221	212	257	246	245	247	199	-22.5
Patent fuel manufacture	351	300	-14.4	68	81	108	94	77	78	70	75	25	(-)
Energy industry use	5	4		2	1	1	1	1	1	1	1	1	
FINAL CONSUMPTION	2,490	2,321	-6.8	728	564	546	653	613	557	565	586	628	+2.5
Iron & steel	60	55		14	14	15	15	-	-	29	26	-	
Other industries	1,655	1,651	-0.2	464	380	372	438	438	415	389	410	455	+3.9
Domestic	718	554	-22.8	236	153	143	185	158	131	130	136	155	-1.5
Other final users	58	60	+4.5	13	16	14	14	17	11	17	15	18	+3.1
Stocks at end of period													
Distributed stocks	15,366	15,113	-1.6	18,926	18,849	19,372	15,366	12,121	14,542	17,340	15,113	10,410	-14.1
Of which:													
Major power producers ⁷	13,370	13,496	+0.9	17,544	16,728	17,613	13,370	9,646	12,484	15,776	13,496	8,656	-10.3
Coke ovens	1,338	1,355	+1.3	831	1,189	1,199	1,338	1,187	1,112	1,324	1,355	1,127	-5.0
Undistributed stocks	1,517	1,018	-32.9	1,339	1,274	1,298	1,517	1,108	849	937	1,018	651	-41.2
Total stocks⁸	16,883	16,131	-4.5	20,266	20,124	20,670	16,883	13,229	15,391	18,277	16,131	11,062	-16.4

1. Percentage change in the first 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 2011 heat generation will not be published until the end of July 2012. Therefore, the 2010 figure is used as an estimate for 2011.

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

<i>Thousand tonnes</i>													
	2010	2011 p	<i>per cent change</i>	2010 1st quarter	2010 2nd quarter	2010 3rd quarter	2010 4th quarter	2011 1st quarter	2011 2nd quarter	2011 3rd quarter	2011 4th quarter	2012 1st quarter p	<i>per cent change³</i>
SUPPLY													
Indigenous production	4,340	4,342	-	1,079	1,113	1,096	1,052	1,029	1,075	1,174	1,064	1,040	+1.1
Coke Oven Coke	3,990	4,021	+0.8	993	1,031	1,011	955	943	991	1,094	993	993	+5.2
Coke Breeze	32	31	-3.0	8	8	8	8	8	8	8	8	8	-0.7
Other MSF	318	289	-8.9	78	74	77	89	78	76	73	63	40	-49.1
Imports	123	47	(-)	21	34	29	39	23	2	3	18	10	(-)
Exports	518	499	-3.6	132	155	136	94	135	58	112	195	325	(+)
Stock change ¹	-215	-534		+50	-30	-133	-101	-62	-129	-233	-110	-67	
Transfers	-	-		-	-	-	-	-	-	-	-	-	
Total supply	3,731	3,356	-10.0	1,018	962	856	895	855	890	833	777	658	-23.1
Statistical difference	-4	4		-2	-	4	-7	2	3	-	-1	-0	
Total demand	3,735	3,351	-10.3	1,020	962	852	902	853	888	833	778	658	-22.9
TRANSFORMATION	2,938	2,645	-10.0	801	758	683	696	673	712	660	601	521	-22.5
Coke manufacture	-	-		-	-	-	-	-	-	-	-	-	
Blast furnaces	2,938	2,645	-10.0	801	758	683	696	673	712	660	601	521	-22.5
Energy industry use	-	-		-	-	-	-	-	-	-	-	-	
FINAL CONSUMPTION	797	706	-11.4	218	204	169	206	181	175	173	177	137	-24.3
Iron & steel	423	395	-6.6	110	116	97	100	96	107	99	94	80	-17.2
Other industries	53	33	-38.0	20	15	7	12	7	6	10	11	5	-20.9
Domestic	321	278	-13.4	88	73	65	95	78	63	65	73	52	-33.2
Stocks at end of period²	719	3,124	-10.0	455	468	603	719	732	753	771	869	930	+27.1

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

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

3. Percentage change in the first quarter of 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

	<i>GWh</i>												
	2010	2011 p	<i>per cent change</i>	2010 1st quarter	2010 2nd quarter	2010 3rd quarter	2010 4th quarter	2011 1st quarter	2011 2nd quarter	2011 3rd quarter	2011 4th quarter	2012 1st quarter p	<i>per cent change¹</i>
SUPPLY													
Indigenous production	21,923	20,908	-4.6	5,578	5,835	5,400	5,110	5,183	5,335	5,327	5,063	4,568	-11.9
Coke oven gas	8,822	8,748	-0.8	2,179	2,331	2,257	2,055	2,103	2,206	2,263	2,176	2,080	-1.1
Blast furnace gas	11,404	10,503	-7.9	2,994	3,029	2,709	2,672	2,677	2,717	2,645	2,464	2,101	-21.5
Benzole & tars	1,696	1,657	-2.3	405	475	434	383	403	412	419	422	387	-3.9
Transfers	263	60	(-)	111	28r	66	58	32	10	11	7	11	(-)
Total supply	22,186	20,968	-5.5	5,689	5,863	5,466	5,168	5,215	5,345	5,338	5,070	4,580	-12.2
Statistical difference	-133	-1		-45	-9	-48	-31	-1	-	-	-	+2	
Total demand	22,318	20,969	-6.0	5,734	5,871	5,514	5,199	5,216	5,346	5,338	5,069	4,578	-12.2
TRANSFORMATION	8,429	7,623	-9.6	2,246	2,117	2,131	1,935	1,949	1,967	1,888	1,819	1,738	-10.8
Electricity generation	7,831	7,025	-10.3	2,097	1,968	1,981	1,785	1,799	1,817	1,739	1,670	1,588	-11.7
Heat generation ²	598	598	-	149	149	149	149	149	149	149	149	149	-
Energy industry use	7,909	7,671	-3.0	2,070	2,001r	1,916	1,922	1,901	1,927	1,967	1,875	1,716	-9.7
Losses	1,953	1,751	-10.4	414	671r	495	373	416	477	443	414	190	(-)
FINAL CONSUMPTION	4,028	3,925	-2.5	1,004	1,083	972	969	950	974	1,040	961	934	-1.7
Iron & steel	2,134	2,068	-3.0	547	563	486	538	499	509	573	486	496	-0.8
Other industries	1,894	1,857	-2.0	457	520	486	431	451	465	466	474	439	-2.7

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

2. For Heat generation, the 2011 figures currently shown are the 2010 figures carried forward - these will be updated in July 2012.

Section 3 - Oil and Oil Products

Key results show:

Total indigenous UK production of crude oil and NGLs in the first quarter of 2012 was 13.0 per cent lower than a year ago. **(Chart 3.1)**

Refinery production was up 3.9 per cent on last year, with notable increases in aviation fuel, gas oil, DERV and motor spirit. **(Chart 3.2)**

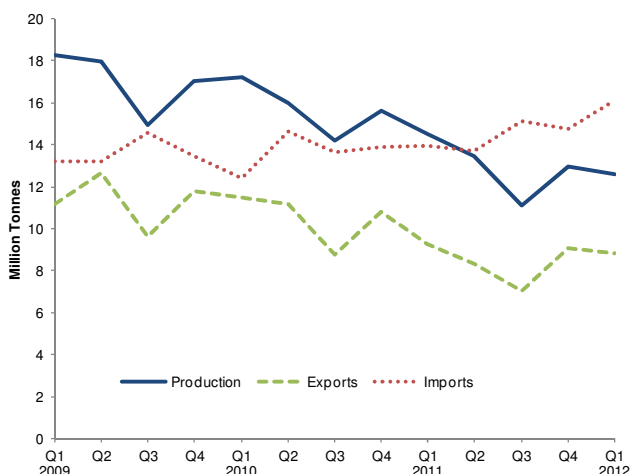
Just over a third of crude oil and NGLs were supplied by net imports in Q1 2012, compared to just over a fifth in the corresponding quarter in 2011. **(Chart 3.3)**

Net exports of petroleum products increased to 2.2 million tonnes in Q1 2012, its highest quarterly level since the third quarter of 2008. **(Chart 3.3)**

Total deliveries of the key transport fuels were up 1.1 per cent when compared to the same period last year. In particular, sales of DERV and motor spirit both increased, which reflects increased demand in March in anticipation of a potential tanker drivers' strike. Deliveries of aviation fuels were lower by 4.4 per cent. **(Chart 3.5)**

Overall stocks of crude oil and petroleum products were 7.6 per cent lower at the end of the first quarter of 2012 than a year earlier. The IEA Emergency Stockdraw for the shortfall in Libyan production will have impacted these figures. **(Chart 3.7)**

Chart 3.1 Production and trade of crude oil and NGLs

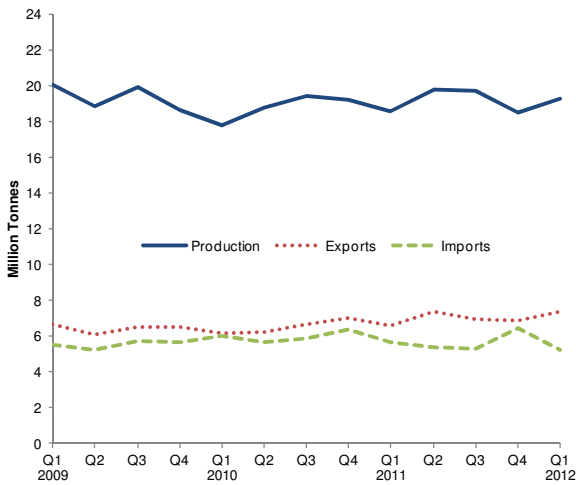


Total indigenous UK production of crude oil and NGLs in the first quarter of 2012 was 13.0 per cent lower than a year earlier. Oil production over the last year has been impacted by maintenance and other production issues over and above the general decline in North Sea production.

Imports increased by 21.7 per cent and exports decreased by 5.1 per cent to compensate for the loss of supply.

Net imports of crude oil and NGLs widened to 6.8 million tonnes in Q1 2012, the second highest quarterly level for over 30 years, and met just over a third of UK demand.

Chart 3.2 Production and trade of petroleum products



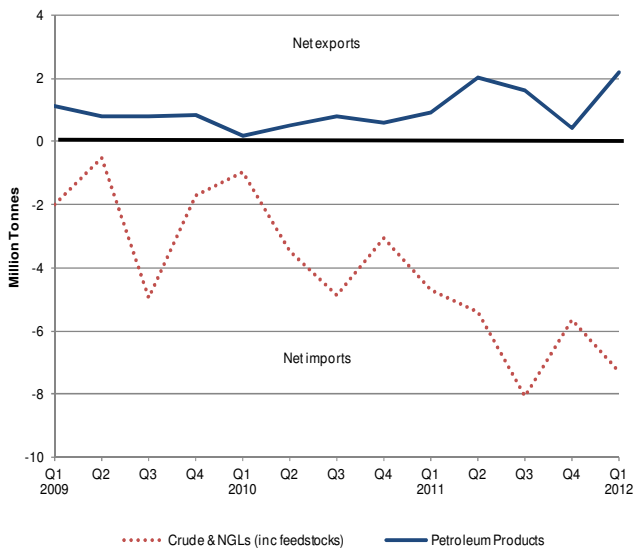
Refinery production in the latest quarter was up 3.9 per cent on the same quarter of last year.

Within this, motor spirit and DERV increased by 8.6 and 6.5 per cent respectively. There were also increases to gas oil (14.1 per cent) and ATF Kerosene (13.9 per cent).

Overall, imports decreased significantly, falling by 8.2 per cent, with imports of aviation fuel decreasing by a third. Exports increased by 12.1 per cent, with motor spirit and gasoil showing the largest absolute increases, up 25.9 per cent and 18.9 per cent respectively.

Whilst a net exporter, the UK remains structurally short in diesel road fuel and aviation fuel. Increased production during the last quarter slightly decreased the UK's import dependence rates for these fuels.

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



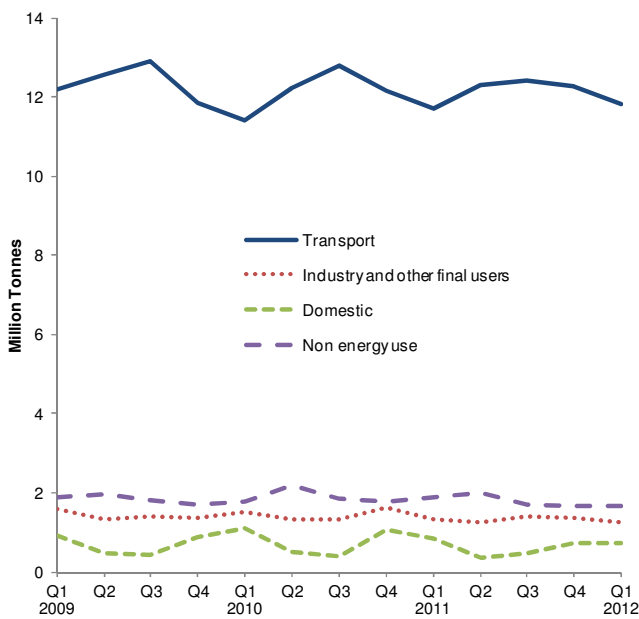
The UK's overall net import dependence for primary oils (crude, NGL's and feedstocks) was 38.9 per cent in Q1 2012, an increase from 25.9 per cent in the same quarter in 2011.

Crude oil import dependence is on an increasing trend as the production from the UKCS declines which magnified by ongoing maintenance and other production issues is causing crude oils imports to increase further.

Petroleum products net import dependence was minus 12.9 per cent (net exporter) in Q1 2012. This compares with minus 5.4 per cent in Q1 2011.

The principal source of the UK's crude imports is Norway. Petroleum products are sourced widely and include significant volumes of diesel road fuel from Sweden, and of aviation fuel from Kuwait, Qatar, and India.

Chart 3.4 Final consumption of oil

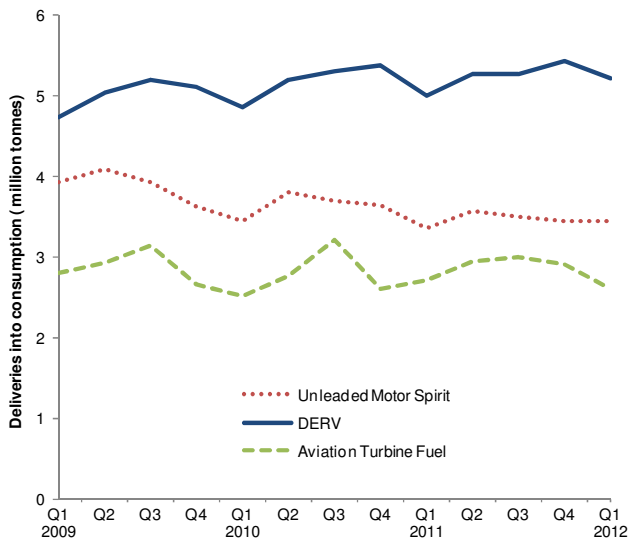


Final consumption in the oil sector is slightly seasonal with different products peaking at different times of the year. Consumption of domestic fuels for heating peaks in Q1 and Q4 each year, and consumption of aviation fuels is higher in Q2 and Q3.

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

Overall final consumption of petroleum products was down by 1.8 per cent on the same quarter of last year, with transport use up 1.1 per cent. Transport fuels are examined in more detail in Chart 3.5.

Chart 3.5 Demand for key transport fuels

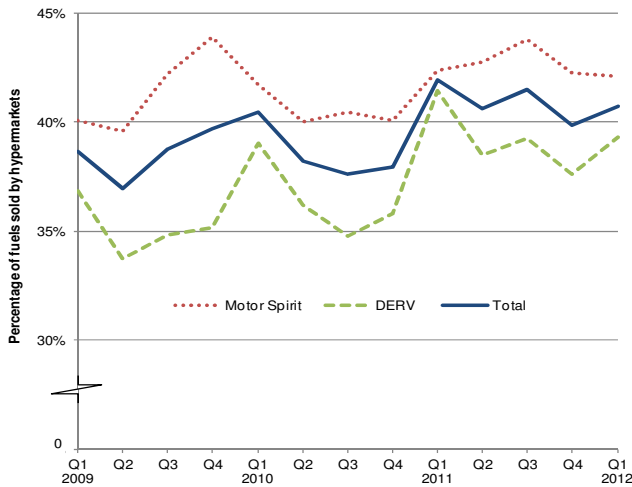


Total deliveries of key hydrocarbon transport fuels in 2012 Q1 were up 1.1 per cent when compared to the same period last year.

Deliveries of DERV and motor spirit both increased by 4.5 per cent and 2.6 per cent respectively. There was a large increase in March 2012 which reflects the increased demand in anticipation of a potential tanker drivers' strike.

Deliveries of aviation fuel were down 4.4 per cent, though the trend is broadly stable.

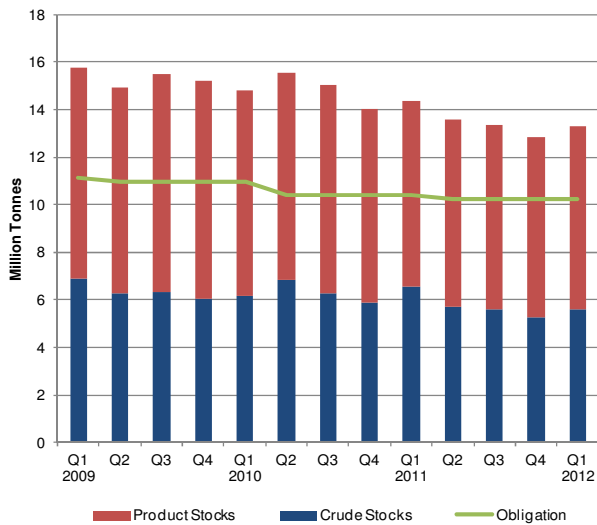
Chart 3.6 Hypermarket share of road fuel sales



The retail shares of motor spirit and diesel sold at hypermarkets stood at 42.1 per cent, and 39.3 per cent respectively.

Hypermarket sales of motor spirit were up by 2.2 per cent and similarly DERV sales were 2.4 per cent higher, however these were lower percentage increases than for refiners and other traders.

Chart 3.7 UK oil stocks

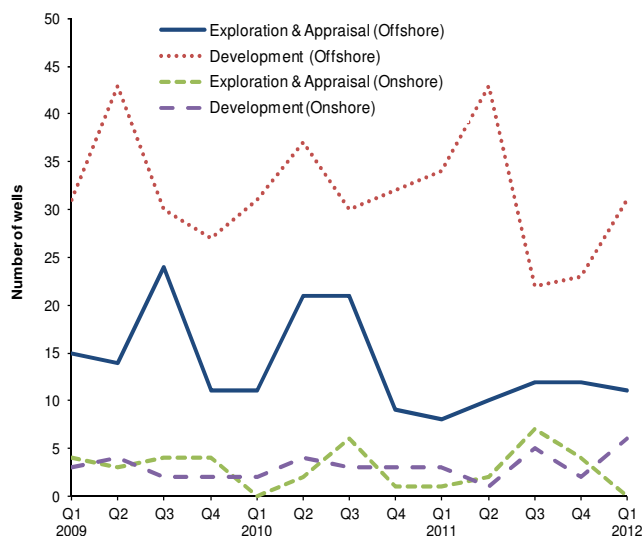


Stocks of crude oil and petroleum products were down 7.6 per cent on last year.

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 first quarter of 2012, the UK had stocks equal to 80 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 11 exploration and appraisal wells started offshore in the first quarter of 2012, compared to 8 in the corresponding quarter of 2011.

There were 31 development wells drilled offshore in the first quarter of 2012, compared to 34 in the corresponding quarter of 2011.

There were no exploration and appraisal wells started onshore in the first quarter of 2012, compared to 1 in the corresponding quarter of 2011.

There were 6 development wells drilled onshore in the first quarter of 2012, compared to 3 in the corresponding quarter of 2011.

Relevant tables

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3 OIL AND OIL PRODUCTS

Table 3.1 Supply and use of crude oil, natural gas liquids and feedstocks¹

Thousand tonnes

			per cent change	2010	2010	2010	2010	2011	2011	2011	2011	2012	per cent change ⁸
	2010	2011 p		1st quarter	2nd quarter	3rd quarter	4th quarter	1st quarter	2nd quarter	3rd quarter	4th quarter	1st quarter p	
SUPPLY													
Indigenous production ²	62,962	51,972r	-17.5	17,197	15,985	14,185	15,595	14,485r	13,423r	11,117r	12,949r	12,600	-13.0
Crude oil	58,047	48,571r	-16.3	15,816	14,677	13,106	14,447	13,504r	12,528r	10,445r	12,095r	11,763	-12.9
NGLs ³	4,915	3,401	-30.8	1,381	1,307	1,079	1,148	981	895	672	854	838	-14.6
Imports ⁴	54,587	57,586r	+5.5	12,430	14,639	13,617	13,901	13,963r	13,717	15,143	14,764	16,123	+15.5
Crude oil & NGLs	48,081	50,582r	+5.2	11,076	13,050	12,010	11,945	12,034r	12,046	13,183	13,319	14,644	+21.7
Feedstocks	6,505	7,003	+7.7	1,354	1,588	1,607	1,956	1,929	1,671	1,960	1,444	1,479	-23.3
Exports ⁴	42,196	33,745	-20.0	11,476	11,161	8,742	10,818	9,265	8,319	7,059r	9,101r	8,831	-4.7
Crude Oil & NGLs	39,239	29,836r	-24.0	10,777	10,338	8,039	10,086	8,303	7,376	5,988r	8,170r	7,882	-5.1
Feedstocks	2,957	3,908	+32.2	700	823	703	732	963	943	1,071	931	949	-1.4
Stock change ⁵	-39	+611r		-95	-553	+184	+426	-654r	+815r	+365r	+85r	-312	
Transfers ⁶	-2,074	-1,986r		-508	-635	-483	-449	-492	-567	-502r	-425r	-634	
Total supply	73,239	74,438r	+1.6	17,548	18,274	18,761	18,656	18,036r	19,068	19,063r	18,271r	18,946	+5.0
Statistical difference ⁷	+39	-271r		+90	-48	-92	+89	-94r	-84	-219r	+125r	+184	
Total demand	73,200	74,709r	+2.1	17,458	18,322	18,854	18,566	18,130	19,152	19,282r	18,146	18,762	+3.5
TRANSFORMATION	73,200	74,709r	+2.1	17,458	18,322	18,854	18,566	18,130	19,152	19,282r	18,146	18,762	+3.5
Petroleum refineries	73,200	74,709r	+2.1	17,458	18,322	18,854	18,566	18,130	19,152	19,282r	18,146	18,762	+3.5
Energy industry use	-	-		-	-	-	-	-	-	-	-	-	

- 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.
- Includes offshore and onshore production.
- Natural Gas Liquids (NGLs) are condensate and petroleum gases derived at onshore treatment plants.
- 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.
- 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.
- Mostly direct disposals to petrochemical plants.
- Total supply minus total demand.
- Percentage change in the first 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		2010		2010		2010		2011		2011		2011		2011		2012		
	2010	2011 p	per cent change	1st quarter	2nd quarter	3rd quarter	4th quarter	1st quarter	2nd quarter	3rd quarter	4th quarter	1st quarter	2nd quarter	3rd quarter	4th quarter	1st quarter	per cent change ¹				
SUPPLY																					
Indigenous production ²	75,177	76,637r	+1.9	17,763	18,807	19,414	19,193	18,585r	19,780r	19,739r	18,533r	19,315	+3.9								
Imports ³	23,979r	22,804r	-4.9	6,023	5,690r	5,861r	6,405	5,678r	5,360r	5,327r	6,440r	5,212	-8.2								
Exports ³	26,065	27,800r	+6.7	6,192	6,200	6,669	7,005	6,613	7,364	6,957	6,867r	7,411	+12.1								
Marine bunkers	2,139	2,296	+7.3	470	534	597	539	554	594	615	533	454	-18.1								
Stock change ⁴	+603	+188r		+303	-43	+75	+268	+224r	+183r	-21r	-199r	+317									
Transfers ⁵	-232	-155r		-52	-43	-63	-74	-49r	-29r	-2r	-74r	+3									
Total supply	71,323r	69,378r	-2.7	17,375	17,677	18,022r	18,249r	17,271r	17,336r	17,471r	17,300r	16,982	-1.7								
Statistical difference ⁶	+150	-109r		+136	-37r	+61r	-9r	+16r	-76r	+30r	-78r	-40									
Total demand	71,173r	69,487r	-2.4	17,240r	17,714r	17,961	18,258	17,255r	17,413r	17,441r	17,378r	17,022	-1.3								
TRANSFORMATION																					
Electricity generation	1,211r	895r	-26.1	376r	231r	282r	322r	268r	194r	205r	228r	271	+1.1								
Heat generation	1,143r	832r	-27.2	357r	215r	266r	306r	252r	178r	190r	213r	255	+1.0								
Blast furnaces	63	63	-0.5	16	16	16	16	16	16	16	16	16	+0.7								
Blast furnaces	4r	-r		4r	-r	-r	-r	-r	-r	-r	-r	-									
Energy industry use	4,967	4,918r	-1.0	1,081r	1,243	1,327	1,316r	1,203r	1,293r	1,258r	1,164r	1,257	+4.5								
Petroleum Refineries	4,474r	4,391r	-1.9	957r	1,120r	1,204r	1,193r	1,072r	1,162r	1,127r	1,030r	1,137	+6.1								
Blast Furnaces	-	-		-	-	-	-	-	-	-	-	-									
Others	493r	527r	+6.9	123r	123r	123r	123r	131r	131r	131r	134r	120	-8.4								
FINAL CONSUMPTION																					
Iron & steel	64,996r	63,674r	-2.0	15,783r	16,240r	16,353r	16,620r	15,784r	15,926r	15,978r	15,986r	15,495	-1.8								
Other industries	5r	4r	-1.9	0r	1r	1r	3r	1r	0r	1r	2r	1	+67.3								
Other industries	4,647r	4,076r	-12.3	1,209r	1,013r	1,116r	1,309r	1,035r	943r	1,098r	1,001r	985	-4.8								
Transport	48,580r	48,685r	+0.2	11,400r	12,245r	12,777r	12,158r	11,706r	12,304r	12,413r	12,262r	11,831	+1.1								
Domestic	3,083	2,401r	-22.1	1,104	514	398	1,068	859r	370	460	712r	733	-14.6								
Other final users	1,151r	1,252r	+8.8	309r	298r	222r	322r	284r	316r	299r	352r	270	-5.2								
Non energy use	7,529r	7,255r	-3.6	1,761	2,169	1,838r	1,761r	1,900r	1,992r	1,706r	1,656r	1,674	-11.9								

1. Percentage change in the first 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 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	75,177	19,918	15,332	9,505	5,781	7,525	7,283	2,570	7,264	76,637r	19,856r	16,801r	8,683	6,411r	7,907	7,253r	2,377r	7,348r
Imports ⁵	23,979r	3,137	7,709	705	7,353	1,020	362	972	2,721r	22,804r	3,398r	7,806r	1,242	6,881r	808r	195	618	1,858r
Exports ⁶	26,065	8,619	2,121	4,358	1,487	4,895	732	191	3,662	27,800r	9,363r	3,127r	4,667	1,210	5,140	820	173	3,299r
Marine bunkers	2,139	-	-	807	-	1,332	-	-	-	2,296	-	-	753r	-	1,543	-	-	-
Stock change ⁷	+603	+299	+61	+95	+116	+115	-15	-5	-63	+188	+39	+83	43r	-28	-15r	-11r	-2r	+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	6,166r	69,378r	13,891r	21,053	4,988r	11,535r	2,068r	6,662r	3,274r	5,908
Statistical difference ⁸	+150	+103	+62	-7	-2	+15	-20	-12	+12	-109r	-4r	+62	-103	-39r	-3r	8r	-13r	-15
Total demand	71,173	14,602	20,740	5,227	11,116	2,404	6,918	4,012	6,154r	69,487r	13,895	20,991	5,091r	11,574	2,071r	6,654r	3,288r	5,923
TRANSFORMATION	1,211r	-	-	73r	-	598r	331r	-	210	895r	-	-	63r	-	426r	358r	-	48
Electricity generation	1,143r	-	-	67r	-	541r	325r	-	210	832r	-	-	58r	-	374r	353r	-	48
Heat generation	63	-	-	5	-	52	5	-	-	63	-	-	5	-	52	5	-	-
Petroleum refineries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coke manufacture	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Blast furnaces	4r	-	-	-	-	4r	-	-	-	-	-	-	-	-	-	-	-	-
Patent fuel manufacture	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Energy industry use	4,967	-	-	493r	-	611r	2,462r	-	1,401	4,918r	-	-	527r	-	660r	2,308r	-	1,423r
FINAL CONSUMPTION	64,996r	14,602	20,740	4,662r	11,116	1,195r	4,125	4,012	4,543r	63,674	13,895	20,991	4,502r	11,574r	985r	3,988r	3,288r	4,452r
Iron & steel	5r	-	-	-	-	5r	-	-	-	4r	-	-	-	-	4r	-	-	-
Other industries	4,647r	-	-	2,056r	-	463r	639	1,489	-	4,076r	-	-	1,837r	-	121r	804r	1,314r	-
Transport	48,580r	14,602	20,740	1,384r	11,116	611	106	-	21	48,685r	13,895	20,991	1,411r	11,574r	695r	98r	-	21
Domestic	3,083	-	-	165	-	-	394	2,523	-	2,401r	-	-	142r	-	-	286	1,973r	-
Other final users	1,151r	-	-	915r	-	116	120	-	-	1,252r	-	-	986r	-	165r	101	-	-
Non energy use	7,530r	-	-	142	-	-	2,865	-	4,522r	7,255r	-	-	125	-	-	2,699	-	4,431r

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 1st quarter										2012 1st quarter p										
	Total Petroleum Products	Motor spirit	DERV ⁹	Gas oil ¹	Aviation turbine fuel	Fuel oils	Petroleum gases ²	Burning oil	Other products ³		Total Petroleum Products	Motor spirit	DERV ⁹	Gas oil ¹	Aviation turbine fuel	Fuel oils	Petroleum gases ²	Burning oil	Other products ³		
SUPPLY																					
Indigenous Production ⁴	18,585	4,563r	3,993	2,129	1,311	2,107	1,775r	742	1,965		19,315	4,954	4,254	2,429	1,493	1,849	1,906	670	1,761		
Imports ⁵	5,678r	891r	1,769r	257	1,850r	170r	88	246	406		5,212	1,005	1,775	317	1,224	162	58	195	475		
Exports ⁵	6,613	2,042	740	1,080	251	1,324	187	45	944		7,411	2,570	716	1,284	338	1,294	285	36	887		
Marine bunkers	554	-	-	164	-	391	-	-	-		454	-	-	182	-	272	-	-	-		
Stock change ⁶	+224r	-2	+129r	+30r	+36r	-70r	-1	-10	+112		+317	+109	-8	-40	+296	-58	+3	+22	-8		
Transfers ⁷	-49r	-18r	-142	+124	-242r	+15	+11	+231	-28		+3	-57	-48	+46	-96	+47	+5	+87	+19		
Total supply	17,271r	3,392r	5,009r	1,297r	2,704r	508r	1,686	1,163r	1,511		16,982	3,440	5,257	1,287	2,579	434	1,687	938	1,360		
Statistical difference ⁸	+16r	+29r	+10r	-16r	-14r	+9r	-8	+5r	-0		-40	-11	+35	-18	-20	-6	+3	-12	-10		
Total demand	17,255r	3,363r	4,999	1,312r	2,718	498r	1,694	1,158r	1,511		17,022	3,451	5,222	1,305	2,599	440	1,683	950	1,371		
TRANSFORMATION	268r	-	-	18r	-	117r	89	-	43		271	-	-	18	-	113	90	-	-		
Electricity generation	252r	-	-	17r	-	104r	88	-	43		255	-	-	16	-	100	88	-	-		
Heat generation	16	-	-	1	-	13	1	-	-		16	-	-	1	-	13	1	-	-		
Petroleum refineries	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-		
Coke manufacture	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-		
Blast furnaces	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-		
Patent fuel manufacture	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-		
Energy industry use	1,203r	-	-	131r	-	167r	585	-	320r		1,257	-	-	120	-	129	651	-	357		
FINAL CONSUMPTION	15,784r	3,363	4,999	1,163r	2,718	215r	1,019	1,158r	1,148r		15,495	3,451	5,222	1,167	2,599	198	943	950	964		
Iron & steel	1r	-	-	-	-	1r	-	-	-		1	-	-	-	-	1	-	-	-		
Other industries	1,035r	-	-	423r	-	17r	131	464r	-		985	-	-	490	-	33	82	380	-		
Transport	11,706r	3,363	4,999	445	2,718	155r	22	-	4		11,831	3,451	5,222	406	2,599	127	22	-	3		
Domestic	859r	-	-	44	-	-	120	695r	-		733	-	-	44	-	-	120	570	-		
Other final users	284r	-	-	205r	-	43r	36	-	-		270	-	-	198	-	36	36	-	-		
Non energy use	1,900r	-	-	45	-	-	710	-	1,145r		1,674	-	-	30	-	-	683	-	960		

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 products¹

Thousand tonnes

			<i>per cent change</i>	2010	2010	2010	2010	2011	2011	2011	2011	2012	<i>per cent change²</i>
	2010	2011 p		1st quarter	2nd quarter	3rd quarter	4th quarter	1st quarter	2nd quarter	3rd quarter	4th quarter	1st quarter p	
MOTOR SPIRIT													
Total sales	14,602	13,895	-4.8	3,447	3,802	3,707	3,646	3,363	3,571	3,502	3,458	3,451	+2.6
By seller:													
Retail sales: ³	14,082	13,430r	-4.6	3,327	3,661	3,576	3,518	3,269	3,443	3,379	3,340r	3,362	+2.9
hypermarkets ⁴	5,710	5,749	+0.7	1,388	1,466	1,446	1,410	1,386	1,472	1,479	1,412	1,416	+2.2
refiners/other traders	8,372	7,681r	-8.3	1,939	2,195	2,130	2,108	1,883	1,971	1,900	1,928r	1,947	+3.4
Commercial sales ⁵	520	465r	-10.5	119	141	131	128	95	129	123	119r	89	-5.9
By grade:													
4-Star/Leaded/LRP ⁶	11	12	+7.2	3	3	3	3	2	3	3	3	2	-14.0
Super Premium Unleaded	646	560r	-13.4	150	138	149	209	114r	122r	128r	196	110	-3.3
Premium Unleaded/ULSP ⁷	13,944	13,324r	-4.5	3,293	3,661	3,556	3,435r	3,247r	3,446r	3,371r	3,260r	3,339	+2.8
GAS DIESEL OIL													
Total sales	25,968r	26,082r	+0.4	6,227r	6,423	6,694	6,624	6,311r	6,477r	6,680r	6,615r	6,527	+3.4
DERV fuel	20,740	20,991	+1.2	4,859	5,198	5,305	5,378	4,999	5,282	5,280	5,431	5,222	+4.5
Retail sales: ³	13,157	13,549r	+3.0	2,893	3,286	3,536r	3,442r	2,998	3,459	3,522	3,570r	3,234	+7.9
hypermarkets ⁴	4,781	5,300	+10.9	1,129	1,190	1,228	1,233	1,243	1,331	1,383	1,343	1,272	+2.4
refiners/other traders	8,376	8,248r	-1.5	1,764	2,096	2,307	2,209r	1,755	2,128	2,138	2,226r	1,962	+11.8
Commercial sales ⁵	7,583	7,442r	-1.9	1,966	1,912	1,770	1,936	2,001	1,822	1,758	1,861r	1,987	-0.7
Other gas diesel oil ⁸	5,228r	5,091r	-2.6	1,368	1,225	1,389r	1,246	1,312r	1,195	1,400r	1,184r	1,305	-0.5
AVIATION FUELS													
Total sales	11,137	11,594r	+4.1	2,527	2,776	3,230	2,604	2,722	2,960r	3,005	2,907r	2,603	-4.4
Aviation spirit	21	21	-3.2	4	6	7	4	4	6	6	4	3	-8.8
Aviation turbine fuel	11,116	11,574r	+4.1	2,523	2,770	3,223	2,600	2,718	2,954r	2,999	2,902r	2,599	-4.4
FUEL OIL													
Total Sales	1,793r	1,411r	-21.3	459r	444r	318r	572	332r	340r	354r	387r	311	-6.3
Light	685r	713r	+4.1	132	86	131	335r	132r	183r	176r	221r	110	-16.2
Medium	119	124r	+3.8	43	16	37	23	35	28	35	25	34	-1.0
Heavy	989r	575r	-41.8	283	341r	150	214	165r	128r	142r	140r	166	+0.4

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 first 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 petroleum¹ 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	797r	963r	9,173r	2,728	12,479r	15,206r
2010		4,110	1,049	520	5,889	1,144	5,415r	687r	917r	8,164r	2,563	11,490r	14,053r
2011 p		3,889	694r	540r	5,274r	849	5,230r	645r	845r	7,569r	2,100	10,743r	12,843r
<i>Per cent change</i>		<i>-5.4</i>	<i>-33.8</i>	<i>+3.7</i>	<i>-10.4</i>	<i>-25.8</i>	<i>-3.4</i>	<i>-6.1</i>	<i>-7.9</i>	<i>-7.3</i>	<i>-18.0</i>	<i>-6.5</i>	<i>-8.6</i>
2010	1st quarter	3,743	1,544	472	6,176	1,150	5,780r	820r	884r	8,634r	2,565	12,245r	14,810r
	2nd quarter	4,283	1,571	449	6,811	1,060	5,904r	882r	881r	8,727r	2,858	12,680r	15,538r
	3rd quarter	4,133	1,327	617	6,257	1,212	5,908r	697r	948r	8,765r	2,841	12,181r	15,022r
	4th quarter	4,110	1,049	520	5,889	1,144	5,415r	687r	917r	8,164r	2,563	11,490r	14,053r
2011	1st quarter	4,402	1,509r	553r	6,580r	1,102	5,231r	658r	815r	7,806r	2,516	11,869r	14,386r
	2nd quarter	3,959	1,093r	505r	5,707r	1,068	5,356r	659r	806r	7,888r	2,834	10,761r	13,596r
	3rd quarter	3,917	818r	627r	5,574r	1,045	5,263r	633r	848r	7,789r	2,647	10,715r	13,362r
	4th quarter	3,889	694r	540r	5,274r	849	5,230r	645r	845r	7,569r	2,100	10,743r	12,843r
2012	1st quarter p	4,006	861	620	5,578	884	5,291	683	853	7,711	2,277	11,012	13,289
<i>Per cent change¹¹</i>		<i>-9.0</i>	<i>-42.9</i>	<i>+12.1</i>	<i>-15.2</i>	<i>-19.8</i>	<i>+1.1</i>	<i>+3.9</i>	<i>+4.7</i>	<i>-1.2</i>	<i>-9.5</i>	<i>-7.2</i>	<i>-7.6</i>

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 first quarter of 2012 compared with a year earlier.

3 OIL AND OIL PRODUCTS

Table 3.7 Drilling activity¹ on the UKCS

		<i>Number of wells started</i>					
		Offshore			Onshore		
		Exploration &		Development ²	Exploration &		
		Exploration	Appraisal		Appraisal	Development ²	
2009		23	41	64	131	15	11
2010		28	34	62	130	9	12
2011 p		14	28	42	122	14	11
<i>Per cent change</i>		<i>-50.0</i>	<i>-17.6</i>	<i>-32.3</i>	<i>-6.2</i>	<i>+55.6</i>	<i>-8.3</i>
2010	1st quarter	7	4	11	31	-	2
	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 p	5	6	11	31	-	6
<i>Per cent change³</i>		<i>+66.7</i>	<i>+20.0</i>	<i>+37.5</i>	<i>-8.8</i>	<i>-100.0</i>	<i>+100.0</i>

1. Including sidetracked wells

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

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

Section 4 - Gas

Key results show:

Gross UK production of natural gas in Q1 2012 was 14 per cent lower than in Q1 2011 (**Chart 4.1**). Within this production of associated gas decreased by 21 per cent, dry gas production also decreased by 4 per cent. (**Chart 4.2**).

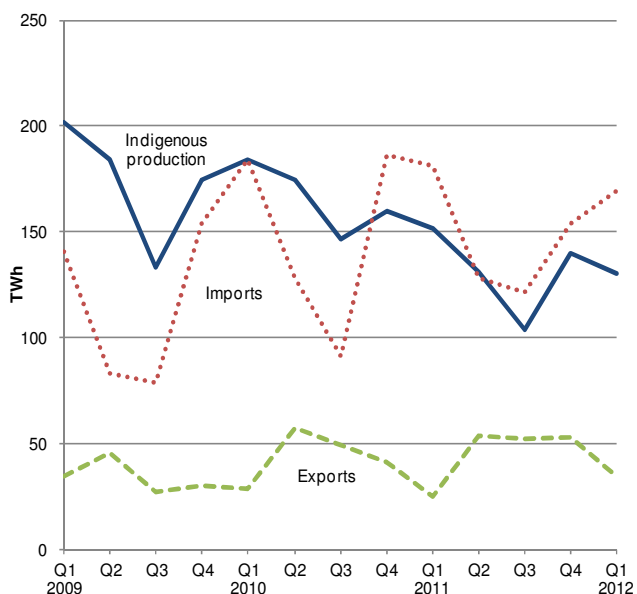
Gas available in Q1 2012 fell by 14 per cent compared to Q1 2011 to 252TWh. (**Chart 4.3**)

Imports of gas decreased by 6 per cent in Q1 2012 compared with the same quarter in 2011, with shipped imports of LNG falling by 50 per cent, reflecting the completion of maintenance work on Norwegian pipelines. (**Chart 4.4**).

Pipeline imports increased by a quarter and made up approximately three quarters of all imports. (**Chart 4.5**)

UK gas demand decreased by 11 per cent compared to Q1 2011. (**Chart 4.7**)

Chart 4.1 Production and imports and exports of natural gas

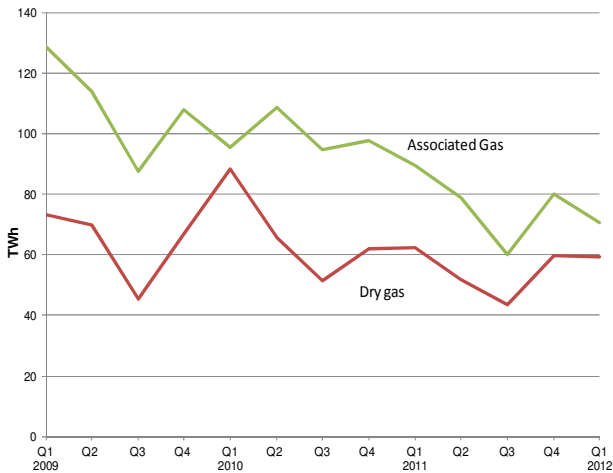


Total indigenous UK production of natural gas in Q1 2012 was 14 per cent lower than in the same quarter a year earlier. Production levels throughout 2011 were significantly lower than anticipated due to an unusual coincidence of planned and unplanned maintenance work. This effect has continued into the first quarter of 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 6 per cent in Q1 2012 compared with the same quarter in 2011, whilst exports increased by 38 per cent, the highest quarterly increase since Q3 2010. As a result, net imports in Q1 2012 decreased to 135 TWh, down 13 per cent on the same quarter in 2011.

Gas

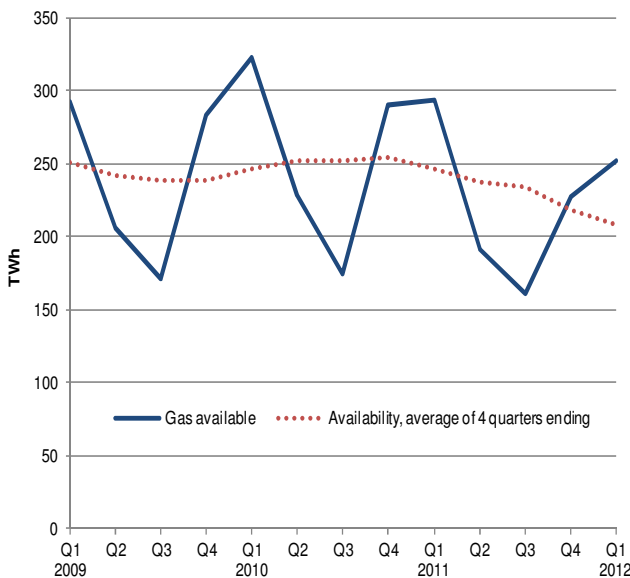
Chart 4.2 Production of dry gas and associated gas



Associated gas production in Q1 2012 decreased by 21 per cent from 89TWh in Q1 2011 to 73TWh. This is consistent with the decrease in production from UK oil fields (section 3) where associated gas is also extracted from this source. In 2011, associated gas decreased by 25 per cent. This trend has continued into 2012 and is the result of planned and unplanned maintenance work being carried out.

Dry gas production also decreased by a smaller amount, it was down by 4 per cent from 62 TWh in Q1 2011 to 59 TWh.

Chart 4.3 Gas availability

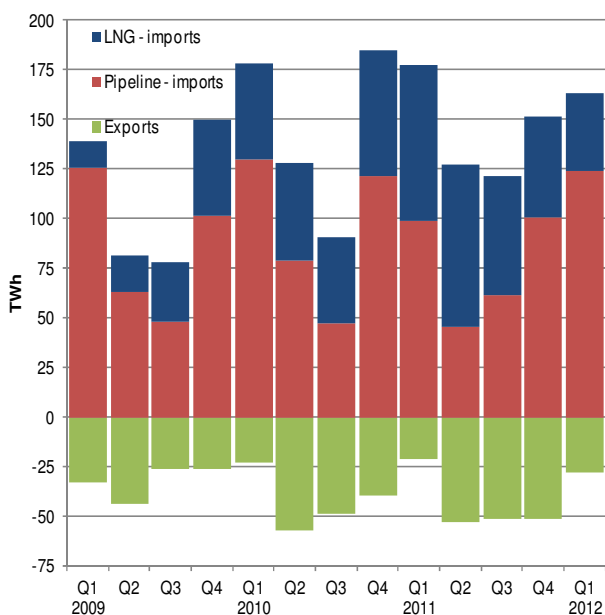


Gas available at terminals is equal to the gross gas production, minus producers own use, plus net imports.

Gas availability is seasonal, mirroring gas demand, and peaks during Q1 and Q4 each year. Gas availability in Q1 2012 fell by 14 per cent compared to Q1 2011 to 252 TWh, which is consistent with demand being lower driven by milder weather and less use by electricity generators during this period.

The average availability over 4 rolling quarters had remained fairly constant up to 2010. In 2011, gas availability was lower than average, again reflecting lower gas demand driven by milder weather and less use by electricity generators in 2011.

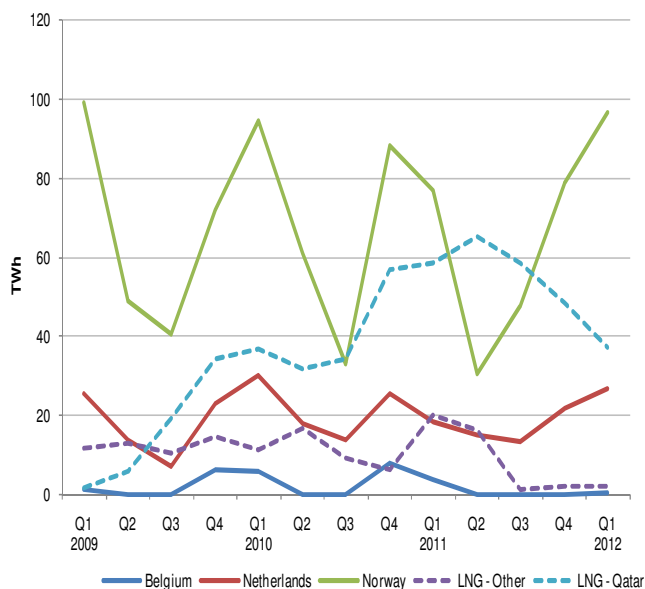
Chart 4.4 Import and exports



Total imports in Q1 2012 decreased by 6 per cent compared to the same quarter a year ago. Within this, imports of Liquefied Natural Gas (LNG) decreased sharply by 50 per cent. LNG imports accounted for 23.2 per cent of total imports compared with 43.3 per cent a year ago. Pipeline imports increased by 25 per cent in Q1 2012. This increase largely reflects maintenance work at terminals in the same period of 2011, and also Norwegian fields increasing production.

Total exports increased significantly by 38 per cent in Q1 2012. A large majority of this increase in Q1 2012 were exports to Belgium which were 4 times larger than in Q1 2011 as shown in Energy Trends table 4.3 - Natural Gas imports and exports.

Chart 4.5 Imports by origin



The UK imported 97TWh and 27TWh via pipelines from Norway and the Netherlands, an increase of 25 per cent compared with Q1 2011, which accounted for three quarters of all imports.

LNG imports are mainly sourced from Qatar which were lower by a third in Q1 2012.

Map: UK imports and exports of gas Q1 2012

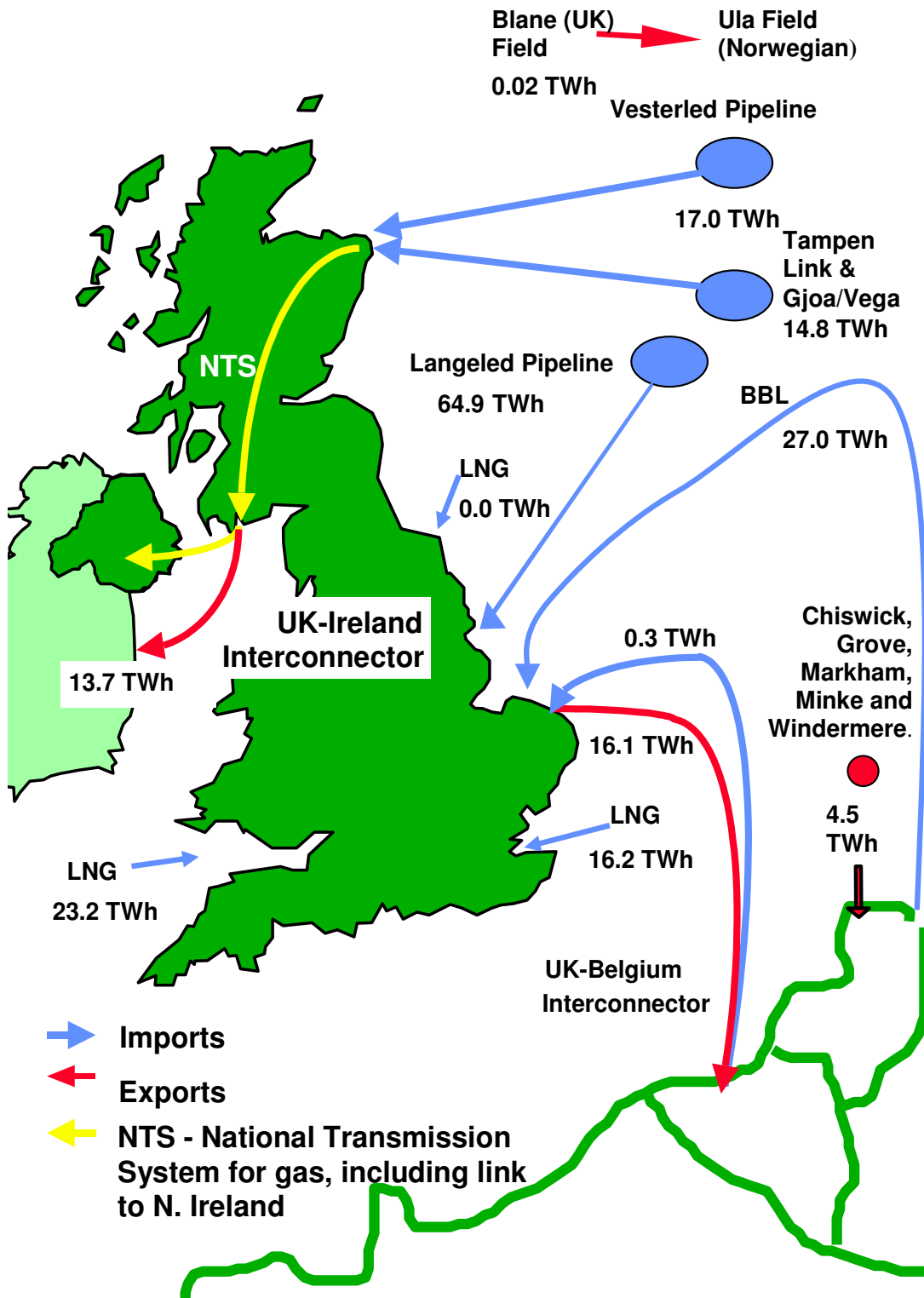
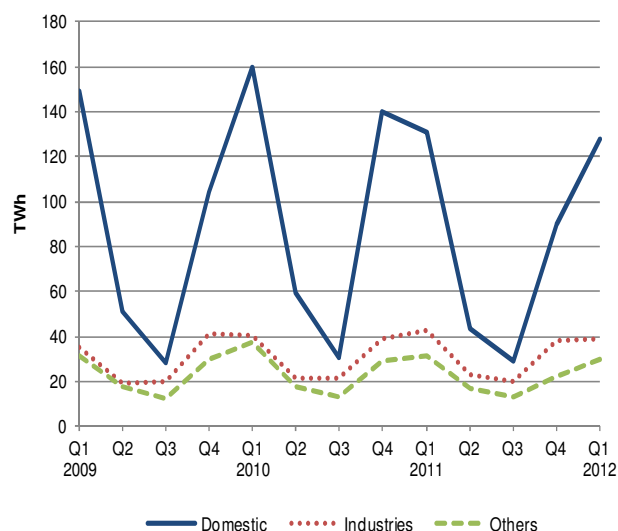


Chart 4.6 UK demand for natural gas



UK overall demand in Q1 2012 decreased by 11 per cent compared to the same quarter a year ago.

Within this, electricity generation decreased by 30 per cent, reflecting the price differential which led to increased use of gas in electricity generation.

Domestic consumption decreased by 1.8 per cent.

Consumption by industries, including Iron and Steel, decreased by 9.3 per cent.

Relevant table

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

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4 GAS

Table 4.1. Natural gas supply and consumption

GWh

	2010	2011 p	per cent change	2010 1st quarter	2010 2nd quarter	2010 3rd quarter	2010 4th quarter	2011 1st quarter	2011 2nd quarter	2011 3rd quarter	2011 4th quarter	2012 1st quarter p	per cent change ¹
SUPPLY													
Indigenous production	664,353	526,030	-20.8	183,913	174,405	146,354	159,681	151,607	131,034	103,515r	139,874r	130,297	-14.1
Imports	589,497	584,414	-0.9	183,844	128,234	91,049	186,370	181,011	127,837	121,583	153,983	169,560	-6.3
of which LNG	203,789	270,733	+32.8	48,033	48,479	43,839	63,439	78,370	81,514	59,915	50,935	39,332	-49.8
Exports	176,399	183,689	+4.1	28,391	57,615	49,278	41,115	24,866	53,666	51,883	53,275r	34,267	+37.8
Stock change ²	+15,271	-22,623		+32,558	-21,833	-13,945	+18,491	+6,805	-21,374	-11,109	+3,055	+13,504	
Transfers	-263	-60		-111	-28	-66	-58	-32	-10	-11	-7	-11	
Total supply	1,092,459	904,072	-17.2	371,813	223,164	174,114	323,368	314,526	183,822	162,095	243,629r	279,082	-11.3
Statistical difference	-70r	-1,687		-308r	-47r	191r	94r	482r	-976r	-782r	-411r	-352	
Total demand	1,092,529r	905,759r	-17.1	372,122r	223,211r	173,923r	323,274r	314,044r	184,798r	162,877r	244,040r	279,434	-11.0
TRANSFORMATION													
Electricity generation	396,675r	330,377r	-16.7	109,422r	102,123r	91,050r	94,080r	88,595r	82,471r	84,421r	74,890r	64,376	-27.3
Heat generation ³	372,968r	306,705r	-17.8	102,137r	97,027r	86,579r	87,225r	81,050r	77,394r	79,756r	68,505r	56,830	-29.9
Heat generation ³	23,707r	23,672r	-0.1	7,286r	5,096r	4,471r	6,855r	7,545r	5,077r	4,666r	6,385r	7,545	-
Energy industry use	69,474r	59,940r	-13.7	19,124r	18,138r	15,151r	17,061r	16,545r	15,264r	13,178r	14,953r	14,975	-9.5
Losses	18,737	14,554r	-22.3	6,482	4,697	3,248	4,310	4,392r	3,636r	2,856r	3,669r	3,721	-15.3
FINAL CONSUMPTION													
Iron & steel	607,643r	500,888r	-17.6	237,093r	98,253r	64,474r	207,824r	204,511r	83,426r	62,423r	150,528r	196,362	-4.0
Other industries	5,827	5,758r	-1.2	1,432	1,454	1,435	1,505r	1,374	1,398	1,476	1,510r	1,331	-3.1
Other industries	115,811r	118,672r	+2.5	38,740r	20,035r	19,682r	37,354r	41,288r	21,667r	18,813r	36,903r	37,354	-9.5
Domestic	389,595	292,971r	-24.8	159,808	59,226	30,519	140,043	130,486r	43,430r	29,219r	89,837r	128,108	-1.8
Other final users	88,264r	75,432r	-14.5	35,077r	15,501r	10,800r	26,886r	29,349r	14,918r	10,901r	20,264r	27,556	-6.1
Non energy use ³	8,147r	8,054r	-1.1	2,037r	2,037r	2,037r	2,037r	2,014r	2,014r	2,014r	2,014r	2,014	-

1. Percentage change in the first 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 first quarter of 2012 fell by 3.4 per cent, from 103.1 TWh a year earlier to 99.5 TWh, the lowest first quarter level of generation since 1998. (**Chart 5.1**).

Renewables' share of electricity generation increased from 7.7 per cent in the first quarter of 2011 to 11.1 per cent in the first quarter of 2012. (**Chart 5.2**).

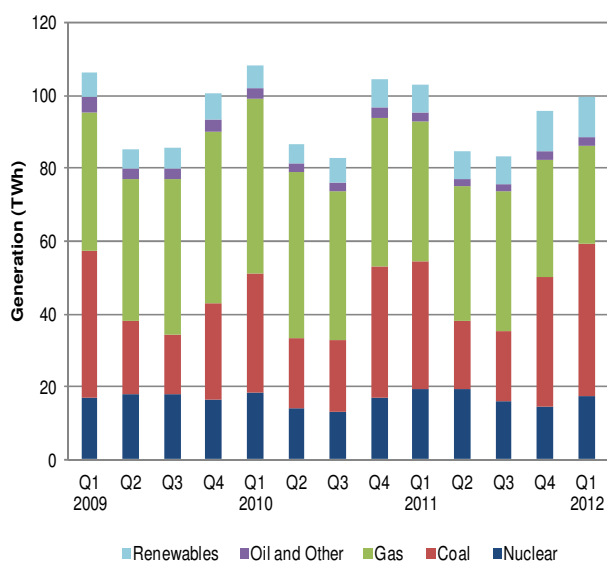
Nuclear's share of generation fell from 18.9 per cent in the first quarter of 2011 to 17.3 per cent in the first quarter of 2012 due to maintenance outages at several stations. Oldbury power station fully closed during the quarter. (**Chart 5.2**).

Gas's share of generation fell from 37.2 per cent in the first quarter of 2011 to 26.8 per cent in the first quarter of 2012, its lowest share for at least 14 years, due to high gas prices. Coal's share increased from 34.1 per cent to 42.3 per cent, its highest for six years. (**Chart 5.2**).

The UK remains a net importer with 2.1 per cent of electricity supplied from net imports in the first quarter of 2012 (**Chart 5.3**).

Final consumption of electricity during the first quarter of 2012, at 86.2 TWh, was provisionally 2.3 per cent lower than in the same period last year, and the lowest level for the first quarter for at least fourteen years. Domestic sales fell by 2.0 per cent, to the lowest quarter one level since the first quarter of 2000. (**Chart 5.4**).

Chart 5.1 Electricity generated by fuel type



In 2012 Q1, total electricity generated fell 3.4 per cent from 103.1 TWh in 2011 Q1 to 99.5 TWh, the lowest level for this quarter since 1998.

In 2012 Q1, coal fired generation rose by 19.7 per cent from 35.1 TWh to 42.0 TWh, its highest level since 2007 Q4.

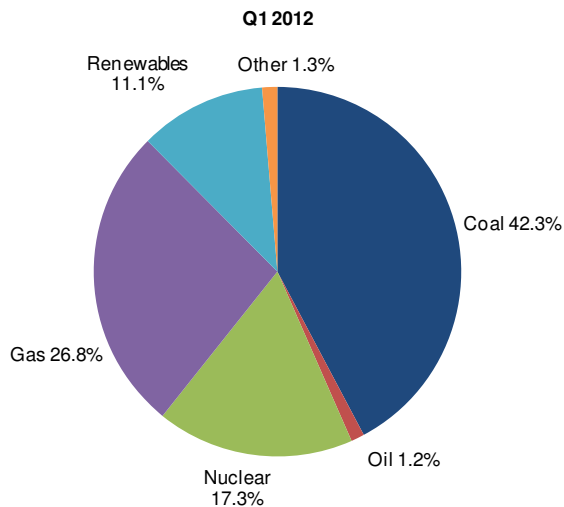
In 2012 Q1, gas fired generation fell 30.4 per cent from 38.3 TWh to 26.7 TWh, its lowest level for at least fourteen years. This was due to high gas prices, with several gas stations being run at minimal or zero levels as a result.

In 2012 Q1, nuclear generation fell 11.6 per cent from 19.5 TWh to 17.2 TWh, due to planned and unplanned outages at some stations and the full closure of Oldbury power station at the end of February.

In 2012 Q1, wind and PV generation rose 55.1 per cent from 3.4 TWh to 5.2 TWh, due to increased capacity and higher wind speeds in January. Hydro generation rose 43.4 per cent from 1.3 TWh to 1.9 TWh, due to high rainfall in the winter months.

Electricity

Chart 5.2 Shares of electricity generation



The share of generation from coal increased from 34.1 per cent in 2011 Q1 to 42.3 per cent in 2012 Q1, its highest share since 2006 Q1.

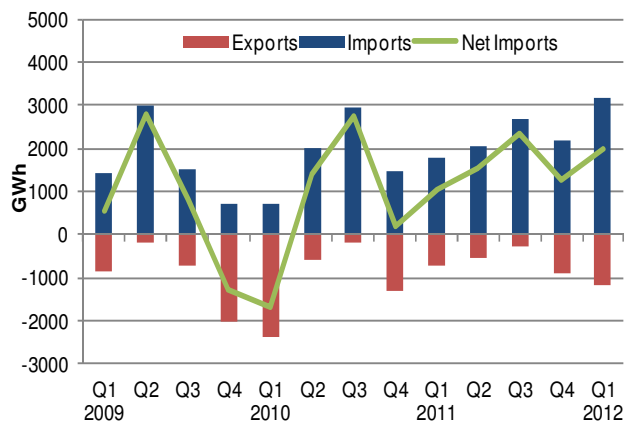
Gas's share of generation decreased from 37.2 per cent in 2011 Q1 to 26.8 per cent in 2012 Q1, its lowest share in the last fourteen years.

Nuclear's share of generation fell from 18.9 per cent in 2011 Q1 to 17.3 per cent in 2012 Q1, due to maintenance outages at several stations.

The share of renewables (hydro, wind and other renewables) increased from 7.7 per cent in 2011 Q1 to 11.1 per cent in 2012 Q1. This was due to much increased wind generation capacity as well as high winter rainfall and the Tilbury B conversion to dedicated biomass. This was a 0.6 percentage point fall on the record 11.7 per cent share in 2011 Q4.

Low carbon electricity's share of generation increased from 26.6 per cent in 2011 Q1 to 28.4 per cent in 2012 Q1, with reduced nuclear generation being more than offset by increased generation from renewables. However, this was 3.3 percentage points less than 2011 Q2's record high share of 31.7 per cent.

Chart 5.3 UK trade in electricity



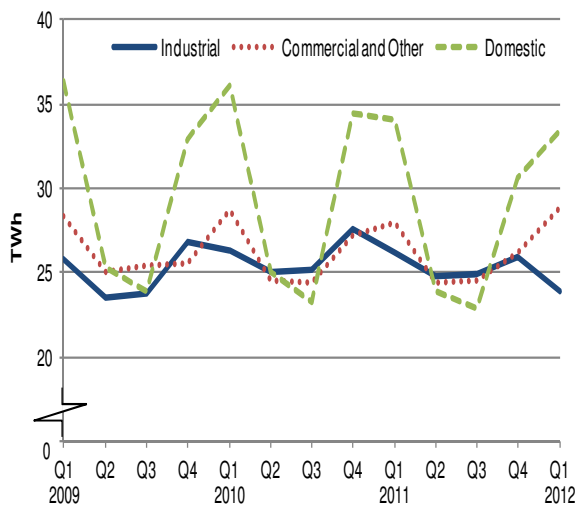
In 2012 Q1, compared with the same period in 2011, imports of electricity rose by 77.3 per cent, to 3.2 TWh, the highest level since 2008 Q3. Meanwhile exports also rose, by 63 per cent, to 1.2 TWh.

For the eighth 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 1,987 GWh, were up 87 per cent on 2011 Q1. This represented 2.1 per cent of electricity supplied in 2012 Q1.

In 2012 Q1, the UK was a net importer from France and the Netherlands (whom the UK started trading with in February 2011) with net imports of 680 GWh and 1,280 GWh respectively. For the second successive quarter, the UK was also a net importer from Ireland with net imports of 27 GWh.

Chart 5.4 Electricity Final Consumption



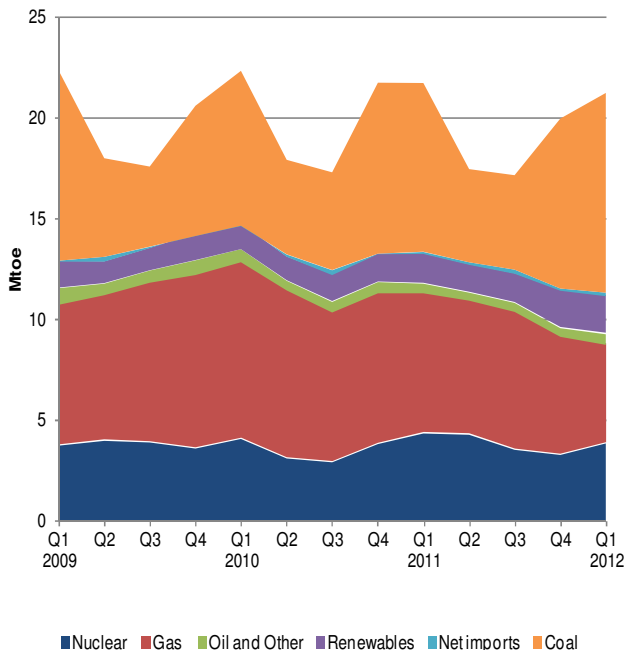
Final consumption of electricity fell by 2.3 per cent in 2012 Q1, from 88.3 TWh in 2011 Q1, to 86.2, its lowest level for the first quarter for at least fourteen years.

Domestic use fell by 2.0 per cent, from 34.1 TWh to 33.4 TWh, the lowest level for the first quarter since 2000 Q1, with warmer weather a factor.

Industrial use of electricity fell 8.6 per cent, from 26.2 TWh to 23.9 TWh, while consumption by commercial and other users² rose by 3.1 per cent, from 28.0 TWh to 28.9 TWh.

In 2012 Q1, temperatures were on average 0.5 degrees higher than in 2011 Q1, and the highest for quarter one for five years.³

Chart 5.5 Fuel used for electricity Generation



Fuel used by generators in 2012 Q1 fell 2.2 per cent, from 21.7 million tonnes of oil equivalent (mtoe) in 2011 Q1 to 21.2 mtoe in 2012 Q2, the lowest level for the first quarter since at least 1998 Q1. This reflects the low levels of generation, as well as the increased contribution from wind¹.

In 2012 Q1, gas use was 29 per cent lower than in 2011 Q1, with lower generation due to high gas prices. Coal use during the quarter was 18 per cent higher than a year earlier, while nuclear sources were 12 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/sourc/temperatures/temperatures.aspx

Relevant tables

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

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5 ELECTRICITY

Table 5.1. Fuel used in electricity generation and electricity supplied

	2010	2011 p	per cent change	2010	2010	2010	2010	2011	2011	2011	2011	2012	per cent change ¹
				1st quarter	2nd quarter	3rd quarter	4th quarter	1st quarter	2nd quarter	3rd quarter	4th quarter	1st quarter p	
FUEL USED IN GENERATION													
All generating companies													
	Million tonnes of oil equivalent												
Coal	25.56	25.95	+1.5	7.64	4.66	4.83	8.44	8.33	4.59	4.65	8.38	9.85	+18.3
Oil	1.17	0.72	-38.3	0.36	0.23	0.27	0.32	0.22	0.16	0.18	0.17	0.28	+28.5
Gas	31.96	26.28	-17.8	8.75	8.32	7.42	7.47	6.94	6.63	6.84	5.87	4.90	-29.4
Nuclear	13.92r	15.46	+11.1	4.07r	3.11	2.92	3.82r	4.36	4.29	3.53	3.28	3.85	-11.6
Hydro	0.31	0.49	+56.1	0.07	0.06	0.08r	0.11r	0.11	0.10	0.11	0.17	0.16	+43.4
Wind ²	0.88	1.35r	+54.2	0.21	0.14	0.24	0.29	0.29	0.31	0.26	0.49r	0.45	+55.1
Other renewables ³	4.06r	4.33r	+6.8	1.02r	1.00r	1.04r	1.00r	1.08r	0.97r	1.08r	1.20r	1.28	+18.2
Other fuels	1.00r	1.01	+0.4	0.28r	0.24r	0.25r	0.22r	0.25r	0.24r	0.27r	0.25r	0.24	-5.9
Net imports	0.23	0.53	(+)	-0.15	0.12	0.24	0.02r	0.09	0.13	0.20	0.11	0.17	+86.8
Total all generating companies	79.10r	76.13r	-3.8	22.26r	17.88r	17.27r	21.69r	21.67r	17.42r	17.12r	19.92r	21.18	-2.2
ELECTRICITY GENERATED													
All generating companies													
	TWh												
Coal	107.69	108.66r	+0.9	32.63r	19.55	19.81	35.71	35.13	19.04	19.24	35.25r	42.05	+19.7
Oil	4.80r	2.83r	-41.1	1.44r	0.92r	1.14r	1.31r	0.88r	0.51r	0.60r	0.85r	1.17	+33.9
Gas	175.65r	146.49r	-16.6	48.24r	45.46r	40.80r	41.15r	38.34r	36.99r	38.63r	32.53r	26.68	-30.4
Nuclear	62.10r	68.98	+11.1	18.18r	13.87	13.01	17.04	19.45	19.15	15.76	14.62	17.20	-11.6
Hydro (natural flow)	3.64r	5.69r	+56.1	0.85r	0.68r	0.88r	1.23r	1.30r	1.15	1.24	2.00r	1.86	+43.4
Wind ²	10.22	15.75r	+54.2	2.45	1.65	2.74	3.38	3.36r	3.59	3.04	5.75r	5.22	+55.1
- of which, Offshore	3.04	5.13	+68.4	0.67	0.46	0.82	1.10	1.00	1.12	1.10	1.92	1.49	+49.8
Other renewables ³	11.99r	12.97r	+8.2	3.01r	2.91r	3.08r	2.99r	3.31r	2.89r	3.29r	3.47r	4.00	+20.9
Pumped Storage	3.15	2.91	-7.8	0.86	0.76	0.71	0.82	0.77	0.65	0.70	0.78r	0.79	+3.1
Other fuels	2.48r	2.13r	-14.3	0.62r	0.65r	0.63r	0.58r	0.52r	0.52r	0.54r	0.55r	0.53	+2.4
Total all generating companies	381.73r	366.40r	-4.0	108.28r	86.47r	82.78r	104.21r	103.05r	84.50r	83.04r	95.81r	99.51	-3.4
ELECTRICITY SUPPLIED⁴													
All generating companies													
	TWh												
Coal	102.27	103.21r	+0.9	30.98r	18.56	18.82	33.91	33.36	18.09	18.28r	33.48r	39.92	+19.7
Oil	4.31r	2.54r	-41.0	1.29r	0.83r	1.03r	1.16r	0.79r	0.46r	0.54r	0.76r	1.06	+35.2
Gas	172.45r	143.80r	-16.6	47.38r	44.66r	40.08r	40.34r	37.63r	36.31r	37.93r	31.93r	26.18	-30.4
Nuclear	56.44r	62.66	+11.0	16.52r	12.61	11.82	15.49	17.67	17.40	14.31	13.28	15.62	-11.6
Hydro	3.62r	5.65r	+56.2	0.84r	0.68r	0.87r	1.22r	1.29r	1.14	1.23	1.99r	1.85	+43.6
Wind ²	10.22	15.75r	+54.2	2.45	1.65	2.74	3.38	3.36r	3.59	3.04	5.75r	5.22	+55.1
- of which, Offshore	3.04	5.13	+68.4	0.67	0.46	0.82	1.10	1.00	1.12	1.10	1.92	1.49	+49.8
Other renewables ³	10.88r	11.76r	+8.2	2.74r	2.64r	2.79r	2.71r	3.00r	2.62r	2.99r	3.15r	3.63	+20.8
Pumped Storage (net supply) ⁵	-1.07	-0.95		-0.29	-0.27	-0.23	-0.28	-0.26	-0.22	-0.23	-0.24	-0.26	
Other fuels	2.35r	2.01r	-14.3	0.59r	0.62r	0.59r	0.55r	0.49	0.49r	0.51r	0.52r	0.50	+2.4
Net imports	2.66	6.22	(+)	-1.69	1.42	2.76	0.18	1.06	1.53	2.36	1.27	1.99	+86.8
Total all generating companies	364.11r	352.66r	-3.1	100.79r	83.40r	81.28r	98.64r	98.39r	81.41r	80.96r	91.89r	95.71	-2.7

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

2. Includes solar PV and wave/tidal

3. Up to 2010 Q4, this includes non-biodegradable wastes. From 2011 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 p	Per cent change	2010 1st quarter	2010 2nd quarter	2010 3rd quarter	2010 4th quarter	2011 1st quarter	2011 2nd quarter	2011 3rd quarter	2011 4th quarter	2012 1st quarter p	Per cent change ¹
SUPPLY													
Indigenous production	381,731	366,401	-4.0	108,276r	86,471r	82,779r	104,206r	103,052r	84,497r	83,041r	95,811r	99,511	-3.4
Major power producers ^{2 3}	344,457	329,399	-4.4	98,432r	77,539r	73,786r	94,701r	93,506r	75,617r	74,087r	86,189	89,461	-4.3
Auto producers	34,123	34,096	-0.1	8,979r	8,170r	8,288r	8,686r	8,776r	8,226r	8,253r	8,842r	9,256	+5.5
Other sources ⁴	3,150	2,906	-7.8	865	763	705	818	770	654	702	780	794	+3.1
Imports	7,144	8,689	+21.6	698	2,025	2,943	1,479	1,787	2,054	2,656	2,192	3,169	+77.3
Exports	4,481	2,467	-44.9	2,384	610	184	1,303	723	525	297	922	1,182	+63.4
Transfers	-	-	-	-	-	-	-	-	-	-	-	-	-
Total supply	384,395	372,623	-3.1	106,589r	87,887r	85,538r	104,381r	104,116r	86,026r	85,400r	97,080r	101,499	-2.5
Statistical difference	370	1,854		364r	-213r	-142r	361r	480r	442r	549r	383r	-405	
Total demand	384,025	370,769	-3.5	106,225r	88,100r	85,680r	104,020r	103,636r	85,584r	84,851r	96,698r	101,904	-1.7
TRANSFORMATION													
Energy industry use ⁵	28,909	28,287	-2.2	7,969r	6,629r	6,443r	7,868r	7,764r	6,484r	6,558r	7,480r	7,902	+1.8
Losses	27,042	26,088	-3.5	7,074	6,734	6,417	6,816r	7,601	5,991	6,072	6,423	7,794	+2.5
FINAL CONSUMPTION													
Iron & steel	3,842	3,916	+1.9	974r	955r	974r	939r	986r	983r	980r	967r	978	-0.8
Other industries	100,407	97,885	-2.5	25,359r	24,137r	24,250r	26,661r	25,205r	23,792r	23,887r	25,001r	22,958	-8.9
Transport	4,076	4,079	+0.1	1,019r	1,019r	1,019r	1,019r	1,020r	1,020r	1,020r	1,020r	1,020	-
Domestic	118,810	111,482	-6.2	36,069r	25,058r	23,197r	34,486r	34,062r	23,937r	22,869r	30,613r	33,393	-2.0
Other final users	100,938	99,032	-1.9	27,761r	23,568r	23,379r	26,231r	26,998r	23,377r	23,464r	25,193r	27,859	+3.2
Non energy use	-	-	-	-	-	-	-	-	-	-	-	-	-

1. Percentage change in the first 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 2010 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 11.1 per cent in 2012 Q1, up 3.4 percentage points on the share in 2011 Q1, reflecting increased capacity levels. This was a 0.6 percentage point fall on 2011 Q4's record high share of 11.7 per cent. **(Chart 6.1)**

Renewable electricity generation was 11.1 TWh in 2012 Q1, an increase of 39 per cent on the 8.0 TWh in 2011 Q1, but a fall of 1.3 per cent on the peak quarterly generation of 2011 Q4. **(Chart 6.2)**

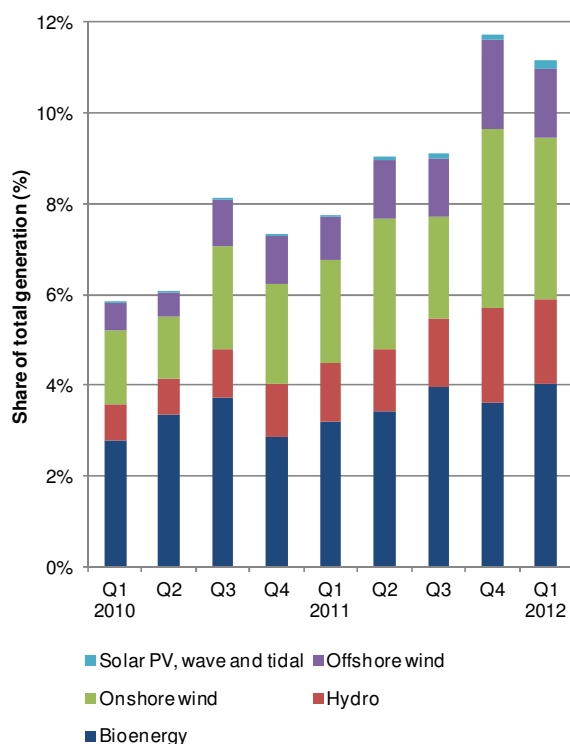
Onshore wind showed the highest absolute increase in generation in 2012 Q1, increasing by 51 per cent, from 2.4 TWh in 2011 Q1 to 3.6 TWh, as a result of much increased capacity. Large increases in generation were also seen in hydro (due to high winter rainfall), offshore wind and bioenergy (due to the conversion of Tilbury B to dedicated biomass) **(Chart 6.2)**

Renewable electricity capacity was 13.0 GW at the end of 2012 Q1, a 36 per cent increase (3.4 GW) on a year earlier, and 5.7 per cent increase (0.7 GW) on the previous quarter. **(Chart 6.3)**

In 2012 Q1, a record 432 MW of capacity joined the Feed in Tariff scheme, increasing the total by two-thirds, to 1,091 MW, approximately 8.4 per cent of all renewable installed capacity. Of this increase, sub-4 kW retrofitted solar PVs contributed 279 MW. **(Chart 6.5)**

Liquid biofuels consumption rose by 32.3 per cent, from 316 million litres in 2011 Q1 to 418 million litres in 2012 Q1, but 7.9 per cent less than the record 454 million litres in 2011 Q4. In 2012 Q1, they represented 3.9 per cent of petrol and diesel consumed in road transport. **(Chart 6.6)**

Chart 6.1 Renewables' share of electricity generation



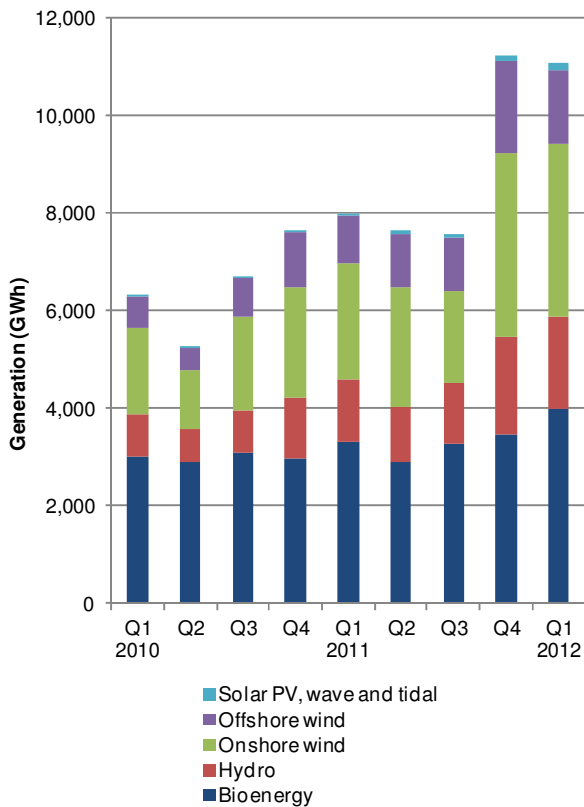
Renewables' share of electricity generation increased from 7.7 per cent in 2011 Q1 to 11.1 per cent in 2012 Q1. However, this was a 0.6 percentage point fall on 2011 Q4's record high share of 11.7 per cent.¹

The increase on a year earlier reflects increased capacity, particularly in onshore and offshore wind, as well as the conversion of the large Tilbury B power station to dedicated biomass. In addition, high winter rainfall resulted in higher levels of hydro generation.

Overall electricity generation (99.5 TWh) in 2012 Q1 was down 3.4 per cent on a year earlier (103.1 TWh), which contributed around 0.4 percentage points of the 3.4 percentage point increase in renewables' share.

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



Total electricity generated from renewables in 2012 Q1 was up by 39 per cent on 2011 Q1, from 8.0 TWh to 11.1 TWh, just short of the record 11.2 TWh in 2011 Q4.

In 2012 Q1, hydro generation rose by 43 per cent on a year earlier, from 1.3 TWh to 1.9 TWh. Whilst it was the wettest January for three years, February rainfall was around half the level of a year earlier and it was the driest March in the UK for over fifty years. However, the very high winter rainfall levels enabled hydro generation to remain high in 2012 Q1.

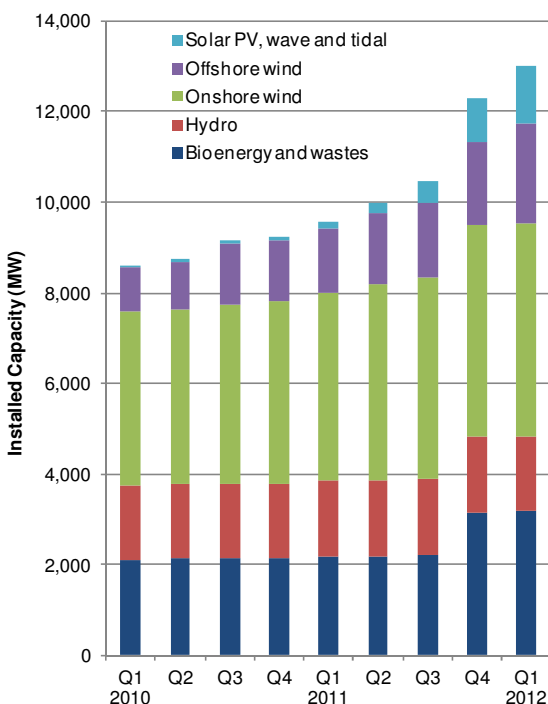
Electricity generated from onshore wind increased by 51 per cent in 2012 Q1, from 2.4 TWh to 3.6 TWh, while generation from offshore wind increased by 50 per cent on a year earlier, from 1.0 TWh to 1.5 TWh. Both increases were primarily due to much increased capacity on a year earlier.

Although wind speeds in February and March were low, January was the windiest for four years. Average wind speeds for 2012 Q1 were 9.3 knots, 0.7 knots higher than a year earlier, and 2.2 knots lower than the very windy 2011 Q4.²

Generation from bioenergy³ in 2012 Q1 increased by 21 per cent on a year earlier, from 3.3 TWh to 4.0 TWh, with the opening of the newly converted Tilbury B biomass power station at the end of 2011 a key contributor to this (despite not generating in March, due to a fire at the end of February).

In 2012 Q1, bioenergy had the largest share of generation (36 per cent) with 32 per cent from onshore wind and 17 per cent from hydro.

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



At the end of 2012 Q1, the UK's renewable electricity capacity totalled 13.0 GW, an increase of 5.7 per cent (0.7 GW) on that installed at the end of 2011 Q4, and 36 per cent (3.4 GW) on that installed a year earlier.

Of the 0.7 GW increase during 2012 Q1, more than half (363 MW) came from offshore wind, with the continued expansion of four new sites (Ormonde, Greater Gabbard, Walney and Sheringham Shoal).

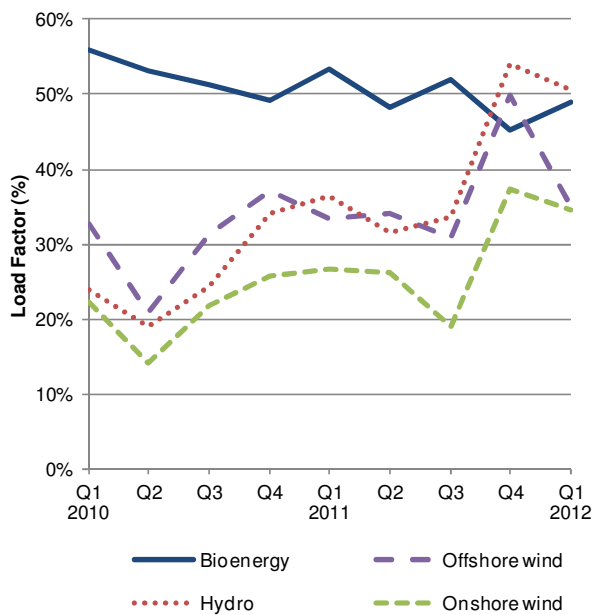
Solar photovoltaics (PV) capacity increased by 296 MW in 2012 Q1, due to the continued high uptake of the GB Feed in Tariff scheme. Solar PV capacity stood at 1.3 GW at the end of 2012 Q1, increasing its share to 10 per cent of all renewables capacity.

At the end of 2012 Q1, onshore wind had the highest share of capacity (36 per cent), followed by bioenergy (24 per cent), and offshore wind (17 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



In 2012 Q1, onshore wind's load factor increased by 8.2 percentage points, from 26.6 per cent in 2011 Q1 to 34.8 per cent. Meanwhile, offshore wind's load factor rose by 0.5 percentage points, from 33.3 per cent to 33.8 per cent. This reflects the particularly high wind speeds in January, although February and March were less windy.

Onshore and offshore wind's load factors, compared with 2011 Q4, were both down, by around 2.4 and 16 percentage points respectively, with wind speeds much (2.2 knots) lower than in 2011 Q4.

Hydro's load factor in 2012 Q1 increased by 14.6 percentage points, from 36.3 per cent in Q1 2011 to 50.9 per cent, due to high rainfall in November to January (despite a dry February and March).

Compared with 2011 Q4, hydro's load factor in 2012 Q1 fell by 3.1 percentage points, from 54.0 per cent, with lower rainfall in the quarter as a whole.

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.

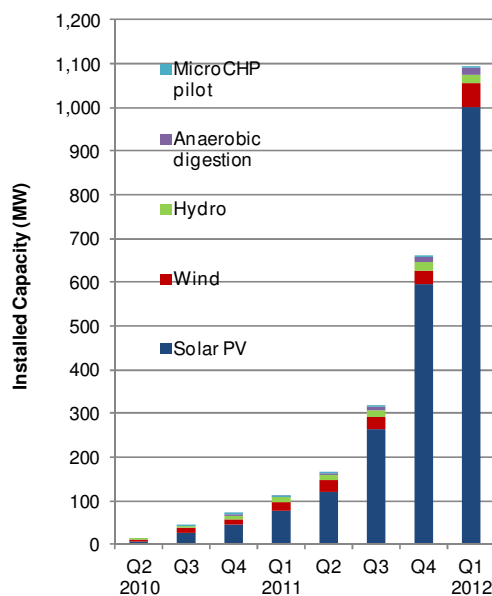
At the end of 2012 Q1, 1,091 MW of capacity was confirmed on the GB Feed in Tariff (FiTs) scheme. This was a 66 per cent increase on the 659 MW confirmed on the scheme at the end of 2011 Q4, and over ten times the amount confirmed at the end of 2011 Q1.⁴

In terms of number of installations, at the end of 2012 Q1, there were 247,953 confirmed on the FiT scheme, a 69 per cent increase on the 147,087 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 92 per cent of the total. The majority of PV installations are sub-4 kW retrofitted schemes, which increased by 94,873 (279 MW) in 2012 Q1.⁵

Renewable installations confirmed on FiTs (all except MicroCHP) represented 8.4 per cent of all renewable installed capacity.

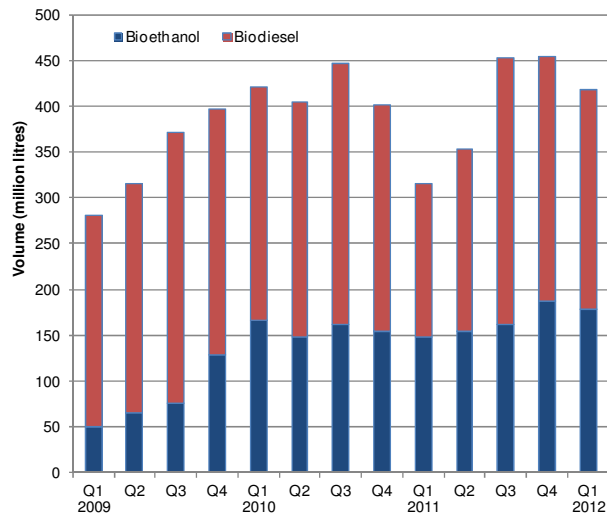
Chart 6.5 Feed in Tariffs: installed capacity (confirmed on FiTs, as at end of quarter)



⁴ Statistics on Feed in Tariff uptake can be found in table ET 5.6, at: www.decc.gov.uk/en/content/cms/statistics/energy_stats/source/fits/fits.aspx

⁵ 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 Q1, 418 million litres of liquid biofuels were consumed in transport, a rise of 32.3 per cent on the total in 2011 Q1, but a 7.9 per cent fall on 2011 Q4's record high of 454 million litres.

In 2012 Q1, biodiesel accounted for 3.8 per cent of diesel, and bioethanol 3.9 per cent of motor spirit. The combined contribution of the two fuels was 3.9 per cent, slightly lower than 2011 Q3's record share.

Bioethanol consumption rose by 20.3 per cent, from 148 million litres to 178 million litres. Biodiesel consumption rose by 42.9 per cent, from 168 million litres in Q1 2011 to 240 million litres in Q1 2012.

In 2012 Q1, 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

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6 RENEWABLES

Table 6.1. Renewable electricity capacity and generation

	2010	2011 p	per cent change	2010 1st quarter	2010 2nd quarter	2010 3rd quarter	2010 4th quarter	2011 1st quarter	2011 2nd quarter	2011 3rd quarter	2011 4th quarter	2012 1st quarter p	per cent change
Cumulative Installed Capacity¹													MW
Onshore Wind	4,037	4,650	+15.2	3,860	3,877	3,981	4,037	4,142r	4,333r	4,448r	4,650r	4,688	+13.2
Offshore Wind	1,341	1,838	+37.0	951	1,041	1,341	1,341	1,427r	1,564r	1,650	1,838r	2,201	+54.2
Shoreline wave / tidal	3	3	+22.0	2	2	3	3	3	3	3	3	3	+22.0
Solar photovoltaics	77	976	(+)	29	39	55	77	137r	212r	489r	976r	1,271	(+)
Small scale Hydro	188r	205	+9.0	180r	188r	188r	188r	198	201r	203r	205r	205	+3.6
Large scale Hydro	1,453	1,471	+1.2	1,453	1,453	1,453	1,453	1,471r	1,471r	1,471r	1,471r	1,471	-
Landfill gas	1,025	1,067	+4.1	1,016r	1,024	1,024	1,024	1,025	1,067r	1,067r	1,067r	1,067	-
Sewage sludge digestion	186r	198	+6.4	183r	186r	186r	186r	195r	195r	198r	198r	198	+1.2
Biodegradable municipal solid waste combustion	461r	577	+25.2	461r	461r	461r	461r	448r	448r	448r	577r	577	+28.9
Animal Biomass (non-AD) ²	111r	111	-	111r	111r	111r	111r	111r	111r	111r	111r	111	-
Anaerobic Digestion	28r	55	+96.9	19r	22r	26r	28r	39r	42r	53r	55r	59	+51.0
Plant Biomass ³	330r	1,159	(+)	328r	328r	329r	330r	327r	328r	330r	1,159r	1,160	(+)
Total	9,238r	12,310	+33.2	8,592r	8,731r	9,156r	9,238r	9,563r	9,974r	10,471r	12,310r	13,010	+36.1
Co-firing ⁴	266r	338	+27.0	266r	266r	266r	266r	338r	338r	338r	338r	295	-12.6
Generation⁵													GWh
Onshore Wind ⁶	7,137	10,372	+45.3	1,774	1,188	1,903	2,272	2,350r	2,423r	1,855r	3,744r	3,552	+51.1
Offshore Wind ^{6,7}	3,044	5,126	+68.4	666	456	821	1,100	997r	1,117r	1,096r	1,916r	1,493	+49.8
Shoreline wave / tidal ⁶	2	1	-61.2	1	1	1	0	0	0r	0r	0r	1	(+)
Solar photovoltaics ⁶	33	252	(+)	4	10	11	8	18r	48r	93r	92r	173	(+)
Hydro ⁶	3,644r	5,686	+56.1	846r	681r	880r	1,236r	1,299r	1,151r	1,239r	1,998r	1,863	+43.5
Landfill gas ⁶	5,014r	4,979	-0.7	1,291r	1,264r	1,268r	1,191r	1,329r	1,130r	1,323r	1,197r	1,345	+1.2
Sewage sludge digestion ⁶	698r	755	+8.2	174r	185r	179r	160r	188r	189r	189r	189r	191	+1.8
Biodegradable municipal solid waste combustion ⁸	1,597r	1,739	+8.9	399	399	399	399	355r	344r	355r	686r	534	+50.4
Co-firing with fossil fuels	2,332r	2,964	+27.1	569r	443r	656r	664r	822r	586r	768r	787r	647	-21.3
Animal Biomass (non-AD) ^{6,9}	627r	614	-2.1	167r	161r	144r	156r	159r	154r	154r	148r	170	+7.4
Anaerobic Digestion	92r	239	(+)	17r	23r	29r	23r	50r	52r	71r	67r	58	+16.5
Plant Biomass ^{6,10}	1,624r	1,683	+3.6	396r	435r	401r	392r	409r	437r	434r	403r	1,057	(+)
Total	25,845r	34,410	+33.1	6,305r	5,246r	6,692r	7,602r	7,974r	7,632r	7,576r	11,228r	11,083	+39.0
Non-biodegradable wastes ¹¹	924r	1,005	+8.8	231r	231r	231r	231r	205r	199r	205r	396r	358	+74.4
Load Factors¹²													
Onshore Wind	21.7%	27.3%		22.4%	14.1%	21.9%	25.7%	26.6%	26.2%	19.1%	37.3%	34.8%	
Offshore Wind	30.4%	36.8%		32.6%	21.0%	31.2%	37.1%	33.3%	34.2%	30.9%	49.8%	33.8%	
Hydro	25.4%	39.2%		24.0%	19.1%	24.3%	34.1%	36.3%	31.6%	33.5%	54.0%	50.9%	
Landfill gas	57.0%	54.4%		59.7%	56.8%	56.1%	52.7%	58.8%	48.5%	56.2%	50.8%	57.7%	
Sewage sludge digestion	46.5%	45.0%		47.4%	45.8%	43.6%	39.1%	45.7%	44.3%	43.7%	43.4%	44.3%	
Biodegradable municipal solid waste combustion	41.5%	38.2%		42.1%	39.7%	39.2%	39.2%	36.1%	35.2%	35.9%	60.6%	42.3%	
Animal Biomass (non-AD)	64.8%	63.4%		70.1%	66.6%	58.8%	63.9%	66.5%	63.7%	63.1%	60.5%	70.6%	
Anaerobic Digestion	57.2%	65.6%		58.1%	52.6%	54.7%	39.0%	68.2%	59.0%	67.1%	55.8%	46.2%	
Plant Biomass	58.9%	25.8%		58.5%	60.8%	55.3%	53.9%	57.7%	61.1%	59.6%	24.5%	41.7%	
Total (excluding co-firing and non-biodegradable wastes)	31.0%	33.3%		31.9%	25.4%	30.6%	34.2%	35.2%	33.0%	30.2%	41.5%	37.7%	

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, hospital 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 p		2010	2010	2010	2010	2011	2011	2011	2011	2012	
				1st quarter	2nd quarter	3rd quarter	4th quarter	1st quarter	2nd quarter	3rd quarter	4th quarter	1st quarter p	
Volume													Million litres
Bioethanol	631	652	+3.4	167	149	161	153	148	154	162	188	178	+20.3
Biodiesel	1,045	925	-11.5	254	256	286	249	168	200	291	266	240	+42.9
Total biofuels for transport	1,676	1,577	-5.9	421	405	447	402	316	354	453	454	418	+32.3
Energy													Thousand tonnes of oil equivalent
Bioethanol	355	367	+3.4	94	84	91	87	83	87	91	106	100	+20.3
Biodiesel	859	760	-11.5	209	211	235	204	138	164	239	219	197	+42.9
Total biofuels for transport	1,214	1,128	-7.2	303	294	326	291	221	251	331	325	298	+34.4
Shares of road fuels			<i>per cent</i>										<i>per cent</i>
Bioethanol as per cent of Motor Spirit	3.1%	3.3%	<i>change</i>	3.4%	2.8%	3.1%	3.0%	3.1%	3.1%	3.3%	3.8%	3.9%	<i>change</i>
Biodiesel as per cent of DERV	4.1%	3.6%		4.2%	4.0%	4.3%	3.7%	2.7%	3.1%	4.4%	4.0%	3.8%	
Total biofuels as per cent of road fuels	3.6%	3.5%		3.9%	3.4%	3.8%	3.4%	2.9%	3.1%	3.9%	3.9%	3.9%	

Source: HM Revenue and Customs Hydrocarbon Oils Bulletin, available at:

<https://www.uktradeinfo.com/Statistics/Pages/TaxAndDutybulletins.aspx>

Renewable energy in 2011

Introduction

This article updates the information on renewable energy published in the June 2011 edition of Energy Trends, and in the 2011 edition of the Digest of UK Energy Statistics. It also presents additional information to that provided in the “Section 6 Renewables” section of this edition of Energy Trends, and discusses key policies that impact on the delivery of renewable energy.

Key messages

Renewable energy provisionally accounted for 3.8 per cent of energy consumption, as measured using the 2009 Renewable Energy Directive methodology. This is an increase from the revised 2010 position of 3.2 per cent.

The amount of electricity generated from renewables sources in 2011 was 34,410 GWh, a 33 per cent increase on 2010. Wind generation saw the largest increases – offshore wind up 68 per cent, and onshore wind up 45 per cent. Hydro generation also saw a large increase, up 56 per cent.

Generation capacity increased by 3.1 GW (33 per cent) to 12.3 GW. The main sources of this increase were: solar photovoltaics (up 0.9 GW); plant biomass (up 0.8 GW, mainly due to the conversion of Tilbury B power station to dedicated biomass); onshore wind (up 0.6 GW) and offshore wind (up 0.5 GW).

A number of weather factors had a major impact on renewable electricity generation during 2011; rainfall levels were 84 per cent higher than in 2010 (which was the driest year since 2003). Average windspeeds were 1.4 knots higher than in 2010. Whilst these factors affect the raw 2011 outputs of renewables, the key Renewable Energy Directive measure uses a normalisation approach to smooth the year on year impacts of differing wind and rain patterns.

There are various national and internationally agreed measures of the contribution renewable electricity makes to the generation mix. These show that in 2011:

- 9.7 per cent of electricity sales by licensed suppliers in the UK were from electricity generated from renewables eligible for the Renewables Obligation, up from 7.0 per cent in 2010 (*not normalised*).
- 8.7 per cent of electricity consumption, as measured using the 2009 Renewable Energy Directive methodology, came from eligible renewable sources (*normalised*).
- 9.2 per cent of electricity generation, as measured using the 2001 Renewables Directive methodology, came from eligible renewable sources; if normalisation is used (adopting the 2009 Renewable Energy Directive methodology) the proportion decreases to 8.6 per cent.
- 9.4 per cent of electricity generation measured against the “International Definition” came from renewables (*not normalised*).

Heat from renewable sources increased by 5 per cent during 2011 (to 1,220 ktoe).

Renewable biofuels for transport fell by 7 per cent (to 1,127 ktoe). They accounted for 3.5 per cent by volume of road transport fuels in 2011. Bioethanol, as a proportion of motor spirit, increased by 0.3 percentage points to 3.3 per cent, whilst biodiesel as a proportion of DERV fell by 0.5 percentage points to 3.6 per cent.

Data collection and methodology

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

The Renewable Energy STATisticS (RESTATS) database now contains 23 years of data from 1989 to 2011 and this database has been used to provide the detailed figures on renewable

sources of energy contained within this article and also within the forthcoming 2012 edition of the Digest of UK Energy Statistics, to be published on 26 July 2012.

EU Renewable Energy Directive

In March 2007, the European Council agreed to a common strategy for energy security and tackling climate change. An element of this was establishing a target of 20 per cent of the EU's energy to come from renewable sources by 2020. During 2008 a Directive was negotiated on this basis and resulted in the agreement of country "shares" of this target being included in the final 2009 Renewable Energy Directive. For the UK, 15 per cent of **final energy consumption** - calculated on a net calorific basis, and with a cap on fuel used for air transport - should be accounted for by energy from renewable sources. This Directive super-ceded the 2001 Renewables Directive, which focused on electricity, and allocated the UK a 10 per cent target for the contribution of renewables as a proportion of electricity consumption during 2010. In reporting against this measure, normalised wind and rain is used. Some of the key policy measures that the UK have to increase renewable deployment are shown on pages 55 and 56 of this article.

The normalisation approach.

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

Renewable electricity generation

Section 6 of the March 2012 edition of Energy Trends contained provisional estimates for three key measures of the share of electricity obtained from renewable sources. These data have now been revised following receipt of new data, and two additional measures have been added. All five measures are shown in Table 1. On the "international definition basis" renewables provided 9.4 per cent of the electricity generated in the United Kingdom in 2011, a 2.6 percentage point increase on the 2010 proportion. Total electricity generation from renewables in 2011 amounted to 34,410 GWh, an increase of 8,565 GWh (33 per cent) on 2010. Chart 1 shows the growth in the proportion of electricity generation from renewable sources and also progress under the Renewables Obligation (RO), which is measured as a proportion of UK electricity sales; the RO measure grew by 2.7 percentage points to 9.7 per cent in 2011.

The 2001 EU Renewables Directive measures the renewable contribution of electricity as the proportion of renewable electricity generated (except from non-biodegradable waste) as a percentage of electricity consumption. The 2009 Renewable Energy Directive introduced a fourth measure, which involves normalising wind and hydro generation over 5 and 15 periods respectively, and measuring against gross electricity consumption. An additional fifth measure has also been proposed, applying the above normalising approach to the 2001 Renewables Directive measure. In 2010 the measures which were normalised showed larger growth than the non-normalised measures; this was to be expected as the very low rainfall and wind speeds were adjusted to take account of the higher load factors during the previous time periods. In 2011, the higher wind speeds and rain fall resulted in the normalised measures showing lower increases than non-normalised measures. The normalised Renewables Directive measure increased by 1.4 percentage points to 8.6 per cent, with the non-normalised measure increasing by 2.5 percentage points to 9.2 per cent. The electricity component of the Renewable Energy Directive increased by 1.4 percentage points, to 8.7 per cent.

The normalised electricity component of the 2009 Renewable Energy Directive measure is also shown in this Chart 1; by comparing this line with the non-normalised lines, it clearly illustrates the impact that low wind speeds and little rain had on renewable electricity generation in 2010, and how this was reversed in 2011.

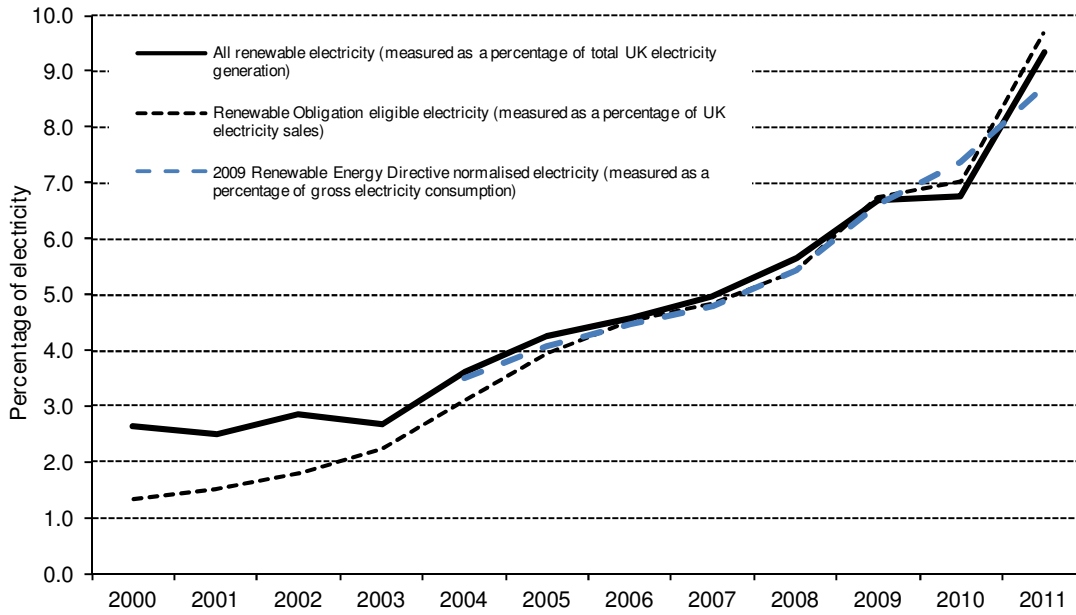
Table 1: Percentages of electricity derived from renewable sources

	2005	2006	2007	2008	2009	2010	2011
Overall renewables percentage – International basis <i>(Electricity generated from all renewables except non-biodegradable wastes, as a percentage of all electricity generated in the UK)</i>	4.3	4.6	5.0	5.6	6.7	6.8	9.4
Percentage on a Renewables Obligation basis <i>(Electricity generated from renewables eligible for the Renewables Obligation as a percentage of electricity sales by licensed suppliers in the UK)</i>	3.9	4.5	4.8	5.4	6.7	7.0	9.7
Percentage on a 2009 Renewable Energy Directive basis <i>(Normalised hydro & wind generation combined with actual generation from other sources except non-biodegradable wastes, as a percentage of UK gross electricity consumption, calculated on a net calorific value basis)</i>	4.1	4.5	4.8	5.4	6.6	7.4	8.7
Percentage on a 2001 Renewables Directive basis (original methodology) <i>(Electricity generated from renewable sources eligible under the 2001 EU Directive - i.e. all renewables except non-biodegradable wastes, as a percentage of UK electricity demand)</i>	4.2	4.5	4.9	5.5	6.7	6.7	9.2
Percentage on a 2001 Renewables Directive basis (normalised methodology) <i>(Normalised hydro & wind generation combined with actual generation from other sources except non-biodegradable wastes, as a percentage of UK electricity demand)</i>	4.1	4.4	4.7	5.4	6.6	7.3	8.6

The largest absolute increase in generation came from onshore wind, rising by 3,235 GWh to 10,372 GWh (a 45 per cent increase on the previous year), reflecting increased installed capacity over the course of the year and also higher average wind speeds. Similar factors helped offshore wind generation contribute the second largest absolute increase, by 2,082 GWh to 5,126 GWh (68 per cent higher). There was a further 2,043 GWh increase in generation from hydro schemes, with the total contribution of hydro amounting to 5,686 GWh during the year, 56 per cent higher than during 2010. Additionally, co-firing of renewables with fossil fuels contributed 27 per cent more electricity, an increase of 631 GWh to 2,964 GWh in 2011.

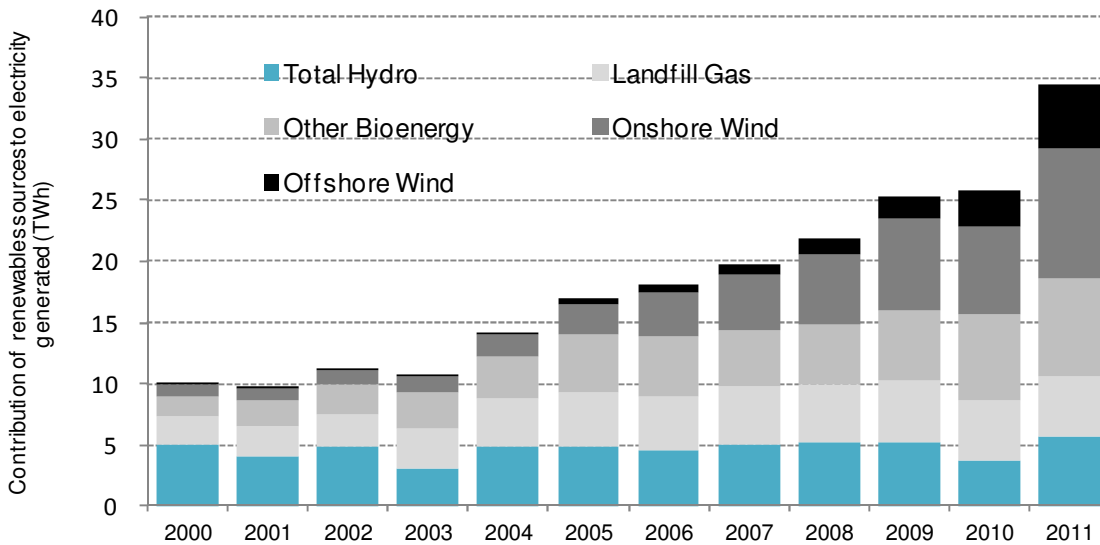
Other sources showing large increases – but from smaller initial levels - included solar photovoltaics (an increase of 219 GWh, 658 per cent higher), anaerobic digestion (147 GWh, 159 per cent higher), biodegradable municipal solid waste (141 GWh, 9 per cent higher), plant biomass (58 GWh, 4 per cent higher), and sewage sludge digestion (57 GWh, 8 per cent higher). There were small reductions in generation from landfill gas (35 GWh lower), and animal biomass (13 GWh lower).

Chart 1: Growth in electricity generation from renewable sources since 2000



Wind continued to be the leading individual technology for the generation of electricity from renewable sources during 2011 with 45 per cent of renewables generation coming from this source; a further 17 per cent came from hydro. However the combined generation from the variety of different bioenergy sources accounted for 38 per cent of renewable generation, with landfill gas accounting almost two-fifths of the biomass generation. Total generation from bioenergy sources was 8 per cent higher than in 2010, with wind being 52 per cent higher and hydro's contribution 56 per cent higher. Chart 2 shows the growth in generation, by main renewable source, since 2000.

Chart 2: Electricity generation by main renewable source since 2000



Note: Onshore Wind bar includes solar PV (0.25 TWh in 2011);
Hydro bar includes shoreline wave/tidal (0.001TWh in 2011)

Renewable electricity capacity

Total renewable electricity capacity at the end of 2011, as shown in Table 4 at the end of this article, amounted to 12.3 GW, compared with 9.2 GW in 2010; this excludes the capacity within conventional generation station that was used for co-firing (a further 0.3 GW). The largest contributor towards this 3.1 GW (33 per cent) capacity increase was 899 MW from solar PV, representing a more than 11 fold increase on the capacity installed at the end of 2010, resulting from the inclusion of this form of generation in the Feed-in Tariff scheme. Other main contributors to the increase were 829 MW from plant biomass (of which 750 MW was due to the conversion of Tilbury B's, previously coal-fired, power station to dedicated biomass in December 2011); 614 MW (+15 per cent) from onshore wind, and 497 MW (+37 per cent) from offshore wind. In capacity terms, wind was the leading technology at the end of 2011, with hydro second, followed by plant biomass and landfill gas. Fifty three per cent of renewable electricity capacity at the end of 2011 was from wind, 14 per cent from hydro, and around 9 per cent each from plant biomass and landfill gas.

Load factors

Load factors are usually calculated in terms of installed capacity, and express the average hourly quantity of electricity generated as a percentage of the average capacity at the beginning and end of the year. A summary of load factors for various technologies during 2009 to 2011 are presented in Table 2. In addition to the traditionally calculated load factors (which use a denominator capacity of the mean beginning and end year values), additional load factors are also calculated showing the load factors restricted to those schemes that have operated throughout the calendar year with an unchanged configuration. As mentioned earlier in this article, low wind speeds and rainfall had a major impact on load factors during 2010. The falling load factors for solar photovoltaics are due to large increases in capacity in the final months of both 2010 and 2011, which were not contributing to generation during the year. An unchanged configuration calculation is not currently available for this technology. The conversion of Tilbury B's previously coal-fired power station to dedicated biomass in December 2011 had a significant impact on reducing the traditional basis bioenergy load factor.

Table 2: Load factors for various renewable technologies

Technology	Traditional basis			Unchanged configuration basis		
	2009	2010	2011	2009	2010	2011
Onshore wind	27.4%	21.7%	27.3%	26.5%	21.6%	27.2%
Offshore wind	26.0%	30.4%	36.8%	32.1%	29.5%	35.0%
Solar photovoltaics	9.3%	7.3%	5.5%	n/a	n/a	n/a
Hydro	36.7%	25.4%	39.1%	38.2%	26.4%	41.7%
Bioenergy (excluding co-firing and non-biodegradable wastes)	54.9%	53.5%	43.1%	60.4%	59.8%	61.0%

The load factors reported above were partly calculated using data on ROCs produced by Ofgem. Ofgem reconcile their data on a financial year basis; at the time that this article was written the ROC data for 2011 was still provisional. In particular this can have an impact on the schemes included in the unchanged configuration definition as new data could include or remove particular schemes. This should be kept in mind if users subsequently reanalyse these results.

Heat production

Around 14 per cent of renewable sources were used to generate heat during 2011. The four categories of renewable heat production in the United Kingdom are the direct combustion of various forms of bioenergy (88 per cent of the total), active solar heating, geothermal aquifers, and heat pumps. Together they produced energy equivalent to 1,220 thousand tonnes of oil equivalent in 2011, a 5 per cent increase during the year. Renewable heat sources accounted for around 2.2 per cent of total heat demand in 2011.

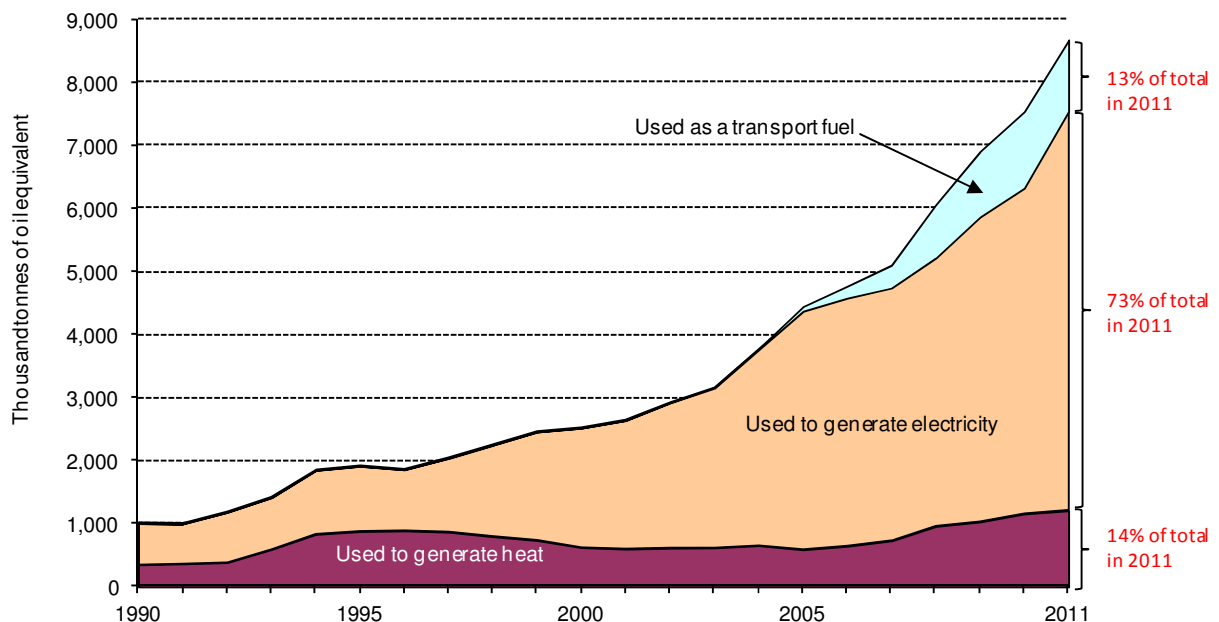
Renewables used to generate heat have shown some growth in recent years, following a decline that started more than 10 years ago as a result of tighter emission controls which discouraged on-site burning of biomass, especially wood waste. Further significant growth in this area is

anticipated, especially in the industrial and domestic wood use sectors, together with additional heat pumps, as a result of the Renewable Heat Incentive and Renewable Heat Premium Payment schemes; however they only had a minor impact during 2011. Domestic use of wood is the main contributor to renewables used for heat – comprising around 35 per cent of the renewable heat total. Non-domestic use of wood and wood waste, and plant biomass formed the next largest components, at around 23 per cent and 20 per cent respectively.

Liquid biofuels for transport

Liquid biofuels for transport comprised around 13 per cent of total renewable sources. Two road transport fuels, biodiesel and bioethanol, are sold blended with diesel and petrol. Figures from HM Revenue and Customs based on road fuel taxation statistics show that 925 million litres of biodiesel and 652 million litres of bioethanol were consumed in 2011; biodiesel consumption was 12 per cent lower than in 2010, whilst bioethanol consumption was 3 per cent higher. Biodiesel has a higher energy content than bioethanol meaning that the combined total energy content of these fuels equates to 1,128 ktoe. During 2011 biodiesel accounted for 3.6 per cent of diesel, and bioethanol 3.3 per cent of motor spirit; the combined contribution of biodiesel and bioethanol was 3.5 per cent by volume, 0.1 percentage points lower than in 2010.

Chart 3: Trends in the use of renewable energy for heat, electricity, and transport



All renewable fuels

When renewables used for transport and heat are combined with the use of renewable sources for electricity generation, renewable sources accounted for 4.1 per cent of the United Kingdom's total primary energy requirements in 2011, up from 3.3 per cent in 2010. Use of non-biodegradable wastes accounted for an additional 0.3 per cent of primary energy. The trends in the use of renewable energy for transport, heat and electricity are shown in Chart 3; data are shown in table 5 at the end of the article disaggregating the totals by various technologies.

On the basis proposed by Eurostat for measuring progress towards the 2009 Renewable Energy Directive, provisionally in the UK during 2011, 3.8 per cent of final energy consumption was from renewable sources. This is an increase from the revised 2010 figure of 3.2 per cent, and 3.0 per cent in 2009. The Eurostat methodology, as mentioned earlier in this article, measures energy based on a net calorific value basis, as opposed to a gross basis that is generally used in presenting data in Energy Trends and the Digest of UK Energy Statistics. The methodology also

includes a cap on energy required for aviation use and normalisation for wind and hydro electricity. In addition to the headline figure, the Directive monitors three constituent parts separately, and these are shown in Table 3. It should be noted that the overall figure is not a simple calculation based around the three constituent parts. The finalised 2011 figures for all member states will be published by Eurostat during 2013.

Table 3: Progress against the 2009 Renewable Energy Directive

	2005	2006	2007	2008	2009	2010	2011
Percentage of electricity from renewable sources (normalised)	4.1	4.5	4.8	5.4	6.6	7.4	8.7
Percentage of heating and cooling from renewable sources	0.9	1.0	1.1	1.4	1.7	1.7	2.2
Percentage of transport energy from renewable sources	0.3	0.5	0.9	2.1	2.6	3.0	2.9
Overall renewable consumption as a percentage of capped gross final energy consumption using net calorific values (normalised)	1.4	1.6	1.8	2.4	3.0	3.2	3.8

UK renewables policy

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

- Putting in place appropriate financial incentives to bring forward and support the take-up of renewable energy, including the “banded” Renewables Obligation (RO), Feed-in Tariffs (FiTs) for small scale (under 5 MW) electricity generation, the launch of the Renewable Heat Incentive (RHI) tariff scheme (for industry, commercial premises and the public sector) in November 2011, and the Renewable Heat Premium Payment Scheme (for households);
- Identifying and removing the most significant non-financial barriers to renewables deployment, including measures to improve existing grid connection arrangements; and
- Overcoming supply chain blockages and promoting business opportunities in the renewables sector in the UK.

The Renewables Obligation (RO)

The Renewables Obligation¹ is an obligation on electricity suppliers to source a specific and annually increasing proportion of electricity from eligible renewable sources or pay a penalty; this is intended to incentivise an increase in the level of renewable generating capacity and so contribute to our climate change targets.

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

When the Obligation was first introduced, 1 ROC was awarded for each MWh of renewable electricity generated. In 2009, ‘banding’ was introduced into the RO, meaning different technologies now receive different numbers of ROCs depending on their costs, relative market maturity, and potential for large scale deployment. A list of technologies eligible for the RO, and

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

the level of ROCs received, is available at:

www.decc.gov.uk/en/content/cms/meeting_energy/renewable_ener/renew_obs/ro_support/ro_support.aspx

Feed-in Tariffs (FiTs)

Feed-in tariffs are a financial support scheme for eligible low-carbon electricity technologies, aimed at small-scale installations with a capacity of less than 5 Megawatts (MW). FiTs support new anaerobic digestion (AD), solar photovoltaic, small hydro and wind, by requiring electricity suppliers to make payments (generation tariffs) to these generators based on the number of kilowatt hours (kWh) they generate. An additional guaranteed export tariff of 3.2p per kWh is paid for electricity generated that is not used on site and exported to the grid. The scheme also supports micro combined heat and power installations with an electrical capacity of 2kW or less, as a pilot programme.

A comprehensive review of the FiTs scheme was launched in February 2012 and had two parts, the first considered support for solar PV and the second other technologies and administrative issues. On 24 May 2012 DECC announced new tariffs for solar PV, to come into effect from 1 August 2012, with further announcements due later in the year relating to other technologies. Any changes implemented as a result of the review will only affect new entrants to the scheme and there is no intention to retrospectively adjust support levels. Policy information and statistical reports relating to FiTs can be found at:

www.decc.gov.uk/en/content/cms/meeting_energy/renewable_ener/feedin_tariff/feedin_tariff.aspx and www.decc.gov.uk/en/content/cms/statistics/energy_stats/source/fits/fits.aspx respectively.

Renewable Heat Incentive (RHI) and Renewable Heat Premium Payment (RHPP)

On 28 November 2011, the Renewable Heat Incentive opened for applications. The scheme provides tariffs for commercial, industrial and community renewable heating installations. For renewable heating in households the Renewable Heat Premium Payment was launched in August 2011 and extended in April 2012 to run until the end of the 2012/13 financial year. Details of the technologies supported by these schemes can be found at:

www.decc.gov.uk/en/content/cms/meeting_energy/Renewable_ener/incentive/incentive.aspx

Renewable Transport Fuel Obligation (RTFO)

The Renewable Transport Fuel Obligation introduced in April 2008, placed a legal requirement on transport fuel suppliers (who supply more than 450,000 litres of fossil fuel per annum to the UK market) to ensure that 5 per cent (by volume) of their overall fuel sales are from a renewable source by 2013/14, with incremental levels starting from of 2.5 per cent (by volume) for 2008/09.

Regional statistics

A further renewable statistics article will be produced in the September 2012 edition of Energy Trends, containing a regional breakdown of the renewable electricity generation and capacity statistics. The data will also be available on the RESTATS website at:

<https://restats.decc.gov.uk/cms/regional-renewable-statistics/>

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Table 4: Capacity of, and electricity generated from, renewable sources

	2009	2010	2011
Installed Capacity (MWe)			
Wind:			
Onshore	3,483.2	4,036.7	4,650.4
Offshore	941.2	1,341.2	1,838.0
Shoreline wave / tidal	2.5	2.6	3.1
Solar photovoltaics	26.5	76.9	975.8
Hydro:			
Small scale	178.6	187.7	204.7
Large scale (1)	1,458.5	1,452.9	1,470.9
Bioenergy:			
Landfill gas	984.9	1,024.6	1,066.7
Sewage sludge digestion	156.9	185.7	197.5
Municipal solid waste combustion (2)	417.6	461.0	577.4
Animal Biomass (non-AD)(3)	110.5	110.5	110.5
Anaerobic digestion	8.8	28.1	55.2
Plant Biomass (4)	299.8	330.2	1,159.5
Total bioenergy and wastes	1,978.6	2,140.0	3,166.8
Total	8,069.1	9,238.0	12,309.7
Co-firing (5)	207.7	266.2	338.2
Generation (GWh)			
Wind:			
Onshore (6)	7,564	7,137	10,372
Offshore	1,740	3,044	5,126
Shoreline wave / tidal (7)	1	2	1
Solar photovoltaics	20	33	252
Hydro:			
Small scale (6)	577	497	697
Large scale (1)	4,664	3,147	4,989
Bioenergy:			
Landfill gas	4,952	5,014	4,979
Sewage sludge digestion	598	698	755
Biodegradable municipal solid waste combustion (8)	1,509	1,597	1,739
Co-firing with fossil fuels	1,625	2,332	2,964
Animal Biomass (3)	637	627	614
Anaerobic digestion	30	92	239
Plant Biomass (4)	1,343	1,624	1,683
Total bioenergy	10,694	11,986	12,973
Total generation	25,259	25,845	34,410
Non-biodegradable wastes (9)	873	924	1,005
Total generation from sources eligible for the Renewable Obligation (10)	21,102	22,465	29,804

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

(2) Includes waste tyres and hospital waste.

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

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

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

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

(7) Includes electricity from the EMEC test facility.

(8) Biodegradable part only.

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

(10) See pages 56 and 57 for definition and coverage.

Table 5: Renewable sources used to generate electricity and heat, and for transport fuels ^{(1) (2)}

	Thousand tonnes of oil equivalent		
	2009	2010	2011
Used to generate electricity ⁽³⁾			
Wind:			
Onshore	650.4	613.7	891.8
Offshore	149.6	261.7	440.7
Shoreline wave / tidal ⁽⁴⁾	0.1	0.2	0.1
Solar photovoltaics	1.7	2.9	21.6
Hydro:			
Small scale	49.6	42.7	60.0
Large scale ⁽⁵⁾	401.0	270.6	429.0
Bioenergy:			
Landfill gas	1,624.2	1,644.5	1,633.1
Sewage sludge digestion	196.1	228.8	247.6
Biodegradable municipal solid waste combustion	624.5	659.0	717.3
Co-firing with fossil fuels	533.0	765.0	972.0
Animal Biomass ⁽⁶⁾	222.2	229.0	215.3
Anaerobic digestion	9.7	30.3	78.5
Plant Biomass ⁽⁷⁾	367.3	412.3	620.3
Total bioenergy	3,576.9	3,968.8	4,484.1
Total	4,829.3	5,160.5	6,327.4
Non-biodegradable wastes ⁽⁸⁾	368.6	388.4	422.0
Used to generate heat			
Active solar heating	69.5	87.0	109.3
Bioenergy:			
Landfill gas	13.6	13.6	13.6
Sewage sludge digestion	51.0	57.8	66.1
Wood combustion - domestic	375.2	391.8	425.0
Wood combustion - industrial	223.4	255.7	280.6
Animal Biomass ⁽⁹⁾	38.3	40.3	-
Anaerobic digestion	2.0	4.8	9.8
Plant Biomass ⁽¹⁰⁾	223.8	266.4	249.1
Biodegradable municipal solid waste combustion ⁽⁶⁾	31.3	25.6	32.7
Total bioenergy	958.5	1,055.9	1,076.8
Geothermal aquifers	0.8	0.8	0.8
Heat Pumps	10.9	21.2	32.5
Total	1,039.7	1,165.0	1,219.5
Non-biodegradable wastes ⁽⁸⁾	140.4	131.5	204.0
Renewable sources used as transport fuels			
as Bioethanol	180.4	355.4	367.5
as Biodiesel	858.1	859.0	760.0
Total	1,038.5	1,214.4	1,127.5
Total use of renewable sources and wastes			
Solar heating and photovoltaics	71.2	89.8	131.0
Onshore wind	650.4	613.7	891.8
Offshore wind	149.6	261.7	440.7
Shoreline wave / tidal	0.1	0.2	0.1
Hydro	450.6	313.3	489.0
Bioenergy	4,535.4	5,024.8	5,561.0
Geothermal aquifers	0.8	0.8	0.8
Heat Pumps	10.9	21.2	32.5
Transport biofuels	1,038.5	1,214.4	1,127.5
Total	6,907.5	7,539.9	8,674.4
Non-biodegradable wastes ⁽⁸⁾	509.0	520.0	626.0
All renewables and wastes	7,416.4	8,059.9	9,300.4

(1) Includes some waste of fossil fuel origin.

(2) See the Digest of UK Energy Statistics for technical notes and definitions of the categories used in this table.

(3) For wind, solar PV and hydro, the figures represent the energy content of the electricity supplied but for bioenergy the figures represent the energy content of the fuel used.

(4) Includes the EMEC test facility.

(5) Excluding pumped storage stations.

(6) Includes electricity from poultry litter combustion and meat & bone combustion.

(7) Includes electricity from straw and energy crops.

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

(9) Includes heat from farm waste digestion, and meat and bone combustion.

(10) Includes heat from straw, energy crops, paper and packaging.

Fuel Poverty levels in England, 2010

Introduction

This article summarises the 2010 Fuel Poverty Statistics, published on 17 May 2012. The full annual report and data can be found at:

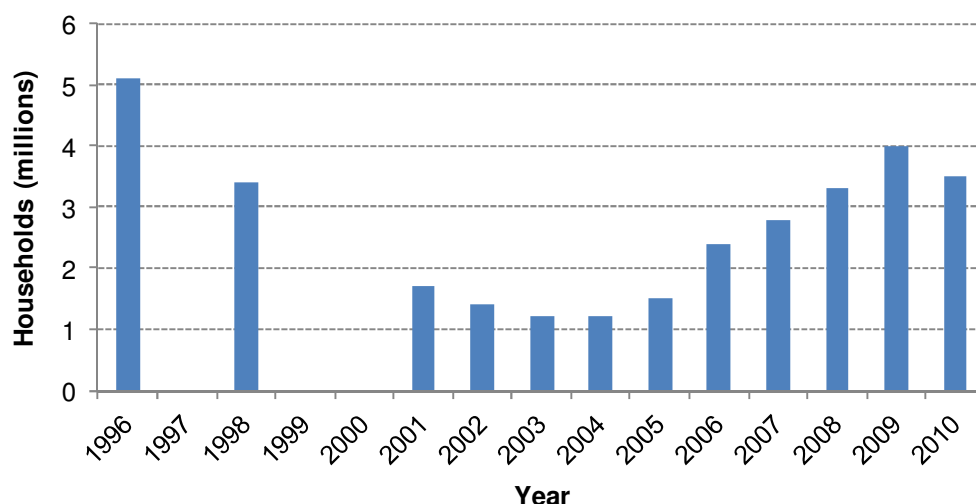
www.decc.gov.uk/en/content/cms/statistics/fuelpov_stats/fuelpov_stats.aspx

The headline findings from these statistics are shown below, along with a snapshot of fuel poverty in 2010 under the measure suggested by the Hills Review of Fuel Poverty.

Headline figures

Chart 1 shows that the number of households living in fuel poverty in England fell from 4.0 million in 2009 to around 3.5 million in 2010 (around 16.4% of households).

Chart 1 – Fuel poverty in England, 1996 to 2010



Note: Figures not calculated for 1997, 1999 and 2000.

Interpreting the change in fuel poverty

This reduction in fuel poverty seen between 2009 and 2010 is due to a combination of rising incomes, improvements in the energy efficiency of the housing stock (including installation of new energy efficient boilers), and relatively little change in prices between 2009 and 2010. This can be seen in table 1 below, which shows the relative effects of these three factors on fuel poverty levels. These have been calculated by holding two of the factors constant, whilst changing a third. For example, by applying 2010 prices to 2009 data, we can hold income and energy efficiency constant at 2009 levels, and determine the effects of price changes between the two years. Whilst this method is not perfect, it gives us a useful indication of the drivers of change.

Table 1 – Fuel poverty change, 2009 to 2010

	Fuel poor	Change in % fuel poor (percentage points)	Change in fuel poverty (households)
2009	4.0m	18.4	-
Prices		+ 0.7	+ 0.15m
Social tariffs		- 0.3	- 0.06m
Income		- 1.5	- 0.33m
Energy consumption		- 0.9	- 0.19m
2010	3.5m	16.4	-0.43m

Special feature – Fuel Poverty levels in England, 2010

As table 1 shows, income increases had the largest effect, taking approximately 330,000 households out of fuel poverty between 2009 and 2010. Energy efficiency improvements (measured by changes in modelled energy consumption) and price increases then almost cancelled each other out, while social tariffs took approximately 60,000 people out of fuel poverty.

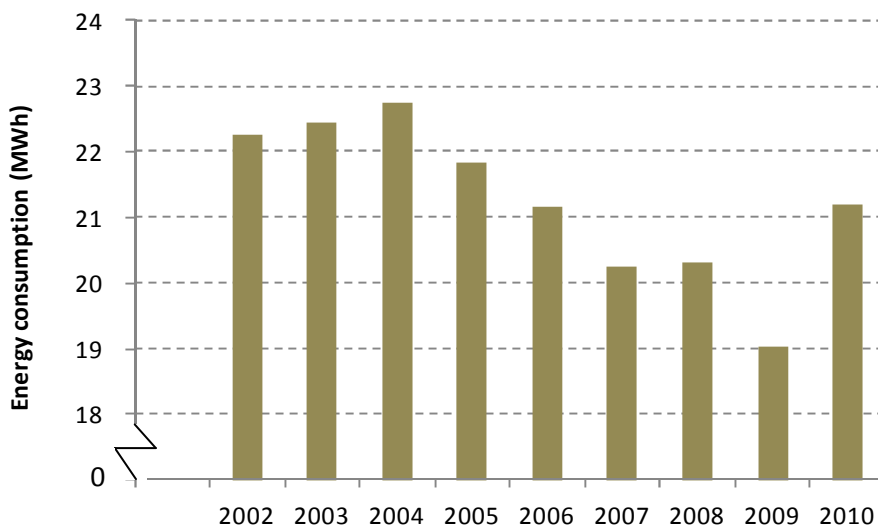
It is also important to consider the fuel poverty numbers alongside energy consumption data for the same year. 2010 was a cold year, especially during the early and late months, and this led to an increase in the number of degree days¹ (chart 2) and therefore demand for space heating grew, leading to a rise in domestic energy consumption (chart 3).

Chart 2 – Total annual degree days UK, 2002 to 2011



Source: *Energy Trends*, table 7.1

Chart 3 – Total annual energy consumption per household, 2002 to 2010



Source: *Energy Consumption in the UK*, Table 3.4

¹ Heating degree days (HDD) are defined relative to a base temperature - the outside temperature above which a building needs no heating. The chart uses 15.5° Celsius. If the average outside air temperature on a day is above this base temperature, no heat is required; if it is below, then the heating requirement that day will be equal to the temperature deficit in degrees. For example, a day with an average temperature of 10°, would score a HDD as 5.5. The HDDs are summed across the year and displayed in the chart.

However, the notional bill used in estimating fuel poverty is modelled based on achieving an adequate standard of warmth of 21 degrees Celsius in the main living area, and 18 degrees in other occupied rooms. In addition, although the fuel poverty modelling of heating requirements varies according to regional differences in climate, it does not reflect periods of annual temperature variations from long-term averages (either cold snaps during the winter that might require additional spells of heating, such as those in chart 2, or mild spells that might reduce the amount of heating required) in any one year that would cause the duration or extent of the heating season to change significantly. Therefore, it is assumed that the same amount of energy will be required to heat an identical dwelling and household in the same location in consecutive years.

So while actual domestic gas consumption rose by 17 per cent between 2009 and 2010 (largely reflecting an increased demand due to the cold weather, partially offset by improvements in the energy efficiency of homes) modelled consumption used in the fuel poverty data actually fell by around 5 per cent (mainly reflecting improvements in the energy efficiency of homes).

Measuring Fuel Poverty using the measure proposed by the Hills Review

In March 2012 the Hills Review of fuel poverty published its final report:

www.decc.gov.uk/en/content/cms/funding/Fuel_poverty/Hills_Review/Hills_Review.aspx

The review set out an alternative way of measuring fuel poverty, focusing on both the extent and depth of fuel poverty in England. It therefore consisted of two parts:

1. The **number** of households that had both low incomes and high fuel costs (both relative to contemporary levels).
2. The **depth** of ‘fuel poverty’ amongst these households – measured in terms of a fuel poverty gap, which represents the difference between the modelled fuel bill for each household, and the reasonable costs threshold for the household.. This is summed for all households that have both low income and high costs to give an aggregate fuel poverty gap.

Comparing Fuel Poverty in 2010 to the Hills Review Low Income-High Costs Measure

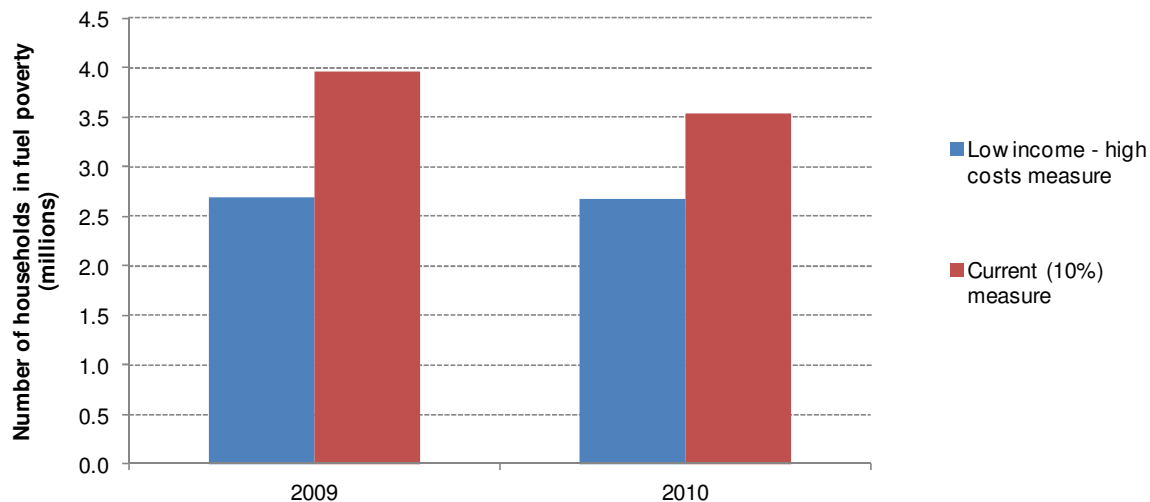
Table 2 shows that in 2010, under the low income–high costs measure 0.8 million fewer households were fuel poor compared with the current 10 per cent measure. This difference is consistent with recent years.

Table 2 – Number and percentage of households in fuel poverty under the low income-high costs measure and the current measure, 2010

	Number of households in fuel poverty (millions)	Percentage of households in fuel poverty
Low income-high costs measure	2.7	12%
Current (10%) measure	3.5	16%

It is interesting to consider how the two measures have changed since 2009. The current measure showed a marked drop in the number of fuel poor households between 2009 and 2010, from 4.0 million to 3.5 million. By contrast, under the low income-high costs measure the number of fuel poor households remained unchanged, at 2.7 million. This can be seen in chart 4.

Chart 4 – Number of households in fuel poverty under the low income-high costs measure and the current measure, 2009 and 2010



The two measures differ largely because of the different effects of income changes on them. For the current measure (which is an absolute measure), any rise in incomes is likely to reduce the extent of fuel poverty. However, under the low income high costs measure, the key factor is how the incomes of households with low incomes and high costs change, relative to other households. Table 3 shows that incomes rose for all quadrants of the matrix between 2009 and 2010. However, median incomes for households with low income and high costs rose by less than the overall median (£362 compared with £432), meaning that relative to all households, these households fared slightly less well.

Equally important is the depth of fuel poverty amongst households with both low incomes and high costs, as measured by the fuel poverty gap. In 2010, this fuel poverty gap was £1.1 billion, with an average of £415 for each fuel poor household. These figures were similar to 2009. This lack of change can be explained mainly by changes in modelled bills. Between 2009 and 2010, median bills fell slightly for households with low income and high costs. However, again the key factor is how the bills changed for households with low incomes and high costs, relative to all households. In this case, the fall was similar to that seen by all households, as seen in table 3. Therefore the average fuel poverty gap for households with low incomes and high costs did not change much between the two years.

Table 3 – Changes in incomes and fuel bills in each quadrant of the low income high costs matrix, 2009 to 2010

		Low income	High income		
Low costs	Income	+£535	+£253	Change in income from 2009 to 2010 (average +£432)	
	Bill	-£11	-£3		
High costs	Income	+£290	+£1,380		Change in bill from 2009 to 2010 (average -£11)
	Bill	+£4	+£25		

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Estimates of domestic dual fuel energy bills in 2011

Introduction

Between 2010 and 2011, headline average domestic energy bills increased by £36 and £61 for electricity and gas bills respectively¹. These increases have been mainly due to increases in wholesale gas prices. However, there are other factors which influence household energy bills, including annual consumption, payment type and tariff type. Specifically, the type of tariff which a household is on will determine the discounts they receive. There are two main types of discounts that are commonly offered to customers: a dual fuel discount and/or an online discount. This article analyses the effect on average annual bills of dual fuel discounts, and online savings in respect of dual fuels.

Background

The data used for this analysis are taken from the Domestic Fuel Inquiry (DFI), which is also used to produce the domestic energy statistics published in Quarterly Energy Prices (QEP). The statistics produced from the data set include average annual domestic energy bills for gas, standard electricity and Economy 7 electricity, and customer number tables, by region and payment type. To estimate average annual bills, fixed consumption levels of 18,000 kWh for gas and 3,300 kWh for standard electricity are used. For Economy 7 electricity, 3,000 kWh of daytime consumption and 3,600 kWh of night consumption are assumed. Further details on these consumption assumptions can be found in the domestic prices methodology note:

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

Economy 7 electricity tariffs have a separate unit cost for night consumption and daytime consumption, and are designed for use with night storage heaters. By contrast, standard electricity tariffs have no distinction in price between night and day. Throughout the analysis presented in this article, electricity data refers to standard electricity only, as Economy 7 customers do not usually consume gas. The methodology used to produce the analysis below are detailed in Annex A.

Key findings

In Great Britain:

- In 2011, on average, customers on a dual fuel deal saved between £16 to £54 compared to a customer not on a dual fuel deal.
- In 2011, on average, a customer on a dual fuel and online deal saved £91 and £98 for standard credit and direct debit payment types respectively, compared to a customer on a non dual fuel deal.
- Between 2010 and 2011 annual dual fuel savings have fallen across all payment methods.

Proportion of customers on a dual fuel tariff

In 2011, there were approximately 11.9 million dual fuel customers, which represents about 55 per cent of all gas customers and 54 per cent of all standard electricity customers in Great Britain.

The proportion of gas and standard electricity customers on a dual fuel deal, split by payment method for the last three years, are provided in tables 1 and 2. Whilst well over half of all direct debit customers are dual fuel customers, this figure is much lower for standard credit customers, with only 43 per cent of customers receiving dual fuel discounts.

¹ Estimates taken from Quarterly Energy Prices (QEP), which is available at: www.decc.gov.uk/en/content/cms/statistics/publications/prices/prices.aspx

Table 1: Proportion of gas customers on a dual fuel deal, by payment method, Great Britain, 2009-2011

	Standard Credit	Direct Debit	Pre-payment	Total
2009	37%	63%	47%	51%
2010	39%	60%	51%	52%
2011	43%	62%	51%	55%

Table 2: Proportion of standard electricity customers on a dual fuel deal, by payment method, Great Britain, 2009-2011

	Standard Credit	Direct Debit	Pre-payment	Total
2009	37%	64%	41%	51%
2010	39%	60%	43%	51%
2011	43%	62%	46%	54%

The proportion of dual fuel customers would be expected to be broadly the same for both gas and electricity. For standard credit and direct debit customers, this is the case, but for pre-payment meter customers they differ slightly. This is likely to be because of the smaller number of dual fuel pre-payment tariffs available, which means that any difficulties in identifying whether tariffs are dual fuel or not have more of an impact on the numbers presented above than for the other payment types.

Average dual fuel and non dual fuel bills

The table below shows estimates for dual fuel and non dual fuel energy bills for the last two years. As mentioned previously, the tariff data available prior to 2010 was not detailed enough to enable dual fuel bills to be estimated.

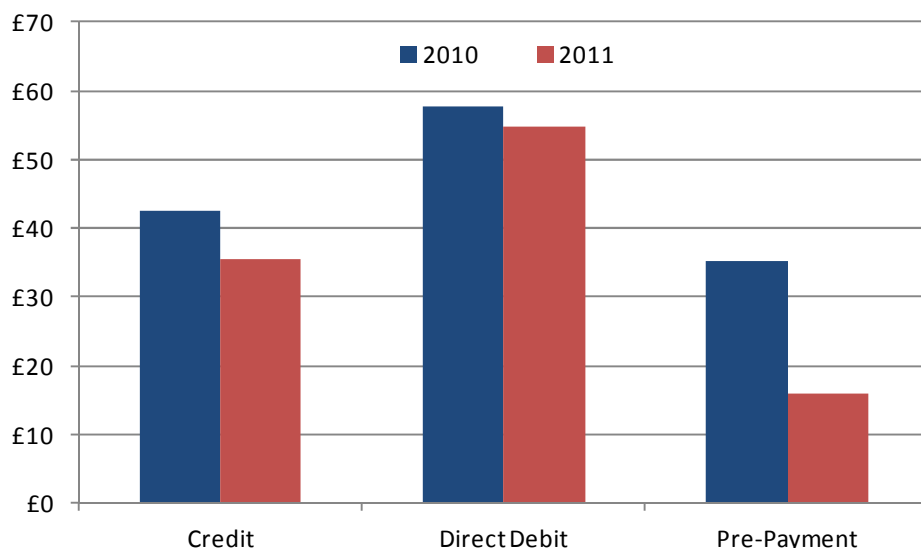
Table 3: Average dual fuel and non dual fuel annual energy bills, by payment method, 2010-2011 (pounds)

	Standard Credit		Direct Debit		Pre-payment	
	DF Bill	Non DF Bill	DF Bill	Non DF Bill	DF Bill	Non DF Bill
2010	1,095	1,138	1,013	1,071	1,099	1,135
2011	1,205	1,241	1,118	1,172	1,219	1,235

In 2011, an average customer on a dual fuel tariff saved £36, £54 and £16 on their energy bills compared to a customer on a non dual fuel tariff for standard credit, direct debit and pre-payment payment methods respectively. The corresponding savings for 2010 were £43, £58 and £36. One possible reason for the fall in dual fuel savings is due to rising energy prices in 2011, but relatively static dual fuel discounts.

Between 2010 and 2011, an average dual fuel bill has increased by £110, £105 and £120 for standard credit, direct debit and pre-payment customers respectively. This compares with slightly smaller increases for non dual fuel customers, of £103, £101 and £100 respectively.

Chart 1 compares the average dual fuel savings for customers between 2010 and 2011 for customers paying for their energy by standard credit, direct debit and pre-payment. Average savings for all payment methods have decreased in 2011 compared to 2010, with the largest fall in savings for pre-payment customers, which decreased by £19.

Chart 1: Average dual fuel savings for 2010 and 2011, by payment method

Users should note that currently only three companies from the big six offer a dual fuel discount to all of their pre-payment customers. Therefore, the dual fuel bills represented here are based on a smaller sample of companies, and the findings seen may reflect this.

Regional analysis

Table 4: Average dual fuel and non dual fuel annual energy bills by region, 2011 (pounds)

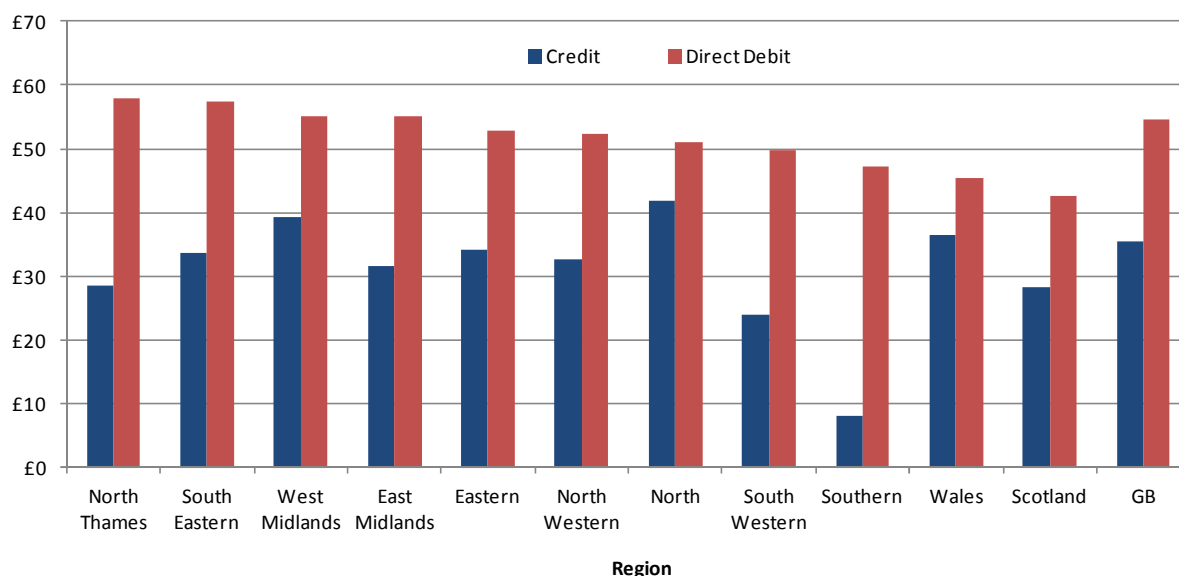
	Standard Credit		Direct Debit		Pre-payment	
	DF Bill	Non DF Bill	DF Bill	Non DF Bill	DF Bill	Non DF Bill
East Midlands	1,190	1,221	1,100	1,155	1,210	1,216
Eastern	1,195	1,229	1,111	1,164	1,209	1,220
North	1,191	1,233	1,105	1,156	1,208	1,216
London	1,210	1,239	1,119	1,177	1,222	1,234
North West	1,208	1,241	1,115	1,167	1,221	1,235
Scotland	1,217	1,246	1,124	1,167	1,224	1,228
South East	1,195	1,229	1,109	1,167	1,193	1,222
South West	1,222	1,245	1,134	1,184	1,227	1,240
Southern	1,225	1,233	1,130	1,177	1,234	1,230
Wales	1,219	1,256	1,137	1,182	1,234	1,237
West Midlands	1,208	1,248	1,119	1,174	1,227	1,238
Great Britain	1,205	1,241	1,118	1,172	1,219	1,235

The regions with the highest average dual fuel bill was Southern for standard credit customers and Wales for direct debit customers. These two regions also had the highest bills for those paying by pre-payment meter. The lowest average dual fuel bills were seen in the East Midlands for both standard credit and direct debit payment customers, and the South East for pre-payment meter customers. However, regional differences are relatively small compared to the difference between payment types.

Differences between dual fuel and non dual fuel bills

Average dual fuel savings were calculated as the difference between the average dual fuel bill and the average non dual fuel bill for a given region and payment type. Pre-payment savings were not included in chart 2, due to the coverage issues mentioned previously.

Chart 2: Average dual fuel savings in 2011, by region



Average Online Bills

Currently 11 per cent of all gas and standard electricity customers pay for their energy online, of which approximately 85 per cent of gas and 76 per cent of standard electricity customers also benefit from a dual fuel discount.

The below table compares the average bill for a customer who is on a dual fuel tariff and who pays their energy bills online with the average bill for a customer who is not on a dual fuel tariff and does not pay for their energy online. Pre-payment customers have not been analysed, because the option to pay bills online is not widely available for pre-payment customers.

Table 5: Average online dual fuel and non dual fuel annual energy bills

	Standard Credit		Direct Debit	
	Dual Fuel & Online Bill	Non Dual Fuel Bill	Dual Fuel & Online Bill	Non Dual Fuel Bill
2010	1,032	1,138	955	1,071
2011	1,150	1,241	1,074	1,172

In 2011, on average customers who were on a online dual fuel tariff saved £91 and £98 for standard credit and direct debit respectively compared to £106 and £116 for 2010.

Users should be aware that the differentials estimated above may contain other discounts and therefore the actual savings may be exaggerated. Unfortunately, it was not possible to control for these other discounts during this analysis.

User feedback

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

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Dual fuel bill methodology

Annex A

For the purposes of this analysis, two types of tariffs were identified: dual fuel and non dual fuel. Dual fuel bills were identified using the tariff name as given by energy suppliers in the Domestic Fuel Inquiry (DFI). Those tariffs with the word 'dual fuel' (or some similar variant) in their name were given a marker. Gas and electricity bills for each tariff were calculated using the same methodology as the average bill estimates in QEP. For further information on this methodology, please refer to the domestic prices methodology note at:

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

Combined dual fuel bills were calculated for 2010 and 2011, while customer number information was calculated for 2009, 2010 and 2011. Tariff name information in earlier years was insufficient to distinguish dual fuel bills from non dual fuel bills.

In order to calculate the average non dual fuel bill, the average gas and average electricity bill were estimated separately using only those tariffs (across all companies) that were not marked with the dual fuel identifier. The combined fuel bill was then calculated by adding the average gas bill and the average electricity bill together.

Similarly, to calculate the average dual fuel bill, the average gas and electricity bill were estimated separately using only those tariffs that were marked with the dual fuel identifier. This was made difficult in some cases by the fact that different companies apply the dual fuel discount to different fuels. For example, one company may give dual fuel customers the discount only on their gas bill, whilst another may give the discount on both fuels. Where we were unable to identify whether particular tariffs were dual fuel or not, it has been assumed that there are an equal number of dual fuel customers for both gas and electricity (for each company), and that for the fuel type that the customers do not get a discount on, the average bill of these customers will be equal to the average bill for non dual fuel customers of that company.

Once these combined fuel bills had been created for each company, a weighted average dual fuel bill was calculated across all companies. These weights were created by dividing the number of dual fuel customers from a particular company by the total number of dual fuel customers, given the region and payment type.

For the purpose of this analysis, the following definition of a dual fuel tariff has been used:

An energy deal such that both electricity and gas are supplied by a single company, and a discount is given to the consumer as a result of this.

Companies who supply a customer with both gas and electricity, but do not offer a discount for this, have been treated as non dual fuel for the purposes of this analysis.

Online bill methodology

For the purpose of this analysis the following definition of online customers was used:

An energy deal where the customer manages their account and payment details online instead of receiving a paper bill through the post.

Through a combination of internet research, definitions supplied by companies and internal consultation, a set of indicators have been developed to separate out the online tariffs. These enabled the relative bills and proportions of customers on online tariffs to be estimated.

In the case of both dual fuel and online tariffs, a number of assumptions have been applied in order to undertake the analysis, and revisions to figures may occur if necessary.

Special feature – Domestic dual fuel energy bills

Regional analysis

Combined gas and electricity bills were also created at a regional level. In the United Kingdom, gas supply regions are split into 13 Local Distribution Zones (LDZ), whereas electricity supply regions are split into 15 Public Electricity Supply (PES) zones. These are the regions that energy companies supply DECC with tariff information for in the DFI survey. Unfortunately LDZ and PES regions do not match exactly. Therefore to carry out this regional analysis, some regions had to be combined. The combinations used were created using information from DFI data and geographical sources, and are shown in grey in the table below. Users should note that these region combinations are not exact:

DF bill region	LDZ (Gas) Region	PES (Electricity) region
East Midlands	East Midlands	East Midlands
Eastern	Eastern	Eastern
London	North Thames	London
North	Northern + North Eastern	North East (Northern) + Yorkshire
North West	North Western	North West (Norweb)
Scotland	Scotland	Northern Scotland (Scottish Hydro) + Southern Scotland (Scottish Power)
South East	South Eastern	South East (Seeboard)
South West	South Western	South West (SWEB)
Southern	Southern	Southern
Wales	Wales North + Wales South	South Wales (Swalec) + Merseyside and North Wales (Manweb)
West Midlands	West Midlands	West Midlands (Midlands)

Map 1: LDZ (Gas) Regions:



Source: XO Serve²

Map 2: PES (Electricity) Regions:



Source: Energylinx³

Northern Ireland was not included as dual fuel deals are not yet widely available

² Available at www.xoserve.com/network_map.asp

³ Available at: www.energylinx.co.uk/electricity_distribution_map.htm

Industrial energy prices

Introduction

In June 2012, final estimates of industrial energy prices in 2011 are published in Section 3 of DECC's *Quarterly Energy Prices* publication.

This article provides background to industrial energy prices and analysis of price movements both within the last year and over the past few years. It also contains details of the different industrial price tables published in *Quarterly Energy Prices* and explanations of their strengths and weaknesses, which may help users to determine which table (or tables) is best suited for their particular needs (please see summary at end of article).

Background

UK energy prices are influenced by a number of factors, both local and global. Prices of primary fuels (gas, coal, oil) will obviously affect the price of secondary fuels (electricity, road fuels), but can also themselves be affected by the price of the other primary fuels. In particular, coal and gas can act as substitutes in electricity generation.

The price of crude oil is the main driver of energy prices. The cost of petroleum products will clearly reflect the price of oil; however, gas prices have also historically been linked to oil, and as initially oil and then gas have formed a major input to electricity generation, the price of electricity has in the past also been driven by oil prices.

In a competitive energy market, prices tend to vary by consumption, reflecting the bargaining position of larger users and factors such as length of contracts and the relative impact of crude prices on fuel prices. Larger consumers can negotiate lower prices, but may be more dependent on wholesale spot prices, and therefore more vulnerable to price spikes, whereas smaller consumers tend to be on more stable contracts with generally higher unit prices.

Wholesale prices post-2000

Oil prices

The price of crude oil has been on an upward trend since the early years of this century. The start of the Iraq War in 2003, hurricane damage to US refineries in 2005, conflict in Lebanon in 2006, and increased demand from emerging economies, geopolitical tensions, and the weak dollar in 2008 all led to price increases. Crude oil prices peaked in real terms in 2008, reaching over \$140 per barrel in cash terms in July (10 per cent higher than the real terms peaks reached in the late 1970's), before dropping sharply into December 2008 as the world economy slowed. Prices increased from January 2009 on, with prices in 2011 staying above \$100/barrel. In the first quarter of 2012, prices were in the range of \$120 - \$125/barrel, due to concerns over potential Iranian supply disruption, but in April the crisis in the Eurozone caused prices to fall. By early June, prices had fallen below \$100/barrel on several days.

Gas prices

Since 2000, UK Continental Shelf gas production has been declining. In 2004, the UK became a net importer of gas for the first time since 1996. The UK imports gas from Europe via pipelines, and from further afield via tankers of Liquid Natural Gas (LNG), and so gas prices in the UK are affected by both local and global price effects. Gas prices in Europe are commonly linked to oil prices, so oil price fluctuations can have significant impacts on European gas prices which feed through to UK wholesale gas prices, and hence to prices paid by UK industry.

Electricity and coal prices

Electricity prices in the UK are strongly linked to gas prices as gas has been a significant generation fuel since the 1990's and has been the majority generation fuel since 2008. Coal is also an important generation fuel, and coal prices are indirectly affected by oil prices, though less so than gas, as the cost of oil impacts on the cost of coal production and transport. Since 2000, coal

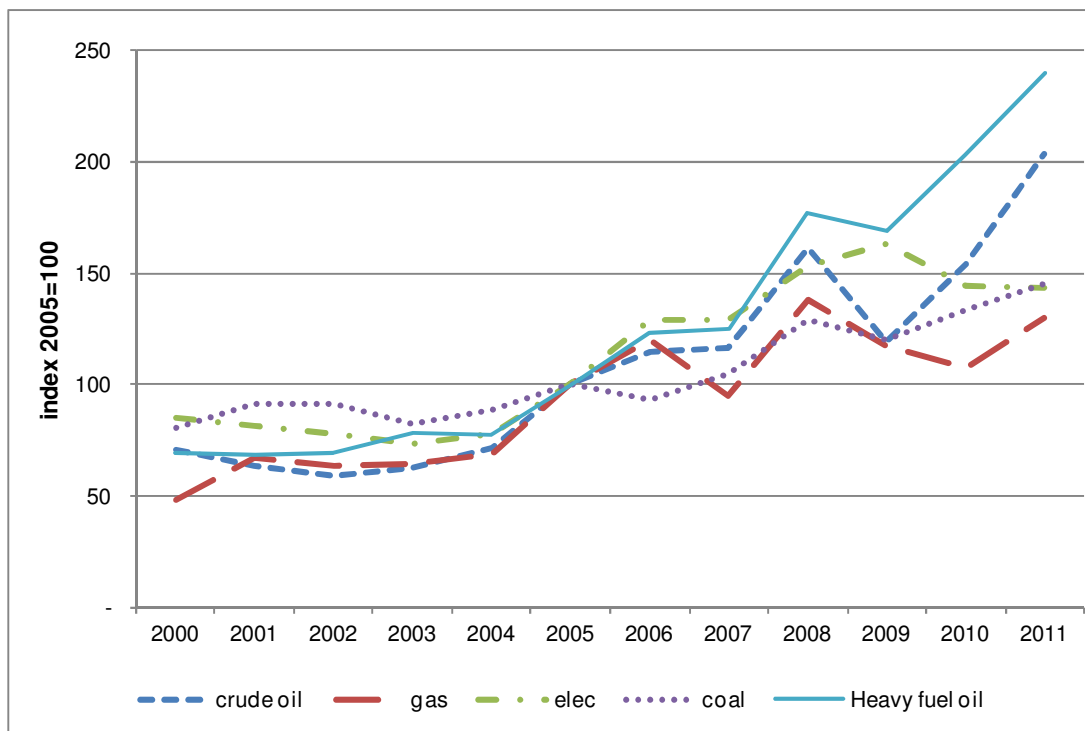
Special feature – Industrial energy prices

prices have increased above the highs in the early 1980's, and in the past few years the price of coal has increased sharply due to demand from China and India.

Petroleum product prices

Products refined from crude oil, such as road fuels, gas oil and fuel oil, are obviously closely linked to the price of crude oil and follow oil price fluctuations. Other factors affecting petroleum product prices are the rates of hydrocarbon oil duty and VAT.

Chart 1: Industrial fuel price indices, 2000 – 2011, real terms



Source: Tables 3.3.1, 4.1.1

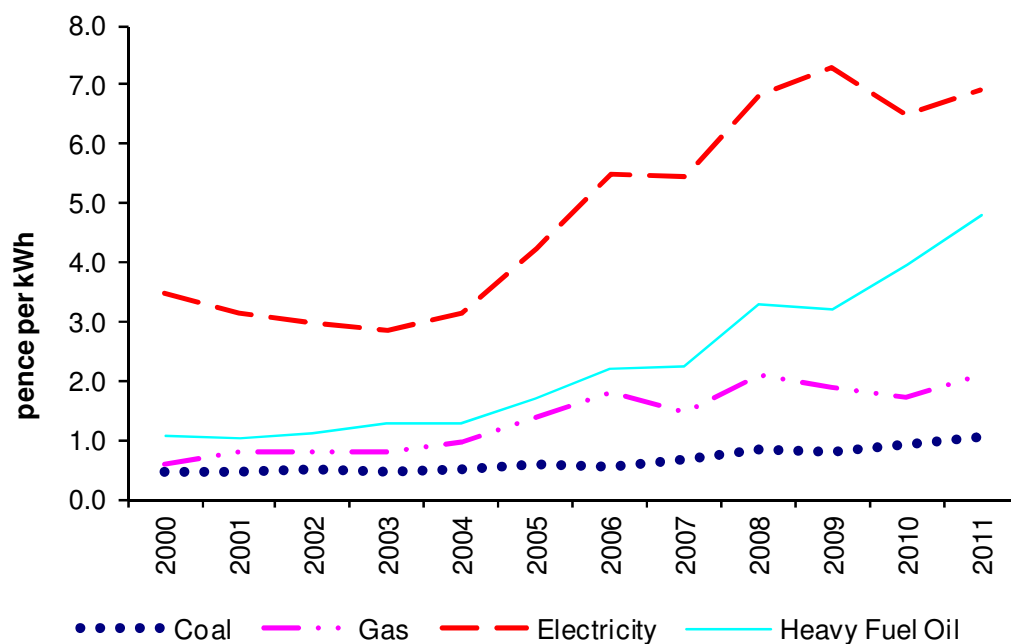
Chart 1 above shows how average industrial gas, electricity, coal and fuel oil prices compare to crude oil prices. The indices for the 4 fuels closely follow the pattern of the crude oil index. The crude oil price spike in 2008 and the fall that followed in 2009 are clearly shown in the crude price index, and reflected in the indices of the other fuels, especially fuel oil.

There is a lag between the change in the price of oil and that of other fuels. The lag is shortest for oil products, like fuel oil. For electricity the lag is delayed, as the prices of coal and gas, the major generating fuels, have to change before being passed through to the price of electricity.

Prices in 2011

Average 2011 prices for fuels have increased over 2010 prices in cash terms. Electricity prices increased by 6 per cent, coal prices by 11 per cent, and gas and heavy fuel oil prices by 21 per cent. In comparison, crude oil prices increased by around 40 per cent.

Over the past five years (2006 to 2011), in cash terms gas prices have increased by 17 per cent, electricity prices by 26 per cent, coal prices by 83 per cent and heavy fuel oil prices by 120 per cent. Crude oil prices increased by around 80 per cent.

Chart 2: Fuel prices for manufacturing industry, 2000 – 2011, cash terms

Source: Table 3.1.4

Quarterly Energy Prices industrial price tables

There are 4 main sets of industrial energy price tables:

- Tables 3.1.1 – 3.1.4
- Table 3.2.1
- Tables 3.3.1 – 3.3.2
- Tables 3.4.1 and 3.4.2

Between them, the tables provide price data and price indices for different sectors and different consumptions, in current and real terms, including and excluding the Climate Change Levy (CCL). As the tables have different coverage, prices in different tables may move to a different degree, or even in a different direction, depending on factors such as the sector coverage, consumption sizeband, inclusion or exclusion of CCL, and whether the data is in current or real terms. Each set of tables has its own uses, strengths and weaknesses.

Tables 3.1.1 – 3.1.4

These 4 tables show price data for manufacturing industry¹ for 5 common fuels – coal, heavy fuel oil, gas oil, electricity and gas – by sizeband, quarterly and annually, in original units and pence per kilowatt-hour (p/kWh), quarterly from Q1 1989 and annually from 1990. The tables use data taken from a quarterly survey of manufacturing industries. The lengthy series of actual prices by consumption sizeband is a considerable strength – data from the series is known to be used as an escalation factor in contracts worth millions of pounds. Factors for users to be aware of include the reducing sample size for the minority fuels, especially coal, which reflects less use in manufacturing industry; and the restriction of the survey coverage to manufacturing industry – although the prices can be used as a proxy for all industry, smaller commercial consumers purchasing low volumes of fuel may find that the price data is not entirely reflective of their experience. To maximise the coverage of each fuel type and minimise the burden on business, larger users are surveyed proportionally more than smaller users. The sample

¹ Manufacturing industry defined as Section C Divisions 10 to 33 inclusive in SIC 2007.

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error from the survey is shown in the methodology notes, available on the DECC website at: www.decc.gov.uk/media/viewfile.ashx?filetype=4&filepath=Statistics/source/prices/369-industrial-price-statistics-methodology.pdf&minwidth=true

Table 3.2.1

This table shows average prices of the 3 major fossil fuels purchased by power generators for the purpose of generating electricity – coal, gas and oil. Data are available quarterly and annually back to 1990 and are collected via a quarterly survey of major power generators. Whilst the data does not show prices paid by industrial consumers, it can be used in conjunction with other industrial price tables to indicate potential price levels for very large purchasers of some fuels.

Tables 3.3.1 – 3.3.2

These 4 tables show quarterly and annual industrial energy price indices for coal, gas, electricity and heavy fuel oil back to 1970, in current and real terms, including and excluding CCL. The tables are not derived from one survey but use a variety of data sources. The strength of the series is that data is available back to 1970. It is also the only industrial table published by DECC to show data in both current and real terms. The limitations are that the data are indices, not actual prices, and do not factor in consumption – the indices will tend to follow the price movements of larger users.

Tables 3.4.1 and 3.4.2

These tables show quarterly and annual price data, by sizeband, for all non-domestic consumers of gas and electricity since Q1 2004, including and excluding CCL. The tables use data provided by gas and electricity suppliers. As the survey used to construct the tables covers all non-domestic users, commercial and small business users are included, and such users may find the prices in the smaller sizebands more reflective of their experience than the data in Table 3.1.1. The limitations are mainly the relatively short time span of the data compared to the other tables, and the lack of data on coal and oil.

Summary

In general, all data tables have their positive points but each suffers from downsides. Sample sizes and coverage vary between tables, with Table 3.3.1 having the greatest coverage, followed by Table 3.4.1, and then Table 3.1.1. For electricity and gas, headline growth figures are taken from Table 3.3.1 including CCL, and this table should be used if constant price data are required. For price levels, users are recommended to use Table 3.4.1, though if the object of interest is specifically manufacturing, or if a longer time series is required, then Table 3.1.1 should be used. For heavy fuel oil, gas oil and coal, Table 3.1.1 should be used.

DECC Table	Coverage	Sizebands	Fuels	CCL	Prices/Index
3.1.1 – 3.1.4	Manufacturing industry	Y	Coal, Heavy Fuel Oil, Gas Oil, Gas, Electricity	N	Prices (original units & p/kWh)
3.3.1 – 3.3.2	Manufacturing industry	N	Coal, Oil, Gas, Electricity	Y	Index
3.4.1 – 3.4.2	Non-domestic	Y	Gas, Electricity	Y	Prices (p/kWh)

User feedback

Please send any comments or queries about this article to:

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DECC report on surveys of business in 2011/12

Introduction

All survey activities in the Department of Energy and Climate Change (DECC) are monitored by DECC's Survey Control Unit (SCU). Burdens imposed by surveys on respondents are measured in terms of compliance costs. In 2011/12 DECC imposed a burden of £137,000 on our data respondents, up 7 per cent on 2010/11 as a result of ad-hoc surveys. Despite this increase, DECC is likely to account for ½ per cent of the survey burden imposed by Government on business.

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

This article presents an overview of the survey activities of businesses in DECC in 2011/12 and their compliance costs.

Survey control in DECC

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

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

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

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

Data collection

Energy statistics are based on regular surveys of companies and from administration data which, by commodity are as follows:

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

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

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

Electricity: From inquiries to companies covering generating capacity, fuel use, generation, sales and distribution of electricity and licensed suppliers, ISSB, autogenerators or autoproducers from ONS.

Renewables : From Renewable Energy STATisticS database (RESTATS), in addition to coverage from surveys of electricity generators.

Special feature – Survey control in DECC

Prices : From energy suppliers and from manufacturing companies.

Copies of the survey questionnaires are available on the DECC website at:
www.decc.gov.uk/media/viewfile.ashx?filetype=4&filepath=11/stats/governance/3808-decc-statistical-surveys-2011.doc&minwidth=true

Compliance costs

A new methodology to calculate the compliance costs (or administrative burden) associated with statistical surveys has been developed by a GSS-wide Respondent Burden Task Force led by the ONS. Results in the next GSS report will be based on this new methodology.

Compliance costs are a measure of the cost to businesses of complying with government statistical surveys. They are calculated using the product of the number of forms received, average completion time and the average hourly rates of the person compiling the return. The average hourly rates were previously based on the Civil Service pay rates for directors, 'management' levels and clericals including an element to reflect overheads and were inflated each year using the average annual increase from the Annual Survey of Hours and Earnings (ASHE). ONS have now amended the methodology and now the survey burden is estimated on ASHE staff costs with no uplift applied for overheads.

In 2011/12, DECC conducted 26 surveys of businesses, 24 of which were regular (see table 2) and 2 were ad-hoc surveys conducted to provide evidence for policy development. In 2010/11, DECC conducted 29 surveys, 24 were regular and 5 policy related ad-hoc surveys.

Total compliance costs in 2011/12, based on the 2011 ASHE rates, was £137,000, up 7% on the previous year and the number of survey forms sent out to businesses increased by 14%. The total compliance costs for the regular surveys was broadly the same when compared with the previous year, however the two ad-hoc surveys in 2011/12 were larger than the five combined in the previous year, resulting in an increase of 66% in the compliance costs for the ad-hoc surveys.

Based on the previous methodology, in 2010/11 DECC's compliance costs of businesses accounted for less than 0.5% of the total across all government surveys. It is anticipated that a similar proportion will be achieved under the new methodology.

Table 1- Actual sample sizes and compliance costs

	2010/11		2011/12		% change	
	Number of out-going survey forms	Compliance costs	Number of out-going survey forms	Compliance costs	Number of out-going survey forms	Compliance costs
Regular surveys	6,705	£ 114,500	6,603	£ 114,900	-2%	0%
Ad-hoc surveys	6,304	£ 13,600	8,212	£ 22,600	30%	66%
Total	13,009	£ 128,100	14,815	£ 137,500	14%	7%

In 2010/11, DECC compliance costs reduced considerably from 2009/10 as one of its large surveys which concerned the reduction of carbon dioxide emissions by Local Authorities, which accounted for 39% of the total burden for 2009/10, was withdrawn.

Table 2 - List of regular surveys, frequency of data collection and compliance costs in 2011/12.

	Surveys	Frequency	Compliance costs (£)
Coal	A: Coal Producers (Qtr)	Quarterly	60
	B: Coal Producers (Yr)	Annual	300
Oil and Gas	A: Gas suppliers(Qtr)	Quarterly	500
	B: Gas suppliers(Yr)	Annual	2,500
	DECC Oil and Natural Gas Survey	Half-Annual	5,700
	Downstream Oil Reporting System	Monthly	26,000
	Hypermarket Petrol and DERV	Monthly	150
	Liquefied Petroleum Gas Deliveries	Quarterly	100
	Oil Stocking	Monthly	600
Electricity	A: Generators, distributors and suppliers of electricity(Mth)	Quarterly	25,300
	B: Generators, distributors and suppliers of electricity(Yr)	Annual	1,900
	Electricity Generators Inquiry.	Quarterly	4,300
Renewables	Renewable Energy Statistics	Annual	90
Prices	Annual petroleum products prices inquiry	Annual	60
	Crude Oil imports	Monthly	500
	Domestic Fuels Inquiry	Quarterly	2,100
	Generators Inquiry	Quarterly	2,100
	New Price Transparency Survey : Domestic	Quarterly	900
	New Price Transparency Survey: Non-domestic	Quarterly	2,100
	Prices paid by final consumers petroleum products	Monthly	500
	Producer Price Index	Monthly	4,300
	Quarterly Fuels Inquiry	Quarterly	33,300
	Weekly oil product prices	Weekly	1,300
Other	Social Programme reporting (Company Fuel Poverty Initiatives)	Annual	200
	Total		114,900

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Sub-national road transport fuel consumption statistics for 2010 and analysis of national trends in diesel and petrol use

Introduction

This article presents the latest estimates of road transport fuel consumption at both Regional and Local Authority level. The dataset has been produced for DECC by AEA, and was calculated using the same methodology used to estimate total UK emissions for the road transport sector in the National Atmospheric Emission's Inventory (NAEI) / Greenhouse Gas Inventory. The data in this article relate to 2010; however to provide a comparable time series, data for years 2005 to 2009 have been revised to incorporate the latest methodological developments.

This work forms part of a wider project that started in 2003 to improve local area energy data, to meet increasing user needs. This information on the consumption of road transport fuels in 2010 complements three other regional and local data sets of energy use for the same year. These data sets include gas and electricity consumption data, which were published in December 2011 and March 2012 respectively, along with estimates for consumption of residual fuels¹, which will be released later this year.

Key points

- Between 2009 and 2010, fossil fuel use for road transport has decreased by two per cent from 36,200 thousand tonnes of fuel to 35,393 thousand tonnes of fuel in the United Kingdom. This is set in the context of a continuing decline since 2007. Fossil fuel use for road transport has fallen by six per cent over this period.
- The change in consumption for cars between 2009 and 2010 saw the largest annual fall since comparable records began in 2005, of 913 thousand tonnes of fuel (four per cent).

All DECC's sub-national energy datasets are available at:

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

Methodology

To produce these 2010 estimates, the NAEI Road Transport Inventory methodology was used. This methodology combines traffic activity data (from the Department for Transport's (DfT) national traffic census) with fleet composition data (vehicle mix by engine size, vehicle size, age, engine and exhaust treatment technology, Euro emission standards and fuel type as observed on different road types), based on licensing data from DfT and fuel consumption/emission factors produced by the Transport Research Laboratory.

The resulting estimates are based on the location at which the fuel was consumed rather than the place where the fuel was purchased. On this basis, AEA have estimated road transport consumption at Local Authority level based on the traffic and road type data and point measurements from traffic counters. Data are then aggregated and published by vehicle type within each Local Authority.

Due to the NAEI continuous improvement programme, AEA have further developed the methodology since the previous publication.

The major changes to the methodology since the last publication are:

- Re-allocation of more petrol and DERV to off-road and inland waterways sectors across all years after a major review;
- Revised 2009 vehicle km activity data for Northern Ireland;
- Use of Automatic Number Plate Recognition (ANPR) data and Regional Vehicle Licensing Statistics (DVLA) to define the petrol and diesel car mix by road type and by Devolved Administrations;
- Assumptions on the split in vehicle weight class have been updated;

¹ These are defined as non-gas, non-electricity and non-road transport use but exclude fuel used for aviation and national navigation.

Special feature – Sub-national road transport consumption statistics for 2010

- Revised figures on average MPG fuel efficiency of different sizes of HGVs;
- Time series revision of DfT's Bus Services, to take account of the fuel consumption for journeys to and from the start and end of a bus route.

A report containing a more detailed description of the methodology behind these estimates is available from the 'Related Documents' section at:

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

Limitations and definitions

As the data are modelled, there are a number of uncertainties affecting the accuracy of these estimates at Local Authority level. These uncertainties mainly reflect the uncertainties in the vehicle kilometre data (traffic census, DfT) and fleet composition data, affecting the consumption factors calculated for each vehicle type.

The uncertainties in allocating consumption to individual Local Authorities are mainly due to local variations in the national fleet in terms of the vehicle age and fuel mix. For example, traffic in some areas can be made by higher proportion of diesel or older cars than in other areas. However, the use of DVLA's Regional Vehicle Licensing Statistics has reduced this uncertainty.

Areas where there is frequently congested urban traffic and those with high levels of heavy duty vehicle traffic (HGVs and buses) are considered to be more uncertain, in comparison to areas where traffic is normally free-flowing. Rural areas dominated by smaller towns are considered to have the lowest levels of uncertainty.

It also should be noted that the estimates exclude consumption of LPG and biofuels and all references to petrol and diesel in this article exclude bioethanol and biodiesel respectively.

The total 2010 UK consumption figure for road transport fuels using aggregated LA level data is 35,393 thousand tonnes of fuel. The total is 1.5 per cent lower than the equivalent total of petrol and diesel (DERV) in the Digest of UK Energy Statistics (DUKES) of 35,926 thousand tonnes. The DUKES value also includes a small amount of petrol and diesel consumed by off-road vehicles and machinery (e.g. portable generators, lawn mowers) and consumption in the Crown Dependencies (Jersey, Guernsey and Isle of Man).

Regional and local estimates

Table 1, at the end of this article, presents estimates of road transport fuel consumption for Scotland, Wales, Northern Ireland and the regions of England for 2010. The table also includes four local authorities from each region showing the highest and lowest total consumption. Total consumption is made up of personal (defined as buses, diesel cars, petrol cars and motorcycles) and freight (defined as HGV, diesel LGV and petrol LGV). Consumption is also shown separately for cars, buses, motorcycles, HGVs and LGVs.

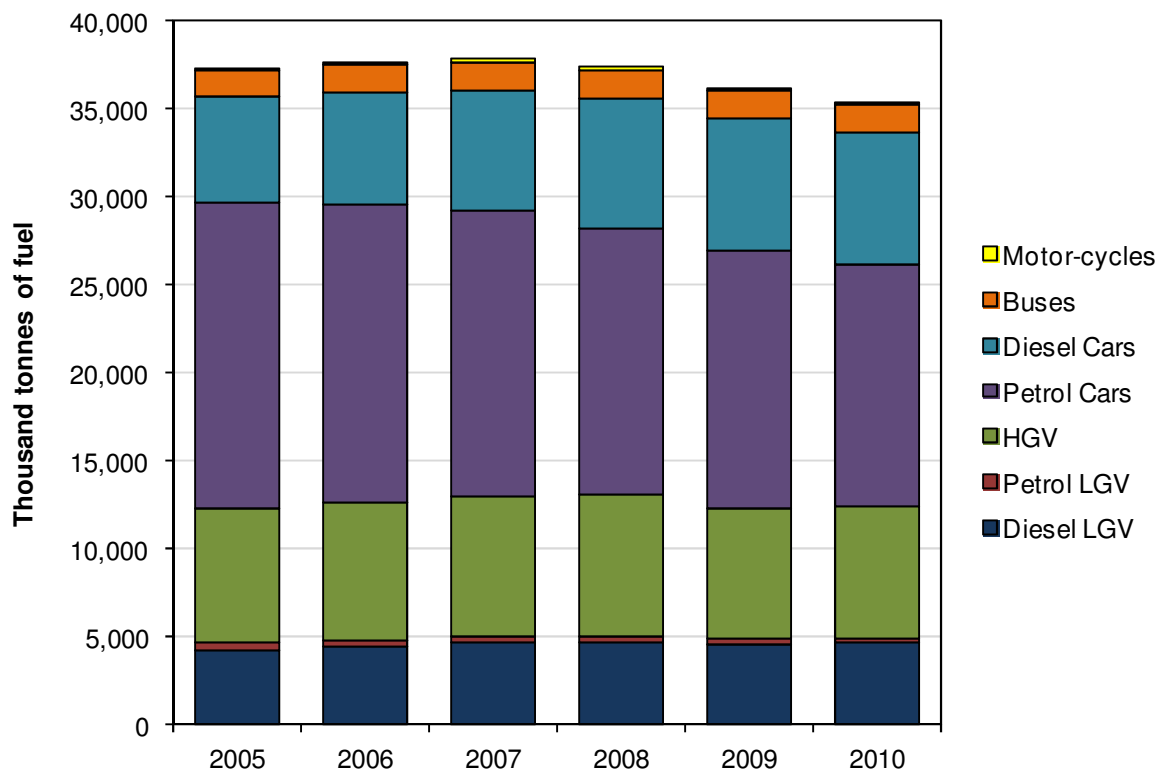
The full tables showing road transport fuel consumption for all LAU1² (formerly NUTS4) areas in the United Kingdom for 2002 to 2010 are available on the DECC Energy Statistics website at: www.decc.gov.uk/en/content/cms/statistics/regional/road_transport/road_transport.aspx. However, the data prior to 2005 are produced using a different methodology, therefore it is not recommended that data for 2002 to 2004 are compared with later data.

² Local Administrative Units (LAU) is a hierarchical classification of spatial units that provides a comparable breakdown of the European Union's territory for producing regional statistics. Formerly known as NUTS4, LAU1 refers to the 354 individual London boroughs/metropolitan districts/unitary authorities/local authority districts in England, 22 individual unitary authorities in Wales, 41 individual or groups of whole/part unitary authorities and/or local enterprise company areas in Scotland, and 26 individual district unitary authorities in Northern Ireland, totalling 443 UK LAU1 regions. LAU1 areas in Scotland do not match exactly the Local Authority Areas and there are more LAU1 areas in Scotland than Local Authorities. In the analysis, Scottish Local Authorities are used in place of LAU1 giving 434 local areas in the UK.

Preliminary analysis of road transport fuel consumption

Between 2009 and 2010, fuel use for road transport has decreased from 36,200 thousand tonnes of fuel to 35,393 thousand tonnes of fuel (two per cent) in the United Kingdom. This is set in the context of a decline since 2007. Fossil fuel use for road transport has fallen by five per cent between 2005 and 2010 (chart 1).

Chart 1: Fuel use split by vehicle type, UK, 2005 to 2010



The cause of the steeper fall since 2008 could be attributed to the effects of the economic downturn and increases in the efficiency of vehicles.

It is important to note that, as these figures refer to consumption of petrol and diesel, the trends partly reflect national changes and growth in consumption of bioethanol and biodiesel which has displaced some petrol/DERV in recent years through blending. Replacement rates differ between the fuel types, with biodiesel representing 4.1 per cent of the total DERV delivered in 2010, whilst bioethanol represented 3.1 per cent of the total motor spirit.

Chart 1 shows fuel use split by vehicle type. Petrol cars saw the largest decrease between 2005 and 2010 of 3,786 thousand tonnes of fuel (22 per cent). Whilst, diesel cars saw the largest increase between this period of 1,612 thousand tonnes of fuel (27 per cent). HGVs have seen the smallest change since 2005 with a decrease of 60 thousand tonnes of fuel (1 per cent).

Total fuel consumption by cars decreased by 913 thousand tonnes of fuel (4 per cent) between 2009 and 2010, and have decreased by 2,175 thousand tonnes of fuel (10 per cent) between 2005 and 2010. The annual change in 2010 was the largest to date.

Road transport for freight increased by 2 per cent (194 thousand tonnes of fuel) between 2005 and 2010. However, there was actually an increase of 7 per cent (846 thousand tonnes of fuel) for freight transportation between 2005 and 2008, followed by a decrease of 6 per cent (767 thousand tonnes of fuel) between 2008 and 2009. Between 2009 and 2010, there has been an increase of 1 per cent (116 thousand tonnes of fuel). The large decrease between 2008 and 2009 can mainly be attributed to the impacts of the recession, which saw a fall in the amount of freight being transported around the UK.

Chart 2: Fuel use by vehicle type, UK, 2010

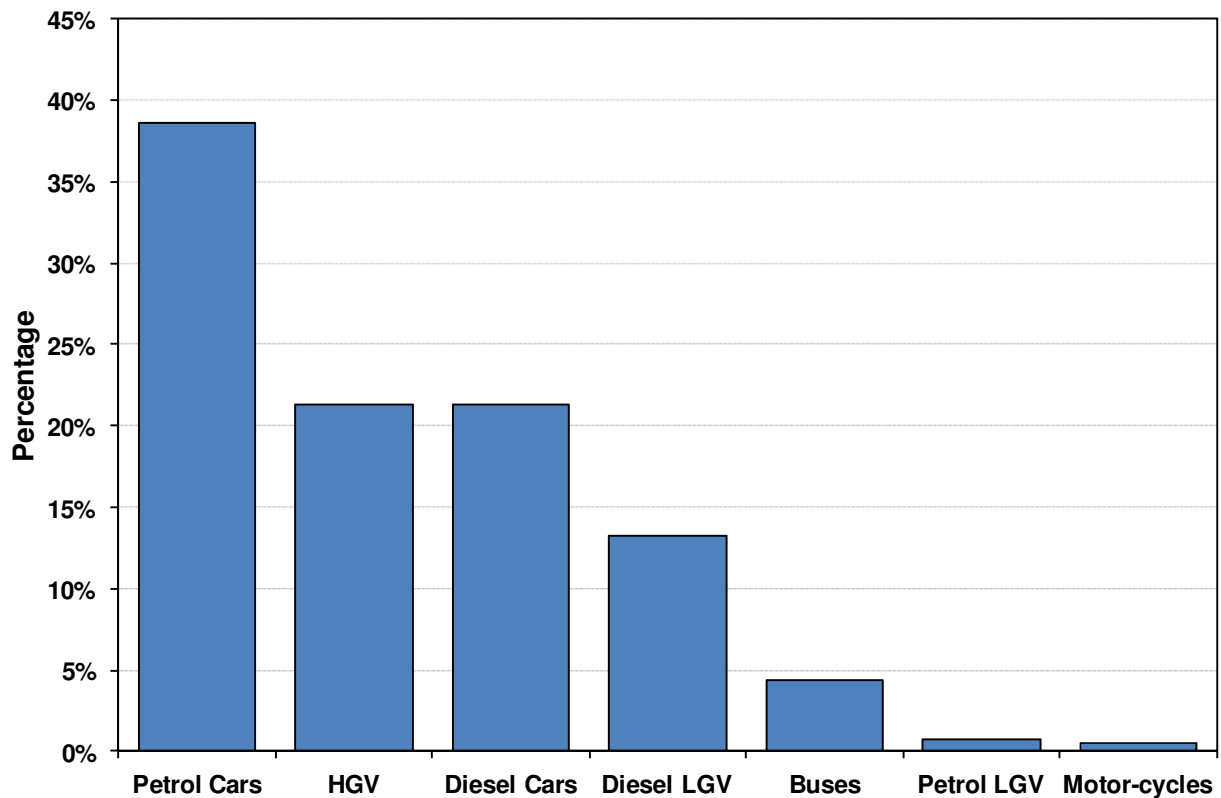
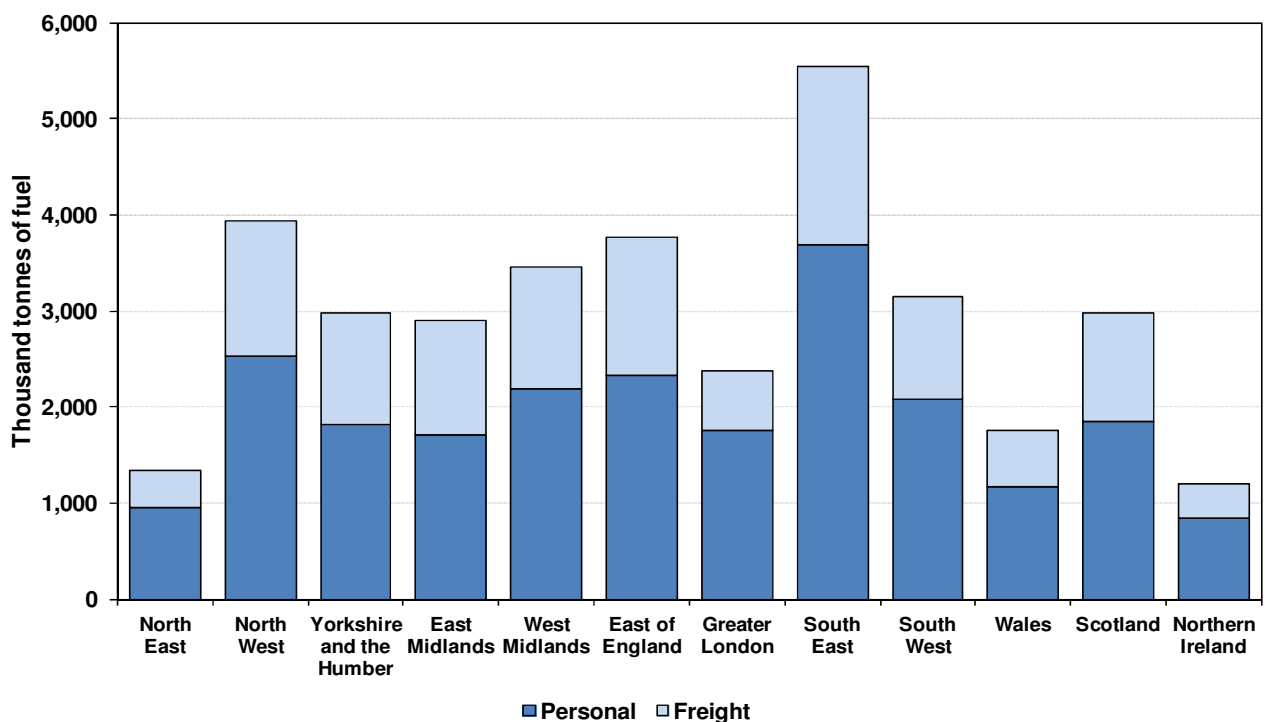


Chart 2 shows the distribution of total UK road transport fuels (35,393 thousand tonnes) by vehicle type in 2010. Petrol and diesel cars combined, were estimated to be responsible for the largest proportion (60 per cent) of total road transport fuel consumption in 2010. HGVs were the second largest consumers of fuel, accounting for 21 per cent of overall fuel consumption followed by LGVs at 14 per cent and the remaining 5 per cent is attributed to buses and motorcycles.

Chart 3: Fuel used for freight and personal road transport by region, 2010



Special feature – Sub-national road transport consumption statistics for 2010

Chart 3 illustrates fuel consumption at a regional level, split by personal and freight road transport. The North East of England and Northern Ireland had the lowest consumption of road transport fuel for both freight and personal travel, with consumption totalling 1,343 and 1,205 thousand tonnes of fuel respectively. The South East of England experienced the largest consumption of all regions, 16 per cent of overall road transport consumption (5,552 thousand tonnes of fuel). Fuel consumption for personal travel in the South East was higher than total consumption in all regions with the exception of the North West and the East of England. At a local authority level, the two areas with the highest total consumption were Leeds (437 thousand tonnes of fuel) and Birmingham (406 thousand tonnes of fuel), this is due to major motorways located within these areas and the relative sizes of these regions.

In the UK personal travel accounted for 65 per cent of the fuel consumed. Between regions, the percentage of fuel consumed for personal travel varied. The East Midlands had the lowest personal travel proportion of 59 per cent, whilst Greater London had the highest proportion of 74 per cent. The variation between the proportion of personal and freight road transport consumption in regions provide an indication on the categorisation of roads within a region.

Acknowledgements

DECC would like to thank Ioannis Tsagatakis and his team at AEA for their work on improving and producing this dataset.

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 Sabena Khan using the details below.

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Table 1: Selected regional and local road transport consumption statistics: 2010

Thousands tonnes of fuel

English Regions and Devolved Administration Regions and selected Local Authorities	Buses	Diesel Cars	Petrol Cars	Motor-cycles	HGV	Diesel LGV	Petrol LGV	Personal ⁽¹⁾	Freight ⁽²⁾	Total
Gateshead	11.0	28.4	56.0	0.5	18.2	17.0	1.0	95.8	36.2	132.0
Newcastle upon Tyne	11.2	29.2	58.2	0.4	12.6	15.2	0.9	99.0	28.7	127.8
Alnwick	0.9	3.9	7.8	0.1	4.8	3.2	0.2	12.8	8.1	20.9
Wansbeck	2.0	4.3	8.7	0.1	1.8	2.5	0.1	15.0	4.4	19.4
TOTAL NORTH EAST	101.3	284.3	561.5	4.4	204.0	177.0	10.0	951.6	391.0	1,342.6
Warrington	5.2	36.9	63.9	0.5	61.4	19.7	1.1	106.5	82.2	188.7
Manchester	13.6	42.8	80.9	0.7	25.3	20.9	1.2	137.9	47.4	185.3
Copeland	1.6	4.9	9.9	0.1	3.2	3.2	0.2	16.5	6.6	23.2
Barrow-in-Furness	1.4	3.0	6.0	0.1	1.6	1.8	0.1	10.5	3.5	13.9
TOTAL NORTH WEST	176.7	825.7	1,519.5	14.0	912.7	465.7	26.0	2,535.8	1,404.3	3,940.1
Leeds	18.1	91.6	170.1	1.5	93.6	58.0	3.3	281.3	154.8	436.1
Doncaster	8.8	41.8	76.1	0.8	86.8	27.8	1.6	127.5	116.1	243.6
Scarborough	3.0	10.3	20.7	0.3	5.5	7.0	0.4	34.3	12.9	47.2
Craven	1.7	8.2	16.4	0.2	8.5	5.6	0.3	26.6	14.4	41.0
TOTAL YORKSHIRE AND THE HUMBER	123.4	580.2	1,097.5	11.9	754.2	394.7	22.0	1,813.0	1,170.9	2,983.9
Daventry	2.5	26.0	45.0	0.4	63.9	19.2	1.0	73.8	84.1	157.9
South Northamptonshire	2.6	27.5	47.4	0.4	58.6	19.8	1.0	77.9	79.3	157.2
Lincoln	1.4	3.6	7.3	0.1	2.7	2.3	0.1	12.5	5.1	17.6
Oadby and Wigston	1.1	3.0	5.9	0.1	1.2	1.5	0.1	10.1	2.8	12.9
TOTAL EAST MIDLANDS	95.6	550.9	1,049.2	11.4	795.8	382.1	20.4	1,707.1	1,198.3	2,905.4
Birmingham	29.6	93.0	180.1	1.6	48.3	50.2	3.0	304.2	101.5	405.7
North Warwickshire	3.0	33.6	53.7	0.4	74.5	23.6	1.1	90.7	99.3	190.0
Oswestry	1.2	3.9	7.7	0.1	5.2	3.3	0.2	12.9	8.6	21.5
Tamworth	1.6	4.7	9.5	0.1	2.5	2.6	0.2	15.9	5.2	21.1
TOTAL WEST MIDLANDS	158.7	706.0	1,310.1	12.3	790.2	450.3	24.7	2,187.1	1,265.3	3,452.4
Huntingdonshire	3.7	33.2	61.9	0.7	75.0	26.0	1.3	99.5	102.4	201.9
South Cambridgeshire	3.0	31.5	59.4	0.6	55.5	23.7	1.2	94.6	80.4	175.0
Harlow	1.7	6.1	11.7	0.1	4.6	3.3	0.2	19.6	8.2	27.8
Watford	1.6	6.5	12.9	0.1	2.7	3.4	0.2	21.2	6.3	27.4
TOTAL EAST OF ENGLAND	128.1	752.0	1,431.3	17.4	876.0	539.1	28.8	2,328.9	1,443.9	3,772.7

Thousands tonnes of fuel

English Regions and Devolved Administration Regions and selected Local Authorities	Buses	Diesel Cars	Petrol Cars	Motor-cycles	HGV	Diesel LGV	Petrol LGV	Personal ⁽¹⁾	Freight ⁽²⁾	Total
Hillingdon	9.3	35.4	66.9	1.1	23.1	17.7	1.0	112.8	41.8	154.6
Enfield	6.0	24.0	45.0	0.6	30.2	12.2	0.7	75.6	43.2	118.8
Islington	5.3	7.3	15.4	0.9	3.7	5.6	0.4	29.0	9.8	38.8
City of London	2.2	3.1	6.7	0.5	1.6	2.4	0.2	12.5	4.2	16.7
TOTAL GREATER LONDON	207.6	504.5	1,022.5	28.7	301.2	288.4	18.0	1,763.3	607.6	2,370.9
West Berkshire	4.4	46.5	78.6	0.8	62.9	26.1	1.3	130.2	90.3	220.5
Cherwell	3.4	35.9	62.7	0.6	51.4	21.8	1.1	102.6	74.4	177.0
Hastings	1.6	5.0	10.1	0.2	1.6	2.8	0.2	16.9	4.5	21.5
Gosport	1.1	4.1	8.2	0.2	1.1	2.3	0.1	13.6	3.5	17.1
TOTAL SOUTH EAST	168.0	1,227.8	2,262.7	29.2	1,035.2	787.1	41.9	3,687.7	1,864.2	5,551.9
South Gloucestershire	7.5	55.6	94.0	1.4	66.6	32.3	1.7	158.5	100.6	259.0
North Somerset	4.9	33.6	58.0	0.8	31.1	19.5	1.0	97.2	51.6	148.8
Weymouth and Portland	1.8	4.2	8.5	0.2	1.5	2.5	0.1	14.7	4.1	18.9
Isles of Scilly	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2
TOTAL SOUTH WEST	120.6	674.0	1,268.0	19.2	590.0	448.1	24.2	2,081.8	1,062.2	3,144.0
Cardiff	8.3	48.8	75.1	0.6	23.9	21.6	1.2	132.8	46.8	179.6
Rhondda, Cynon, Taff	5.5	32.1	49.7	0.4	18.4	18.5	1.0	87.7	37.9	125.6
Merthyr Tydfil	1.0	6.3	10.1	0.1	3.9	3.9	0.2	17.4	8.0	25.4
Blaenau Gwent	0.9	5.6	9.0	0.1	3.5	3.2	0.2	15.5	6.9	22.4
TOTAL WALES	75.5	424.4	656.6	7.5	309.4	264.5	14.2	1,164.0	588.1	1,752.1
Glasgow City	16.1	54.5	87.3	0.6	41.2	30.1	1.7	158.5	73.1	231.6
North Lanarkshire	13.1	44.4	75.9	0.5	49.7	28.8	1.6	133.9	80.1	214.0
Shetland Islands	0.8	2.4	4.2	0.0	2.0	2.4	0.1	7.5	4.6	12.1
Orkney Islands	0.7	1.8	3.1	0.0	1.5	1.6	0.1	5.7	3.2	8.9
TOTAL SCOTLAND	181.3	617.6	1,047.7	10.1	686.3	406.6	22.3	1,856.8	1,115.2	2,972.0
Belfast	1.7	30.5	34.6	0.6	21.4	3.2	0.1	67.4	24.7	92.1
Lisburn	0.9	26.8	30.6	0.4	20.2	4.5	0.1	58.7	24.7	83.4
Moyle	0.2	6.6	7.4	0.1	3.5	1.1	0.0	14.2	4.6	18.8
Carrickfergus	0.1	4.2	4.6	0.1	1.8	0.6	0.0	9.0	2.4	11.5
TOTAL NORTHERN IRELAND	11.2	389.4	440.5	4.6	283.6	73.8	1.6	845.7	359.1	1,204.7
Great Britain Total	1,536.8	7,147.3	13,226.7	166.1	7,254.8	4,603.5	252.6	22,077.0	12,110.9	34,187.9
UK	1,548.0	7,536.6	13,667.2	170.8	7,538.4	4,677.3	254.3	22,922.6	12,470.0	35,392.7

(1) Personal travel includes buses, diesel cars, petrol cars and motor cycles

(2) Freight includes HGV, diesel LGV and petrol LGV

Identifying trends in the deployment of domestic solar PV under the Feed-in Tariff scheme

Introduction

The Feed-in Tariffs (FiTs) scheme, launched in April 2010, seeks to incentivise the uptake and deployment of small scale renewable technologies. Individual tariff rates are assigned, depending on the technology, size, and eligibility of the installation, and paid to owners of FiT installations (or their nominated recipients) for every unit of electricity generated. A separate export tariff is paid for any electricity exported (or assumed exported) to the national grid, which is a flat rate across all technologies and sizes. The scheme covers various technology types including solar photovoltaics (PV), anaerobic digestion, wind, and hydro up to 5MW of Total Installed Capacity and micro CHP up to 2kW of Total Installed Capacity (TIC).

Ofgem do not release specific site location information, as such data is only currently available down to Lower Layer Super Output Area¹ (LSOA). In this analysis we matched the LSOA data with data from the Neighbourhood statistics database (maintained by the Office for National Statistics) in order to try and identify trends in FiTs uptake and to determine the drivers that cause an individual to take up the scheme.

The data used in the analysis relates to installations confirmed onto the FiTs scheme (i.e. on the Central FiTs Register) between April 2010 and the end of 2011, with the main focus on domestic PV installations in England.

Summary of statistical data used in the analysis

LSOAs are a Census 2001 based geography designed to be of consistent size and with fixed boundaries. The minimum population in an LSOA is 1,000 and the average population is 1,500 (or around 500 households). Since the LSOAs are designed to be of roughly equal size to one another, in this analysis we have assumed that the number of households in each are equal. However, this is unlikely to be the case, especially given that these geographies are based on data from 2001 and, in some cases, the number of households is likely to have changed considerably since then.

The variables presented in Table 1 have been identified as having the potential to influence FiT uptake and all are available to download at LSOA level from the Neighbourhood Statistics website: www.neighbourhood.statistics.gov.uk/dissemination

¹ This is a Census 2001 based geography – for more information, see the 'Data issues' section. LSOAs apply to England and Wales only. Scotland has a separate geographical system in which data zones are roughly equivalent to (though smaller than) LSOAs.

Table 1 – Variables of interest

Variable	Source – including latest year and coverage
Average electricity consumption	DECC sub-national energy consumption statistics (2009 ² , England and Wales)
Average gas consumption	DECC sub-national energy consumption statistics (2009 ² , England and Wales)
Gas Coverage	Derived from DECC sub-national energy consumption statistics (2009 ² , England and Wales)
Fuel Poverty – percentage of households in LSOA that are fuel poor	DECC (2009 ² , England).
Average Age of population	Derived from Census 2001 data (England and Wales)
Index of Multiple Deprivation and its various domains	DCLG (2010, England)
Dwelling stock by tenure (%)	Derived from Census 2001 data (England and Wales)
Dwelling stock by type (%)	Derived from Census 2001 data (England and Wales)
Urban/Rural Classification	Derived from Census 2001 data (England and Wales)
Council Tax Band	DCLG, (2011, England)

Impact of Aggregators

The impact of aggregators (or multi-site owners) within the domestic PV market must be taken into consideration since the drivers for uptake of these are likely to be different to those for privately owned installations. Therefore, throughout this analysis, we have attempted to cover private owners schemes and aggregator schemes separately where possible. For this analysis we have defined an aggregator to be any single generator that owns 25 or more installations – this is in line with the recent changes to tariff rates for these owners which set the level at 25 or more. Overall, at the end of 2011 in England, 24 per cent of all domestic PV installations are assumed to be owned by aggregators.

Analysis

DECC publish data on the average electricity and gas consumption in every LSOA in England and Wales on an annual basis. At the time of analysis, the most recent data available was for 2009. Using this data, the LSOAs were grouped into 10 equally sized groups (or decile groups) based on their average annual domestic electricity consumption. Group 1 are the 10% of LSOAs with the highest average electricity consumption (approx. 4,800 kWh per annum and above) and group 10 contain the 10% of LSOAs with the lowest average electricity consumption (approx. 3,100 kWh per annum and below).

Chart 1 shows the number of PV installations (at the end of 2011) for each of the 10 groups and indicates that the highest electricity consuming group of LSOAs (group 1) has the most domestic PV installations and group 10 the lowest amount, with declining amounts seen for the groups in between. This would seem to suggest that high electricity consuming households were more likely to install a PV installation than low electricity consuming households. This trend is repeated for those PV installations assumed to be privately owned but we see a different trend for those assumed to be owned by aggregators where groups 7 and 8 (i.e. lower electricity users) have the most installations.

² DECC have now published 2010 data for this series but these were unavailable at the time that this analysis was carried out.
June 2012

Chart 1 – Domestic PV Installations by average electricity consumption group

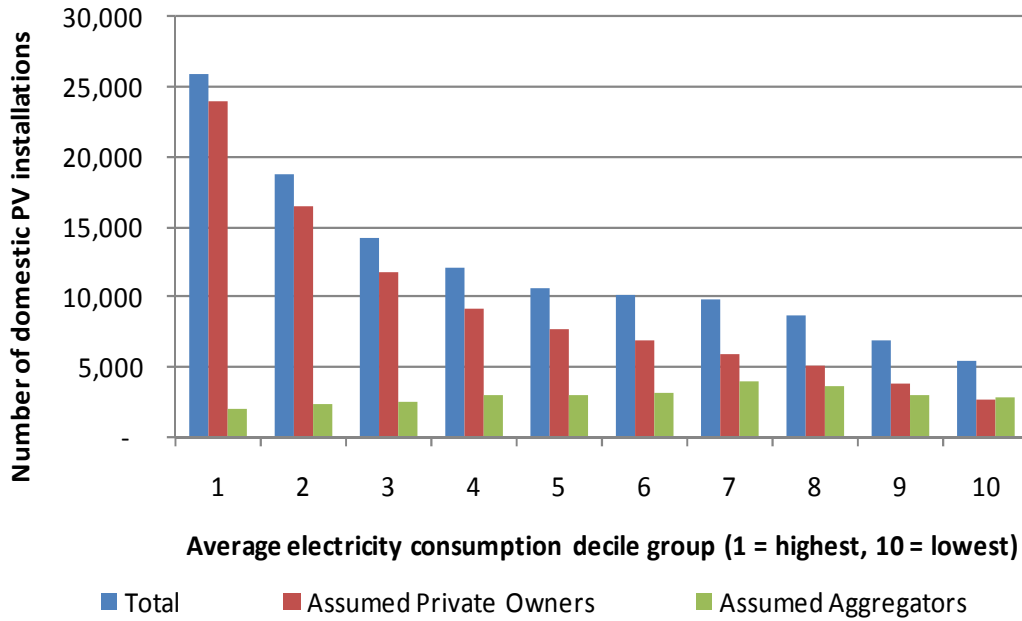
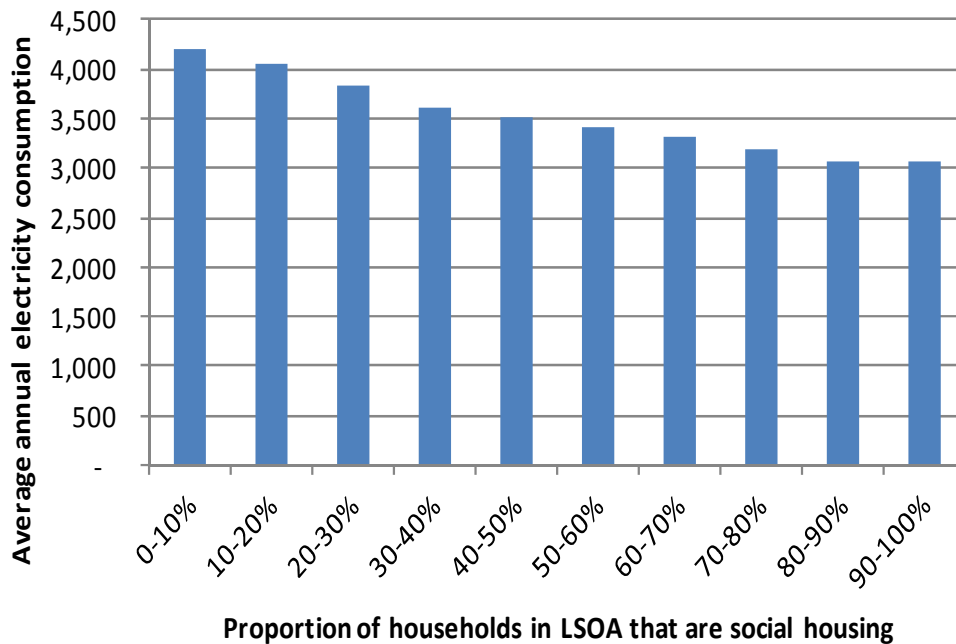


Chart 2 shows that those LSOAs with a high proportion of social housing have a lower average electricity consumption than those LSOAs with a low proportion of social housing. This may help to explain the trend for aggregator owned installations seen in Chart 1 where lower electricity consuming LSOAs tend to have higher amounts of aggregator owned PV installations.

Chart 2 – Average annual electricity consumption by proportion of social housing



Similar analysis was also carried out on the other variables listed in Table 1, the details of which are available in the full paper on the DECC website (see the 'Further information' below).

Summary of findings

The evidence from this analysis suggests that domestic PV installations are typically located in the more affluent, higher energy consuming households. This correlates with the additional findings that areas with a high proportion of detached housing, a low proportion of social housing and/or a low proportion of low value housing tend to have a higher amount of PV installations. The analysis also suggests that rural areas (and areas with low gas coverage, which are mostly rural) have a greater density³ of domestic PV installations than urban areas. Social characteristics, such as age and education also have a part to play. Areas where the average age is 40 or above have a greater density of PV installations than those with an average age below 40. Areas where educational deprivation is low tend to have higher numbers of PV installations. Of course, there will be some degree of correlation between some or all of these variables. The drivers for uptake of aggregator owned installations, however, differ from those of privately owned installations, with the former typically located in less affluent, lower consuming households.

Further information

The full paper containing the details of this analysis is available on the DECC website at: www.decc.gov.uk/en/content/cms/statistics/energy_stats/source/fits/fits.aspx

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

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³ I.e. number of PV installations per 10,000 households.

Recent and forthcoming publications of interest to users of energy statistics

Annual Fuel Poverty Statistics Report and sub-regional data

This annual Internet only publication, published in support of the UK Fuel Poverty Strategy, details the latest statistics on fuel poverty. The 2012 edition, detailing the 2010 statistics, was published on 17 May 2012, and can be accessed on the Internet, along with a series of appendices, at:

www.decc.gov.uk/en/content/cms/statistics/fuelpov_stats/fuelpov_stats.aspx. Data for 2010 at sub-regional level can be accessed at:

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

Digest of United Kingdom Energy Statistics

This annual publication provides essential information for everyone involved in energy, from economists to environmentalists, and from energy suppliers to energy users. The 2012 edition will be published on 26 July 2012. With extensive tables, charts and commentary covering all the major aspects of energy, it provides a detailed and comprehensive picture of energy production and use over the last 5 years. It will be available to purchase from The Stationery Office, and it can also be accessed for free on the Internet (along with additional annexes and key series back to 1970) at:

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

Energy Flow Chart

This annual publication illustrates the flow of primary fuels from home production and imports to their eventual final uses. The flows are shown in their original state and after being converted into different kinds of energy by the secondary fuel producers, and are measured in million tonnes of oil equivalent, with the widths of the bands approximately proportional to the size of the flows they represent. The 2012 edition of the chart, showing the flows for 2011, will be published on 26 July 2012. The Chart will be available free from DECC and it can also be accessed on the Internet at:

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

UK Energy in Brief

This annual publication summarises the latest statistics on energy production, consumption, prices and climate change in the United Kingdom. The figures are primarily taken from the Digest of United Kingdom Energy Statistics (see above). The 2012 edition will be published on 26 July 2012 and will be available free from DECC. It can also be accessed on the Internet at:

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

Energy Consumption in the UK

This annual Internet only publication brings together statistics from a variety of sources to produce a comprehensive review of energy consumption and changes in efficiency, intensity and output since the 1970s, with a particular focus on trends since 1990. The information is presented in five sections covering overall energy consumption and energy consumption in the transport, domestic, industrial and service sectors. The 2012 edition will be published on 26 July 2012 and it can be accessed on the Internet at:

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

Feed-in Tariff Statistics

In order to help monitor and inform policy following a comprehensive review of the Feed-in Tariffs (FiTs) scheme, a number of changes are being made to the suite of FiTs statistics currently published. Key data will now be available on a monthly basis and will cover installations on the Central FiTs Register (CFR) as well as the MCS and ROOFiT databases. In order to implement these changes, the publication timetable has been revised to ensure data can be collected and quality assured ahead of publication. The changes will start to take effect from June 2012 and further information can be found on the internet at:

www.decc.gov.uk/en/content/cms/statistics/energy_stats/source/fits/fits.aspx

Special feature – Recent and forthcoming publications

Estimates of Home Insulation Levels in Great Britain

This quarterly publication provides estimates of the number of homes in Great Britain with cavity wall insulation, loft insulation and solid wall insulation. These estimates are based on a variety of sources and are currently published as Experimental Statistics. Proposed future changes to the methodology were published alongside the publication on 7 June. Subject to user comments, these will be implemented for the next publication on 19 September. Further information including past publications and proposed changes to the methodology can be found on the internet at:

www.decc.gov.uk/en/content/cms/statistics/energy_stats/en_effic_stats/home_ins_est/home_ins_est.aspx

DECC's timetable of statistical releases for twelve months ahead

DECC's timetable of statistical releases for twelve months ahead is available on the internet at:

www.decc.gov.uk/assets/decc/Statistics/publications/37-decc12monthstatscalendar.pdf.

The timetable will be updated every 3 months or as and when new releases or revised publication dates are confirmed. All releases will be published on the DECC website at 9:30am on the day of release.

Explanatory notes

General

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

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.

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

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

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

Sectoral breakdowns

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

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

ENERGY TRENDS

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

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

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



Quarterly Energy Prices and Energy Trends

Subscription available from DECC (0300 068 5056)

Price £40 per annum UK

www.decc.gov.uk/en/content/cms/statistics/publications/prices/prices.aspx
and

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

Single copies available from the Publications Orderline

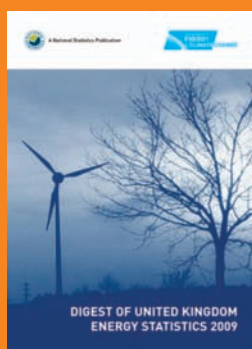
priced £6 for Energy Trends and £8 for Quarterly Energy Prices.



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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