

Section 5 – Electricity

Key results show:

In 2015 Q2, total electricity generated remained unchanged at 78.8 TWh compared to a year earlier. **(Chart 5.1)**

There has been a large generation switch from coal to renewables, which will have reduced emissions. **(Chart 5.2)**

Renewables' share of electricity increased from 16.7 in the second quarter of 2014 to 25.3 per cent in the second quarter of 2015. **(Chart 5.2)**

Coal's share of generation decreased from 28.2 per cent to 20.5 per cent, whilst gas share of generation in 2015 Q2 remained unchanged from 30.2 per cent in 2014 Q2. **(Chart 5.2)**.

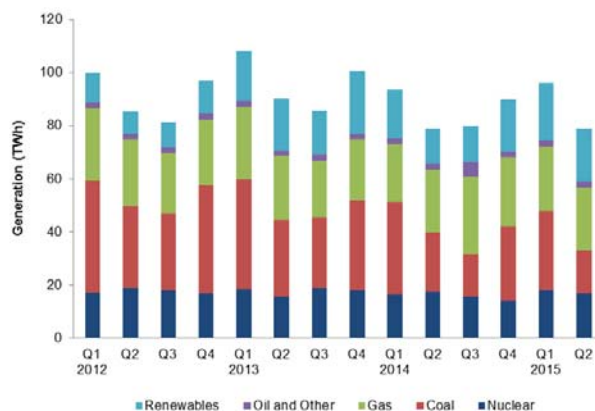
Nuclear's share of generation decreased from 22.2 per cent in the second quarter of 2014 to 21.5 per cent in the second quarter of 2015. **(Chart 5.2)**.

Low carbon electricity's share of generation increased from 38.9 per cent in the second quarter of 2014 to 46.8 per cent in the second quarter of 2015. **(Chart 5.3)**.

The UK remains a net importer with 6.9 per cent of electricity supplied from net imports in the second quarter of 2015 **(Chart 5.4)**.

Final consumption of electricity during the second quarter of 2015, at 71.9 TWh, was provisionally 1.0 per cent higher than in the same period last year. Domestic consumption fell by 0.6 per cent. **(Chart 5.5)**.

Chart 5.1 Electricity generated by fuel type



Despite a 3.7 per cent fall in MPP generation in the second quarter of 2015 overall generation remained unchanged from 78.8 TWh in 2014 Q2. This is due to a quarterly record 26 per cent increase in generation from other generators, mainly due to increased wind and solar capacity.

Coal fired generation fell by 27 per cent from 22.2 TWh in 2014 Q2 to 16.1 TWh in 2015 Q2, due to reduced capacity caused by the closure of several power stations, the conversion of a unit at Drax from coal to biomass, the temporary closure of some plants due to market conditions and an increase in the carbon price floor from April 2015.

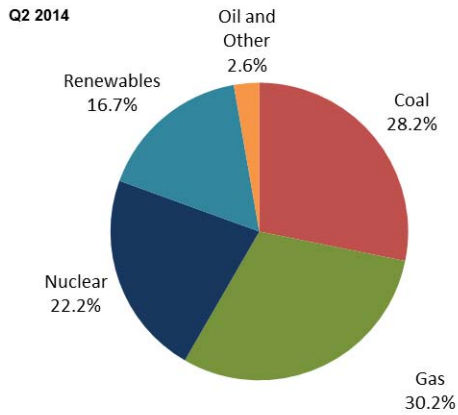
In 2015 Q2, gas fired generation remained the same as in 2014 Q2, at 23.8 TWh.

Nuclear generation fell by 3.3 per cent from 17.5 TWh in 2014 Q2 to 16.9 TWh in 2015 Q2.

In 2015 Q2, wind and PV generation rose by 76.4 per cent from 6.6 TWh to 11.6 TWh. Wind generation was up 76.4 per cent compared with a year ago, due to higher wind speeds (wind speeds were 1.4 knots higher compared to the same quarter a year earlier). Solar generation increased by 115 per cent due to increased capacity. Hydro generation rose 27.8 per cent from 1.1 TWh to a Q2 record 1.4 TWh, due to a 19.5 per cent increase in rainfall, mainly during May and June.

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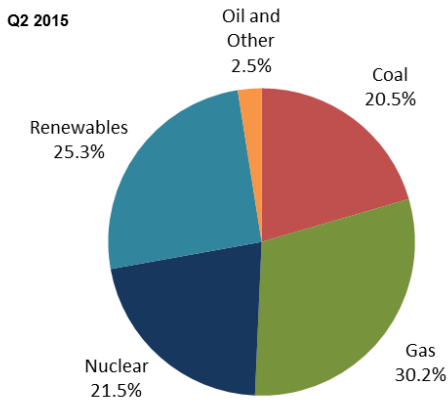
Chart 5.2 Shares of electricity generation



The share of generation from coal decreased from 28.2 per cent in 2014 Q2 to 20.5 per cent in 2015 Q2.

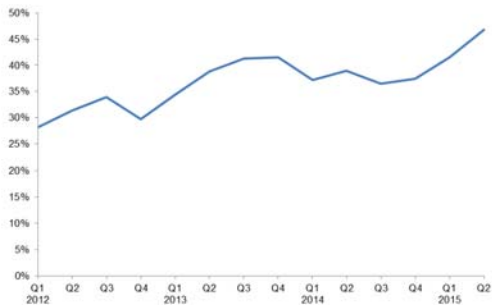
Gas' share of generation in 2015 Q2 remained unchanged from 30.2 per cent in 2014 Q2.

Nuclear's share of generation fell from 22.2 per cent in 2014 Q2 to 21.5 per cent in 2015 Q2.



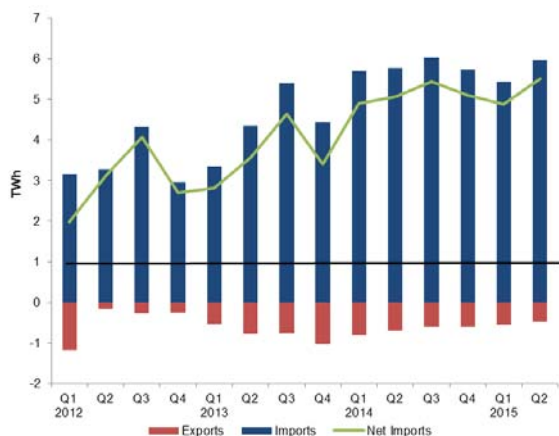
The share of renewables (hydro, wind and other renewables) increased from 16.7 per cent in 2014 Q2 to 25.3 per cent in 2015 Q2. This was due to increased wind and solar generation as well as the conversion of a second unit at Drax from coal to biomass.

Chart 5.3 Low carbon electricity's share of generation



Low carbon electricity's share of generation increased from 38.9 per cent in 2014 Q2 to 46.8 per cent in 2015 Q2, due to higher renewables generation.

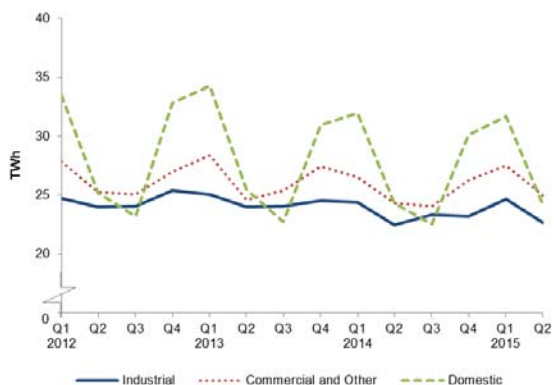
Chart 5.4 UK trade in electricity



In 2015 Q2, compared with the same period in 2014, imports of electricity rose by 3.7 per cent (+0.2 TWh), whilst exports fell by 32 per cent. For every quarter since 2010 Q2, the UK has been a net importer after two quarters of being a net exporter (2009 Q4 and 2010 Q1).

Net imports of electricity rose by 8.6 per cent from 5.1 TWh in 2014 Q2 to 5.5 TWh in 2015 Q2. Net imports represented 6.9 per cent of electricity supplied in 2015 Q2.

Chart 5.5 Electricity final consumption



Final consumption of electricity rose by 1.0 per cent in 2015 Q2, from 71.1 TWh in 2014 Q2, to 71.9 TWh.

Domestic use fell by 0.6 per cent, from 24.3 TWh to 24.2 TWh as impacts of energy efficiency exceeded that of lower April and May temperatures.

Industrial use of electricity, including iron and steel, rose by 0.8 per cent, from 22.5 TWh to 22.7 TWh, and consumption by commercial and other users¹ increased by 2.8 per cent, from 24.3 TWh to 25.0 TWh.

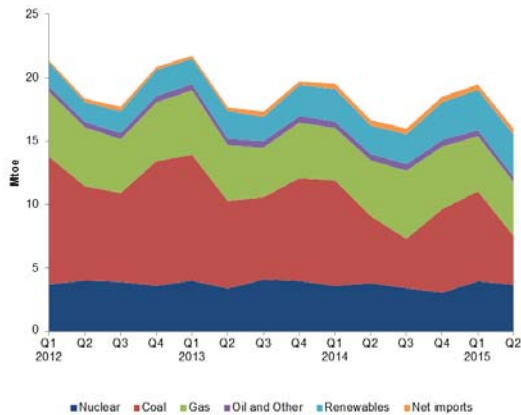
In 2015 Q2, temperatures were on average 1.2 degrees lower than in 2014 Q2.²

¹ Includes commercial, transport and other final users.

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

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Chart 5.6 Fuel used for electricity generation



Fuel used by generators in 2015 Q2 fell 4.0 per cent, from 16.7 mtoe in 2014 Q2 to 16.0 mtoe in 2015 Q2³.

In 2015 Q2, gas use was 2.8 per cent lower than in 2014 Q2. Coal use during the quarter was 27.2 per cent lower than a year earlier, and nuclear sources were 3.3 per cent lower.

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

Relevant tables

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Table 5.1. Fuel used in electricity generation and electricity supplied

	2013	2014	per cent change	2013 2nd quarter	2013 3rd quarter	2013 4th quarter	2014 1st quarter	2014 2nd quarter	2014 3rd quarter	2014 4th quarter	2015 1st quarter	2015 2nd quarter p	per cent change ¹
FUEL USED IN GENERATION													
All generating companies													
	Million tonnes of oil equivalent												
Coal	31.43	24.11	-23.3	6.90	6.50	8.12	8.32	5.30	3.91	6.59	7.11r	3.86	-27.2
Oil	0.59	0.53	-10.6	0.13	0.17	0.16	0.14	0.15	0.12	0.12	0.14r	0.11	-27.0
Gas	17.74	18.78	+5.9	4.38	3.90	4.37	4.13	4.37	5.36	4.92	4.33r	4.25	-2.8
Nuclear	15.44	13.85	-10.3	3.38	4.09	3.97	3.59	3.80	3.40	3.05	3.95r	3.68	-3.3
Hydro	0.40	0.51	+25.2	0.08	0.06	0.15	0.19	0.10	0.07	0.15	0.17	0.12	+27.4
Wind and Solar ²	2.62	3.10	+18.5	0.62	0.48	0.92	0.99	0.57	0.58	0.97	1.10r	1.00	+76.8
Bioenergy ³	5.54	6.53	+17.9	1.50	1.37	1.37	1.38	1.59	1.70	1.87	1.90r	2.20	+38.2
Other fuels	1.43	1.52	+6.3	0.39	0.35	0.35	0.38	0.35	0.39	0.40	0.34	0.30	-13.4
Net imports	1.24	1.76	+42.1	0.31	0.40	0.29	0.42	0.44	0.47	0.44	0.42	0.47	+8.6
Total all generating companies	76.45	70.70	-7.5	17.68	17.32	19.71	19.54	16.66	15.99	18.51	19.47r	15.99	-4.0
ELECTRICITY GENERATED													
All generating companies													
	TWh												
Coal	130.77	100.71	-23.0	28.97	26.69	33.58	34.67	22.21	16.01	27.81	29.73r	16.14	-27.4
Oil	2.09	1.88	-10.0	0.47	0.60	0.49	0.53	0.50	0.43	0.42	0.52r	0.37	-26.1
Gas	96.03	100.93	+5.1	24.21	21.38	23.16	21.76	23.78	29.16	26.22	24.35	23.79	-
Nuclear	70.61	63.75	-9.7	15.47	18.69	18.16	16.53	17.50	15.66	14.06	18.17	16.92	-3.3
Hydro (natural flow)	4.70	5.88	+25.2	0.97	0.74	1.74	2.24	1.11	0.78	1.75	2.02r	1.42	+27.8
Wind and Solar ²	30.42	36.07	+18.6	7.18	5.54	10.65	11.55	6.58	6.70	11.24	12.84r	11.61	+76.4
- of which, Offshore ⁶	11.47	13.40	+16.8	2.63	1.98	4.03	4.38	2.09	2.24	4.69	4.66r	3.56	+70.4
Bioenergy ³	18.16	22.70	+25.0	5.07	4.46	4.44	4.59	5.48	5.94	6.68	6.90r	6.92	+26.1
Pumped Storage	2.90	2.88	-0.7	0.69	0.71	0.76	0.79	0.67	0.63	0.79	0.64r	0.59	-12.4
Other fuels	3.49	4.13	+18.1	0.90	0.87	0.86	1.04	1.00	1.03	1.06	1.05r	1.01	+1.3
Total all generating companies	359.17	338.93	-5.6	83.92	79.67	93.85	93.71	78.84	76.35	90.03	96.22r	78.75	-0.1
ELECTRICITY SUPPLIED⁴													
All generating companies													
	TWh												
Coal	124.06	95.53	-23.0	27.48	25.32	31.86	32.89	21.07	15.19	26.39	28.21	15.31	-27.3
Oil	1.89	1.71	-9.8	0.42	0.54	0.45	0.48	0.46	0.39	0.38	0.47r	0.33	-27.0
Gas	94.21	99.03	+5.1	23.74	20.99	22.72	21.33	23.34	28.63	25.73	23.83	23.33	-
Nuclear	64.13	57.90	-9.7	14.05	16.97	16.50	15.01	15.90	14.22	12.77	16.51	15.37	-3.3
Hydro	4.67	5.83	+24.9	0.96	0.74	1.72	2.21	1.10	0.77	1.74	2.01r	1.41	+27.9
Wind and Solar ²	30.42	36.07	+18.6	7.18	5.54	10.65	11.55	6.58	6.70	11.24	12.84r	11.61	+76.4
- of which, Offshore ⁶	11.47	13.40	+16.8	2.63	1.98	4.03	4.38	2.09	2.24	4.69	4.66r	3.56	+70.4
Bioenergy ³	16.20	20.08	+24.0	4.52	3.99	3.95	4.05	4.84	5.27	5.92	6.10r	6.11	+26.3
Pumped Storage (net supply) ⁵	-1.04	-1.01	-2.4	-0.26	-0.26	-0.25	-0.26	-0.25	-0.24	-0.26	-0.25r	-0.23	-7.8
Other fuels	2.80	3.38	+20.7	0.73	0.69	0.69	0.86	0.82	0.84	0.87	0.86r	0.83	+0.7
Net imports	14.43	20.51	+42.1	3.56	4.65	3.40	4.89	5.08	5.43	5.11	4.89	5.51	+8.6
Total all generating companies	351.78	339.03	-3.6	82.40	79.17	91.68	93.01	78.94	77.21	89.87	95.47r	79.58	+0.8

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

	2013	2013	Per cent change	2013	2013	2013	2014	2014	2014	2014	2014	2015	2015	Per cent change ¹
	2013	2014		2nd quarter	3rd quarter	4th quarter	1st quarter	2nd quarter	3rd quarter	4th quarter	1st quarter	2nd quarter p		
SUPPLY														
Indigenous production	359,168	338,927	-5.6	83,924	79,670	93,848	93,705	78,843	76,350	90,028	96,084r	78,752		-0.1
Major power producers ^{2,3}	321,821	297,939	-7.4	74,603	70,848	83,922	83,205	68,844	66,368	79,522	84,312r	66,369		-3.6
Auto producers	34,443	38,104	+10.6	8,629	8,114	9,163	9,710	9,329	9,354	9,712	11,136r	11,795		+26.4
Other sources ⁴	2,904	2,883	-0.7	692	708	763	791	671	628	793	637r	588		-12.4
Imports	17,533	23,230	+32.5	4,340	5,402	4,436	5,701	5,771	6,031	5,726	5,436	5,983		+3.7
Exports	3,103	2,720	-12.4	777	751	1,038	807	695	602	616	546	473		-32.0
Transfers	-	-		-	-	-	-	-	-	-	-	-		
Total supply	373,598	359,437	-3.8	87,488	84,321	97,246	98,599	83,919	81,780	95,139	100,975r	84,262		+0.4
Statistical difference	-1,036	-561		-366	-512	-326	-116	-265	-153	-27	343r	306		
Total demand	374,634	359,998	-3.9	87,854	84,833	97,572	98,715	84,184	81,933	95,166	100,632r	83,956		-0.3
TRANSFORMATION	-	-		-	-	-	-	-	-	-	-	-		
Energy industry use ⁵	29,932	28,027	-6.4	7,116	7,177	7,536	7,541	6,882	6,417	7,186	7,545r	6,644		-3.5
Losses	27,725	28,562	+3.0	6,636	5,459	7,078	8,307	6,156	5,606	8,493	9,223r	5,458		-11.3
FINAL CONSUMPTION	316,977	303,409	-4.3	74,103	2,904	82,958	82,867	71,146	69,910	79,486	83,863r	71,854		+1.0
Iron & steel	3,804	3,786	-0.5	968	947	940	956	945	937	949	969r	919		-2.7
Other industries	93,865	89,587	-4.6	23,034	23,105	23,620	23,415	21,556	22,388	22,228	23,669r	21,774		+1.0
Transport	4,268	4,259	-0.2	1,067	1,067	1,067	1,065	1,065	1,065	1,065	1,065	1,065		-
Domestic	113,445	108,881	-4.0	25,480	22,723	30,936	31,961	24,317	22,518	30,084	31,694r	24,164		-0.6
Other final users	101,595	96,896	-4.6	23,554	24,355	26,395	25,470	23,263	23,003	25,161	26,466r	23,932		+2.9
Non energy use	-	-		-	-	-	-	-	-	-	-	-		

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

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