



**ENERGY TRENDS** 

**DECEMBER 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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## Introduction

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

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

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

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

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

Energy Trends does not contain information on Foreign Trade, Weather (temperature, wind speed, sun hours and rainfall) and Prices. Foreign Trade, and Weather tables are, however, available on the DECC website at: <a href="www.decc.gov.uk/en/content/cms/statistics/source/source.aspx">www.decc.gov.uk/en/content/cms/statistics/source/source.aspx</a>. Information on Prices can be found in the Quarterly Energy Prices publication and on the DECC website at: <a href="https://www.decc.gov.uk/en/content/cms/statistics/publications/prices/prices.aspx">www.decc.gov.uk/en/content/cms/statistics/publications/prices/prices.aspx</a>

Please note that the DECC website will be moving to the new gov.uk website (www.gov.uk/) in early 2013. All existing links should continue to work; however, if users experience any difficulty in locating Energy Trends publications or tables following the migration they should contact either Kevin Harris (details below) or the DECC Energy Statistics contacts shown for each section or article within the publication.

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

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### The main points for the third quarter of 2012:

- Total energy production was 7½ per cent lower than in the third quarter of 2011. This decline in output is due to a significant fall in petroleum and gas production as a result of maintenance work and slowdowns on a number of fields. Lower production resulted in net import dependency of 43 per cent, an increase of 1½ percentage points on the third quarter of 2011.
- Oil production fell by 12 per cent when compared with the third quarter of 2011. Refinery
  production in the third quarter of 2012 was down by 10 per cent on the same quarter of last
  year, following the closure of the Coryton refinery, the largest quarterly decrease since the first
  quarter of 2010, with notable decreases in aviation turbine fuel and petroleum gases.
- Natural gas production was 11 per cent lower than the third quarter of 2011, and was the lowest recorded third quarter production since 1992. Gas imports decreased by 23 per cent, with shipped imports of LNG falling by 42 per cent. Gas consumption was down by 18 per cent, driven by lower generation use.
- Coal production in the third quarter of 2012 was 12½ per cent lower than the third quarter of 2011 due to operational problems at several sites. Coal imports were 33½ per cent higher and generators' demand for coal was up by 49½ per cent.
- Total primary energy consumption for energy uses rose by 1 per cent. When adjusted to take
  account of weather differences between the third quarter of 2011 and the third quarter of 2012,
  primary energy consumption also rose by 1 per cent.
- Final energy consumption was 2 per cent lower than in the third quarter of 2011. Domestic consumption rose by 4½ per cent, reflecting colder weather, whilst industrial consumption fell by 2½ per cent, transport consumption fell by 1½ per cent and other final users consumption fell by ½ per cent.
- Electricity generated in the third quarter of 2012 fell by 3 per cent, from 83.3 TWh a year earlier to 81.0 TWh, the lowest level of generation in 14 years.
- Of electricity generated in the third quarter of 2012, gas accounted for 28.2 per cent (its lowest third quarter share in the last 14 years) due to high gas prices, whilst coal accounted for 35.4 per cent (its highest third quarter share in the last 14 years). Nuclear generation accounted for 22.3 per cent of total electricity generated in the third quarter of 2012, an increase from the 18.9 per cent share in the third quarter of 2011, due to increased availability.
- Renewables' share of electricity generation increased to 11.7 per cent from the 9.1 per cent share in the third quarter of 2011. Hydro generation decreased by 16 per cent on the third quarter of 2011 as a result of low rainfall. Over the same period, offshore wind generation increased by 54 per cent, whilst onshore wind generation increased by 38 per cent. Overall renewable generation was up 25 per cent compared to the same quarter in 2011.
- In the third quarter of 2012, 218 MW of installed capacity joined the Feed in Tariff scheme, increasing the total confirmed capacity by 17 per cent to 1,486 MW, approximately 10 per cent of all renewable installed capacity. Of this increase, sub-4 kW retrofitted solar PVs contributed 126 MW.
- Consumption of liquid biofuels for road transport fell to a three and a half year low, due to the
  ending of a reduced duty rate on cooking oil used for biodiesel. In 2012 Q3, biofuels
  represented 2.7 per cent of petrol and diesel consumed in road transport, a fall of 1.2
  percentage points on the 3.9 per cent in 2011 Q3.

## **Section 1 - Total Energy**

### Key results show:

Total energy production was 7.3 per cent lower than in the third quarter of 2011. (**Charts 1.1 & 1.2**)

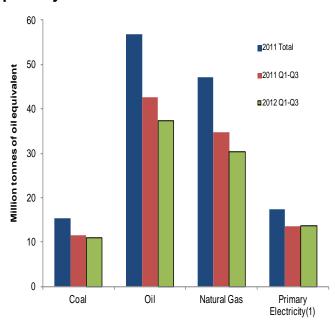
Total primary energy consumption for energy uses rose by 1.2 per cent. When adjusted to take account of weather differences between the third quarter of 2011 and the third quarter of 2012, primary energy consumption rose by 1.1 per cent. (**Chart 1.3**)

Final energy consumption fell by 1.7 per cent compared to the third quarter of 2011. Domestic consumption rose by 4.6 per cent, whilst industrial consumption fell by 2.3 per cent, transport consumption fell by 1.6 per cent and other final users' consumption fell by 0.3 per cent. (**Chart 1.4**)

Net import dependency was 43.1 per cent, up 1.4 percentage points from the third quarter of 2011. This rise was due to the fall in oil and gas production. (**Chart 1.6**)

Fossil fuel dependency was 84.5 per cent in the third quarter of 2012, a record low level. (**Chart 1.7**)

Chart 1.1 Production of indigenous primary fuels



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

Total production in the third quarter of 2012 at 27.1 million tonnes of oil equivalent was 7.3 per cent lower than in the third quarter of 2011.

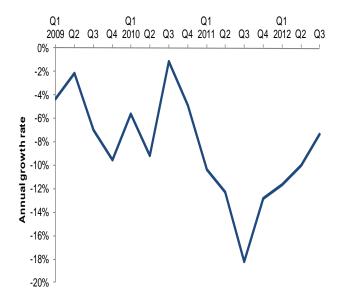
Production of natural and other gases fell by 10.3 per cent and production of oil by 12.1 per cent compared to the third quarter of 2011, as a result of maintenance work and other production issues.

Primary electricity output in the third quarter of 2012 was 16.2 per cent higher than in the third quarter of 2011, within which nuclear electricity output was 14.4 per cent higher and output from wind and natural flow hydro was 33.4 per cent higher than the same period in 2011 (see section 5).

In the third quarter of 2011 production of coal and other solid fuels was 9.0 per cent lower than the corresponding period of 2011. This was due to a decrease in both deep-mined and surface mining production (see section 2).

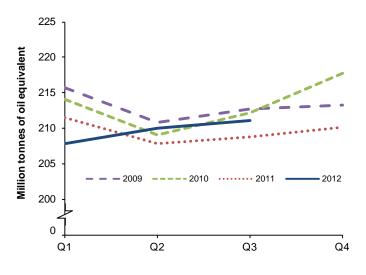
### Total Energy

# Chart 1.2 UK production (annual growth rate)



In the third quarter of 2012, the annual growth rate of UK production was -7.3 per cent. This was the result of the falls in oil and gas production due to maintenance activity and slowdowns in 2012.

# Chart 1.3 Total inland consumption (primary fuel input basis)<sup>(1)</sup>



(1) Seasonally adjusted and temperature corrected annual rates.

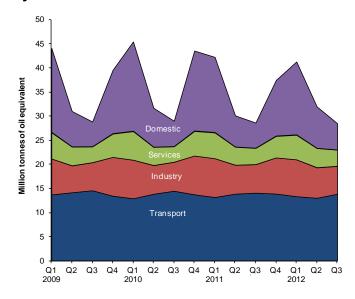
Total inland consumption on a primary fuel input basis (temperature corrected, seasonally adjusted annualised rate), was 211.1 million tonnes of oil equivalent in the third quarter of 2012, 1.1 per cent higher than in the third quarter of 2011. The average temperature in the third quarter of 2012 was 0.2 degree Celsius colder than the same period a year earlier.

Between the third quarter of 2011 and the third quarter of 2012 (on a seasonally adjusted and temperature corrected basis) coal and other solid fuel consumption increased by 27.8 per cent, driven by increased coal use in electricity generation.

Also on a seasonally adjusted and temperature corrected basis, oil consumption fell by 1.1 per cent between the third quarter of 2011 and the third quarter of 2012.

On the same basis, natural gas consumption fell by 13.2 per cent between the third quarter of 2011 and the third quarter of 2012, as higher gas prices led to less gas being used in electricity generation.

Chart 1.4 Final energy consumption by user



Total final energy consumption fell by 1.7 per cent between the third quarter of 2011 and the third quarter of 2012.

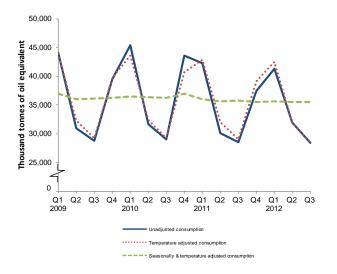
Domestic sector energy consumption rose by 4.6 per cent, reflecting the colder weather compared to a year earlier.

Industrial energy consumption fell by 2.3 per cent.

Transport sector energy consumption fell by 1.6 per cent.

Service sector energy consumption fell by 0.3 per cent.

Chart 1.5 Seasonally adjusted and temperature corrected final energy consumption



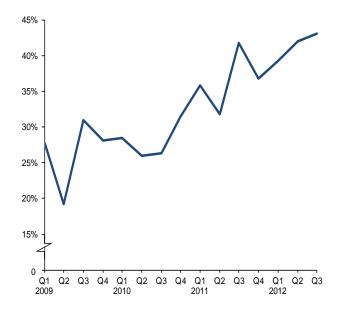
Total unadjusted final energy consumption (excluding non-energy use) fell by 0.2 per cent between the third quarter of 2011 and the third quarter of 2012.

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

These analyses and consumption data by fuel and sector is available in the table ET 1.3c on the DECC website at:

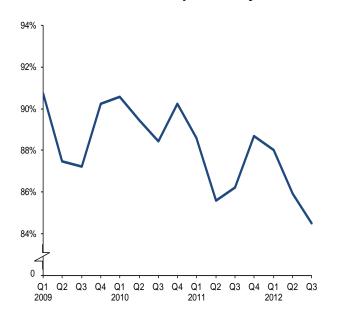
www.decc.gov.uk/en/content/cms/statistics/energy\_stats/source/total/total.aspx

### Chart 1.6 Net import dependency



In the third quarter of 2012 net import dependency was 43.1 per cent, up 1.4 percentage points from the third 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 third quarter of 2012 dependency on fossil fuels was 84.5 per cent, down 1.7 percentage points from the third quarter of 2011, and at a record low level. Low carbon fuels accounted for a record share of 34 per cent of generation in 2012 quarter 3 (see section 5).

#### Relevant tables

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**TABLE 1.1. Indigenous production of primary fuels** 

Million tonnes of oil equivalent

						Primary electri	city
		Total	Coal <sup>1</sup>	Petroleum <sup>2</sup>	Natural gas <sup>3</sup>	\ Nuclear	Vind and natural flow hydro <sup>4</sup>
2009		166.9	14.1	74.7	61.6	15.2	1.25
2010		157.9	14.7	69.0	59.1	13.9	1.19
2011		137.0	15.4	56.9	47.2	15.6	1.84
Per cent	change	-13.2	+4.8	-17.5	-20.1	+12.2	+54.7
2011	Quarter 3	29.2	3.8	12.2	9.3	3.6	0.37
	Quarter 4	34.4	3.7	14.2	12.6	3.3	0.67
2012	Quarter 1	33.8	3.7	13.8	11.8	3.9	0.61r
	Quarter 2	31.5	3.8	12.9	10.2	4.2	0.44r
	Quarter 3 p	27.1r	3.4	10.7	8.4	4.1	0.49r
Per cent	<i>change</i> ⁵	<i>-7.3</i>	-9.0	-12.1	-10.3	+14.4	+33.4

<sup>1.</sup> 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.

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

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

<sup>4.</sup> Includes generation by solar PV.

<sup>5.</sup> Percentage change in the third quarter of 2012 compared with a year earlier.

## TABLE 1.2 Inland energy consumption: primary fuel input basis

Million	tonnes	of oil	eauivalent
IVIIIIIOII	willia	ווט וט	cyuivaiciii

							Primary electricity						F	Primary electricity	
					Natural		Wind and natural	Net			1	Vatural	Wind and natural Net		
		Total	Coal <sup>1</sup>	Petroleum <sup>2</sup>	gas <sup>3</sup>	Nuclear	flow hydro <sup>4</sup>	imports	Total	Coal	Petroleum	gas	Nuclear	flow hydro	imports
		Unadjuste	$d^5$						Seasonall	y adjuste	d and temper	rature co	orrected <sup>6,7</sup>	(annualised rates	s)
2009		211.0	35.3	71.0	87.9	15.2	1.25	0.25	213.1	36.0	71.0	89.4	15.2	1.25	0.25
2010		218.0	37.1	70.3	95.3	13.9	1.19	0.23	213.3	36.0	70.3	91.7	13.9	1.19	0.23
2011		203.0	37.9	68.0	79.1	15.6	1.84	0.53	209.6	40.1	68.0	83.4	15.6	1.84	0.53
Per cent	change	-6.9	+2.2	-3.2	-17.0	+12.2	+54.7	(+)	-1.7	+11.5	-3.2	-9.0	+12.2	+54.7	(+)
2011	Quarter 3	42.9	7.5	17.1	14.2	3.6	0.37	0.20	208.8	38.4	68.4	84.1	15.4	1.74	0.81
	Quarter 4	54.4	11.6	17.4	21.3	3.3	0.67	0.11	210.2	44.4	69.6	79.5	14.1	2.12	0.44
2012	Quarter 1	59.1r	13.2	16.8	24.4	3.9	0.61r	0.17	207.8r	46.2	67.2	77.4r	14.2	2.11r	0.68
	Quarter 2	48.0	10.3	16.4	16.4	4.2	0.44r	0.27	210.0r	47.0r	65.6	77.7	16.2	2.34r	1.10
	Quarter 3 p	43.4r	9.8	16.9r	11.8	4.1	0.49r	0.35	211.1r	49.1r	67.6r	73.0r	17.7	2.35r	1.40r
Per cent change 8 +1.2		+1.2	+30.8	-1.1	-16.9	+14.4	+33.4	+73.1	+1.1	+27.8	-1.1	-13.2	+14.9	+35.2	+73.1

<sup>1.</sup> 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.

<sup>2.</sup> Inland deliveries for energy use, plus refinery fuel and losses, minus the differences between deliveries and actual consumption at power stations.

<sup>3.</sup> Includes gas used during production, colliery methane, landfill gas and sewage gas. Excludes gas flared or re-injected and non-energy use of gas.

<sup>4.</sup> Includes generation by solar PV. Excludes generation from pumped storage stations.

<sup>5.</sup> Not seasonally adjusted or temperature corrected.

<sup>6.</sup> Coal and natural gas are temperature corrected; petroleum and primary electricity are not temperature corrected.

<sup>7.</sup> 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.aspx

<sup>8.</sup> Percentage change in the third quarter of 2012 compared with a year earlier.

## Table 1.3a Supply and use of fuels

											Thousand	d tonnes of oil	equivalent
				2010	2010	2011	2011	2011	2011	2012	2012	2012	
	2010	2011	per cent change	3rd quarter	4th quarter	1st quarter	2nd quarter	3rd quarter	4th quarter	1st quarter	2nd quarter	3rd quarter p	per cent change <sup>1</sup>
SUPPLY													
Indigenous production	157,892	136,990	-13.2	35,716	39,490	38,375	34,947	29,208	34,460	33,948r	31,595r	27,144	-7.1
Imports	156,173	162,180	+3.8	33,649	43,713	42,555	37,197	39,037	43,392	45,150r	42,555r	39,867	+2.1
Exports	-91,184	-84,127	<i>-7.7</i>	-21,339	-23,389	-19,775	-21,936	-20,003	-22,414	-20,865r	-21,146r	-20,119	+0.6
Marine bunkers	-2,251	-2,413	+7.2	-628	-567	-582	-624	-646	-560	-479	-603	-552	-14.6
Stock change <sup>2</sup>	+6,383	-919		-1,358	4,713	+2,414	-2,221	-2,636	1,524	+3,507r	-2,086r	-1,058	
Primary supply	227,012	211,711	-6.7	46,040	63,959	62,988	47,363	44,959	56,402	61,262r	50,315r	45,282	+0.7
Statistical difference <sup>3</sup>	+130	-598		-92	149	-46	-321	-357	126	+1r	+151r	+74	
Primary demand	226,882	212,310	-6.4	46,132	63,811	63,034	47,684	45,316	56,276	61,260r	50,164r	45,208	-0.2
Transfers <sup>4</sup>	-6	-14		-51	19	+28	+10	-10	-42	-31r	-78r	67	
TRANSFORMATION	-49,939	-48,182	-3.5	-10,648	-13,550	-13,945	-10,937	-10,677	-12,622	-13,469r	-11,889r	-11,446	+7.2
Electricity generation	-46,443	-44,978	-3.2	-10,005	-12,818	-12,990	-10,210	-9,968	-11,810	-12,774r	-11,020r	-10,558	+5.9
Heat generation	-1,085	-1,079	-0.5	-209	-311	-336	-236	-219	-289	-336	-236	-219	+0.1
Petroleum refineries	-222	-42	-80.9	86	116	-85	62	4	-23	63	-13r	-53	(-)
Coke manufacture	-356	-333	-6.4	-88	-118	-84	-94	-73	-83	-61r	-73r	-92	+27.0
Blast furnaces	-1,828	-1,739	-4.9	-415	-421	-445	-461	-429	-404	-343	-544r	-521	+21.6
Patent fuel manufacture	-5	-10	(+)	-18	2	-5	1	7	-13	-20	-4r	-2	(-)
Energy industry use	14,238	13,277	-6.7	3,388	3,656	3,490	3,388	3,148	3,252	3,345r	3,252r	2,997	-4.8
Losses	4,104	3,825	-6.8	879	994	1,122	910	848	944	1,031r	871r	729	-14.1
FINAL CONSUMPTION	158,613	147,012	-7.3	31,171	45,633	44,499	32,462	30,637	39,414	43,378r	34,077r	30,108	-1.7
Iron & steel	1,364	1,311	-3.9	329	342	321	326	334	330	353	369r	329	-1.5
Other industries	26,326	25,834	-1.9	5,610	7,632	7,651	5,582	5,510	7,091	7,207r	5,863r	5,379	-2.4
Transport	55,154	55,187	+0.1	14,511	13,780	13,223	13,916	14,111	13,937	13,396r	13,064r	13,892	-1.6
Domestic	48,486	38,842	-19.9	5,263	16,604	15,605	6,471	5,226	11,540	15,134r	8,603r	5,464	+4.6
Other Final Users	18,285	17,168	-6.1	3,254	5,189	5,432	3,787	3,409	4,540	5,183r	4,045r	3,399	-0.3
Non energy use	8,999	8,669	-3.7	2,204	2,085	2,267	2,379	2,047	1,976	2,104	2,134r	1,644	-19.7
<b>DEPENDENCY</b> <sup>5</sup>													
Net import dependency	28.3%	36.5%		26.4%	31.5%	35.8%	31.8%	41.7%	36.8%	39.3% r	42.0% r	43.1%	
Fossil fuel dependency	89.8%	87.5%		88.4%	90.3%	88.6%	85.6%	86.2%	88.7%	88.0% r	85.9% r	84.5%	

<sup>1.</sup> Percentage change in the third quarter of 2012 compared with a year earlier.

<sup>2.</sup> Stock fall (+), stock rise (-).

<sup>3.</sup> Primary supply minus primary demand.

<sup>4.</sup> 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.

<sup>5.</sup> See article in the December 2010 edition of Energy Trends at:

Table 1.3b Supply and use of fuels

				2011 (	Quarter 3					2012 Quarter 3 p								
	Coal	Manufactured fuels <sup>4</sup>	Primary oil	Petroleum Products	Natural gas <sup>5</sup>	Bioenergy & waste <sup>6</sup>	Primary electricity	Electricity	Heat sold	Coal	Manufactured fuels⁴	Primary oil	Petroleum Products	Natural gas <sup>5</sup>	Bioenergy & waste <sup>6</sup>	Primary electricity	Electricity	Heat sold
SUPPLY																		
Indigenous production	2,922	-	12,168	-	8,915	1,266	3,938	-	-	2,555	-	10,678	-	7,909	1,426	4,576	-	-
Imports	5,425	3	16,546	5,827	10,454	553	-	228	-	7,099	16	16,631	7,199	8,064	488	-	371	-
Exports	-81	-80	-7,717	-7,585	-4,461	-54	-	-26	-	-74	-26	-8,660	-7,513	-3,740	-87	-	-20	-
Marine bunkers	-	-	-	-646	-	-	-	-	-	-	-	-	-552	-	-	-	-	-
Stock change <sup>1</sup>	-1,886	-166	+396	-24	-955	-	-	-	-	-971	+43	+700	-106	-725	-	-	-	-
Primary supply	6,380	-244	21,393	-2,428	13,953	1,765	3,938	203	-	8,609	33	19,349	-972	11,509	1,827	4,576	351	-
Statistical difference <sup>2</sup>	-59	-3	-244	+33	-69	+1	-	-16	-	+10	-	-	+47	+11	-	-	+5	-
Primary demand	6,438	-241	21,637	-2,461	14,022	1,764	3,938	219	-	8,599	+33	19,348	-1,018	11,497	1,827	4,576	346	
Transfers <sup>3</sup>	-	+1	-595	+585	-1	-	-368	+368		_	+1	-251	+318	-1	-	-491	+491	
TRANSFORMATION	-6,037	658	-21,042	20,820	-7,273	-1,244	-3,569	6,737	272	-8,195	396	-19,097	18,820	-4,567	-1,406	-4,085	6,416	272
Electricity generation	-4,650	-161	-	-209	-6,871	-1,244	-3,569	6,737	-	-6,958	-151	-	-207	-4,166	-1,406	-4,085	6,416	-
Heat generation	-61	-13	-	-16	-401	-	-	-	272	-61	-13	-	-17	-401	-	-	-	272
Petroleum refineries	-	-	-21,042	21,045	-	-	-	-	-	-	-	-19,097	19,044	-	-	-	-	-
Coke manufacture	-1,090	1,017	-	-	-	-	-	-	-	-929	837	-	-	-	-	-	-	-
Blast furnaces	-187	-242	-	-	-	-	-	-	-	-195	-326	-	-	-	-	-	-	-
Patent fuel manufacture	-49	57	-	-	-	-	-	-	_	-52	50	-	-	-	-	-	-	-
Energy industry use	1	169	-	1,321	1,135	-	-	499	24	-	179	-	1,171	1,079	-	-	544	24
Losses	-	38	-	-	246	-	-	565	-	_	18	-	-	215	-	-	495	-
FINAL CONSUMPTION	401	211	-	17,622	5,368	520	-	6,261	254	404	232	-	16,949	5,635	421	-	6,214	253
Iron & steel	10	113	-	1	127	-	-	83	-	9	135	-	1	97	-	-	87	-
Other industries	259	47	-	1,222	1,618	87	-	2,067	210	270	44	-	1,096	1,623	99	-	2,038	210
Transport	2	-	-	13,691	-	330	-	88	-	3	-	-	13,602	-	199	-	88	-
Domestic	121	50	-	512	2,512	57	-	1,969	5	115	53	-	455	2,806	73	-	1,957	5
Other final users	10	-	-	322	937	46	-	2,056	38	7	-	-	323	936	50	-	2,044	38
Non energy use	-	-	-	1,874	173	-	-	-	<u> </u>		-	-	1,471	173	-	-	-	-

Thousand tonnes of oil equivalent

<sup>1.</sup> Stock fall (+), stock rise (-).

<sup>2.</sup> Primary supply minus primary demand.

<sup>3.</sup> 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.

<sup>4.</sup> Includes all manufactured solid fuels, benzole, tars, coke oven gas and blast furnace gas.

<sup>5.</sup> Inludes colliery methane.

<sup>6.</sup> 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:

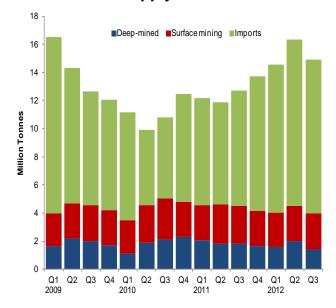
Overall production down 12.5 per cent (-0.6 million tonnes) compared to quarter 3 2011 with deepmined output down 21.6 per cent (-0.4 million tonnes). This was due to operational problems at several sites. Surface mining output also down by 4.7 per cent (-0.1 million tonnes). **(Chart 2.1)** 

Coal imports up 33.4 per cent (+2.7 million tonnes) on quarter 3 2011. (Charts 2.1 and 2.2).

The demand for coal by electricity generators in the third quarter of 2012, was 49.6 per cent (+3.7 million tonnes) higher than that in the third quarter of 2011. (Chart 2.3)

Total stock levels were down 14.0 per cent (-2.6 million tonnes) to 15.8 million tonnes compared to quarter 3 2011 but were up by 10.1 per cent (1.4 million tonnes) on quarter 2 2012. **(Chart 2.4)** 

### **Chart 2.1 Coal supply**



Provisional figures for the third quarter of 2012 show that coal production (including an estimate for slurry) was down 12.5 per cent on the third quarter of 2011 at 4.1 million tonnes. There was a decrease of 4.7 per cent (-0.1 million tonnes) in surface-mined production and of 21.6 per cent (-0.4 million tonnes) in deep-mined production. The decrease in deep-mined production was due to operational problems at several sites.

Imports of coal in the third quarter of 2012 were 33.4 per cent higher than in the third quarter of 2011 at 10.9 million tonnes.

In quarter 3 2012, net imports (10.8 million tonnes) made up 80.7 per cent of coal supply, 1.0 percentage points lower compared to the third quarter of 2011 (81.7 per cent).

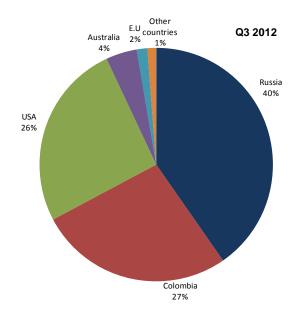
**Table 2A Coal imports by origin** 

			Thousand	Tonnes	
	2010	2011	2011 Q3	2012 Q3	
European Union	954	1,155	412	160	
Russia	9,750	12,567	3,213	4,411	
Colombia	6,437	8,176	1,800	2,941	
USA	4,522	6,283	1,440	2,824	
Australia	3,247	3,127	970	468	
Other Countries	1,610	1,303	383	134	
Total imports	26,521	32,610	8,219	10,939	

Steam coal, largely for the power stations market, accounted for 88.3 per cent of coal imported in the third quarter of 2012. Steam coal imports increased by 50.2 per cent (3.2 million tonnes) in quarter 3 2012, when compared to the same period a year earlier.

Coking coal imports decreased by 27.9 per cent (-0.5 million tonnes) to 1.2 million tonnes. Imports of anthracite are negligible in comparison with coking coal and steam coal imports.

### Chart 2.2 Coal imports by origin

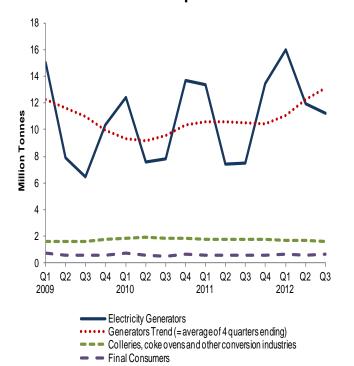


All but 2.3 per cent of UK steam coal imports came from just three countries: Russia (43.8 per cent), the Colombia (30.4 per cent) and the USA (23.4 per cent).

Russian and Colombian steam coal imports increased by 39.7 per cent (+1.2 million tonnes) and 66.9 per cent (+1.2 million tonnes), respectively, from quarter 3 2011.

Steam coal imports originating from the USA were more than double the volumes reported in quarter 3 2011 (1.1 million tonnes).

**Chart 2.3 Coal consumption** 



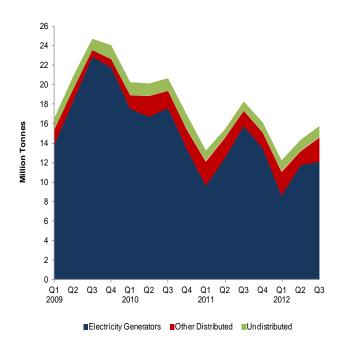
Total demand for coal in the third quarter of 2012, at 13.4 million tonnes, was 35.6 per cent higher than in the third quarter of 2011. Consumption by electricity generators was up by 49.6 per cent to 11.2 million tonnes, reflecting the switch from gas to coal for electricity generation.

Electricity generators accounted for 83.3 per cent of total coal use in the third quarter of 2012; compared with 75.5 per cent a year earlier.

Sales to industrial users increased by 4.2 per cent in quarter 3 2012 while sales to final consumers (as measured by disposals to final consumers) were down by 4.5 per cent.

Coal consumption by generators over the three quarters of 2012 is already at 93 per cent of the level seen in 2011.

### **Chart 2.4 Coal stocks**



Coal stocks showed a seasonal rise of 1.4 million tonnes during the third quarter of 2012 and at the end of September 2012 stood at 15.8 million tonnes, 2.6 million tonnes lower than at the end of September 2011.

The level of coal stocks at power stations at the end of the third quarter of 2012 was 12.1 million tonnes, 3.7 million tonnes (23 per cent) lower than at the end of September 2011.

Stocks held by producers (undistributed stocks) decreased during the third quarter of 2012 to stand at 1.2 million tonnes, but were 0.2 million tonnes higher than at the end of September 2011.

#### Relevant tables

2.1:	: Supply and consumption of coal	.Page 16
	: Supply and consumption of coke oven coke, coke breeze	J
	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

												Thous	and tonnes
				2010	2010	2011	2011	2011	2011	2012	2012	2012	
			per cent	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	per cent
	2010	2011	change	quarter p	change 1								
SUPPLY													
Indigenous production	18,417	18,627	+1.1	5,164	4,927	4,773	4,835	4,699	4,321	4,155	4,636r	4,109	-12.5
Deep mined	7,390	7,312	-1.1	2,113	2,284	2,039	1,838	1,793	1,642	1,585r	1,978	1,406	-21.6
Surface mining <sup>2</sup>	10,426	10,580	+1.5	2,894	2,506	2,550	2,805	2,713	2,511	2,458	2,540r	2,585	-4.7
Other sources	600	735	+22.5	157	136	184	192	192	167	113	118	118	-38.8
Imports <sup>3</sup>	26,541	32,527	+22.6	5,811	7,692	7,556	7,215	8,199	9,557	10,494	11,851	10,939	+33.4
Exports <sup>4</sup>	715	491	-31.3	155	219	133	117	107	135	117	131	99	-7.9
Stock change <sup>5</sup>	+7,206	+836		-546r	+3,786	+3,619	-2,173	-2,888	+2,279	+3,830	-2,101r	-1,521	
Total supply	51,448	51,500	+0.1	10,274	16,186	15,815	9,760	9,902	16,022	18,363	14,256r	13,429	+35.6
Statistical difference	-6	-14		+36r	+7	-63	-23	-4	+75	-18	+5r	+1	
Total demand	51,455	51,514	+0.1	10,238	16,178	15,879	9,783	9,906	15,946	18,381	14,251r	13,428	+35.6
TRANSFORMATION	48,958	49,057	+0.2	9,692	15,524	15,214	9,198	9,323	15,323	17,740	13,638r	12,836	+37.7
Electricity generation	41,498	41,857	+0.9	7,833	13,695	13,440	7,412	7,481	13,523	16,025	11,901r	11,192	+49.6
Heat generation <sup>6</sup>	477	477	-	97	134	145	106	99	127	145	106	99	-
Coke manufacture	5,654	5,398	-4.5	1,432	1,389	1,279	1,353	1,428	1,338	1,300	1,301	1,217	-14.8
Blast furnaces	978	995	+1.7	221	212	257	246	245	247	199	253	255	+4.4
Patent fuel manufacture	351	331	-5.7	108	94	93	81	69	87	71	77r	72	+4.3
Energy industry use	5	4		1	1	1	1	1	1	1	1	1	
FINAL CONSUMPTION	2,492	2,453	-1.6	545	654	664	584	582	623	640	612r	591	+1.5
Iron & steel	60	53		15	16	13	13	13	14	12	13	13	-5.4
Other industries	1,656	1,629	-1.6	372	438	431	400	393	404	457	431r	410	+4.5
Domestic	718	717	-0.2	143	186	209	161	159	188	158	155	154	-3.2
Other final users	58	55	-5.5	14	14	11	10	17	16	13	12r	14	-16.9
Stocks at end of period													
Distributed stocks	15,366	15,113	-1.6	19,372	15,366	12,186	14,447	17,332	15,113	11,072	13,188r	14,596	-15.8
Of which:													
Major power producers <sup>7</sup>	13,370	13,496	+0.9	17,613	13,370	9,646	12,484	15,776	13,496	8,656	11,749	12,117	-23.2
Coke ovens	1,338	1,355	+1.3	1,199	1,338	1,187	1,112	1,324	1,355	1,127	1,018	955	-27.9
Undistributed stocks	1,517	926	-39.0	1,298	1,517	1,071	983	986	926	1,136	1,122r	1,155	+17.1
Total stocks 8	16,884	16,039	-5.0	20,670	16,884	13,257	15,430	18,318	16,039	12,209	14,310r	15,751	-14.0

<sup>1.</sup> Percentage change in the third quarter of 2012 compared with a year earlier.

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

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

<sup>4.</sup> 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.

<sup>5.</sup> Stock fall (+), stock rise (-).

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

<sup>7.</sup> This includes stocks held at ports.

<sup>8.</sup> 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

												Thous	and tonnes
	2010	2011	per cent change	2010 3rd quarter	2010 4th quarter	2011 1st quarter	2011 2nd quarter	2011 3rd quarter	2011 4th quarter	2012 1st quarter	2012 2nd quarter	2012 3rd quarter p	per cent change <sup>3</sup>
SUPPLY													
Indigenous production	4,340	4,342	-	1,096	1,052	1,029	1,075	1,174	1,064	1,040	1,056	954	-18.7
Coke Oven Coke	3,990	4,021	+0.8	1,011	955	943	991	1,094	993	993	983	883	-19.3
Coke Breeze	32	31	-3.0	8	8	8	8	8	8	8	8	8	-3.7
Other MSF	318	289	-8.9	77	89	78	76	73	63	40	66	64	-12.2
Imports	123	47	(-)	29	39	23	2	3	18	10	17	22	(+)
Exports	518	499	-3.6	136	94	135	58	112	195	325	143	36	(-)
Stock change <sup>1</sup>	-215	-540		-133	-101	-68	-129	-233	-110	-67	+150	+60	
Transfers	-	-		-	-	-	-	-	-	-	-	-	
Total supply	3,731	3,350	-10.2	856	895	850	890	833	777	658	1,080	1,000	+20.1
Statistical difference	-5	-4		4	-7	-6	3	0r	-1	-0	-0	0	
Total demand	3,735	3,354	-10.2	852	902	856	888	833	778	658	1,080	1,000	+20.1
TRANSFORMATION	2,938	2,645	-10.0	683	696	673	712	660	601	521	882r	828	+25.5
Coke manufacture	-	-		-	-	-	-	-	-	-	-	-	
Blast furnaces	2,938	2,645	-10.0	683	696	673	712	660	601	521	882r	828	+25.5
Energy industry use	-	-		-	-	-	-	-	-	-	-	-	
FINAL CONSUMPTION	797	709	-11.1	169	206	183	175	173	177	137	198r	172	-0.4
Iron & steel	423	395	-6.6	97	100	96	107	99	94	80	122r	91	-8.1
Other industries	53	35	-33.8	7	12	9	6	10	11	5	13	13	+34.9
Domestic	321	278	-13.4	65	95	78	63	65	73	52	64	68	+6.0
Stocks at end of period <sup>2</sup>	719	872	-10.2	603	719	734	755	773	872	930	793	687	-11.2

<sup>1.</sup> Stock fall (+), stock rise (-).

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

<sup>3.</sup> Percentage change in the third 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

				2010	2010	2011	2011	2011	2011	2012	2012	2012	GWh
	2010	2011	per cent change	3rd quarter	4th quarter	1st quarter	2nd quarter	3rd quarter	4th quarter	1st quarter	2nd quarter	3rd quarter p	per cent change 1
SUPPLY													
Indigenous production	21,923	21,007	-4.2	5,400	5,110	5,183	5,368	5,360	5,096	4,655r	5,730r	5,419	+ 1.1
Coke oven gas	8,822	8,847	+0.3	2,257	2,055	2,103	2,239	2,296	2,209	2,149r	2,105r	2,003	-12.8
Blast furnace gas	11,404	10,503	-7.9	2,709	2,672	2,677	2,717	2,645	2,464	2,101	3,224r	3,059	+15.6
Benzole & tars	1,696	1,657	-2.3	434	383	403	412	419	422	404r	400r	358	-14.6
Transfers	263	60	(-)	66	58	32	10	11	7	11	4	14	+23.4
Total supply	22,186	21,067	-5.0	5,466	5,168	5,215	5,378	5,371	5,103	4,667r	5,734r	5,433	+ 1.1
Statistical difference	-133	-131		-48	-31	-38	-33	-32	-28	-2r	+0	+1	
Total demand	22,318	21,199	-5.0	5,514	5,199	5,253	5,411	5,403	5,131	4,669r	5,733r	5,431	+0.5
TRANSFORMATION	8,429	8,038	-4.6	2,131	1,935	2,007	2,103	2,024	1,905	1,257r	1,942r	1,911	-5.6
Electricity generation	7,831	7,441	-5.0	1,981	1,785	1,857	1,953	1,875	1,756	1,108r	1,793r	1,762	-6.0
Heat generation <sup>2</sup>	598	598	-	149	149	149	149	149	149	149	149	149	-
Energy industry use	7,909	7,671	-3.0	1,916	1,922	1,901	1,927	1,967	1,875	1,774r	2,126r	2,084	+5.9
Losses	1,953	1,751	-10.4	495	373	416	477	443	414	178r	319r	211	(-)
FINAL CONSUMPTION	4,028	3,739	-7.2	972	969	929	904	969	937	1,460r	1,346r	1,225	+26.5
Iron & steel	2,134	1,883	-11.8	486	538	479	439	502	462	1,004r	895r	820	+63.2
Other industries	1,894	1,857	-2.0	486	431	451	465	466	474	456r	452r	406	-13.0

<sup>1.</sup> Percentage change in the third quarter of 2012 compared with a year earlier.

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

### Section 3 - Oil and Oil Products

#### Key results show:

Total indigenous UK production of crude oil and Natural Gas Liquids (NGL) in Q3 2012 was 12.1 per cent lower than a year ago. (Chart 3.1)

Refinery production in the Q3 2012 was down 10.0 per cent on the same quarter of last year. This is a significant reduction in production and is due in the main to the closure of the Coryton refinery in Essex. There were notable decreases in aviation turbine fuel and petroleum gases. (Chart 3.2)

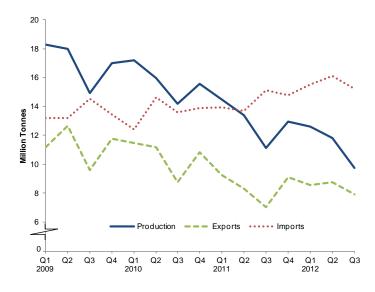
Net imports of crude oil and NGLs in Q3 2012 remained high at 7.1 million tonnes, which is the third largest figure since oil production peaked in 1999. This met around 43 per cent of UK's refinery demand. (Chart 3.3)

Net exports of petroleum products in Q3 2012 decreased significantly to only 0.3 million tonnes, with exports at their lowest quarterly level since the Q1 2010. (Chart 3.3)

Total deliveries of the key transport fuels decreased by 0.4 per cent when compared to the same period last year. Diesel deliveries increased by 3.4 per cent (in line with longer-term trends) and diesel share of road fuels increased further to a new peak at 62.3 per cent. Deliveries of aviation fuel were up by 2.0 per cent. (Chart 3.5)

Overall stocks of crude oil and petroleum products were down by 4.4 per cent at end of the Q3 2012 compared to a year earlier. (Chart 3.7)

Chart 3.1 Production and trade of crude oil and NGLs



Total Indigenous UK crude oil and NGL production was 12.1 per cent lower in Q3 of 2012 compared with the same quarter a year earlier. In particular, crude oil production in September 2012 was around a third lower. Oil production over the last eighteen months has been impacted by maintenance and other production issues over and above the general decline in North Sea production.

Production of NGLs was 39.5 per cent lower with a key driver the planned maintenance work taking place at the St Fergus associated gas terminal. With production being lower there was a large stock draw in the quarter of 0.6 million tonnes.

The decrease of indigenous production was accompanied by increased imports of Crude oil and NGL's. Imports increased by 6.4 per cent compared with the same quarter a year earlier. Exports increased by 15.0 per cent to 6.9 million tonnes.

Net imports of crude oil and NGLs remained at around 7.1 million tonnes in Q3 2012, this met around 43 per cent of the UK's refinery demand.

Chart 3.2 Production and trade of petroleum products

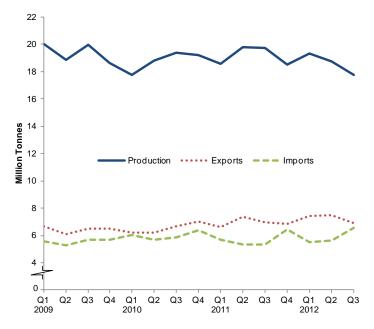
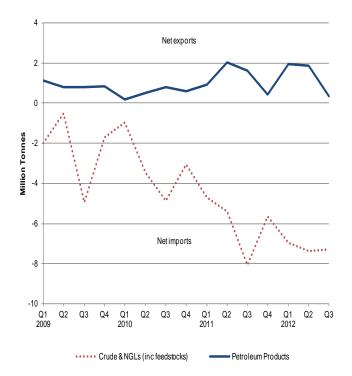


Chart 3.3 Overall trade of crude oil and NGLs, and petroleum products



Indigenous production of petroleum products at refineries in the latest quarter of 2012 was 10.0 per cent lower compared with the same quarter a year earlier. This is a significant reduction in production and is due in the main to the closure of the Coryton refinery in Essex, coupled with shutdowns at other refineries for planned maintenance work.

Aviation Turbine Fuel and Petroleum Gases showed the largest absolute changes, decreasing by 20.3 and 18.2 per cent respectively.

The decrease in production was accompanied by a large increase in imports to meet demand, up by 23.1 per cent compared with Q3 2011. Within this, Aviation Turbine Fuel and DERV showed the largest absolute increases, up 28.4 and 28.2 per cent respectively. Road fuel imports were at their highest level for at least 10 years.

Exports of petroleum products decreased by 1.1 per cent compared with Q3 2011. Despite this, the UK remained a net exporter of petroleum products in Q3 2012 by 0.3 million tonnes.

The UK's overall net import dependence for primary oils (Crude, NGL's and feedstocks) was 42 per cent in Q3 2012, equal to Q3 in 2011.

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

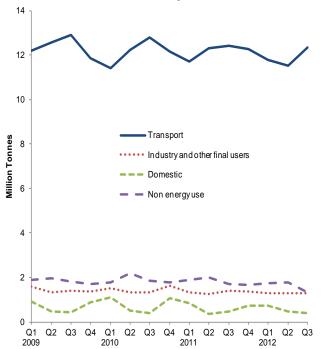
The principal source of the UK's crude imports is Norway. On the other hand, petroleum products are sourced widely and for example include significant volumes of diesel road fuel from Sweden, and of aviation fuel from Kuwait, Qatar, and India.

Petroleum products net import dependence was minus 2 per cent (net exporter) in Q3 2012, a decrease from the same quarter in 2012. The UK remained an overall net exporter of petroleum products in the latest quarter by 0.3 million tonnes. However, in September 2012 the UK was a net importer of petroleum products for the first time since 2010.

Whilst the UK remains a net exporter of petroleum products, the UK remains structurally short in diesel road fuel and aviation fuel. Decreased production in the latest quarter increased the UK's import dependence rate for DERV, increasing to 27 per cent compared with 23 per cent in Q3 2011. Whist the dependence rate for aviation fuel increased significantly to 52 per cent from 36 per cent.

December 2012 20

Chart 3.4 Final consumption of oil

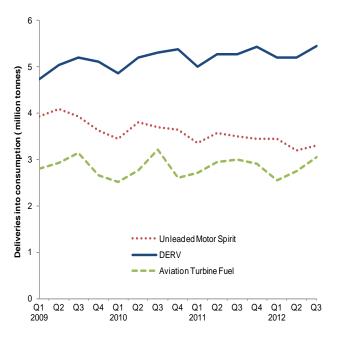


Final consumption in the oil sector is slightly seasonal with different products peaking at different times of the year. Consumption of domestic fuels for heating peaks in Q1 and Q4 each year, and consumption of aviation fuels is higher in Q2 and Q3.

Overall final consumption of petroleum products was down by 3.8 per cent on the same quarter of last year. Within this: domestic consumption, primarily used for heating, was lower by almost 11 per cent and non energy use was down by 21.3 per cent, due to maintenance activity at a large chemical plant.

Transport accounts for about three-quarters of UK final consumption. Transport consumption was down by 0.6 per cent on the same quarter of last year, but recorded the highest quarterly level since Q3 2011 - an increase of 7.0 per cent on Q2 2011. Transport fuels are examined in more detail below.

Chart 3.5 Demand for key transport fuels

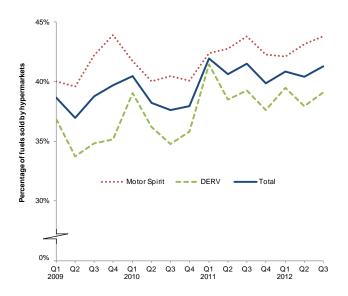


Total deliveries of key hydrocarbon transport fuels were down 0.4 per cent when compared to the same period last year.

While deliveries of motor spirit decreased by 5.6 per cent Diesel deliveries increased by 3.4 per cent on the same quarter last year. Diesel's share of road fuels also increased further, to another new peak at 62.3 per cent.

Deliveries of aviation fuel were up by 2.0 per cent on the same quarter last year and up 10.0 per cent on Q2 2012, continuing the trend for increasing demand of aviation fuel during 2012.

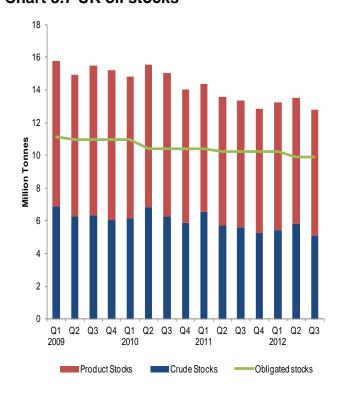
# Chart 3.6 Hypermarket share of road fuel sales



The retail share of motor spirit and diesel sold at hypermarkets stood at 44 per cent, and 39 per cent respectively at the end of Q3 2012.

Hypermarket sales of motor spirit were lower by 5.6 per cent and DERV sales were 0.4 per cent higher on the same quarter of last year. These decreases are consistent with overall sales being lower in Q3 2012.

#### Chart 3.7 UK oil stocks



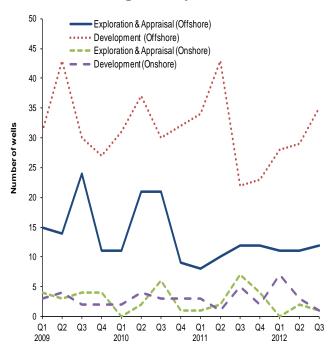
Total stocks for the UK in Q3 2012 were down 4.4 per cent compared with Q3 2011. With indigenous UK crude oil and NGL production down 12.1 per cent and Refinery production down 10.0 per cent there was a large stock draw in Q3 2012 of 0.6 million tonnes.

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 third quarter of 2012, the UK had stocks equal to around 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 12 exploration and appraisal wells started offshore in the third quarter of 2012, the same number as in the corresponding quarter of 2011.

There were 35 development wells drilled offshore in the third quarter of 2012, compared to 22 in the corresponding quarter of 2011.

There was 1 exploration and appraisal well started onshore in the third quarter of 2012, compared to 7 in the corresponding quarter of 2011.

There was 1 development well drilled onshore in the third quarter of 2012, compared to 5 in the corresponding quarter of 2011.

### **Relevant tables**

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3.7: Drilling activity on the UK Continental Shelf	•

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Table 3.1 Supply and use of crude oil natural gas liquids and feedstocks<sup>1</sup>

Table 3.1 Suppl	y and us	e of cr	ude oil,	natur	al gas	liquid	s and t	<u>feedst</u>	ocks <sup>1</sup>			Thousa	nd tonnes
			,	2010	2010	2011	2011	2011	2011	2012	2012	2012	,
	2010	2011	per cent change	3rd quarter	4th quarter	1st quarter	2nd quarter	3rd quarter	4th quarter	1st quarter	2nd quarter	3rd quarter p	per cent change <sup>8</sup>
SUPPLY													
Indigenous production <sup>2</sup>	62,962	51,972	-17.5	14,185	15,595	14,485	13,423	11,117	12,949	12,602r	11,808r	9,771	-12.1
Crude oil	58,047	48,571	-16.3	13,106	14,447	13,504	12,528	10,445	12,095	11,764r	11,111r	9,365	-10.3
NGLs <sup>3</sup>	4,915	3,401	-30.8	1,079	1,148	981	895	672	854	838	697r	406	-39.5
Imports <sup>4</sup>	54,587	57,586	+5.5	13,617	13,901	13,963	13,717	15,143	14,764	15,519r	16,130r	15,223	+0.5
Crude oil & NGLs	48,081	50,582	+5.2	12,010	11,945	12,034	12,046	13,183	13,319	14,040r	14,540r	14,033	+6.4
Feedstocks	6,505	7,003	+7.7	1,607	1,956	1,929	1,671	1,960	1,444	1,479	1,590r	1,191	-39.2
Exports <sup>4</sup>	42,196	33,745	-20.0	8,742	10,818	9,265	8,319	7,059	9,101	8,571r	8,746r	7,917	+12.1
Crude Oil & NGLs	39,239	29,836	-24.0	8,039	10,086	8,303	7,376	5,988	8,170	7,622r	7,782r	6,884	+15.0
Feedstocks	2,957	3,908	+32.2	703	732	963	943	1,071	931	949	964	1,033	-3.6
Stock change <sup>5</sup>	-39	+611		+184	+426	-654	+815	+365	+85	-198r	-224r	+639	
Transfers <sup>6</sup>	-2,074	-1,986		-483	-449	-492	-567	-502	-425	-633	-569r	-205	
Total supply	73,239	74,438	+1.6	18,761	18,656	18,036	19,068	19,063	18,271	18,719r	18,400r	17,512	-8.1
Statistical difference <sup>7</sup>	+39	-271		-92	+89	-94	-84	-219	+125	-15r	+102r	+7	
Total demand	73,200	74,709	+2.1	18,854	18,566	18,130	19,152	19,282	18,146	18,734	18,299r	17,505	-9.2
TRANSFORMATION	73,200	74,709	+2.1	18,854	18,566	18,130	19,152	19,282	18,146	18,734	18,299r	17,505	-9.2
Petroleum refineries	73,200	74,709	+2.1	18,854	18,566	18,130	19,152	19,282	18,146	18,734	18,299r	17,505	-9.2

<sup>1.</sup> 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.

<sup>2.</sup> Includes offshore and onshore production.

<sup>3.</sup> Natural Gas Liquids (NGLs) are condensate and petroleum gases derived at onshore treatment plants.

<sup>4.</sup> 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.

<sup>5.</sup> 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.

<sup>6.</sup> Mostly direct disposals to petrochemical plants.

<sup>7.</sup> Total supply minus total demand.

<sup>8.</sup> Percentage change in the third quarter of 2012 compared with a year earlier.

Table 3.2 Supply and use of petroleum products

												Thousa	and tonnes
				2010	2010	2011	2011	2011	2011	2012	2012	2012	
			per cent	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	per cent
	2010	2011	change	quarter p	change <sup>1</sup>								
SUPPLY													
Indigenous production <sup>2</sup>	75,177	76,637	+1.9	19,414	19,193	18,585	19,780	19,739	18,533	19,339	18,777r	17,762	-10.0
Imports <sup>3</sup>	23,979	22,804	-4.9	5,861	6,405	5,678	5,360	5,327	6,440	5,493r	5,645r	6,555	+23.1
Exports <sup>3</sup>	26,065	27,800	+6.7	6,669	7,005	6,613	7,364	6,957	6,867	7,419	7,486r	6,884	-1.1
Marine bunkers	2,139	2,296	+7.3	597	539	554	594	615	533	454	572	523	-15.0
Stock change <sup>4</sup>	+603	+188		+75	+268	+224	+183	-21	-199	+101r	+200r	-99	
Transfers <sup>5</sup>	-232	-155		-63	-74	-49	-29	-2	-74	+2r	-23r	-60	
Total supply	71,323	69,378	-2.7	18,022	18,249	17,271	17,336	17,471	17,300	17,061r	16,540r	16,751	-4.1
Statistical difference <sup>6</sup>	+150	-109		+61	-9	+16	-76	+30	-78	-42r	+12r	+40	
Total demand	71,173	69,487	-2.4	17,961	18,258	17,255	17,413	17,441	17,378	17,104r	16,528r	16,711	-4.2
TRANSFORMATION	1,211	895	-26.1	282	322	268	194	205	228	270r	236	203	-1.0
Electricity generation	1,143	832	-27.2	266	306	252	178	190	213	255	221	187	-1.1
Heat generation	63	63	-0.5	16	16	16	16	16	16	16	16	16	+0.7
Blast furnaces	4	0		0	-	-	-	-	-	-	-	-	
Energy industry use	4,967	4,918	-1.0	1,327	1,316	1,203	1,293	1,258	1,164	1,268	1,216r	1,129	-10.2
Petrolem Refineries	4,474	4,391	-1.9	1,204	1,193	1,072	1,162	1,127	1,030	1,137	1,085r	998	-11.4
Blast Furnaces	-	-		-	-	-	-	-	-	-	-	-	
Others	493	527	+6.9	123	123	131	131	131	134	131	131	131	-
FINAL CONSUMPTION	64,996	63,674	-2.0	16,353	16,620	15,784	15,926	15,978	15,986	15,566r	15,076r	15,379	-3.8
Iron & steel	5	4	-1.9	1	3	1	0	1	2	1	1	1	-11.4
Other industries	4,647	4,076	-12.3	1,116	1,309	1,035	943	1,098	1,001	1,020r	997r	992	-9.7
Transport	48,580	48,685	+0.2	12,777	12,158	11,706	12,304	12,413	12,262	11,792r	11,531r	12,335	-0.6
Domestic	3,083	2,401	-22.1	398	1,068	859	370	460	712	733r	480	409	-11.0
Other final users	1,151	1,252	+8.8	222	322	284	316	299	352	276r	281	298	-0.2
Non energy use	7,529	7,255	-3.6	1,838	1,761	1,900	1,992	1,706	1,656	1,743	1,786r	1,343	-21.3

<sup>1.</sup> Percentage change in the third quarter of 2012 compared with a year earlier.

<sup>2.</sup> Includes refinery production and petroleum gases extracted as products during the production of oil and gas.

<sup>3.</sup> 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.

<sup>4.</sup> Stock fall (+), stock rise (-).

<sup>5.</sup> Mainly transfers from product to feedstock.

<sup>6.</sup> Total supply minus total demand.

## Table 3.3 Supply and use of petroleum products - annual data

																	Thousand	1 tonnes
-					2010									2011				
	Total Petroleum Products	Motor spirit	DERV <sup>9</sup>	Gas oil¹	Aviation turbine fuel	Fuel oils	Petroleum gases²	Burning oil	Other products³	Total Petroleum Products	Motor spirit	DERV <sup>9</sup>	Gas oil¹	Aviation turbine fuel	Fuel oils	Petroleum gases²	Burning oil	Other products <sup>3</sup>
SUPPLY																		
Indigenous production <sup>4</sup>	75,177	19,918	15,332	9,505	5,781	7,525	7,283	2,570	7,264	76,637	19,856	16,801	8,683	6,411	7,907	7,253	2,377	7,348
Imports <sup>5</sup>	23,979	3,137	7,709	705	7,353	1,020		972	2,721	22,804	3,398	7,806	1,242	6,881	808	195	618	1,858
Exports <sup>5</sup>	26,065	8,619	2,121	4,358	1,487	4,895	732	191	3,662	27,800	9,363	3,127	4,667	1,210	5,140	820	173	3,299
Marine bunkers	2,139	-	-	807	-	1,332	-	-	-	2,296	-	-	753	-	1,543	-	-	-
Stock change <sup>o</sup>	+603	+299	+61	+95	+116	+115	-15	-5	-63	+188	+39	+83	+43	-28	-15	-11	-2	80
Transfers'	-232	-30	-180	+81	-649	-15	+0	+655	-94	-155	-39	-510	+441	-518	49	+46	+455	-79
Total supply	71,323	14,705	20,802	5,220	11,114	2,419	6,898	4,000	6,166	69,378	13,891	21,053	4,988	11,535	2,068	6,662	3,274	5,908
Statistical difference <sup>8</sup>	+150	+103	+62	-7	-2	+15	-20	-12	+12	-109	-4	+62	-103	-39	-3	+8	-13	-15
Total demand	71,173	14,602	20,740	5,227	11,116	2,404	6,918	4,012	6,154	69,487	13,895	20,991	5,091	11,574	2,071	6,654	3,288	5,923
TRANSFORMATION	1,211	-	-	73	-	598	331	-	210	895	-	-	63	-	426	358	-	48
Electricity generation	1,143	-	-	67	-	541	325	-	210	832	-	-	58	-	374	353	-	48
Heat generation	63	-	-	5	-	52	5	-	-	63	-	-	5	-	52	5	-	-
Petroleum refineries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coke manufacture	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Blast furnaces	4	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Patent fuel manufacture	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Energy industry use	4,967	-	-	493	-	611	2,462	-	1,401	4,918	-	-	527	-	660	2,308	-	1,423
FINAL CONSUMPTION	64,996	14,602	20,740	4,662	11,116	1,195	4,125	4,012	4,543	63,674	13,895	20,991	4,502	11,574	985	3,988	3,288	4,452
Iron & steel	5	-	-	-	-	5	-	-	-	4	-	-	-	-	4	-	-	-
Other industries	4,647	-	-	2,056	-	463	639	1,489	-	4,076	-	-	1,837	-	121	804	1,314	-
Transport	48,580	14,602	20,740	1,384	11,116	611	106	-	21	48,685	13,895	20,991	1,411	11,574	695	98	-	21
Domestic	3,083	-	-	165	-	-	394	2,523	-	2,401	-	-	142	-	-	286	1,973	-
Other final users	1,151	-	-	915	-	116	120	-	-	1,252	-	-	986	-	165	101	-	
Non energy use	7,530	-	-	142	-	_	2,865		4,522	7,255	-	-	125	-	-	2,699	-	4,431

<sup>1.</sup> Includes: Middle distillate feedstock destined for use in the petrochemical industry and marine diesel oil

<sup>2.</sup> Includes ethane, propane, butane and other petroleum gases.

<sup>3.</sup> Includes naphtha, industrial and white spirits, lubricants, bitumen, petroleum waxes, petroleum coke and other oil products.

<sup>4.</sup> Includes refinery production and petroleum gases extracted as products during the production of oil and gas.

<sup>5.</sup> 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.

<sup>6.</sup> Stock fall (+), stock rise (-).

<sup>7.</sup> Mainly transfers from product to feedstock.

<sup>8.</sup> Total supply minus total demand.

<sup>9.</sup> See page 15 of the March 2011 edition of Energy Trends for a note concerning changes to this table.

Table 3.4 Supply and use of petroleum products - latest quarter

																	Thousand	d tonnes
			2	2011 3rd	quarter							20	12 3rd q	uarter p				
	Total Petroleum Products	Motor spirit	DERV <sup>3</sup>	Gas oil ¹	Aviation turbine fuel	Fuel oils	Petroleum gases <sup>2</sup>	Burning oil	Other products <sup>3</sup>	Total Petroleum Products	Motor spirit	DERV³	Gas oll 1	Aviation turbine fuel	Fuel oils	Petroleum gases <sup>2</sup>	Burning oil	Other products 3
SUPPLY																		
Indigenous Production <sup>4</sup>	19,739	5,095	4,238	2,382	1,922	1,921	1,871	470	1,840	17,762	4,514	4,068	2,301	1,533	1,707	1,532	455	1,653
Imports <sup>5</sup>	5,327	777	1,974	332	1,488	194	34	113	414	6,555	1,118	2,530	214	1,912	157	55	63	506
Exports <sup>5</sup>	6,957	2,347	740	1,174	405	1,243	229	29	790	6,884	2,184	1,041	1,056	318	1,232	325	12	716
Marine bunkers	615	-	-	212	-	403	-	-	-	523	-	-	233	-	290	-	-	-
Stock change <sup>6</sup>	-21	-32	-56	-41	+86	+9	-23	+52	-15	-99	-75	-29	+54	-11	+50	-13	-6	-69
Transfers <sup>7</sup>	-2	-2	-122	+103	-74	+15	+11	+49	+17	-60	-67	-76	+84	-68	+16	+6	+59	-14
Total supply	17,471	3,490	5,293	1,389	3,019	494	1,666	655	1,466	16,751	3,306	5,452	1,364	3,047	408	1,254	559	1,360
Statistical difference8	+30	-12	+13	-11	+19	-18	+4	+13	+20	+40	+1	-9	+13	-13	+4	+10	+16	+17
Total demand	17,441	3,502	5,280	1,400	2,999	512	1,661	642	1,446	16,711	3,305	5,461	1,351	3,059	404	1,244	544	1,343
TRANSFORMATION	205	-	-	14	-	101	89	-	-	203	-	-	14	-	100	90	-	0
Electricity generation	190	-	-	13	-	88	88	-	-	187	-	-	12	-	87	88	-	0
Heat generation	16	-	-	1	-	13	1	-	-	16	-	-	1	-	13	1	-	-
Petroleum refineries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coke manufacture	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Blast furnaces	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Patent fuel manufacture	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Energy industry use	1,258	-	-	131	-	158	581	-	388	1,129	-	-	130	-	120	475	-	404
FINAL CONSUMPTION	15,978	3,502	5,280	1,255	2,999	252	991	642	1,058	15,379	3,305	5,461	1,207	3,059	185	680	544	939
Iron & steel	1	-	-	-	-	1	-	-	-	1	-	-	-	-	1	-	-	-
Other industries	1,098	-	-	564	-	4	273	257	-	992	-	-	537	-	27	183	218	-
Transport	12,413	3,502	5,280	437	2,999	165	25	-	6	12,335	3,305	5,461	362	3,059	119	23	-	5
Domestic	460	-	-	36	-	-	39	385	-	409	-	-	45	-	-	38	326	-
Other final users	299	-	-	197	-	82	20	-	-	298	-	-	243	-	37	19	-	-
Non energy use	1,706	-	-	20	-	-	634	-	1,052	1,343	-	-	20	-	-	416	-	907

- 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.

## Table 3.5 Demand for key petroleum products<sup>1</sup>

				2010	2010	2011	2011	2011	2011	2012	2012		sand torines
			per cent	2010	2010	2011	2011	2011	2011	2012	2012	2012	per cent
	2010	2011	change	3rd quarter	4th quarter	1st quarter	2nd quarter	3rd quarter	4th quarter	1st quarter	2nd quarter	3rd quarter p	change <sup>2</sup>
MOTOR SPIRIT													
Total sales	14,602	13,895	-4.8	3,707	3,646	3,363	3,571	3,502	3,458	3,447	3,193	3,305	-5.6
By seller:													
Retail sales: 3	14,082	13,430	-4.6	3,576	3,518	3,269	3,443	3,379	3,340	3,360r	3,079r	3,190	-5.6
hypermarkets 4	5,710	5,749	+0.7	1,446	1,410	1,386	1,472	1,479	1,412	1,416	1,328	1,397	-5.6
refiners/other traders	8,372	7,681	-8.3	2,130	2,108	1,883	1,971	1,900	1,928	1,944r	1,751r	1,792	<i>-5.7</i>
Commercial sales <sup>5</sup> By grade:	520	465	-10.5	131	128	95	129	123	119	86r	114r	115	-6.1
4-Star/Leaded/LRP <sup>6</sup>	11	12	+7.2	3	3	2	3	3	3	2	3	2	-27.6
Super Premium Unleaded	646	560	-13.4	149	209	114	122	128	196	107r	105r	117	-8.6
Premium Unleaded/ULSP <sup>7</sup>	13,944	13,324	-4.5	3,556	3,435	3,247	3,446	3,371	3,260	3,337r	3,085r	3,186	-5.5
GAS DIESEL OIL													
Total sales	25,968	26,082	+0.4	6,694	6,624	6,311	6,477	6,680	6,615	6,562r	6,478r	6,812	+2.0
DERV fuel	20,740	20,991	+1.2	5,305	5,378	4,999	5,282	5,280	5,431	5,209	5,196	5,461	+3.4
Retail sales: 3	13,157	13,549	+3.0	3,536	3,442	2,998	3,459	3,522	3,570	3,225r	3,410r	3,554	+0.9
hypermarkets 4	4,781	5,300	+10.9	1,228	1,233	1,243	1,331	1,383	1,343	1,272	1,295	1,388	+0.4
refiners/other traders	8,376	8,248	-1.5	2,307	2,209	1,755	2,128	2,138	2,226	1,953r	2,116r	2,166	+1.3
Commercial sales <sup>5</sup>	7,583	7,442	-1.9	1,770	1,936	2,001	1,822	1,758	1,861	1,984r	1,786r	1,907	+8.5
Other gas diesel oil 8	5,228	5,091	-2.6	1,389	1,246	1,312	1,195	1,400	1,184	1,353r	1,281r	1,351	-3.5
AVIATION FUELS													
Total sales	11,137	11,594	+4.1	3,230	2,604	2,722	2,960	3,005	2,907	2,564r	2,758	3,064	+2.0
Aviation spirit	21	21	-3.2	7	4	4	6	6	4	3	5	5	-20.8
Aviation turbine fuel	11,116	11,574	+4.1	3,223	2,600	2,718	2,954	2,999	2,902	2,560r	2,753	3,059	+2.0
FUEL OIL													
Total Sales	1,793	1,411	-21.3	318	572	332	340	354	387	324r	193r	294	-17.0
Light	685	713	+4.1	131	335	132	183	176	221	114r	111r	178	+0.7
Medium	119	124	+3.8	37	23	35	28	35	25	35r	21	30	-15.2
Heavy	989	575	-41.8	150	214	165	128	142	140	176r	60r	86	-39.4

Thousand tonnes

<sup>1.</sup> 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

<sup>2.</sup> Percentage change in the third quarter of 2012 compared with a year earlier.

<sup>3.</sup> Retail sales are those deliveries made to garages etc. mainly for resale to final consumers.

<sup>4.</sup> Data for sales by hypermarket companies are collected by a separate reporting system, but are consistent with the main data collected from companies.

<sup>5.</sup> Commercial sales are those deliveries made direct to a consumer for use in their own business, e.g. to bus and coach depots.

<sup>6.</sup> Sales of leaded petrol ceased from 31st December 1999, with Lead Replacement Petrol being introduced as a replacement fuel.

<sup>7.</sup> 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.

<sup>8.</sup> This includes gas diesel oil used for other purposes such as heating and middle distillate feedstock destined for use in the petrochemical industry.

## Table 3.6 Stocks of petroleum<sup>1</sup> at end of period

												Thousar	nd tonnes
		Cru	de oil and refi	nery process o	oil		Petrole	eum produc	ets		T	otal stocks	
						Light	Kerosene &	Fuel	Other	Total	Net	Stocks	Total
		Refineries <sup>2</sup>	Terminals <sup>3</sup>	Offshore <sup>4</sup>	Total⁵	distillates <sup>6</sup>	gas/diesel <sup>7</sup>	oils	products <sup>8</sup>	products	bilaterals <sup>9</sup>	in UK <sup>10</sup>	stocks
2009		3,848	1,136	682	6,033	1,157	6,256	797	963	9,173	2,728	12,479	15,206
2010		4,110	1,049	520	5,889	1,144	5,415	687	917	8,164	2,563	11,490	14,053
2011		3,889	694	540	5,274	849	5,230	645	845	7,569	2,100	10,743	12,843
Per cen	t change	-5.4	-33.8	+3.7	-10.4	-25.8	-3.4	-6.1	-7.9	<i>-7.3</i>	-18.0	-6.5	-8.6
2010	3rd quarter	4,133	1,327	617	6,257	1,212	5,908	697	948	8,765	2,841	12,181	15,022
	4th quarter	4,110	1,049	520	5,889	1,144	5,415	687	917	8,164	2,563	11,490	14,053
2011	1st quarter	4,402	1,509	553	6,580	1,102	5,231	658	815	7,806	2,516	11,869	14,386
	2nd quarter	3,959	1,093	505	5,707	1,068	5,356	659	806	7,888	2,834	10,761	13,596
	3rd quarter	3,917	818	627	5,574	1,045	5,263	633	848	7,789	2,647	10,715	13,362
	4th quarter	3,889	694	540	5,274	849	5,230	645	845	7,569	2,100	10,743	12,843
2012	1st quarter	4,006	861	488r	5,446r	884	5,291	748r	853	7,775r	2,277	10,945r	13,221r
	2nd quarter	3,826	1,250r	522r	5,845r	878	5,288	667r	843	7,676r	2,431	11,091r	13,521r
	3rd quarter p	3,345	1,012	481	5,083	855	5,343	561	929	7,688	2,448	10,323	12,771
Per cen	t change <sup>11</sup>	-14.6	+23.7	-23.2	-8.8	-18.2	+1.5	-11.4	+9.6	-1.3	-7.5	-3.7	-4.4

- 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 third quarter of 2012 compared with a year earlier.

## Table 3.7 Drilling activity<sup>1</sup> on the UKCS

Number of wells started

			(	Offshore		On	shore
				Exploration &		Exploration &	
		Exploration	Appraisal	Appraisal	Development <sup>2</sup>	Appraisal	Development <sup>2</sup>
2009		23	41	64	131	15	11
2010		28	34	62	130	9	12
2011		14	28	42	122	14	11
Per ce	nt change	-50.0	-17.6	-32.3	-6.2	+55.6	-8.3
2010	3rd quarter	9	12	21	30	6	3
	4th quarter	4	5	9	32	1	3
2011	1st quarter	3	5	8	34	1	3
	2nd quarter	2	8	10	43	2	1
	3rd quarter	5	7	12	22	7	5
	4th quarter	4	8	12	23	4	2
2012	1st quarter	5	6	11	28	-	7
	2nd quarter	5	6r	11r	29	2	3
	3rd quarter p	4	8	12	35	1	1
Per ce	nt change <sup>3</sup>	-20.0	+14.3	-	+59.1	-85.7	-80.0

<sup>1.</sup> Including sidetracked wells

<sup>2.</sup> Development wells are production or injection wells drilled after development approval has been granted.

<sup>3.</sup> Percentage change in the third quarter of 2012 compared with a year earlier

### Section 4 - Gas

### Key results show:

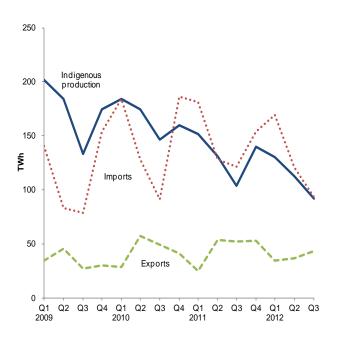
Gross UK production of natural gas in Q3 2012 was 11.3 per cent lower than in the same period a year ago, and was the lowest recorded third quarter production since 1992, driven by long-term decline and maintenance issues. **(Chart 4.1).** 

Within this, production of associated gas (natural gas produced from oil fields) decreased by 24.0 per cent, due to maintenance activity at St Fergus, whilst dry gas production increased by 6.2 per cent. This was the first time since 1998 that production from dry gas fields exceeded associated gas production (Chart 4.2).

Imports of gas decreased by 22.9 per cent in Q3 2012 compared with the same quarter in 2011, with shipped imports of LNG falling by 42.1 per cent. Exports also decreased by 16.2 per cent. (Chart 4.4).

Overall UK gas demand fell by 18.0 per cent to around 133 TWh, the lowest third quarter demand since the third quarter of 1995, largely driven by a fall in gas demand for electricity generation. (Chart 4.6)

# Chart 4.1 Production and imports and exports of natural gas

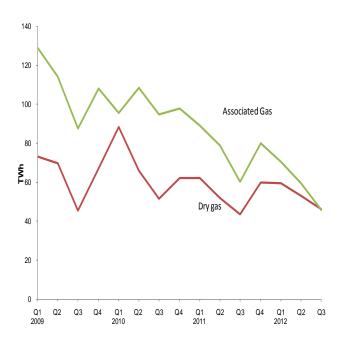


Total indigenous UK production of natural gas in Q3 2012 was 11.3 per cent lower than in the same quarter a year earlier. At 92 TWh, this was the lowest third quarter production since the third quarter of 1992. Part of the reason for this was the significant amount of planned maintenance work that took place at the St Fergus associated gas terminal in September this year.

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.

In Q3 2012, imports and exports of natural gas were, respectively, 22.9 and 16.2 per cent lower than a year ago. The trade position shows net imports were 27.8 per cent lower than in the same period a year ago-decreasing from 70 TWh, to 50 TWh, the fall reflecting lower demand for gas.

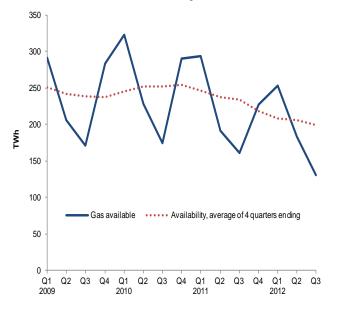
# Chart 4.2 Production of dry gas and associated gas



In Q3 2012 associated gas production (natural gas produced from oil fields) decreased by 24.0 per cent from 60 TWh in Q3 2011 to 46 TWh in Q3 2012. This was the first time since 1998 that production of dry gas exceeded associated gas production. The planned maintenance shutdown of two sub terminals at the St Fergus associated gas terminal was a contributory factor.

Dry gas production increased by 6.2 per cent from 43 TWh in Q3 2011 to 46 TWh in Q2 2012.

### **Chart 4.3 Gas availability**



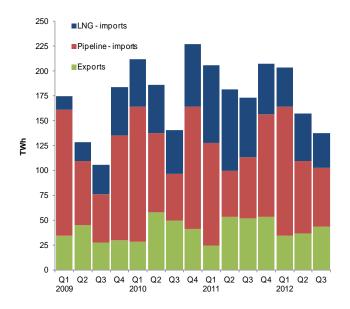
Gas available at terminals is equal to the gross gas production, minus producers own use, plus net imports.

Gas availability is seasonal, mirroring gas demand, and peaks during Q1 and Q4 each year. Gas availability in Q3 2012 fell by 18.8 per cent compared to Q3 2011 to 131 TWh.

So far in 2012, gas availability in Q1–Q3 was 12 cent lower compared with the same period last year and generally reflects lower demand from electricity generators.

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

### **Chart 4.4 Import and exports**



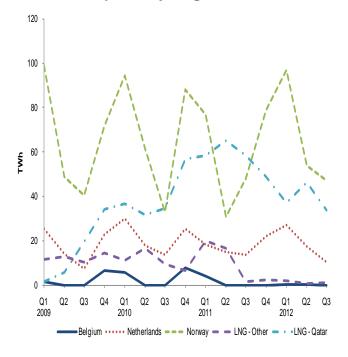
Total imports in Q3 2012 decreased by 22.9 per cent compared to the same quarter a year ago.

The main bulk of this decrease was with imports of Liquefied Natural Gas (LNG). LNG imports decreased sharply by 42.1 per cent falling from 60 TWh in Q3 2011 to 35 TWh in Q3 2012. LNG imports accounted for 37.0 per cent of total imports in Q3 2012 compared with 49.3 per cent a year ago.

Pipeline imports also decreased but to a lesser extent – from 62 TWh in Q3 2011 to 59 TWh in the latest quarter. The majority of this was with imports from the Netherlands due to planned maintenance work at the Dutch Balgzand terminal in September. However, Norwegian pipeline imports were also impacted by planned maintenance work at St Fergus associated gas terminal in September.

Total exports also decreased by 16.2 per cent in Q3 2012. This was largely due to Bacton – Zeebrugge interconnector switching from export to import mode during September of this year. Energy Trends table 4.3 - *Natural Gas imports and exports*.

### Chart 4.5 Imports by origin

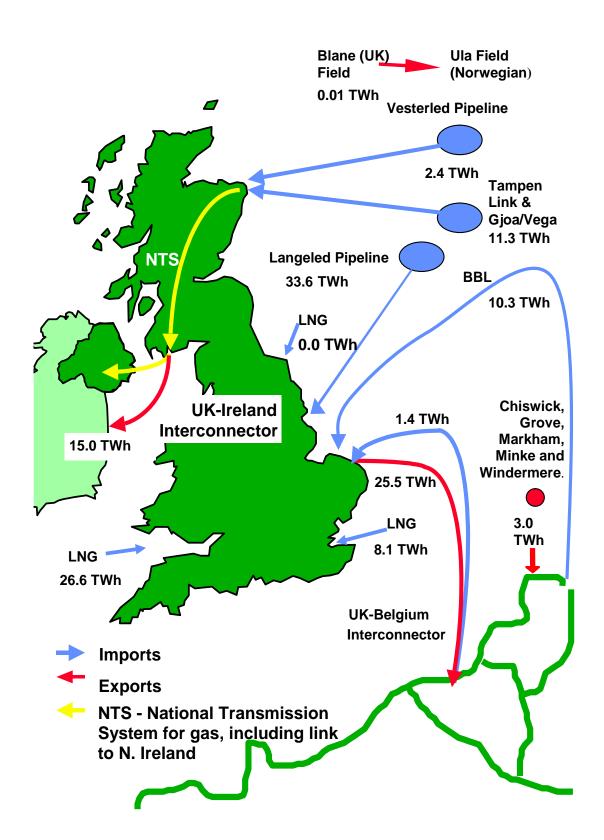


As mentioned above there was a sharp decrease with LNG imports. The majority of LNG imports are sourced from Qatar which were lower by 42.4 per cent in Q3 2012 compared with the same quarter in 2011.

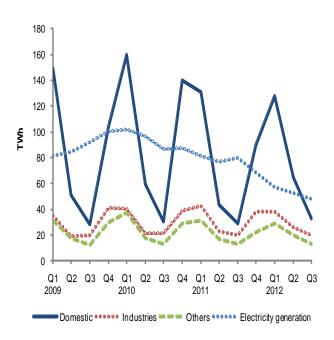
The fall in LNG imports is likely to be a combination of factors, such as the decline in UK gas demand and the strong competition for LNG in the global market, especially Japan following the closure of their nuclear facilities in 2011.

Pipeline imports from the Netherlands were 24.2 per cent lower in the recent quarter compared with the previous year falling from 13.6 TWh in Q3 2011 to 10.3 TWh In Q3 2012.

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



### Chart 4.6 UK demand for natural gas



UK demand for natural gas in Q3 2012 was 18.0 per cent lower than in the same period a year ago and was the lowest third quarter demand since 1995.

This is largely driven by the fall in gas demand for electricity generation at the expense of coal. Gas used for electricity generation was lower by 39.4 per cent in Q3 2012 compared with Q3 2011.

Gas use for generation over the three quarters of 2012 is at 52 per cent of the total level seen in 2011.

Domestic demand for gas increased by 11.7 per cent with mean temperatures in the third quarter of 2012 being around 0.2 degrees lower than in Q3 2011.

Gas used within industry (including iron and steel) decreased by 1.5 per cent compared with the same quarter a year earlier.

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

#### Relevant table

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

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## 4 GAS

Table 4.1. Natural gas supply and consumption

			per cent	2010 3rd	2010 4th	2011 1st	2011 2nd	2011 3rd	2011 4th	2012 1st	2012 2nd	2012 3rd	per cent
	2010	2011	change	quarter	quarter	quarter	quarter	quarter	quarter	quarter	quarter	quarter p	change1
SUPPLY													
Indigenous production	664,353	526,030	-20.8	146,354	159,681	151,607	131,034	103,515	139,874	129,984r	112,358r	91,813	-11.3
Imports of which LNG	589,497 <i>203,789</i>	584,414 <i>270,733</i>	-0.9 +32.8	91,049 <i>43,839</i>	186,370 <i>63,439</i>	181,011 <i>78,370</i>	127,837 <i>81,514</i>	121,583 <i>59,915</i>	153,983 <i>50,935</i>	169,218r <i>38,990r</i>	120,422r <i>47,366r</i>	93,784 <i>34,703</i>	-22.9 -42.1
Exports	176,399	183,689	+4.1	49,278	41,115	24,866	53,666	51,883	53,275	34,263	36,821r	43,493	-16.2
Stock change <sup>2</sup>	+15,271	-22,623		-13,945	+18,491	+6,805	-21,374	-11,109	+3,055	+13,504	-9,544	-8,427	
Transfers	-263	-60		-66	-58	-32	-10	-11	-7	-11	-4	-14	
Total supply	1,092,459	904,072	-17.2	174,114	323,368	314,526	183,822	162,095	243,629	278,431r	186,412r	133,664	-17.5
Statistical difference	-70	-1,687		191	94	411	-614	-801	-684	-344r	591r	132	
Total demand	1,092,529	905,759	-17.1	173,923	323,274	314,115	184,436	162,896	244,313	278,776r	185,821r	133,531	-18.0
TRANSFORMATION	396,675	330,377	-16.7	91,050	94,080	88,666	82,109	84,440	75,163	65,012	57,874r	52,976	-37.3
Electricity generation	372,968	306,705	-17.8	86,579	87,225	81,121	77,032	79,774	68,778	57,466	52,798r	48,311	-39.4
Heat generation <sup>3</sup>	23,707	23,672	-0.1	4,471	6,855	7,545	5,077	4,666	6,385	7,545	5,077	4,666	-
Energy industry use	69,474	59,940	-13.7	15,151	17,061	16,545	15,264	13,178	14,953	14,087r	14,211r	12,525	-5.0
Losses	18,737	14,554	-22.3	3,248	4,310	4,392	3,636	2,856	3,669	3,723r	2,760r	2,502	-12.4
FINAL CONSUMPTION	607,643	500,888	-17.6	64,474	207,824	204,511	83,426	62,423	150,528	195,955r	110,976r	65,528	+5.0
Iron & steel	5,827	5,758	-1.2	1,435	1,505	1,374	1,398	1,476	1,510	1,358r	1,282r	1,125	-23.7
Other industries	115,811	118,672	+2.5	19,682	37,354	41,288	21,667	18,813	36,903	37,179r	24,496r	18,866	+0.3
Domestic	389,595	292,971	-24.8	30,519	140,043	130,486	43,430	29,219	89,837	128,067r	65,144r	32,633	+11.7
Other final users	88,264	75,432	-14.5	10,800	26,886	29,349	14,918	10,901	20,264	27,338r	18,041r	10,890	-0.1
Non energy use <sup>3</sup>	8,147	8,054	-1.1	2,037	2,037	2,014	2,014	2,014	2,014	2,014	2,014	2,014	

GWh

<sup>1.</sup> Percentage change in the third quarter of 2012 compared with a year earlier.

<sup>2.</sup> Stock fall (+), stock rise (-).

<sup>3.</sup> 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 third quarter of 2012 fell by 2.8 per cent to 81.0 TWh from 83.3 TWh in the same period a year earlier, the lowest level of generation in 14 years (**Chart 5.1**).

Renewables' share of electricity generation increased from 9.1 per cent in the third quarter of 2011 to 11.7 per cent in the third quarter of 2012 (**Chart 5.2**).

Nuclear's share of generation increased from 18.9 per cent in the third quarter of 2011 to 22.3 per cent in the third quarter of 2012 due to increased availability after outages last year (**Chart 5.2**).

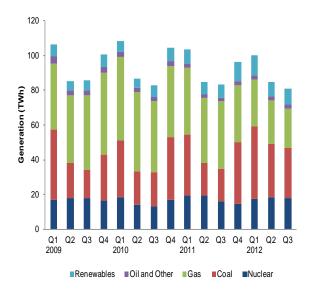
Gas's share of generation fell from 46.3 per cent in the third quarter of 2011 to 28.2 per cent in the third quarter of 2012 due to high gas prices. It was gas's lowest share of generation for the third quarter in at least 14 years. Coal's share increased from 22.9 per cent to 35.4 per cent over this same period (**Chart 5.2**).

The UK remains a net importer with 5.1 per cent of electricity supplied from net imports in the third quarter of 2012 (**Chart 5.3**).

Final consumption of electricity during the third quarter of 2012 was 0.8 per cent lower than in the same period last year, while domestic sales fell by 0.6 per cent to the lowest level for 13 years. (**Chart 5.4**).

England had a share of 76.5 per cent of the UK's electricity generation in 2011. Scotland's share was 13.9 per cent. Wales's share was 7.4 per cent and Northern Ireland's share was 2.2 per cent (**Chart 5.6**).

# Chart 5.1 Electricity generated by fuel type



In 2012 Q3, total electricity generated fell 2.8 per cent from 83.3 TWh in 2011 Q3 to 81.0 TWh, and the lowest level since prior to 1998 Q1.

In 2012 Q3, coal fired generation rose by 49.9 per cent from 19.1 TWh to 28.7 TWh, its highest third quarter level for at least 14 years, due to low gas generation.

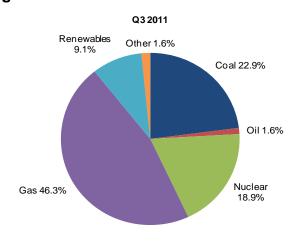
In 2012 Q3, gas fired generation fell 40.9 per cent from 38.6 TWh to 22.8 TWh due to high gas prices, with several stations being run at very minimal (or zero) levels as a result.

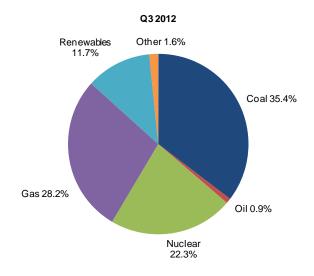
In 2012 Q3, nuclear generation rose 14.4 per cent from 15.8 TWh to 18.0 TWh, due to increased availability after the outages last year.

In 2012 Q3, wind and PV generation rose 53.6 per cent from 3.0 TWh to 4.7 TWh, due to increased capacity. Hydro generation fell 16.2 per cent from 1.2 TWh to 1.0 TWh, due to lower rainfall in the main hydro areas (Scotland) compared to the same period last year.

#### **Electricity**

## Chart 5.2 Shares of electricity generation





The share of generation from coal increased from 22.9 per cent in 2011 Q3 to 35.4 per cent in 2012 Q3. This was its highest third quarter share in 14 years.

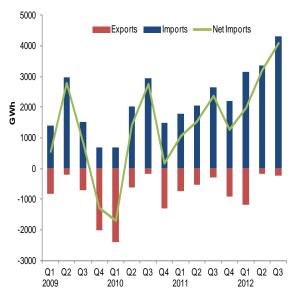
Gas's share of generation decreased from 46.3 per cent in 2011 Q3 to 28.2 per cent in 2012 Q3. This was its lowest third quarter share in 14 years.

Nuclear's share of generation increased from 18.9 per cent in 2011 Q3 to 22.3 per cent in 2012 Q3, due to increased availability.

The share of renewables (hydro, wind and other renewables) increased from 9.1 per cent in 2011 Q3 to 11.7 per cent in 2012 Q3.

Low carbon generation increased from 28.0 per cent in 2011 Q3 to a new record high of 34.0 per cent in 2012 Q3, due to increased nuclear availability and higher renewable generation, within a lower overall UK generation level.

Chart 5.3 UK trade in electricity



In 2012 Q3, compared with the same period in 2011, imports of electricity rose by 62.4 per cent, whilst exports fell by 23.5 per cent.

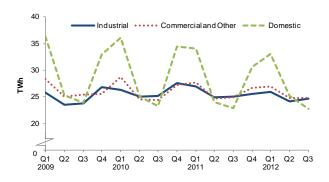
For the tenth quarter running, the UK has been a net importer after two quarters of being a net exporter (2009 Q4 and 2010 Q1).

Net imports of electricity, at 4,085 GWh, were up 73.1 per cent on 2011 Q3. This represented 5.1 per cent of electricity supplied in 2012 Q3.

In 2012 Q3, the UK was a net importer from France and the Netherlands with net imports of 2,735 GWh and 1,439 GWh respectively. The UK was a net exporter to Ireland with net exports of 90 GWh.

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## Chart 5.4 Electricity Final Consumption



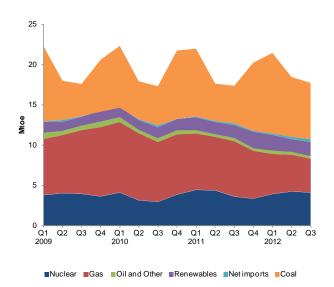
Final consumption of electricity fell by 0.8 per cent in 2012 Q3, from 72.8 TWh in 2011 Q3, to 72.3, its lowest level since 1998 Q3.

Domestic use fell by 0.6 per cent, from 22.9 TWh to 22.8 TWh, its lowest level since 1999 Q3.

Industrial use of electricity fell 1.1 per cent, from 25.0 TWh to 24.7 TWh, while consumption by commercial and other users <sup>1</sup> fell by 0.5 per cent, from 24.9 TWh to 24.8 TWh.

In 2012 Q3, temperatures were on average 0.2 degrees lower than in 2011 Q3.<sup>2</sup> It was the coldest third quarter since 2007.

## Chart 5.5 Fuel used for electricity Generation



Fuel used by generators in 2012 Q3 rose by 2.0 per cent, from 17.3 mtoe in 2011 Q3 to 17.7 mtoe.<sup>3</sup>

Despite this increase in fuel use, generation fell by 2.8 per cent. This was due to the large increase in the use of coal to generate electricity, at the expense of gas. Coal stations have a lower thermal efficiency compared with gas, with more fuel required to generate each unit of electricity.

In 2012 Q3, gas use was 39.4 per cent lower than in 2011 Q3, due to high gas prices. Coal use during the quarter was 49.6 per cent higher than a year earlier, while nuclear sources were 14.4 per cent higher

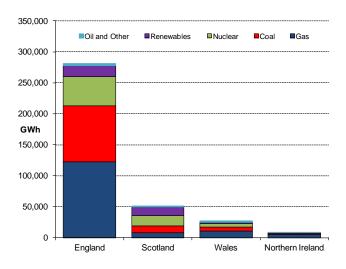
<sup>&</sup>lt;sup>3</sup> For wind (and other primary renewable sources), the fuel used is assumed the same as the electricity generated, unlike thermal generation where conversion losses are incurred.

<sup>&</sup>lt;sup>1</sup> Includes commercial, transport and other final users.

<sup>&</sup>lt;sup>2</sup> Temperature data comes from table ET 7.1, at: <u>www.decc.gov.uk/en/content/cms/statistics/energy\_stats/s</u> <u>ource/temperatures/temperatures.aspx</u>

#### **Electricity**

### Chart 5.6 Generation by fuel in 2011 for England, Scotland, Wales and Northern Ireland



In 2011, England had a share of 76.5 per cent of electricity generation in the UK with 281.4 TWh. Of England's generation 43.6 per cent was from gas and 32.0 per cent was from coal.

Scotland had a share of 13.9 per cent of electricity generation in the UK with 51.2 TWh. Of Scotland's generation 33.0 per cent was from nuclear, 26.8 per cent from renewables, and 21.0 per cent was from coal.

Wales had a share of 7.4 per cent of electricity generation in the UK with 27.3 TWh. Of Wales's generation 39.1 per cent was from gas, with 22.6 per cent from coal.

Northern Ireland had a share of 2.2 per cent of electricity generation in the UK with 7.9 TWh. Over two thirds was from gas and almost one fifth was from coal.

Of electricity generated in the UK, 9.4 per cent came from renewables in 2011. The shares of electricity generated by renewables for each country are: Scotland 26.8 per cent, Northern Ireland 12.5 per cent, Wales 7.9 per cent and England 6.2 per cent.

Data from special feature article "Electricity generation and supply figures for Scotland, Wales, Northern Ireland and England, 2008 to 2011" (page 50).

#### Relevant tables

5.1:	Fuel used in electrici	ity generation an	d electricity supplied.	 Page 41
5.2:	Supply and consump	otion of electricity	/	 Page 42

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## **5 ELECTRICITY**

Table 5.1. Fuel used in electricity generation and electricity supplied

			nor cont	2010	2010	2011	2011	2011	2011	2012	2012	2012	per cent
	2010	2011	per cent change	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	change 1
	2010	2011	criarige	quarter	quarter	quarter p	Change						
FUEL USED IN GENERATION													
All generating companies										Million tonn		•	
Coal	25.56	26.03	+1.8	4.83	8.44	8.36	4.61	4.65	8.41	9.97	7.40	6.96	+49.6
Oil	1.18	0.90	-23.3	0.27	0.33	0.26	0.19	0.25	0.20	0.26	0.19	0.18	-25.2
Gas	32.12	26.42	-17.8	7.46	7.51	6.99	6.64	6.87	5.93	4.95	4.55	4.17	-39.4
Nuclear	13.93	15.63	+12.2	2.92	3.82	4.41	4.34	3.57	3.31	3.90	4.20	4.08	+14.4
Hydro	0.31	0.49	+56.1	0.08	0.11	0.11	0.10	0.11	0.17	0.16	0.07	0.09	-16.2
Wind <sup>2</sup>	0.88	1.35	+54.2	0.24	0.29	0.29	0.31	0.26	0.49	0.45r	0.37	0.40	+53.6
Other renewables <sup>3</sup>	4.36	4.91	+12.6	1.11	1.08	1.20	1.10	1.21	1.39	1.32r	1.14r	1.22	+0.8
Other fuels	0.80	0.77	-4.4	0.20	0.18	0.20	0.19	0.21	0.17	0.21r	0.21r	0.22	+3.1
Net imports	0.23	0.53	(+)	0.24	0.02	0.09	0.13	0.20	0.11	0.17	0.27	0.35	+73.1
Total all generating companies	79.37	77.03	-2.9	17.33	21.76	21.91	17.60	17.33	20.19	21.39r	18.42r	17.68	+2.0
ELECTRICITY GENERATED													
All generating companies												TWh	
Coal	107.69	108.58	+0.8	19.81	35.71	35.14	19.06	19.12	35.26	42.02r	30.46r	28.66	+49.9
Oil	4.80	3.66	-23.7	1.14	1.31	1.15	0.69	0.96	0.87	1.04	0.79	0.74	-23.4
Gas	175.65	146.81	-16.4	40.80	41.15	38.33	37.09	38.60	32.79	27.01r	25.17	22.83	-40.9
Nuclear	62.14	68.98	+11.0	13.02	17.05	19.45	19.15	15.76	14.62	17.20	18.53	18.03	+14.4
Hydro (natural flow)	3.64	5.69	+56.1	0.88	1.23	1.30	1.15	1.24	2.00	1.84	0.80r	1.04	-16.2
Wind <sup>2</sup>	10.22	15.75	+54.2	2.74	3.38	3.36	3.59	3.04	5.75	5.23r	4.32r	4.68	+53.6
- of which, Offshore	3.04	5.13	+68.4	0.82	1.10	1.00	1.12	1.10	1.92	1.49	1.64	1.69	+54.2
Other renewables <sup>3</sup>	11.99	12.97	+8.2	3.08	2.99	3.31	2.89	3.29	3.47	4.12r	3.28r	3.77	+14.6
Pumped Storage	3.15	2.91	-7.8	0.71	0.82	0.77	0.65	0.70	0.78	0.79	0.67	0.71	+0.5
Other fuels	2.48	2.44	-1.5	0.63	0.58	0.59	0.59	0.62	0.65	0.58r	0.63r	0.59	-4.0
Total all generating companies	381.77	367.80	-3.7	82.80	104.21	103.41	84.87	83.34	96.19	99.84r	84.66r	81.04	-2.8
ELECTRICITY SUPPLIED 4													
All generating companies												TWh	
Coal	102.27	103.13	+0.8	18.82	33.90	33.37	18.10	18.17	33.49	39.89r	28.92	27.21	+49.7
Oil	4.31	3.31	<i>-23.1</i>	1.03	1.16	1.04	0.62	0.87	0.78	0.94	0.72	0.66	-24.3
Gas	172.45	144.11	-16.4	40.08	40.34	37.62	36.41	37.91	32.17	26.52r	24.73r	22.41	-40.9
Nuclear	56.44	62.66	+11.0	11.82	15.49	17.67	17.40	14.31	13.28	15.62	16.83	16.38	+14.4
Hydro	3.62	5.65	+56.2	0.87	1.22	1.29	1.14	1.23	1.99	1.83	0.79r	1.03	-16.2
Wind <sup>2</sup>	10.22	15.75	+54.2	2.74	3.38	3.36	3.59	3.04	5.75	5.23r	4.32r	4.68	+53.6
- of which, Offshore	3.04	5.13	+68.4	0.82	1.10	1.00	1.12	1.10	1.92	1.49	1.64	1.69	+54.2
Other renewables <sup>3</sup>	10.88	11.54	+6.1	2.79	2.71	2.95	2.57	2.93	3.09	3.67r	2.92r	3.36	+14.6
Pumped Storage (net supply) 5	-1.07	-0.95		-0.23	-0.28	-0.26	-0.22	-0.23	-0.24	-0.26	-0.24	-0.25	
Other fuels	2.35	2.30	-1.8	0.59	0.55	0.56	0.56	0.58	0.61	0.54r	0.60r	0.56	-4.0
Net imports	2.66	6.22	(+)	2.76	0.18	1.06	1.53	2.36	1.27	1.99r	3.19	4.08	+73.1
Total all generating companies	364.12	353.73	-2.9	81.28	98.64	98.66	81.70	81.18	92.18	95.98r	82.76r	80.12	-1.3

<sup>1.</sup> Percentage change in the third quarter of 2012 compared with a year earlier.

<sup>2.</sup> Includes solar PV and wave/tidal

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

<sup>4.</sup> Electricity supplied net of electricity used in generation

<sup>5.</sup> 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**

-													
				2010	2010	2011	2011	2011	2011	2012	2012	2012	
	2010	2011	Per cent change	3rd quarter	4th quarter	1st quarter	2nd quarter	3rd quarter	4th quarter	1st quarter	2nd quarter	3rd quarter p	Per cent change <sup>1</sup>
SUPPLY													
Indigenous production	381,772	367,801	-3.7	82,795	104,209	103,406	84,866	83,340	96,189	99,835r	84,662r	81,035	-2.8
Major power producers <sup>2 3</sup>	344,499	329,406	-4.4	73,796	94,712	93,508	75,619	74,088	86,191	89,838r	75,168r	72,035	-2.8
Auto producers	34,123	35,490	+4.0	8,294	8,680	9,128	8,594	8,550	9,218	9,204r	8,819r	8,295	-3.0
Other sources 4	3,150	2,906	-7.8	705	818	770	654	702	780	794	675	705	+0.5
Imports	7,144	8,689	+21.6	2,943	1,479	1,787	2,054	2,656	2,192	3,169	3,352	4,311	+62.4
Exports	4,481	2,467	-44.9	184	1,303	723	525	297	922	1,182	162	227	<i>-23.5</i>
Transfers	-	-		-	-	-	-	-	-	-	-	-	
Total supply	384,436	374,023	-2.7	85,554	104,385	104,470	86,396	85,699	97,458	101,823r	87,852r	85,120	-0.7
Statistical difference	-377	-320		-422	71	-312	-268	-188	449	38r	-320r	63	
Total demand	384,813	374,343	-2.7	85,976	104,314	104,783	86,664	85,887	97,009	101,784r	88,172r	85,057	-1.0
TRANSFORMATION	-	-		-	-	-	-	-	-	-	-	-	
Energy industry use 5	28,993	28,153	-2.9	6,470	7,882	7,755	6,679	6,503	7,217	7,854r	7,091r	7,035	+8.2
Losses	27,037	28,181	+4.2	6,480	6,881	8,243	6,472	6,567	6,899	8,093r	7,055r	5,759	-12.3
FINAL CONSUMPTION	328,784	318,009	-3.3	73,026	89,551	88,785	73,513	72,818	82,893	85,838r	74,025r	72,263	-0.8
Iron & steel	3,842	3,842	-	974	939	967	964	962	949	960	987	1,012	+5.2
Other industries	100,678	98,554	-2.1	24,467	26,537	25,969	23,897	24,034	24,654	24,925r	23,106r	23,696	-1.4
Transport	4,076	4,079	+0.1	1,019	1,019	1,020	1,020	1,020	1,020	1,020	1,020	1,020	-
Domestic	118,820	111,585	-6.1	23,200	34,488	34,088	23,963	22,895	30,639	33,011	25,186r	22,758	-0.6
Other final users Non energy use	101,367	99,948	-1.4	23,367	26,568	26,742	23,669	23,907	25,630	25,922r -	23,727r -	23,777	-0.5

**GWh** 

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.

<sup>1.</sup> Percentage change in the third quarter of 2012 compared with a year earlier.

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

<sup>3.</sup> 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.

<sup>4.</sup> Gross supply from pumped storage hydro

<sup>5.</sup> Includes electricity used in generation and for pumping

### Section 6 - Renewables

#### Key results show:

Renewables' share of electricity generation was 11.7 per cent in 2012 Q3, equalling the record share set in 2011 Q4. This was an increase of 2.6 percentage points on the share in 2011 Q3, reflecting increased capacity. **(Chart 6.1)** 

Renewable electricity generation was 9.5 TWh in 2012 Q3, an increase of 25 per cent on the 7.6 GWh in 2011 Q3, but a fall of 15 per cent on the peak quarterly generation of 2011 Q4. **(Chart 6.2)** 

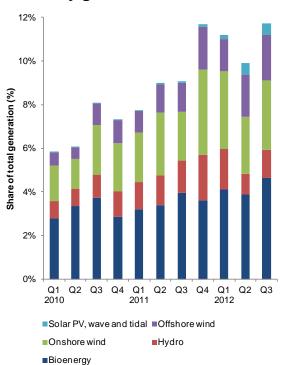
Onshore wind showed the highest absolute increase in generation in 2012 Q3, increasing by 38 per cent, from 1.9 TWh in 2011 Q3 to 2.6 TWh, as a result of increased capacity. Offshore wind generation also increased substantially, from 1.1 TWh to 1.7 TWh (up 54 per cent). Generation from plant biomass more than doubled on a year earlier, due to Tilbury B power station's conversion from coal in late 2011. (Chart 6.2)

Renewable electricity capacity was 14.9 GW at the end of 2012 Q3, a 42.1 per cent increase (4.4 GW) on a year earlier, and 4.4 per cent increase (0.6 GW) on the previous quarter. (Chart 6.3)

In 2012 Q3, 218 MW of installed capacity joined the Feed in Tariff scheme, increasing the total to 1,486 MW, approximately ten per cent of all renewable installed capacity. Of this increase, sub-4 kW retrofitted solar PVs contributed 126 MW. (Chart 6.5)

Liquid biofuels consumption fell by 33 per cent, from 453 million litres in 2011 Q3 to 304 million litres in 2012 Q3, the lowest level since 2009 Q1, as a result of the ending of a reduced duty rate on cooking oil used for biodiesel. Biofuels represented 2.7 per cent of petrol and diesel consumed in road transport, a fall from 3.9 per cent in 2011 Q3 (Chart 6.6)

## Chart 6.1 Renewables' share of electricity generation



Renewables' share of electricity generation increased from 9.1 per cent in 2011 Q3 to 11.7 per cent in 2012 Q3. This equalled the record share set in 2011 Q4.  $^{1}$ 

The increase on a year earlier reflects increased capacity, particularly in offshore and onshore wind, and plant biomass. This more than countered the impacts of reduced hydro generation due to lower rainfall.

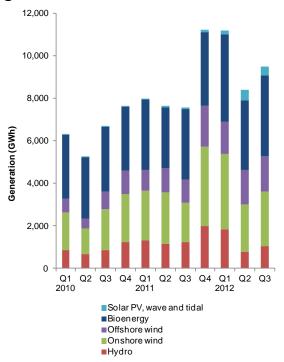
Overall electricity generation (81.0 TWh) in 2012 Q3 was down 2.8 per cent on a year earlier (83.3 TWh), which contributed 0.3 percentage points of the 2.6 percentage point increase in renewables' share.

Renewables' share of electricity generation in the first three-quarters of 2012 increased to 11.0 per cent, from 8.5 per cent in the first three-quarters of 2011, reflecting increased capacity. Meanwhile, a 2.2 per cent reduction in overall electricity generation contributed around 0.2 of the 2.4 percentage point increase in the share.

<sup>&</sup>lt;sup>1</sup> Total electricity generation figures (all generating companies) can be found in table ET 5.1, at:

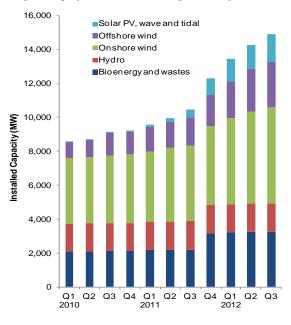
www.decc.gov.uk/en/content/cms/statistics/energy\_stats/source/electricity/electricity.aspx

## Chart 6.2 Renewable electricity generation



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

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



Total electricity generated from renewables in 2012 Q3 was up by 25 per cent on 2011 Q3, from 7.6 TWh to 9.5 TWh.

In 2012 Q3, hydro generation fell by 16 per cent on a year earlier, from 1.2 TWh to 1.0 TWh. After high levels of rainfall in 2011 Q3, rainfall in 2012 Q3 was 15 per cent lower, with both August and September (39 per cent less than a year earlier, and the driest for three years) averaging less rainfall than a year earlier.

Electricity generated from onshore wind rose by 38 per cent in 2012 Q3, from 1.9 TWh to 2.6 TWh, while offshore wind was up by 54 per cent on a year earlier, from 1.1 TWh to 1.7 TWh. Both of these increases were chiefly due to increased capacity.

Although wind speeds in July and August were up on a year earlier, in September they were 1.1 knots lower than the 10.4 knots of 2011 (the highest in September for seven years). Average wind speeds for 2012 Q3 were 7.9 knots, 0.2 knots lower than a year earlier.<sup>2</sup>

Generation from bioenergy <sup>3</sup> in 2012 Q3 increased by 15 per cent on a year earlier, from 3.3 TWh to 3.8 TWh. The conversion of Tilbury B (open again after a fire closed it for several months earlier in 2012) in late 2011 to plant biomass, more than doubled generation from that source, while generation from biodegradable waste was up by two-thirds, due to increased capacity.

In 2012 Q3, bioenergy had the largest share of generation (40 per cent) with 27 per cent from onshore wind, 18 per cent from offshore wind, 11 per cent from hydro, and 4 per cent from solar photovoltaics.

At the end of 2012 Q3, the UK's renewable electricity capacity totalled 14.9 GW, an increase of 4.4 per cent (0.6 GW) on that installed at the end of 2012 Q2, and 42.1 per cent (4.4 GW) on that installed a year earlier.

Of the 0.6 GW increase in capacity during 2012 Q3, almost one half (284 MW) was from onshore wind (largely from the new and expanding Whitelee 2 and Clyde North sites), Over one quarter (166 MW) came from the continued expansion of the Greater Gabbard and Sheringham Shoal offshore wind farms.

Solar photovoltaics (PV) capacity increased by 169 MW in 2012 Q3, due to the continued high uptake of the GB Feed in Tariff scheme. Solar PV capacity stood at 1.6 GW at the end of 2012 Q3, 11 per cent of all renewable electricity capacity.

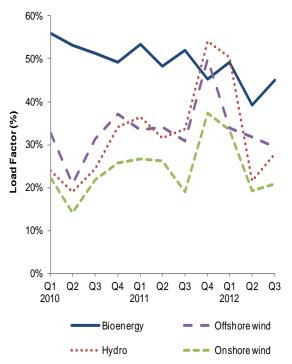
At the end of 2012 Q3, onshore wind had the highest share of capacity (38 per cent), followed by bioenergy (22 per cent) and offshore wind (18 per cent).

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<sup>&</sup>lt;sup>2</sup> Statistics on weather (temperature, wind speeds, rainfall and sun levels) can be found in tables ET 7.1 – 7.4, at: <a href="https://www.decc.gov.uk/en/content/cms/statistics/energy\_stats/source/temperatures/temperatures.aspx">www.decc.gov.uk/en/content/cms/statistics/energy\_stats/source/temperatures/temperatures.aspx</a>

<sup>&</sup>lt;sup>3</sup> 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 Q3, onshore wind's load factor increased by 1.9 percentage points, from 19.1 per cent in 2011 Q3 to 21.0 per cent. Meanwhile, offshore wind's load factor fell by 1.4 percentage points, from 30.9 per cent to 29.4 per cent. 4

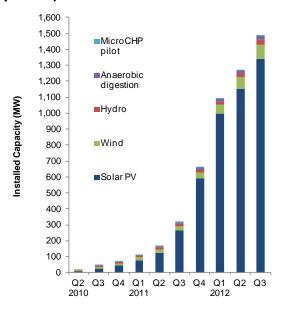
Compared with 2012 Q2, onshore and offshore wind's load factors in 2012 Q3 were up 1.6 and down 2.4 percentage points respectively, with wind speeds just 0.1 knots higher.

Hydro's load factor in 2012 Q3 fell by 5.6 percentage points, from 33.5 per cent in 2011 Q3 to 27.9 per cent, due to low rainfall in the quarter, (and the preceding two quarters), compared with a year earlier.

Compared with 2012 Q2, hydro's load factor in 2012 Q3 was up 6.2 percentage points, from 21.7 per cent to 27.9 per cent, with rainfall up 36 per cent. August 2012 also saw the return to service (after three years' closure) of the newest (and second largest) large hydro scheme, Glendoe.

For bioenergy, the load factor in 2012 Q3 was down 7.0 percentage points on a year earlier, but up 5.8 percentage points on 2012 Q2, with Tilbury B's gradual return to full operations during the quarter.

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



At the end of 2012 Q3, 1,486 MW of capacity was confirmed on the GB Feed in Tariff (FiTs) scheme. This was a 17 per cent increase on the 1,268 MW confirmed on the scheme at the end of 2012 Q2, and over four times the amount confirmed at the end of 2011 Q3. <sup>5</sup>

In terms of number of installations, at the end of 2012 Q3, there were 329,656 confirmed on the FiT scheme, a 15 per cent increase on the 285,449 confirmed at the end of the previous guarter.

Solar photovoltaics (PVs) represent the majority of both installations and installed capacity confirmed on FiTs, with, respectively, 99 per cent and 90 per cent of the total. The majority of PV installations are sub-4 kW retrofitted schemes, which increased by 40,729 (126 MW) in 2012 Q3.  $^6$ 

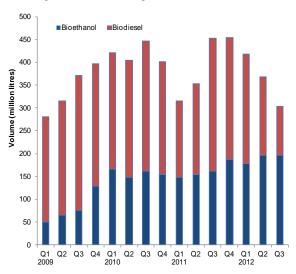
Renewable installations confirmed on FiTs (all except MicroCHP) represented 10 per cent of all renewable installed capacity.

<sup>&</sup>lt;sup>4</sup> 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.

<sup>&</sup>lt;sup>5</sup> Statistics on Feed in Tariff uptake can be found in the monthly central Feed-in-Tariff register table, at: <a href="https://www.decc.gov.uk/en/content/cms/statistics/energy\_stats/source/fits/fits.aspx">www.decc.gov.uk/en/content/cms/statistics/energy\_stats/source/fits/fits.aspx</a>

<sup>&</sup>lt;sup>6</sup> 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 Q3, 304 million litres of liquid biofuels were consumed in transport, a fall of one third on the 453 million litres in 2011 Q3, and the lowest level since 2009 Q1.

In 2012 Q3, biodiesel accounted for 1.6 per cent of diesel, and bioethanol 4.2 per cent of motor spirit. The combined contribution of the two fuels was 2.7 per cent, a fall from 3.2 per cent a quarter earlier, and 3.9 per cent a year earlier.

Biodiesel consumption fell by 63 per cent, from 291 million litres in 2011 Q3 to 108 million litres in 2012 Q3, as a result of the ending of a reduced duty rate on cooking oil used for biodiesel on 1 April 2012 (increasing duty payable by 20 pence per litre).

Bioethanol consumption rose by 21 per cent, from 162 million litres to 196 million litres.

After six years of biodiesel contributing the largest share of biofuels consumption, the last two quarters have seen a reversal in the trend. In 2012 Q3, the largest share of consumption was from bioethanol (64 per cent), with 36 per cent from biodiesel.

#### Relevant tables

6.1: Renewable electricity capacity	y and generation	Page 47
6.2: Liquid biofuels for transport co	onsumption	Page 48

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## **6 RENEWABLES**

Table 6.1. Renewable electricity capacity and generation

rable of the front able discontainty supposity and			per cent	2010	2010	2011	2011	2011	2011	2012	2012	2012	per cent
	2010	2011	change	3rd quarter	4th quarter	1st quarter	2nd quarter	3rd quarter	4th quarter	1st quarter	2nd quarter	3rd quarter p	change
Cumulative Installed Capacity <sup>1</sup>												MW	
Onshore Wind	4,037	4,650	+15.2	3,981	4,037	4,142	4,333	4,448	4,650	5,046r	5,391r	5,674	+27.6
Offshore Wind	1,341	1,838	+37.0	1,341	1,341	1,427	1,564	1,650	1,838	2,201r	2,517r	2,683	+62.6
Shoreline wave / tidal	3	3	+22.0	3	3	3	3	3	3	4	6r	6	+82.0
Solar photovoltaics	77	976	(+)	55	77	137	212	489	976	1,295r	1,412r	1,582	(+)
Small scale Hydro	188	205	+9.0	188	188	198	201	203	205	208	212r	214	+5.0
Large scale Hydro	1,453	1,471	+1.2	1,453	1,453	1,471	1,471	1,471	1,471	1,471	1,471	1,471	-
Landfill gas	1,025	1,067	+4.1	1,024	1,025	1,067	1,067	1,067	1,067	1,067	1,067	1,067	-
Sewage sludge digestion	186	198	+6.4	186	186	195	195	198	198	198	198	199	+0.6
Municipal solid waste combustion	461	577	+25.2	461	461	448	448	448	577	608r	608r	608	+35.8
Animal Biomass (non-AD) <sup>2</sup>	111	111	-	111	111	111	111	111	111	111	111	111	-
Anaerobic Digestion	28	55	+96.9	26	28	39	42	53	55	67r	79r	81	+53.3
Plant Biomass <sup>3</sup>	330	1,159	(+)	329	330	327	328	330	1,159	1,160	1,190r	1,190	(+)
Total	9,238	12,310	+33.2	9,156	9,238	9,563	9,974	10,471	12,310	13,435r	14,261r	14,884	+42.1
Co-firing <sup>4</sup>	266	338	+27.0	266	266	338	338	338	338	265r	265r	265	-21.6
Generation <sup>5</sup>												GWh	
Onshore Wind <sup>6</sup>	7,137	10,372	+45.3	1,903	2,272	2,350	2,423	1,855	3,744	3,540r	2,209r	2,564	+38.2
Offshore Wind 6,7	3,044	5,126	+68.4	821	1,100	997	1,117	1,096	1,916	1,493	1,639r	1,690	+54.2
Shoreline wave / tidal <sup>6</sup>	2	1	-61.2	1	0	0	0	0	0	1	1r	1	(+)
Solar photovoltaics <sup>6</sup>	33	252	(+)	11	8	18	48	93	92	196r	470r	421	(+)
Hydro <sup>6</sup>	3,644	5,686	+56.1	880	1,236	1,299	1,151	1,239	1,998	1,843	796r	1,038	-16.2
Landfill gas <sup>6</sup>	5,014	4,979	-0.7	1,268	1,191	1,329	1,130	1,323	1,197	1,337r	1,291r	1,282	-3.1
Sewage sludge digestion <sup>6</sup>	698	755	+8.2	179	160	188	189	189	189	197	187r	182	-3.9
Biodegradable municipal solid waste combustion <sup>8</sup>	1,597	1,739	+8.9	399	399	355	344	355	686	546r	578r	595	+67.8
Co-firing with fossil fuels	2,332	2,964	+0.9 +27.1	656	664	822	586	768	787	688r	516r	538	-29.9
Animal Biomass (non-AD) <sup>6, 9</sup>	627	614	-2.1	144	156	159	154	154	148	173r	134r	135	-12.6
Anaerobic Digestion	92	239	-2.1 (+)	29	23	50	52	71	67	85r	92r	90	+27.7
Plant Biomass 6, 10	1,624	1,683	+3.6	401	392	409	437	434	403	1,091r	487r	952	(+)
Total	25,845	34,410	+33.1	6,692	7,602	7,974	7,632	7,576	11,228	11,190r	8,400r	9,488	+25.2
Non-biodegradable wastes <sup>11</sup>	924	1,005	+8.8	231	231	205	199	205	396	315	333r	343	+67.3
Load Factors <sup>12</sup>													
Onshore Wind	21.7%	27.3%		21.9%	25.7%	26.6%	26.2%	19.1%	37.3%	33.4%	19.4%	21.0%	
Offshore Wind	30.4%	36.8%		31.2%	37.1%	33.3%	34.2%	30.9%	49.8%	33.8%	31.8%	29.4%	
Hydro	25.4%	39.2%		24.3%	34.1%	36.3%	31.6%	33.5%	54.0%	50.3%	21.7%	27.9%	
Landfill gas	57.0%	54.4%		56.1%	52.7%	58.8%	48.5%	56.2%	50.8%	57.4%	55.4%	54.4%	
Sewage sludge digestion	46.5%	45.0%		43.6%	39.1%	45.7%	44.3%	43.7%	43.4%	45.6%	43.4%	41.6%	
Biodegradable municipal solid waste combustion	41.5%	38.2%		39.2%	39.2%	36.1%	35.2%	35.9%	60.6%	42.2%	43.5%	44.3%	
Animal Biomass (non-AD)	64.8%	63.4%		58.8%	63.9%	66.5%	63.7%	63.1%	60.5%	71.7%	55.6%	55.1%	
Anaerobic Digestion	57.2%	65.6%		54.7%	39.0%	68.2%	59.0%	67.1%	55.8%	63.6%	57.6%	50.8%	
Plant Biomass	58.9%	25.8%		55.3%	53.9%	57.7%	61.1%	59.6%	24.5%	43.1%	19.0%	36.2%	
Total (excluding co-firing and non-biodegradable wastes)	31.0%	33.3%		30.6%	34.2%	35.2%	33.0%	30.2%	41.5%	37.4%	26.1%	27.8%	

<sup>1.</sup> Cumulative capacity at the end of the quarter/year

Includes the use of farm waste digestion, poultry litter and meat and bone.

<sup>3.</sup> Includes the use of waste tyres, straw combustion, short rotation coppice and hospital waste.

<sup>4.</sup> 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.

<sup>5.</sup> 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.

<sup>6.</sup> 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.

<sup>7.</sup> For 2009, shoreline wave and tidal are included in offshore wind.

<sup>8.</sup> Biodegradable part only.

<sup>9.</sup> Includes the use of farm waste digestion, poultry litter combustion and meat and bone combustion.

<sup>10.</sup> Includes the use of straw and energy crops.

<sup>11.</sup> Non-biodegradable part of municipal solid waste plus waste tyres, hosptal waste and general industrial waste.

<sup>12.</sup> 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

			per cent	2010	2010	2011	2011	2011	2011	2012	2012	2012	per cent
	2010	2011	change	3rd quarter	4th quarter	1st quarter	2nd quarter	3rd quarter	4th quarter	1st quarter	2nd quarter	3rd quarter p	change
Volume													
Bioethanol	631	652	+3.4	161	153	148	154	162	188	178	197r	196	+20.8
Biodiesel	1,045	925	-11.5	286	249	168	200	291	266	240	171r	108	-62.9
Total biofuels for transport	1,676	1,577	-5.9	447	402	316	354	453	454	418	368r	304	-33.0
Energy										Thousa	nd tonnes of	oil equivalent	
Bioethanol	355	367	+3.4	91	87	83	87	91	106	100	111r	110	+20.8
Biodiesel	859	760	-11.5	235	204	138	164	239	219	197	141r	89	-62.9
Total biofuels for transport	1,214	1,128	-7.2	326	291	221	251	331	325	298	252r	199	-39.8
Shares of road fuels													
Bioethanol as per cent of Motor Spirit	3.1%	3.3%		3.1%	3.0%	3.1%	3.1%	3.3%	3.8%	3.9%	4.1%	4.2%	
Biodiesel as per cent of DERV	4.1%	3.6%		4.3%	3.7%	2.7%	3.1%	4.4%	4.0%	3.8%	2.6%	1.6%	
Total biofuels as per cent of road fuels	3.6%	3.5%		3.8%	3.4%	2.9%	3.1%	3.9%	3.9%	3.9%	3.2%	2.7%	

Source: HM Revenue and Customs Hydrocarbon Oils Bulletin, available at: <a href="https://www.uktradeinfo.com/Statistics/Pages/TaxAndDutybulletins.aspx">https://www.uktradeinfo.com/Statistics/Pages/TaxAndDutybulletins.aspx</a>

### Sub-national energy consumption statistics updates

#### Introduction

This article alerts users to changes in the publication arrangements for sub-national energy statistics, which have previously been included as *special feature articles* within Energy Trends. Whilst the method of release for the statistics is changing, the release dates will continue to be on the same day as Energy Trends.

Following feedback received from users of the sub-national energy statistics, future releases of these datasets will be in the form of a National Statistics "factsheet". This release format has proved popular with users of DECC's Energy Consumption in the UK National Statistics. The factsheets will contain the majority of the content of the previous *special feature articles*, but with additional material that did not previously fit within the style of Energy Trends.

The factsheets and data will all be made available on the DECC website. The website is in the process of being migrated to the central "gov.uk" website early in 2013, but it is currently available at: <a href="https://www.decc.gov.uk/en/content/cms/statistics/energy\_stats/regional/regional.aspx">www.decc.gov.uk/en/content/cms/statistics/energy\_stats/regional/regional.aspx</a>. We will continue to update versions of all the tables previously released.

#### Release timetable

The release dates for the sub-national statistics will remain as pre-announced by DECC. The dates coincide with the Energy Trends release dates. The following table shows the current and forthcoming sub-national energy statistics planned release dates.

Sub-national series	Geography level	Reference year	Release date
Electricity	Local Authority (LAU1)	2011	20 December 2012
Gas	Local Authority (LAU1)	2011	20 December 2012
Residual fuels	Local Authority (LAU1)	2010	20 December 2012
Total	Local Authority (LAU1)	2010	20 December 2012
Electricity	MLSOA / LLSOA / IGZ	2011	28 March 2013
Gas	MLSOA / LLSOA / IGZ	2011	28 March 2013
Road Transport	Local Authority (LAU1)	2011	27 June 2013
Electricity	Local Authority (LAU1)	2012	19 December 2013
Gas	Local Authority (LAU1)	2012	19 December 2013
Residual fuels	Local Authority (LAU1)	2011	19 December 2013
Total	Local Authority (LAU1)	2011	19 December 2013

Energy Trends will include a reference to the sub-national releases in the "Recent and forthcoming publications of interest to users of energy statistics" section.

#### User feedback

We welcome all feedback on the factsheets and data from users of the sub-national data. If you wish to comment on the new release method, or the data itself, please contact Julian Prime or Sabena Khan using the contact details below.

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

#### Introduction

This article shows how generation and consumption of electricity varies across the four countries of the United Kingdom. It updates and extends that published in December 2011. The UK figures shown in the tables in this article are taken from the Digest of United Kingdom Energy Statistics (DUKES) 2012, Chapters 5 and 6 and so the definitions used are identical to those in the Digest. Tables 1 and 2 are shown in "landscape" format at the end of the main text and cover the last four years.

#### Generation and trade

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

Between 2010 and 2011, England's share of total generation remained at 76.5 per cent. Increases in coal, nuclear and renewables generation was offset by a decrease in gas generation. Scotland's share, meanwhile, increased from 13.1 per cent to 13.9 per cent, due to increases in nuclear, hydro and wind generation, outweighing a decrease in coal generation. For Wales, there was a decrease in the share from 8.4 per cent to 7.4 per cent, mainly due to a decline in gas generation. Northern Ireland's share of generation rose from 2.0 per cent to 2.2 per cent, mainly due to increased gas generation. On average, over the last four years, 75.9 per cent of UK electricity generation has taken place in England, 13.4 per cent in Scotland, 8.6 per cent in Wales and 2.2 per cent in Northern Ireland.

Both Scotland and Wales are net exporters of electricity, with England importing electricity from both countries and from continental Europe (via the France and Netherlands interconnectors). Northern Ireland trades electricity with the Republic of Ireland to which it is a net exporter. It also imports electricity from Scotland via the Moyle interconnector - these imports were greater than exports to the Irish Republic in each of the last four years. In 2010, Scotland exported 20.6 per cent of the electricity generated there to consumers elsewhere in the UK and this rose to 26.1 per cent in 2011. Transfers from Scotland to England rose by 45 per cent between 2010 and 2011, to a new record high, as Scottish generation increased and consumption fell. Wales exported the equivalent of 24.5 per cent of its generation to consumers in England in 2010, falling to a record low of 13.4 per cent in 2011.

#### Generation by fuel

For each of the four UK countries, Table A1 shows the shares of the generation of electricity by the fuel categories used in Table 5.6 of the Digest of UK Energy Statistics 2012, for 2010 and 2011. The position in 2011 is shown in Chart 1, in terms of GWh. After unplanned and planned outages to nuclear stations had reduced nuclear's share of generation in England in 2008, nuclear's share increased again in 2009 as these stations returned. The share of nuclear in generation in England fell again in 2010 due to maintenance outages at several stations including Sizewell B, which was offline for six months, before increasing once more in 2011 as these stations came back on line. In Scotland, after an increase in the share of nuclear in 2009, it fell back in 2010 due to maintenance outages. Nuclear's share in Scotland rose again in 2011 to one third of all generation due to increased availability. In Wales, nuclear generation fell in 2010 before rising again in 2011.

Due to high gas prices, in England, gas's share of generation fell by six percentage points, between 2010 and 2011, while coal's share rose by three percentage points. This pattern, of an increase in coal's share at the expense of gas, between 2010 and 2011, was repeated in Wales. Gas's share also declined in Scotland, but coal's share declined further, by eight percentage points. In 2011, gas's share of generation in each of England, Scotland and Wales was at a record low for the 2003 to 2011 period covered. In Northern Ireland (where electricity is traded within the

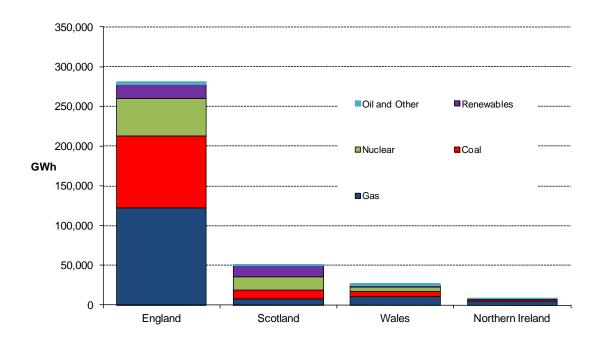
Irish all-island market, as opposed to the Great Britain market), however, gas's share of generation increased, at the expense of coal.

Table A1: Shares of each country's generation, by fuel type, 2010 and 2011

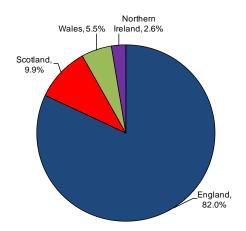
	Scotland	Wales	Northern Ireland	England
2010				
Coal	29.4%	18.4%	24.4%	29.2%
Gas	16.8%	49.8%	64.0%	50.1%
Nuclear	30.6%	17.2%	•	14.1%
Renewables	19.2%	5.0%	10.2%	4.7%
Oil and Other	4.0%	9.5%	1.4%	1.8%
2011				
Coal	21.0%	22.6%	18.4%	32.0%
Gas	15.7%	39.1%	68.0%	43.6%
Nuclear	33.0%	19.7%	•	16.6%
Renewables	26.8%	7.9%	12.6%	6.2%
Oil and Other	3.5%	10.7%	1.1%	1.5%

Combined heat and power (CHP) forms the bulk of "Other generators" generation, although some major power producers (MPPs) also operate generating plant that is partially CHP. CHP statistics for 2011 on a sub-national and regional basis were published in the September 2012 issue of Energy Trends (see references at the end of the article). The share of generation accounted for by generators other than major power producers varies across the UK. In Scotland, in 2011, other generators had a 12 per cent share, while in England the share was 9 per cent, in Wales 8 per cent and in Northern Ireland 8 per cent.

Chart 1: Generation by country and fuel type in 2011 (all generating companies)



#### Chart 2: Electricity consumption in 2011



#### **Consumption and sales**

Transmission and distribution losses are not separately available for Scotland, Wales, Northern Ireland and England so estimates have been made using the UK proportions. Consumption figures have then been calculated by deducting net transfers and losses figures from the electricity supplied figures shown in Table 1. These show (Chart 2) that in 2011, 9.9 per cent of electricity consumption in the UK was in Scotland, 5.5 per cent in Wales, 2.6 per cent in Northern Ireland and 82.0 per cent in England. These shares were all little changed from the average percentage shares for each country for the period 2008 to 2010, namely 82.0 per cent for England, 10.0 per cent for Scotland, 5.4 per cent for Wales and 2.6 per cent for Northern Ireland.

Separate data are collected for sales of electricity from the public supply system in Scotland, England and Wales, and Northern Ireland and published in monthly table ET 5.5 on DECC's Energy Statistics website (see references at the end of the article), but for this article the breakdown between England and Wales has been estimated. Because of definitional and other differences set out in the technical notes to Chapter 5 of DUKES 2012, there is a statistical difference between the calculated consumption and the sales data in Table 1. The overall statistical difference for the UK equals that shown in Table 5.3 of DUKES for the UK as a whole for the public distribution system.

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

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

#### Renewables

The share of renewables in electricity generation or sales is measured in two different ways in the UK<sup>1</sup>. First, there is the "headline" overall measure that shows the percentage of electricity generation accounted for by all renewables. Secondly, there is the measure that is based on the Renewables Obligation (RO) (and the analogous Renewables Obligation (Scotland) - ROS) which shows the percentage of electricity sales accounted for by renewables eligible under these obligations. The main differences are the exclusion from the RO of large-scale hydro and non-biodegradable wastes<sup>2</sup>. Table A2 shows the overall measure for 2008, 2009, 2010 and 2011.

**Table A2: Renewables percentages** 

		UK	Scotland	Wales	Northern Ireland	England
Overall	2008	5.6	18.2	4.3	6.3	3.6
renewables	2009	6.7	21.0	5.0	10.4	4.2
percentage	2010	6.8	19.2	5.0	10.2	4.7
	2011	9.4	26.8	7.9	12.6	6.2

<sup>&</sup>lt;sup>1</sup> There is also a third method used by the EU – a Renewables Directive basis – see Chapter 6 of the Digest of UK Energy Statistics 2012, table 6.7 and paragraph 6.38.

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

High rainfall in the winters of 2008 and 2009 saw a large increase in hydro generation in Scotland. With its high proportion of natural flow hydro, as well as wind generation increasing by over a third due to increased capacity, renewables' share in Scotland under the headline measure increased by almost three percentage points to stand at 21.0 per cent in 2009. Scotland's renewables' share fell in 2010 mainly due to a fall in hydro generation as a result of much lower rainfall. With much higher rainfall, higher wind speeds and increased wind capacity, Scotland's renewables' share rose to 26.8 per cent in 2011. This share is very much higher than other parts of the UK. In 2011, all four countries had a record high percentage of electricity generated by renewables. On a RO basis, the percentage measure for the UK (5.4 per cent in 2008, 6.7 per cent in 2009, 7.0 per cent in 2010 and 9.7 per cent in 2011) is not meaningful at sub-national level because electricity generated in one part of the UK can be sold in a different part of the UK.

In Scotland, the renewables target (which was to reach 31 per cent by 2011 and 100 per cent by 2020) is expressed as generation as a proportion of gross electricity consumption (defined as generation plus transfers into Scotland less transfers out of Scotland). In 2008, this percentage was 22.2 per cent, rising to 27.6 per cent in 2009, falling to 24.2 per cent in 2010. In 2011, this rose to 36.3 per cent, thus exceeding the target <sup>3</sup>.

The amount of electricity from renewable sources transferred from Scotland or Wales to England, or from Scotland to Northern Ireland, is not known. What is known from Table 2 is that the amount of ROS eligible electricity generated in Scotland in 2011 was 38 per cent more than in 2010, while the amount of RO eligible electricity generated in Wales in 2011 was 34 per cent more than in 2010. In England, the increase was 29 per cent. In Northern Ireland RO eligible electricity generated was 27 per cent more. In the UK as a whole, RO eligible electricity production increased by 33 per cent. Over the four years shown in Table 2, the increases in RO eligible electricity production have been substantial across all countries, namely 63 per cent for Northern Ireland, 66 per cent for Scotland, 40 per cent for Wales and 69 per cent for England.

Renewables statistics for 2011 on a sub-national and regional basis were published in the September 2012 issue of Energy Trends (see references at the end of the article).

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#### References:

Digest of UK Energy Statistics 2012 (DUKES); published for DECC by The Stationery Office. £62.00, but also available on DECC's energy statistics website at:

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

Energy Trends monthly table 5.5:

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

"Combined Heat and Power in Scotland, Wales, Northern Ireland and the regions of England in 2011" – Energy Trends September 2012, page 60:

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

"Renewable energy in Scotland, Wales, Northern Ireland and the regions of England in 2010" – Energy Trends September 2012, page 49:

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

<sup>&</sup>lt;sup>3</sup> The corresponding percentages for the UK as a whole are 5.5 in 2008, 6.7 in 2009, 6.7 in 2010 and 9.2 in 2011, which are similar to the overall renewables percentages in Table 2.

Chart 3: Electricity generation and consumption flow chart, 2011

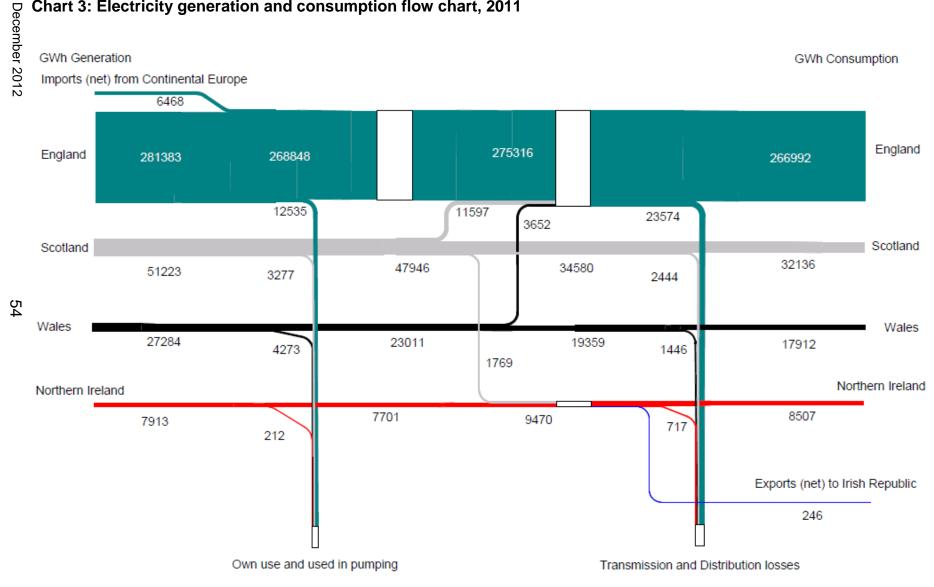


Table 1: (	Generation and supply of e		008 to 20		wales,	ivortileri	i ireiaiiu a	and Eng	iaiiu,		GWh
	_			2008					2009		
					Northern					Northern	
	-		Scotland	Wales		England		Scotland	Wales	Ireland	England
Generated by	Major power producers	355,209	45,147	36,560	9,234	264,268	342,374		30,370	7,628	259,092
	Other generators	33,781	4,973	1,646	390	26,771	34,400	5,886	1,618	392	26,504
Total generated	I	388,989	50,121	38,205	9,624	291,039	376,774	51,170	31,988	8,020	285,596
Own use by Oth	ner generators	1,684	248	82	19	1,334	1,822	312	86	21	1,404
Electricity suppl	lied (net) by Other generators	32,097	4,725	1,564	371	25,437	32,578	5,574	1,532	371	25,100
Used in pumpin use by MPP	ng at pumped storage and other own es	20,033	2,682	5,806	288	11,258	19,593	3,649	4,732	184	11,029
Electricity suppl	lied (net) by MPPs	335,175	42,466	30,754	8,946	253,010	322,781	41,635	25,638	7,444	248,063
	ferred to England (net of receipts) ferred to Northern Ireland (net of	-	8,444	12,168	-	-20,612	-	10,209	8,140	-	-18,349
receipts)		-	545	-	-545	-	-	1,937	-	-1,937	
Electricity trans	ferred to Europe (net of receipts)	-11,022	-	-	222	-11,244	-2,861	-	-	367	-3,228
Transfers from	other generators to public supply	13,545	1,597	542	286	11,121	16,265	2,419	578	295	12,973
Transmission Id	osses	6,547	661	349	167	5,370	6,853	671	364	180	5,638
Distribution loss	ses	21,310	1,925	1,068	533	17,784	21,192	1,796	1,065	548	17,782
Consumption fr	om public supply [A]	331,900	32,469	17,711	8,856	272,863	313,883	29,452	16,649	8,581	259,201
Consumption by	y autogenerators	18,538	3,147	1,021	84	14,285	16,292	3,151	953	76	12,111
Total Electricity	consumption	350,437	35,616	18,733	8,941	287,148	330,175	32,597	17,602	8,658	271,319
Electricity sales	(public supply) [B]	331,870	30,941	18,586	8,093	274,250	313,784	29,955	17,498	8,265	258,065
Statistical differen	ence	+29	+1,528	-875	+763	-1,386	+98	-510	-850	+316	+1,142
between calcula	ated consumption [A] and sales [B]										

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

	ontinued: Generation and s		d, 2008 t	to 2011		•					GWh
				2010					2011		
		LIIZ total	Caatland		Northern		ا مدمد	Caatland		Northern	Coolood
			Scotland	Wales		England	UK total			Ireland	England
Generated by	Major power producers	347,649	44,238	30,018	7,128	266,265	332,312	44,880	25,043	7,319	255,070
	Other generators	34,123	5,755	2,153	502	25,714	35,490	6,343	2,241	594	26,313
Total generated	I	381,772	49,992	32,170	7,630	291,979	367,802	51,223	27,284	7,913	281,383
Own use by Oth	ner generators	1,703	287	107	25	1,283	1,973	353	124	33	1,464
Electricity suppl	lied (net) by Other generators	32,420	5,468	2,045	477	24,431	33,517	5,990	2,116	561	24,850
Used in pumpin use by MPP	g at pumped storage and other own	18,615	3,264	4,383	199	10,769	18,323	2,924	4,149	179	11,072
Electricity suppl	lied (net) by MPPs	329,034	40,973	25,634	6,929	255,497	313,988	41,956	20,893	7,140	243,998
Electricity transf	ferred to England (net of receipts) ferred to Northern Ireland (net of	-	7,998	7,897	-	-15,896	-	11,597	3,652	-	-15,250
receipts)		-	2,297	-	-2,297	-	-	1,769	-	-1,769	-
Electricity transf	ferred to Europe (net of receipts)	-2,663	-	-	232	-2,895	-6,222	-	-	246	-6,468
Transfers from	other generators to public supply	15,292	2,595	680	383	11,635	16,394	3,016	818	441	12,119
Transmission lo	osses	5,975	593	325	155	4,902	6,476	633	354	169	5,320
Distribution loss	ses	21,062	1,816	1,049	532	17,665	21,705	1,811	1,091	548	18,254
Consumption from	om public supply [A]	319,967	30,863	17,044	8,690	263,370	308,444	29,165	16,615	8,388	254,276
Consumption by	y autogenerators	17,113	2,874	1,364	94	12,781	17,103	2,970	1,297	120	12,716
Total Electricity	consumption	337,080	33,736	18,408	8,784	276,151	325,546	32,136	17,912	8,507	266,992
Electricity sales	(public supply) [B]	319,919	31,143	17,737	8,316	262,724	308,033	28,072	17,241	7,476	255,244
Statistical differen	ence	+47	-280	-693	+375	+646	+410	+1,093	-626	+912	-968
between calcula	ated consumption [A] and sales [B]										

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

Table 2:	Generation of electrici	ty by fuel	in Scotla	and, Wa	ales, No	rthern Ire	eland and E	ngland, 20	08 to 20	11	GWh
				2008					2009		
					Northern					Northern	
		UK total	Scotland	Wales	Ireland	England	UK total	Scotland	Wales	Ireland	England
Major power	Coal	120,305	11,591	9,364	2,040	97,310	99,287	11,896	6,547	1,371	79,473
producers:	Oil	4,558	431	-	334	3,793	3,839	278	-	78	3,484
	Gas	161,583	9,822	16,059	6,537	129,165	152,598	7,430	14,111	5,642	125,415
I	Nuclear	52,486	15,079	7,080	-	30,327	69,098	16,681	6,122	-	46,295
•	Thermal renewables	2,607	231	60	-	2,315	2,670	242	91	-	2,337
I	Hydro natural flow	4,224	3,923	278	-	23	4,294	4,056	216	-	22
	Hydro pumped storage	4,089	1,091	2,998	-	-	3,685	1,087	2,598	-	-
I	Non thermal renewables	5,357	2,978	722	323	1,335	6,904	3,615	685	538	2,066
•	Total	355,209	45,147	36,560	9,234	264,268	342,374	45,284	30,370	7,628	259,092
Other	Coal	4,077	71	-	37	3,968	3,751	69	-	31	3,651
Generators:	Oil	2,152	1,087	62	35	967	2,155	1,017	64	34	1,041
	Gas	14,636	1,786	487	31	12,332	13,901	1,940	470	32	11,459
	Thermal renewables	7,040	870	243	15	5,912	8,025	1,091	347	43	6,543
(	Other thermal	2,444	-	529	-	1,915	2,327	-	468	-	1,860
1	Hydro natural flow	931	786	56	26	63	947	808	50	31	58
1	Non thermal renewables	1,757	352	267	245	892	2,420	943	220	221	1,036
,	Wastes	744	21	-	-	723	873	18	-	-	855
•	Total	33,781	4,973	1,646	390	26,771	34,400	5,886	1,618	392	26,504
Total generati	ion by fuel	388,989	50,121	38,205	9,624	291,039	376,774	51,170	31,988	8,020	285,596
within which: Re	enewables Hydro	5,155	4,709	334	26	85	5,241	4,864	266	31	80
	Wind, wave, solar	7,114	3,330	989	568	2,227	9,324	4,558	905	759	3,102
	Other	9,647	1,102	303	15	8,227	10,694	1,333	438	43	8,881
	Total	21,916	9,141	1,627	609	10,539	25,259	10,755	1,609	832	12,063
Renewables obligation	eligible under the renewables	18,005	6,592	1,467	609	9,337	21,102	8,196	1,489	832	10,585
Percentage	Coal	32.0%	23.3%	24.5%	21.6%	34.8%	27.3%	23.4%	20.5%	17.5%	29.1%
shares of	Oil	1.7%	3.0%	0.2%	3.8%	1.6%	1.6%	2.5%	0.2%	1.4%	1.6%
generation:	Gas	45.3%	23.2%	43.3%	68.2%	48.6%	44.2%	18.3%	45.6%	70.7%	47.9%
1	Nuclear	13.5%	30.1%	18.5%	-	10.4%	18.3%	32.6%	19.1%	-	16.2%
	Hydro natural flow	1.3%	9.4%	0.9%	0.3%	-	1.4%	9.5%	0.8%	0.4%	-
	Other renewables	4.3%	8.8%	3.4%	6.1%	3.6%	5.3%	11.5%	4.2%	10.0%	4.2%
	Other	1.9%	2.2%	9.2%		0.9%	1.8%	2.2%	9.6%	<u> </u>	1.0%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

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

				2010					2011		
					Northern					Northern	
		UK total	Scotland	Wales	Ireland	England	UK total	Scotland	Wales	Ireland	England
Major power	Coal	103,941	14,653	5,929	1,817	81,542	104,797	10,728	6,170	1,414	86,48
producers:	Oil	2,272	206	-	73	1,993	1,075	160	-	52	863
	Gas	161,747	6,618	15,227	4,840	135,062	132,753	6,227	9,880	5,301	111,346
	Nuclear	62,140	15,293	5,532	-	41,315	68,980	16,892	5,364	-	46,72
	Thermal renewables	3,690	299	72	-	3,320	4,531	274	76	-	4,181
	Hydro natural flow	2,758	2,579	164	0	14	4,594	4,362	210	0	21
	Hydro pumped storage	3,150	779	2,372	-	-	2,906	604	2,301	-	
	Non thermal renewables	7,950	3,811	722	398	3,020	12,675	5,632	1,041	553	5,450
	Total	347,649	44,238	30,018	7,128	266,265	332,312	44,880	25,043	7,319	255,070
Other	Coal	3,753	62	-	41	3,650	3,786	51	-	41	3,694
Generators:	Oil	2,532	1,007	173	34	1,318	2,589	996	215	34	1,345
	Gas	13,908	1,770	806	44	11,288	14,062	1,825	790	77	11,369
	Thermal renewables	8,296	1,117	336	86	6,757	8,442	1,130	367	82	6,862
	Other thermal	1,559	-	511	-	1,048	1,439	· -	405	-	1,034
	Hydro natural flow	885	734	49	53	50	1,093	970	58	19	46
	Non thermal renewables	2,266	1,051	278	244	693	3,075	1,360	406	340	969
	Wastes	924	14	-	-	910	1,005	12	-	-	993
	Total	34,123	5,755	2,153	502	25,714	35,490	6,343	2,241	594	26,313
Total genera	tion by fuel	381,772	49,992	32,170	7,630	291,979	367,802	51,223	27,284	7,913	281,383
within which:	Renewables Hydro	3,644	3,313	213	53	65	5,686	5,332	268	19	68
winch.	Wind, wave, solar	10,216	4,862	1,000	642	3,712	15,750	6,992	1,447	893	6,418
	Other	11,986	1,416	407	86	10,076	12,973	1,404	443	82	11,043
	Total	25,845	9,591	1,620	780	13,853	34,410	13,728	2,159	994	17,529
Renewahles	eligible under the renewables										
obligation	ongible under the fortowables	22,465	7,931	1,530	780	12,224	29,804	10,951	2,049	994	15,811
Percentage	Coal	28.2%	29.4%	18.4%	24.4%	29.2%	29.5%	21.0%	22.6%	18.4%	32.0%
shares of	Oil	1.3%	2.4%	0.5%	1.4%	1.1%	1.0%	2.3%	0.8%	1.1%	0.8%
9	Gas	46.0%	16.8%	49.8%	64.0%	50.1%	39.9%	15.7%	39.1%	68.0%	43.6%
	Nuclear	16.3%	30.6%	17.2%	-	14.1%	18.8%	33.0%	19.7%	-	16.6%
	Hydro natural flow	1.0%	6.6%	0.7%	0.7%	-	1.5%	10.4%	1.0%	0.2%	
	Other renewables	5.8%	12.6%	4.4%	9.5%	4.7%	7.8%	16.4%	6.9%	12.3%	6.2%
	Other	1.5%	1.6%	9.0%	-	0.7%	1.5%	1.2%	9.9%	-	0.7%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

### **National Energy Efficiency Data-Framework**

#### Introduction

In November 2012 the Department of Energy and Climate Change (DECC) published its second report summarising analysis from the National Energy Efficiency Data-Framework (NEED). NEED is a project set up by the Department to develop its understanding of energy use and the impact of energy efficiency measures. It brings together data from existing sources, including meter point energy consumption data and information on energy efficiency measures installed in households<sup>1</sup>, and links them to information about property characteristics to provide a rich resource for analysis.

The published report covers:

- Development of the framework an overview of what NEED is and how it was developed.
- Domestic energy consumption analysis of energy consumption by property attributes and household characteristics.
- Energy efficiency measures in homes including estimates of the savings from key energy efficiency measures and a summary of which households have had measures installed.
- Non-domestic consumption an initial assessment of the quality of the non-domestic data.

A number of annexes were also published alongside the report providing more detailed results, as well as further information on the quality of the data, the methodology for estimating the impact of energy efficiency measures and a review of work undertaken by DECC contractors. The publication can be found on the DECC website at:

www.decc.gov.uk/en/content/cms/statistics/energy\_stats/en\_effic\_stats/need/need.aspx.

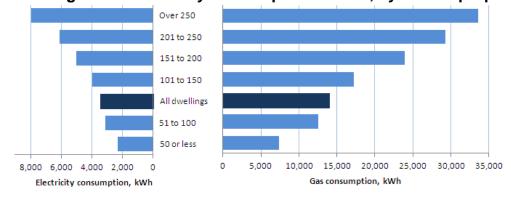
#### Summary of results

All results for the domestic sector are based on a sample of properties in England. All gas data used in the analysis are weather corrected.

#### **Domestic energy consumption**

Analysis of data in NEED shows that while the property attributes and household characteristics considered in NEED influence electricity and gas consumption there is a significant amount of variation which has not been explained. This echoes other work undertaken by and on behalf of DECC to model gas consumption<sup>2</sup>, which shows that only approximately 30 to 40 per cent of the variation in gas consumption seen in different households can be explained using the variables available in NEED<sup>3</sup>. Of the variables within NEED, property size has the greatest influence.





<sup>&</sup>lt;sup>1</sup> Information on energy efficiency measures installed is from the Homes Energy Efficiency Database (HEED): <a href="www.energysavingtrust.org.uk/Organisations/Local-delivery/Free-resources-for-local-authorities/Homes-Energy-Efficiency-Database">www.energysavingtrust.org.uk/Organisations/Local-delivery/Free-resources-for-local-authorities/Homes-Energy-Efficiency-Database</a>

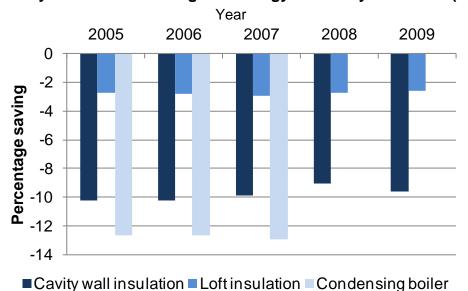
<sup>&</sup>lt;sup>2</sup>Work undertaken by NERA and Katalysis set out in Annexes E and F of the NEED report.

<sup>&</sup>lt;sup>3</sup> DECC's local area gas model also draws a similar conclusion (See the special feature 'Identifying local areas with higher than expected domestic gas use' in Energy Trends, March 2012 available at: <a href="https://www.decc.gov.uk/assets/decc/11/stats/publications/energy-trends/4779-energy-trends-mar12.pdf">www.decc.gov.uk/assets/decc/11/stats/publications/energy-trends/4779-energy-trends-mar12.pdf</a>).

#### Impact of energy efficiency measures

Considerable savings can be made by installing energy efficiency measures in homes. Chart 2 shows the typical percentage savings for the three main measures considered in this report for households which use gas as the primary heating fuel. Initial work is also published for solid wall insulation. However, the number of observations is low, so this will be expanded in future work.

Chart 2: Summary of observed savings for energy efficiency measures (median)



The percentage saving for each of these measures is consistent across all the years considered. However, the typical kWh savings have decreased over time as typical gas consumption has decreased<sup>4</sup>.

Savings based on data in NEED reflect observed savings, so they provide an estimate of the saving after comfort taking (where a household takes the benefit of the insulation through increased warmth) and an average for all properties irrespective of whether the measure has been installed fully throughout the property. As a result there will be differences between the savings estimates reported in NEED and more technical physics based estimates. The savings estimates from NEED reflect what occurs in practise.

#### **Future plans**

The analysis from NEED will help monitor and support the development of key DECC policies, including the Green Deal, and will be used alongside other evidence to help understand observed savings and how and why these differ from physics based estimates. If possible, the work will be extended to cover Wales and Scotland, in future. Further work will also be undertaken on the non-domestic data in NEED to see whether robust analysis can be produced in order to inform energy policy in the non-domestic sector.

#### Contacts

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<sup>&</sup>lt;sup>4</sup> It should be noted that the data used for this analysis are weather corrected. This is important to ensure comparability between years but masks the variation in savings occurring as a result of different temperatures during the heating season. For example, in a year with a cold winter households will experience a greater absolute saving than they would in a warmer year.

### Tariff type variation in the domestic energy market

#### Introduction

DECC's Quarterly Energy Prices (QEP) publication<sup>1</sup> includes quarterly data on customer numbers in the domestic UK electricity and GB gas markets<sup>2</sup>, split by payment type and energy distribution region. It also includes annual energy bills for electricity and gas customers, which are calculated based on a fixed consumption level, by payment type and region, and are averaged across all tariffs.

The data used to produce these bills and customer numbers is collected via the Domestic Fuel Inquiry (DFI), a quarterly survey of 8 domestic energy companies in the UK (the 'Big 6' plus two others)<sup>3</sup>. This provides DECC with price and customer number information for tariffs in the domestic energy market. The majority of these tariffs are no longer available to new customers; particularly in the case of fixed and capped tariffs, which are normally only featured for a short time before being replaced with an updated version.

This tariff data is aggregated and analysed to produce annual bills and customer numbers, based on standard annual consumption assumptions: 18,000 kWh per year for gas, 3,300 kWh for standard electricity, and 6,600 kWh for Economy 7 electricity (of which 3,000kWh are assumed to be consumed at the day rate and 3,600 kWh at the night rate).

This article examines the current structure of the domestic energy market; how many customers are on standard, fixed, online and social tariffs, and how average bills differ between these tariff types for a set consumption level.

The data in this article is based on identifying tariff types from the name of each tariff. Due to the nature of the domestic energy markets, the exact structure and/or names of tariffs can vary considerably between energy companies, and not all features of a tariff may be fully reflected in the tariff name. As a result, these figures should be treated as estimates.

#### Tariff types

The individual approach of each energy company to tariff structure and provision means that a perfect definition cannot be applied to all tariffs within a given type. However, for the purpose of this article, the following definitions have been applied:

#### Standard:

The basic variable tariff offered by a company, available on all payment types and to all new customers, and as such holding the majority of customers. The underlying prices and structures are the same for all customers within a distribution region. This category does not include any fixed, online, social, or green tariffs.

#### Fixed:

A tariff offering prices that remain constant at the initially offered level until a pre-defined expiry date, regardless of any price changes announced by the company. They differ from capped or tracker tariffs, which are usually set at x% above or below a variable tariff, and as such are liable to price fluctuations.

#### Online:

A tariff requiring customers to manage their account online and receive online bills, reducing billing costs for the company. These tariffs are thus offered at a discounted price to the standard tariff, but are sometimes only available for a short period of time before being replaced by an updated version. Customers usually supply their own meter readings.

<sup>&</sup>lt;sup>1</sup> Available at: www.decc.gov.uk/en/content/cms/statistics/energy\_stats/prices/prices.aspx

<sup>&</sup>lt;sup>2</sup> Due to a lack of competition within the Northern Ireland domestic gas markets, figures are produced on a GB basis only.

<sup>&</sup>lt;sup>3</sup> The DFI covers more than 98% of the domestic energy market and can be used to produce figures representative of the domestic Electricity and Gas markets as a whole.

#### Social:

A tariff available to 'vulnerable' customers, whether it be due to low income, age, illness or disability, at a price which must be at most the same as the cheapest standard alternative for a customer within that region on each payment type.

There is an element of overlap between these tariff types (with the exception of standard). For example, some customers may be on a tariff that is both fixed and online. The above definitions are based on our knowledge of the energy market, but are by no means definitive, and we welcome any suggestions to improve them.

#### **Economy 7 Electricity:**

Economy 7 electricity tariffs offer a day price and a reduced rate night unit price for electricity consumed within a given 7 hours each night. These are suitable for individuals that consumer the majority of their energy at night, i.e. those with storage heaters. Economy 7 is treated as a separate fuel rather than tariff, as fixed, online, social tariffs are available for Economy 7 customers.

#### **Customer Numbers**

At the end of quarter 3 of 2012, more than half of domestic energy customers were paying by direct debit (56% and 55% for gas and standard electricity respectively).<sup>4</sup> The proportion of customers on standard, fixed, online and social tariffs by payment types at the end of quarter 3 2012 are shown in Table 1.

Table 1: The proportion of domestic Gas and Electricity (both standard electricity and Economy 7) customers on each tariff type, by payment method

		Standard	Fixed	Online	Social
	Standard Credit	85%	4%	2%	5%
Gas	Direct Debit	57%	18%	19%	4%
	Pre-Payment	97%	0%	0%	2%
	Standard Credit	87%	4%	2%	3%
Electricity	Direct Debit	59%	18%	18%	3%
	Pre-Payment	97%	0%	0%	2%

For standard credit and pre-payment payment methods, the large majority of customers are on a company's standard tariff at 85 and 97 per cent respectively for gas, and 87 and 97 per cent respectively for electricity. Direct debit has the lowest proportion of customers on standard tariffs at 57 per cent for gas and 59 per cent for electricity, as a result of the wide range of tariffs available to customers paying by this payment method.

We estimate that for direct debit, at least 4% of gas customers and total electricity customers are on both a fixed and online tariff. These customers are included in both columns in the above table.

The wide variation in tariff types amongst direct debit customers is indicated in Table 1, with 18 per cent of both gas and electricity direct debit customers having chosen to fix their prices, and 19 per cent of gas and 18 per cent of electricity direct debit customers being on online tariffs.

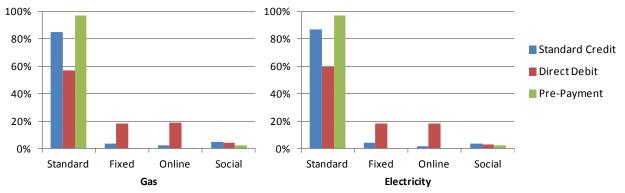
Because of the small range of pre-payment tariffs available, the vast majority (97%) of customers are on the standard tariff. In the case of standard credit, despite a wider range of available tariffs, there is relatively little variation in tariff types when compared with direct debit customers.

Social tariffs follow a slightly different pattern to other types, as they depend on a variety of eligibility criteria. Some 'vulnerable' customers may feel more in control of their energy usage and payments by paying by standard Credit or pre-payment methods, and therefore there is very little difference in the proportion of customers on social tariffs between each payment method.

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<sup>&</sup>lt;sup>4</sup>Q3 2012 data available in Quarterly Energy Prices tables 2.4.2 for standard electricity and 2.5.2 for gas

Charts 1 and 2: The proportion of Gas and Electricity customers on Standard, Fixed, Online and Social tarifs, by payment method



There was very little difference between these distributions for gas and electricity in quarter 3 of 2012, as indicated in Charts 1 and 2. This is likely to be as a result of the large number of customers choosing to take advantage of dual fuel discounts offered, and so choosing the same energy company and tariff for both gas and electricity.

As with Gas and Electricity, whether an Electricity customer is on an Economy 7 (E7) or Standard Electricity has little impact on their choice of standard, fixed, or online tariff, as indicated in Table 2.

Table 2: The proportion of Economy 7 and Standard Electricity customers on tariff types at the end of Q3 2012

		Standard	Fixed	Online	Social
	Standard Credit	90%	4%	1%	3%
E7	Direct Debit	62%	19%	18%	2%
	Pre-Payment	98%	0%	0%	2%
	Standard Credit	86%	4%	2%	4%
Standard Electricity	Direct Debit	59%	18%	18%	3%
	Pre-Payment	97%	0%	0%	2%

The majority (86%) of domestic Electricity customers use Standard Electricity, whilst 14 per cent are on an Economy 7 (or equivalent 'time of use') tariff. The majority of customers on an Economy 7 tariff will use storage heaters to heat their homes, and therefore use electricity rather than gas for space heating.

Table 3: The proportion of customers on Standard Electricity and Economy 7 tariffs at the end of Q3 2012

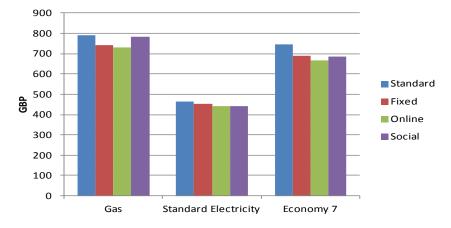
	Standard	
	Electricity	Economy 7
East Midlands	71%	29%
East Anglia	75%	25%
South East	77%	23%
North Scotland	78%	22%
South West	85%	15%
Midlands	87%	13%
South Scotland	88%	12%
Southern	89%	11%
London	92%	8%
North West	92%	8%
North East	93%	7%
Merseyside & N. Wales	93%	7%
Yorkshire	93%	7%
South Wales	94%	6%
Northern Ireland	95%	5%
Grand Total	86%	14%

The regional variation of Standard Electricity and Economy 7 customers in the UK is shown in Table 3. The most popular regions for Economy 7 tariffs are the East Midlands and East Anglia, where 29 and 25 per cent of Electricity customers are on these tariffs respectively.

Northern Ireland and South Wales have the lowest proportion of Electricity customers on Economy 7 tariffs, at 5 and 6 per cent respectively.

Bills

Chart 3: Average 2012 bills for Direct Debit customers on each tariff type<sup>5</sup>



Economy 7 bills are calculated separately to Standard Electricity bills, because many Economy 7 customers will use electricity for space heating, and so are assumed to have a higher annual consumption.

<sup>&</sup>lt;sup>5</sup> DECC Publishes bills in QEP both on a provisional basis (in December) and a final basis (in March of the following year)
December 2012

#### Online or Offline?

Most companies offer discounts to customers for managing their bills online, as it reduces costs for the energy company. Table 4 shows that in 2012, the average online bill was cheaper than the average offline bill for all fuel types and payment methods. It is important to note that not all consumers are able to access online tariffs and benefit from these savings, depending on whether they have easily available internet access, and whether they prefer to receive a paper bill.

Table 4: Average 2012 bills for customers on Online and Offline tariffs (GBP)<sup>6</sup>

	Gas			Standard Electricity			Economy 7		
	Online	Offline	Saving	Online	Offline	Saving	Online	Offline	Saving
Standard Credit	£813	£837	£24	£470	£500	£30	£752	£791	£39
Direct Debit	£729	£780	£51	£442	£462	£20	£666	£736	£70

#### Fixed or Variable?

Unlike the above online/offline comparison, the potential savings from switching between a fixed or variable tariff will depend on future movements in energy prices. Consumers sign up for a fixed tariff for a number of reasons including: expectations of future price rises and also for budgeting purposes. Initially customers on fixed term tariffs can see an increase in costs as the fix is likely to be higher than the current standard tariff at the time of the switch.

In 2012, direct debit customers on fixed tariffs paid less than those on variable tariffs for both gas and electricity. The savings were £32, £6, and £41 for gas, standard electricity, and Economy 7 customers respectively, as shown in Table 5.

Table 5: Average 2012 bills for customers on Fixed and Variable tariffs (GBP)<sup>6</sup>

	Gas			Standard Electricity			Economy 7		
	Fixed	Variable	Difference	Fixed	Variable	Difference	Fixed	Variable	Difference
Standard Credit	£849	£836	-£13	£503	£499	-£4	£777	£791	£14
Direct Debit	£743	£775	£32	£454	£460	£6	£688	£729	£41

Domestic energy prices rose in August-November 2011 and October 2012-January 2013, outweighing the impact of the price cuts in quarter 1 of 2012. Any customers who had fixed their energy prices before or during the initial price rises may have benefited from a lower energy bill than those on variable tariffs during 2012.

The average Economy 7 standard credit bills followed a similar pattern to direct debit, with the average variable tariff bill exceeding the average fixed tariff bill. For standard credit Gas and Standard Electricity customers, average 2012 bills were higher for those on fixed tariffs than for those on variable tariffs.

#### **Social Tariffs**

Table 6: Average 2012 bills for customers on Standard and Social tariffs (GBP)

	Gas			Stand	Standard Electricity			Economy 7		
	Standard	Social	Saving	Standard	Social	Saving	Standard	Social	Saving	
Standard Credit	£839	£802	£37	£503	£455	£48	£794	£698	£96	
Direct Debit	£791	£783	£8	£465	£443	£22	£746	£687	£59	
Pre-Payment	£827	£794	£33	£502	£468	£34	£779	£738	£41	

Social tariffs are available to vulnerable customers that might otherwise struggle to pay for energy at the standard market rates. Table 6 shows that in 2012 the average bill for social tariffs was lower than that for standard tariffs across all fuels and payment types; on average, a customer eligible for a social tariff will benefit from a lower energy bill than if they were on a standard tariff.

<sup>&</sup>lt;sup>6</sup> Very few customers are on Online or Fixed Pre-Payment tariffs (<1%), so savings for Pre-Payment customers are not shown

### Special feature - Tariff type variation

### **User Feedback**

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

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

Energy

December 2011 DECC Statistical surveys

Revisions to quarterly total energy data

New weather tables: sources and methodology

June 2012 DECC report on surveys of business in 2011/12

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Combined Heat and Power (CHP)

September 2012 Combined Heat and Power in Scotland, Wales, Northern Ireland and the

regions of England in 2011

**Electricity** 

December 2011 Electricity generation and supply figures for Scotland, Wales, Northern Ireland

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**Energy prices** 

March 2012 Domestic energy bills in 2011

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Industrial energy prices

**Feed-in Tariffs** 

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National Grid operational metering data and renewables New Renewables Obligation Certificates (ROCs) table

**Sub-national energy consumption** 

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Sub-national gas consumption statistics for 2010

Sub-national estimates of non gas, non electricity and non road transport fuels

for 2009

Sub-national total energy consumption statistics for 2009

Sub-national electricity and gas consumption statistics analysis tool

Sub-national non-domestic electricity consumption in Northern Ireland for 2010 Sub-national domestic electricity consumption in Northern Ireland for 2009

March 2012 Sub-national electricity consumption statistics and household energy

distribution analysis for 2010

Gas and electricity consumption data below Local Authority level Identifying local areas with higher than expected domestic gas use

June 2012 Sub-national road transport fuel consumption statistics for 2010 and analysis

of national trends in diesel and petrol use

**UK Continental Shelf (UKCS)** 

March 2012 UKCS capital expenditure survey 2011

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<u>www.decc.gov.uk/en/content/cms/statistics/publications/trends/articles\_sub/articles\_sub.aspx</u> (articles by subject).

### **Explanatory notes**

#### General

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

### Symbols used in the tables

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

#### Notes to tables

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

#### **Conversion factors**

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

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.

All conversion of fuels from

#### **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

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

Note that all factors are quoted to 5 significant figures

#### **Abbreviations**

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

#### Sectoral breakdowns

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

Fuel producers	05-07, 09, 19, 24.46, 35
Final consumers	
Iron and steel	24 (excluding 24.4, 24.53 and 24.54)
Other industry	08, 10-18, 20-23, 24.4 (excluding 24.46), 24.53, 24.54,
	25-33, 36-39, 41-43
Transport	49-51
Other final users	
Agriculture	01-03

Commercial 45-47, 52-53, 55-56, 58-66, 68-75, 77-82 Public administration 84-88

Other services 90-99

Domestic Not covered by SIC 2007

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