

GB ELECTRICITY MARKET 2016 ANNUAL SUMMARY

RISE OF GAS FUELS GB POWER SECTOR

A sharp rise in gas generation fuelled Britain's electricity sector last year as coal's contribution fell to an all-time annual low.

Levels of gas-fired output jumped by 51% to 126.98TWh in 2016, with this source of fuel providing more than 40% of Britain's overall power according to the latest report by energy market monitoring firm EnAppSys.

The sharp increase was attributed partly to the continuing fall in coal generation, which plummeted from 76.46TWh in 2015 to 27.92TWh last year following the closure of several coal plants. Lower gas prices and higher carbon taxes, which made it more expensive to produce power at coal stations, pushed up gas output close to peak levels last recorded in 2010.

Meanwhile, although growth in renewable generation slowed as subsidies for green energy schemes were axed, renewables still contributed 22% of Britain's overall output in 2016 – more than any other electricity source apart from gas.

Levels of biomass and solar capacity continued to see significant growth last year, with the last new-build solar plants under the Renewable Obligation Scheme coming onto the system, offsetting reductions in wind and hydro output. Despite this, wind farms broke half-hourly, daily and weekly records towards the end of the year, according to data from the National Grid¹.

These are the standout headlines of the latest GB Electricity Market Summary by EnAppSys.*

Britain's fuel mix during 2016 was derived from: CCGT plants (41.2%), renewables (22.3%), nuclear (21.6%), coal (9.1%) and interconnectors (5.8%).

Against this changing fuel mix picture, levels of overall electricity demand have continued to decline slowly. Demand totalled 305.2TWh in 2016, down 2% on 2015 levels and 9% from the peak in 2010.

Paul Verrill, director of EnAppSys, said: "The high carbon taxes that have pushed coal-fired stations to the periphery of the market have had a considerable impact on the make-up of Britain's fuel mix and many coal stations have now shut down ahead of Government indications that they will have to close by 2025 anyway.

"Coal has dominated the electricity market in Britain throughout the full history of the electricity market. However, with gas-fired plants generating 41.2% of power last year and renewables and nuclear also making significant contributions, the fuel mix in 2016 had the lowest carbon intensity since the early market's formation.

"The transition from coal to gas has created challenges for the market in terms of ensuring sufficient security of supply, but with the Capacity Mechanism kicking off from next winter the market should now start to move towards increased levels of stability.

¹ <http://www.renewableuk.com/news/324181/Trio-of-new-wind-energy-records-set-at-end-of-December-.htm>

“The carbon strategy for the British power market has contrasted starkly with other European nations but it does appear that carbon pricing has done the job and resulted in a cleaner yet reliable fuel mix.

“However, 2016 marks the end of the easy wins in terms of carbon savings with all the low-hanging fruit having been collected by the market. The challenges ahead will make it more difficult to achieve the same volume of savings and how these challenges are dealt with will determine the future of the market.”

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*For the full 2016 and Q4 2016 reports, please visit the following page on the EnAppSys website: http://www.enappsys.com/news_and_rep/summary_reports.jsp

EnAppSys is an independent energy market monitoring company that provides electricity and energy market data, systems and consultancy services to parties with an interest in the UK energy market.

The company’s experienced analysts use aggregated data from different electricity data sources to provide subscribers with informed and user configurable energy information and analysis, energy management systems and energy-related applications. Details at www.enappsys.com

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GB fuel activity:

The following tables contain key statistics relating to GB fuel activity in 2016 and previous years.

*GB Only (Excludes Northern Ireland)	2008	2009	2010	2011	2012	2013	2014	2015	2016
TOTAL GENERATION BY FUEL (TWh)									
Coal	116.59	99.10	102.95	103.48	136.84	125.74	96.65	74.46	27.92
Gas	151.00	147.32	156.89	127.01	82.86	80.23	86.72	84.35	126.98
Imports	10.62	1.32	0.58	4.77	9.88	13.02	19.48	20.75	17.81
Nuclear	49.93	64.97	58.44	64.75	65.81	65.93	59.74	65.68	66.58
Renewables	17.38	21.75	21.45	29.24	36.09	44.51	53.75	65.35	68.64
TOTAL	345.52	334.46	340.30	329.24	331.48	329.43	316.34	310.58	307.93
SHARE OF GENERATION (%)									
Coal	33.7%	29.6%	30.3%	31.4%	41.3%	38.2%	30.6%	24.0%	9.1%
Gas	43.7%	44.0%	46.1%	38.6%	25.0%	24.4%	27.4%	27.2%	41.2%
Imports	3.1%	0.4%	0.2%	1.4%	3.0%	4.0%	6.2%	6.7%	5.8%
Nuclear	14.5%	19.4%	17.2%	19.7%	19.9%	20.0%	18.9%	21.1%	21.6%
Renewables	5.0%	6.5%	6.3%	8.9%	10.9%	13.5%	17.0%	21.0%	22.3%
INCREASE TO 2016 (%)									
Coal	-76.1%	-71.8%	-72.9%	-73.0%	-79.6%	-77.8%	-71.1%	-62.5%	0.0%
Gas	-15.9%	-13.8%	-19.1%	0.0%	53.2%	58.3%	46.4%	50.5%	0.0%
Imports	67.8%	1246.7%	2965.2%	273.7%	80.3%	36.8%	-8.6%	-14.2%	0.0%
Nuclear	33.3%	2.5%	13.9%	2.8%	1.2%	1.0%	11.5%	1.4%	0.0%
Renewables	294.9%	215.7%	220.0%	134.7%	90.2%	54.2%	27.7%	5.0%	0.0%
Fossil Fuels	267.59	246.42	259.83	230.49	219.70	205.97	183.37	158.81	154.89
Fossil Fuel Share	77.4%	73.7%	76.4%	70.0%	66.3%	62.5%	58.0%	51.1%	50.3%
Renewable Share	5.0%	6.5%	6.3%	8.9%	10.9%	13.5%	17.0%	21.0%	22.3%