

## Section 5 – Electricity

### Key results show:

#### Provisional 2014

Electricity generated in 2014 fell by 6.7 per cent from 359.2 TWh in 2013 to 335.0 TWh due to falling demand. (**Chart 5.1**)

Low carbon electricity's share of generation increased from 34.6 per cent in 2013 to a record high of 38.3 per cent in 2014, due to higher renewables generation. (**Chart 5.2**)

Renewables' share of electricity generation increased from 14.9 per cent in 2013 to a record 19.2 per cent in 2014. (**Chart 5.2**)

Gas's share of generation rose from 26.6 per cent to 30.2 per cent, due to lower wholesale gas prices between June and August and to help meet the shortfall in generation caused by nuclear outages in the second half of the year. Coal's share of generation decreased from 36.4 per cent to 29.1 per cent with a record low generation of 97.3 TWh, due to plant closures and conversions. (**Chart 5.2**)

Net imports of electricity, a record high level at 20.5 TWh, made up 6.1 per cent of electricity supplied in 2014 and were up 42 per cent from 14.4 TWh in 2013. This was due mainly to increased imports from France. (**Chart 5.4**).

Final consumption of electricity in 2014 was 4.3 per cent lower than in 2013, the lowest level in the last 17 years. Domestic consumption fell by 5.5 per cent, partly due to a warmer winter. (**Chart 5.6**).

#### Quarter 4 2014

Electricity generated in the fourth quarter of 2014 fell by 5.3 per cent from 93.9 TWh a year earlier to 89.0 TWh (**Chart 5.1**).

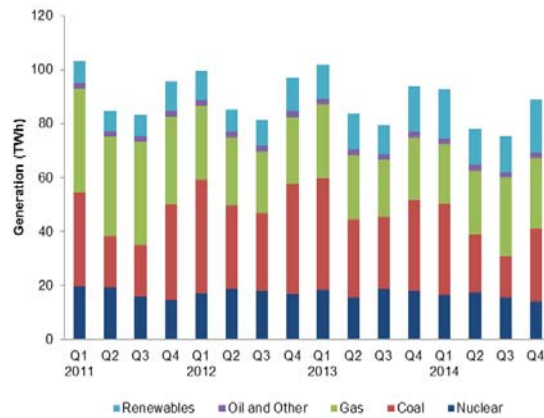
Renewables' share of electricity generation increased from 17.9 per cent in the fourth quarter of 2013 to a record 22.0 per cent in the fourth quarter of 2014. (**Chart 5.2**).

Gas's quarterly share of generation increased from 24.7 per cent to 29.5 per cent, while coal's quarterly share fell from 35.8 per cent to 30.3 per cent. Nuclear's share decreased from 19.3 per cent to 15.8 per cent, due to planned and unplanned outages affecting four EDF nuclear stations. (**Chart 5.2**).

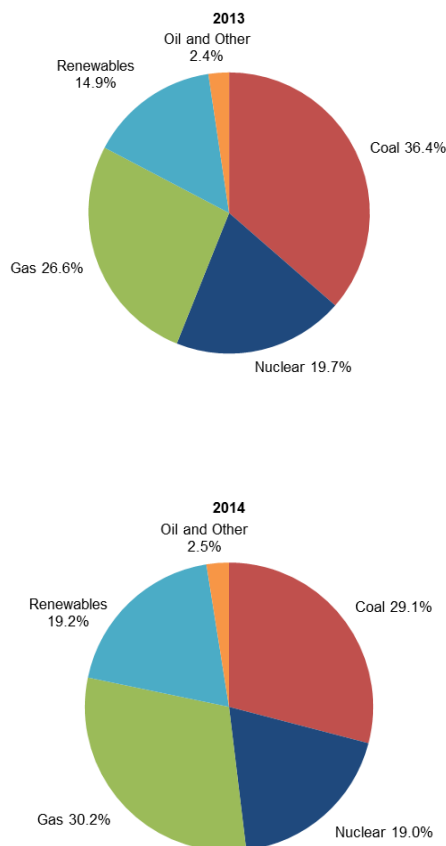
Final consumption in the fourth quarter of 2014 fell by 3.4 per cent on a year earlier, and domestic sales fell by 4.4 per cent, as a result of warmer weather in 2014. (**Chart 5.6**)

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**Chart 5.1 Electricity generated by fuel type**



**Chart 5.2 Shares of electricity generation**



In 2014, total electricity generated fell 6.7 per cent from 359.2 TWh in 2013 to 335.0 TWh as demand fell.

In 2014, coal fired generation fell by 25.6 per cent from 130.8 TWh in 2013 to 97.3 TWh, its lowest level in the time series as a result of reduced capacity due to the closure of several power stations and the conversion of a second unit at Drax from coal to biomass. Nuclear generation fell 9.7 per cent from 70.6 TWh to 63.7 TWh due to outages in the second half of the year. Gas fired generation rose 5.7 per cent from 95.6 TWh to 101.1 TWh due to lower wholesale gas prices between June and August and to help meet the shortfall in nuclear generation.

In 2014, wind and solar PV generation rose 16.6 per cent from 30.5 TWh to 35.5 TWh, mainly due to increased capacity compared to 2013. Hydro generation rose 26 per cent from 4.7 TWh to 5.9 TWh, with average rainfall in the main hydro areas 15.5 per cent higher in 2014 than a year earlier.

The share of generation from coal decreased from 36.4 per cent in 2013 to 29.1 per cent in 2014, and that from nuclear decreased from 19.7 per cent to 19.0 per cent in 2014. The share of generation from gas increased from 26.6 per cent in 2013 to 30.2 per cent in 2014.

The share of generation from renewables (hydro, wind and bioenergy) increased from 14.9 per cent in 2013 to 19.2 per cent in 2014. This was mainly due to increased wind and bioenergy generation capacity.

In 2014 Q4, total electricity generated fell 5.3 per cent from 93.9 TWh in 2013 Q4 to 89.0 TWh, driven by lower demand.

In 2014 Q4, coal fired generation fell by 19.7 per cent from 33.6 TWh in 2013 Q4 to 27.0 TWh. Gas fired generation rose 13.0 per cent from 23.2 TWh to 26.2 TWh. Nuclear generation fell 22.6 per cent from 18.2 TWh to 14.1 TWh, due to planned and unplanned outages affecting four EDF nuclear stations.

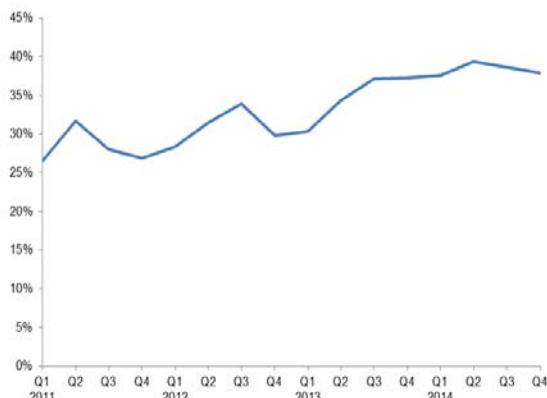
In 2014 Q4, wind and solar PV generation rose 4.6 per cent from 10.6 TWh to 11.1 TWh. Hydro generation rose 1.6 per cent.

The share of generation from coal decreased from 35.8 per cent in 2013 Q4 to 30.3 per cent in 2014 Q4. Share of generation from gas increased from 24.7 per cent in 2013 Q4 to 29.5 per cent in 2014 Q4. Share of generation from nuclear decreased from 19.3 per cent in 2013 Q4 to 15.8 per cent in 2014 Q4.

The share of generation from renewables (hydro, wind and bioenergy) increased from 17.9 per cent in 2013 Q4 to 22.0 per cent in 2014 Q4. This was due to increased capacity for wind and bioenergy generation.

The increased share of hydro and wind (which use little electricity on site), coupled with the fall in use of nuclear and coal input (which use a lot of electricity), has led to a drop in the industry own use of generation of 18 per cent between 2013 and 2014 and 17 per cent between Q4 2013 and Q4 2014.

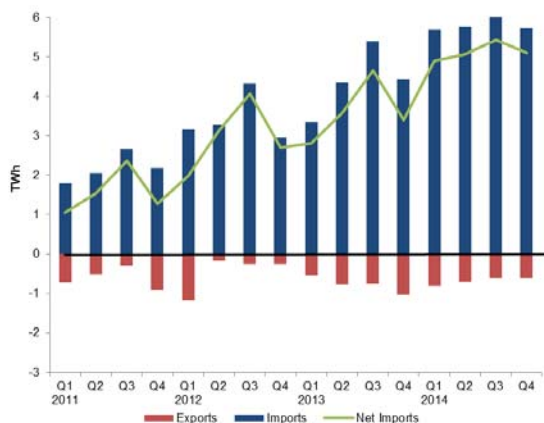
**Chart 5.3 Low carbon electricity's share of generation**



Low carbon electricity's share of generation increased from 34.6 per cent in 2013 to 38.3 per cent in 2014, the highest share in the last 18 years, due to higher renewables generation.

Low carbon electricity's share of generation increased from 37.3 per cent in 2013 Q4 to 37.8 per cent in 2014 Q4, with an increase in renewable generation offsetting the fall from nuclear.

**Chart 5.4 UK trade in electricity**



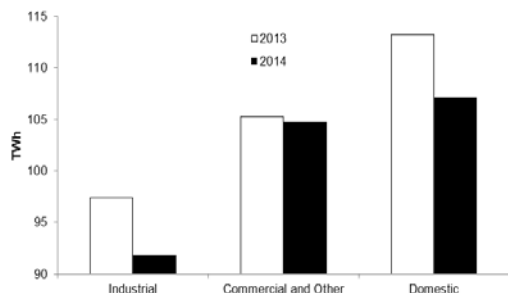
In 2014, imports of electricity rose by 32.5 per cent, whilst exports fell by 12.4 per cent. Net imports of electricity were a record high at 20.5 TWh, up 42 per cent on the 2013 value, and made up 5.8 per cent of electricity supplied in 2014. This was mainly due to increased imports from France via the interconnector, which in 2014 ran at 85.5 per cent of capacity (imports and exports combined) compared to 64.9 per cent in 2013.

In 2014, the UK was a net importer from France and the Netherlands with net imports of 15.0 TWh and 7.9 TWh respectively. The UK was a net exporter to Ireland, with net exports of 2.4 TWh.

In 2014 Q4, compared with the same period in 2013, imports of electricity rose by 29 per cent, whilst exports decreased by 41 per cent. In each of the quarters from 2010 Q2, the UK has been a net importer.

Net imports of electricity, at 5.1 TWh, were up 50 per cent on the level of 3.4 TWh in 2013 Q4. This represented 5.4 per cent of electricity supplied in 2014 Q4. In 2014 Q4, the UK was a net importer from France and Netherlands with net imports of 3.5 TWh and 2.1 TWh respectively and a net exporter to Ireland with net exports of 2.3 TWh.

**Chart 5.5 Electricity final consumption (annual)**



Final consumption of electricity fell by 4.3 per cent in 2014, from 317.3 TWh in 2012, to 303.8 TWh, its lowest level in the last 18 years.

Domestic use fell by 5.5 per cent, from 113.5 TWh in 2013 to 107.2 TWh in 2014. Industrial use of electricity fell 6.3 per cent, from 98.0 TWh to 91.9 TWh, while consumption by commercial and other users<sup>1</sup> fell by 1.0 per cent, from 105.8 TWh to 104.8 TWh.

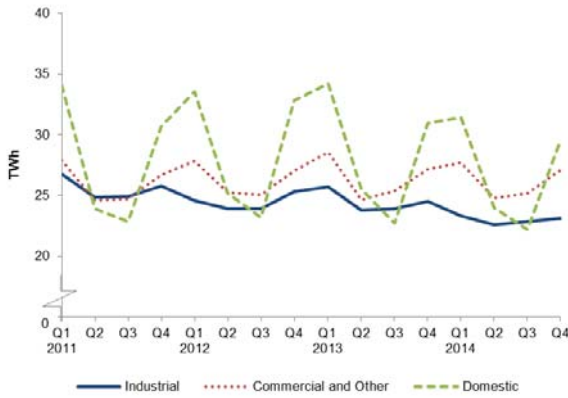
In 2014, temperatures were on average 1.2 degrees warmer than in 2013.<sup>2</sup>

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

<sup>2</sup>Temperature data comes from table ET 7.1, at: [www.gov.uk/government/publications/energy-trends-section-7-weather](http://www.gov.uk/government/publications/energy-trends-section-7-weather)

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**Chart 5.6 Electricity final consumption (quarterly)**

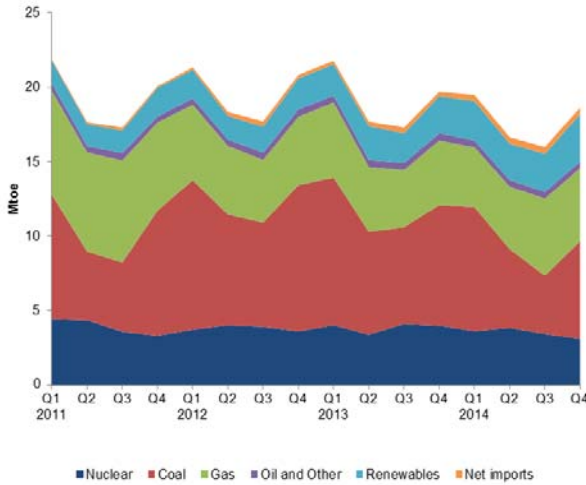


Final consumption of electricity fell by 3.4 per cent in 2014 Q4, from 82.6 TWh in 2012 Q4, to 79.8 TWh.

Domestic use fell by 4.4 per cent, from 30.9 TWh in Q4 2013 to 29.6 TWh in Q4 2014. Industrial use of electricity fell 5.7 per cent, from 24.5 TWh to 23.1 TWh, and consumption by commercial and other users fell by 0.2 per cent, from 27.2 TWh to 27.1 TWh.

In 2014 Q4, temperatures were on average 0.3 degrees warmer than a year earlier.

**Chart 5.7 Fuel used for electricity generation**



Fuel used by generators in 2014 fell 7.5 per cent, from 76.4 mtoe in 2013 to 70.7 mtoe.<sup>3</sup>

In 2014, gas use was 4.1 per cent higher than in 2013. Coal use during 2014 was 23.3 per cent lower than a year earlier, while nuclear sources were 9.7 per cent lower.

Fuel used by generators in 2014 Q4 fell 5.4 per cent, from 19.7 mtoe in 2013 Q4 to 18.6 mtoe.

In 2014 Q4, gas use was 13.0 per cent higher than in 2013 Q4. Coal use during the quarter was 18.9 per cent lower than a year earlier, while nuclear sources were 22.6 per cent lower.

The increased share of primary renewables and gas, at the expense of the less thermally efficient coal and nuclear, has meant fuel use has fallen by more than generation in 2014.

<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.

**Relevant tables**

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Table 5.1. Fuel used in electricity generation and electricity supplied

	2013	2014 p	per cent change	2012 4th quarter	2013 1st quarter	2013 2nd quarter	2013 3rd quarter	2013 4th quarter	2014 1st quarter	2014 2nd quarter	2014 3rd quarter	2014 4th quarter p	per cent change <sup>1</sup>
<b>FUEL USED IN GENERATION</b>													
<b>All generating companies</b>													
	Million tonnes of oil equivalent												
Coal	31.44	24.12	-23.3	9.83	9.92	6.90	6.50	8.12	8.33	5.30	3.91	6.58	-18.9
Oil	0.59	0.61	+4.0	0.19	0.14	0.11	0.17	0.16	0.16	0.17	0.15	0.14	-16.0
Gas	17.57	18.29	+4.1	4.59	5.06r	4.35r	3.83r	4.32r	4.02r	4.19r	5.19r	4.89	+13.0
Nuclear	15.44	13.94	-9.7	3.60	4.00	3.38	4.09	3.97	3.61	3.83r	3.43	3.07	-22.6
Hydro	0.40	0.51	+26.1	0.14	0.11	0.08	0.06	0.15	0.19	0.10	0.07	0.15	+1.5
Wind and Solar <sup>2</sup>	2.62	3.06	+16.7	0.56	0.61	0.62	0.48	0.91	0.98r	0.55	0.57	0.95	+4.6
Bioenergy <sup>3</sup>	5.82	7.25	+24.5	1.38	1.38	1.57	1.44	1.44	1.47r	1.79r	1.91r	2.08	+44.6
Other fuels	1.31	1.18	-9.6	0.30	0.31	0.35	0.32	0.32	0.30	0.27	0.30	0.31	-3.2
Net imports	1.24	1.76	+42.1	0.23	0.24	0.31	0.40	0.29	0.42	0.44	0.47	0.44	+50.4
<b>Total all generating companies</b>	<b>76.44</b>	<b>70.72</b>	<b>-7.5</b>	<b>20.82</b>	<b>21.77</b>	<b>17.69</b>	<b>17.29</b>	<b>19.69</b>	<b>19.48r</b>	<b>16.63r</b>	<b>15.98r</b>	<b>18.62</b>	<b>-5.4</b>
<b>ELECTRICITY GENERATED</b>													
<b>All generating companies</b>													
	TWh												
Coal	130.77	97.35	-25.6	41.01	41.53	28.97	26.69	33.58	33.82	21.38	15.19	26.96	-19.7
Oil	2.14	2.04	-4.4	0.75	0.57	0.47	0.60	0.50	0.57r	0.55	0.48	0.44	-11.9
Gas	95.61	101.09	+5.7	24.73	27.24	24.05	21.10	23.22	21.93	23.79r	29.15r	26.23	+13.0
Nuclear	70.61	63.75	-9.7	16.65	18.28	15.47	18.69	18.16	16.53r	17.50r	15.66	14.06	-22.6
Hydro (natural flow)	4.70	5.93	+26.2	1.63	1.26	0.97	0.74	1.73	2.26r	1.12r	0.79	1.76	+1.6
Wind and Solar <sup>2</sup>	30.48	35.55	+16.6	6.53	7.12	7.23	5.53	10.59	11.45r	6.42r	6.59r	11.08	+4.6
- of which, Offshore <sup>6</sup>	11.44	13.28	+16.1	2.73	2.85	2.61	1.96	4.01	4.37	2.03	2.23r	4.65	+15.9
Bioenergy <sup>3</sup>	18.49	22.92	+24.0	4.10	4.28	5.15	4.55	4.51	4.58r	5.57r	6.00r	6.77	+50.1
Pumped Storage	2.90	2.85	-1.8	0.79	0.74	0.69	0.71	0.76	0.79	0.67	0.65	0.73	-3.8
Other fuels	3.46	3.55	+2.6	0.77	0.86	0.91	0.85	0.85	0.86	0.86	0.88	0.94	+10.8
<b>Total all generating companies</b>	<b>359.15</b>	<b>335.03</b>	<b>-6.7</b>	<b>96.96</b>	<b>101.87</b>	<b>83.92</b>	<b>79.46</b>	<b>93.90</b>	<b>92.78r</b>	<b>77.88r</b>	<b>75.39r</b>	<b>88.97</b>	<b>-5.3</b>
<b>ELECTRICITY SUPPLIED<sup>4</sup></b>													
<b>All generating companies</b>													
	TWh												
Coal	124.06	95.48	-23.0	38.90	39.40	27.48	25.32	31.86	32.90	21.05	15.14	26.39	-17.2
Oil	1.94	1.86	-3.9	0.66	0.51	0.43	0.55	0.45	0.52r	0.51	0.44	0.40	-12.4
Gas	93.80	97.43	+3.9	24.25	26.72	23.59	20.73	22.77	20.88r	22.74r	28.01r	25.80	+13.3
Nuclear	64.13	57.90	-9.7	15.12	16.61	14.05	16.97	16.50	15.01r	15.90r	14.22	12.77	-22.6
Hydro	4.66	5.89	+26.3	1.62	1.25	0.96	0.74	1.72	2.25r	1.11r	0.78	1.75	+1.6
Wind and Solar <sup>2</sup>	30.48	35.55	+16.6	6.53	7.12	7.23	5.53	10.59	11.45r	6.42r	6.59r	11.08	+4.6
- of which, Offshore <sup>6</sup>	11.44	13.28	+16.1	2.73	2.85	2.61	1.96	4.01	4.37	2.03	2.23r	4.65	+15.9
Bioenergy <sup>3</sup>	16.04	20.06	+25.1	3.61	3.71	4.49	3.94	3.90	3.97r	4.85r	5.32r	5.92	+51.6
Pumped Storage (net supply) <sup>5</sup>	-1.04	-1.00	-4.2	-0.27	-0.27	-0.26	-0.26	-0.25	-0.25	-0.25	-0.24	-0.24	-3.8
Other fuels	3.26	3.34	+2.6	0.73	0.81	0.85	0.80	0.80	0.81	0.81	0.83	0.89	+10.8
Net imports	14.43	20.51	+42.1	2.70	2.82	3.56	4.65	3.40	4.89	5.08	5.43	5.11	+50.4
<b>Total all generating companies</b>	<b>351.76</b>	<b>337.03</b>	<b>-4.2</b>	<b>93.85</b>	<b>98.66</b>	<b>82.39</b>	<b>78.97</b>	<b>91.74</b>	<b>92.42r</b>	<b>78.23r</b>	<b>76.53r</b>	<b>89.85</b>	<b>-2.1</b>

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

2. Includes wave and tidal

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

4. Electricity supplied net of electricity used in generation

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

6. This now includes a small amount of offshore wind generation from other generators

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## Table 5.2 Supply and consumption of electricity

GWh

	2012	2013	2013	2013	2013	2013	2013	2013	2014	2014	2014	2014	
	2013	2014 p	Per cent change	4th quarter	1st quarter	2nd quarter	3rd quarter	4th quarter	1st quarter	2nd quarter	3rd quarter	4th quarter p	Per cent change <sup>1</sup>
<b>SUPPLY</b>													
Indigenous production	359,149	335,025	-6.7	96,964	101,873	83,915	79,456	93,904	92,784r	77,883r	75,389r	88,969	-5.3
Major power producers <sup>2,3</sup>	320,805	293,820	-8.4	87,231	92,365	74,298	70,411	83,731	82,266r	67,785r	65,305r	78,464	-6.3
Auto producers	35,446	38,360	+8.2	8,941	8,766	8,928	8,339	9,413	9,726r	9,427r	9,434r	9,773	+3.8
Other sources <sup>4</sup>	2,898	2,846	-1.8	793	742	690	706	761	792	672	650	731	-3.8
Imports	17,533	23,230	+32.5	2,960	3,354	4,340	5,402	4,436	5,701	5,771	6,031	5,726	+29.1
Exports	3,103	2,720	-12.4	262	538	777	751	1,038	807	695	602	616	-40.7
Transfers	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total supply</b>	<b>373,578</b>	<b>355,535</b>	<b>-4.8</b>	<b>99,662</b>	<b>104,689</b>	<b>87,479</b>	<b>84,107</b>	<b>97,302</b>	<b>97,678r</b>	<b>82,959r</b>	<b>80,819r</b>	<b>94,080</b>	<b>-3.3</b>
Statistical difference	-176	-1,154		-420	-112	17	-305	223	319r	-520r	-473r	-480	
<b>Total demand</b>	<b>373,755</b>	<b>356,689</b>	<b>-4.6</b>	<b>100,082</b>	<b>104,801</b>	<b>87,462</b>	<b>84,413</b>	<b>97,079</b>	<b>97,359r</b>	<b>83,479r</b>	<b>81,292r</b>	<b>94,560</b>	<b>-2.6</b>
<b>TRANSFORMATION</b>													
Energy industry use <sup>5</sup>	29,455	24,187	-17.9	7,678	7,980	6,998	7,052	7,425	6,558r	5,989r	5,497r	6,143	-17.3
Losses	27,000	28,691	+6.3	7,263	8,272	6,443	5,236	7,048	8,366r	6,128r	5,561r	8,635	+22.5
<b>FINAL CONSUMPTION</b>													
Iron & steel	3,803	3,782	-0.5	851	950	967	946	939	955	944	936	948	+0.9
Other industries	94,204	88,078	-6.5	24,445	24,766	22,864	23,009	23,565	22,349r	21,633r	21,929r	22,167	-5.9
Transport	4,109	4,109	-	1,024	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	-
Domestic	113,453	107,190	-5.5	32,799	34,234	25,521	22,755	30,943	31,438	23,992r	22,188r	29,572	-4.4
Other final users	101,731	100,652	-1.1	26,021	27,572	23,641	24,386	26,131	26,666r	23,766r	24,154r	26,067	-0.2
Non energy use	-	-	-	-	-	-	-	-	-	-	-	-	-

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

2. Companies that produce electricity from nuclear sources plus all companies whose prime purpose is the generation of electricity are included under the heading "Major Power Producers". At the end of December 2014 they were:

AES Electric Ltd., Baglan Generation Ltd., British Energy plc., Centrica Energy, Coolkeeragh ESB Ltd., Corby Power Ltd., Coryton Energy Company Ltd.,

Dong Energy Burbo UK Ltd., Drax Power Ltd., EDF Energy plc., Eggborough Power Ltd., E.On UK plc., Energy Power Resources, Falck Renewables Ltd., Fred Olsen, Greencoat UK Wind plc.,

HG Capital, Immingham CHP, Infinis plc, International Power Mitsui, London Waste Ltd., Magnox North Ltd., Peel Energy Ltd., Premier Power Ltd., Renewable Energy Systems, Riverside Resource Recovery Ltd.,

Rocksavage Power Company Ltd., RWE Npower plc, Scottish Power plc, Scottish and Southern Energy plc., Seabank Power Ltd., SELCHP Ltd., Spalding Energy Company Ltd., Statkraft Energy Ltd.,

Third Energy Trading Ltd., Vattenfall Wind Power

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

4. Gross supply from pumped storage hydro

5. Includes electricity used in generation and for pumping