



GB Electricity Market Summary

YEAR ENDING 2014

Recorded Levels of GB Generation by Fuel (based upon Ofgem & DECC Embedded Forecasts & FUELHH data):

COAL: 11.0GW (-23%)
WIND: 3.2GW (+15%)

CCGT: 9.9GW (+8%)
INTERCONNECTORS: 2.2GW (%)

NUCLEAR: 6.8GW (-9%)
BIOMASS: 0.8GW (+94%)

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Foreword

As a specialist information business based in the GB energy markets, EnAppSys provides market participants with online market analysis, reporting and forecasting tools and regular weekly and monthly reports alongside bespoke analysis and consultancy and as part of providing these services the company has built up specialist knowledge in the GB energy market.

In this report, EnAppSys has used the insights that have resulted from this analysis to produce a summary of activity across the whole of 2014.

The charts in the report are produced using data sourced from either our NETAReports.com database or one of our online data analysis tools which we provide to market participants and stakeholders.

Within this report EnAppSys has focused on the high level activity in this period, specifically that around the overall system activity and the by fuel type activity in the quarter, but with further details included where of particular interest.

The aim is to provide a concise overview of the most important activity noted in the three month period with the aim of the report to provide an understanding of the broad trends and notable events occurring in the period.

The charts included focus on activity within the GB market (excluding Northern Ireland).

Executive Summary

The notable activity in 2014 saw levels of coal-fired generation fall 23% from the previous year as the overall installed capacity at coal-fired plants fell 10% from 2013 and as gas plants generated at the expense of coal plants in the summer as a result of unusually low gas prices, with coal plants typically having lower generation costs than gas plants.

Offsetting this decrease was a 29% increase in levels of generation at renewable plants with wind farms seeing levels of generation 15% higher than the levels seen in 2013. This coupled with the reduced levels of coal-fired generation meant that carbon emissions were estimated to be 12% lower in 2014 with this representing a further 18% decrease in emissions since 2012.

This came despite a 9% decrease in levels of nuclear fleet output with gas-fired plants seeing levels of generation rise by 8% in the year.

Demand had also fallen by 4% with falling demand being a general trend commonly seen in recent years, but with the year seeing abnormally mild weather, especially in the winter months.

Of the increased levels of renewable generation, wind farms saw their share of total generation increase from 7.7% in 2013 to 9.2% in 2014 as the year saw increased levels of wind capacity with further increases likely to take the share of generation coming from wind farms beyond 10% in future years. Renewable plants provided 14.1% of power in 2014, up from 10.5% in 2013.

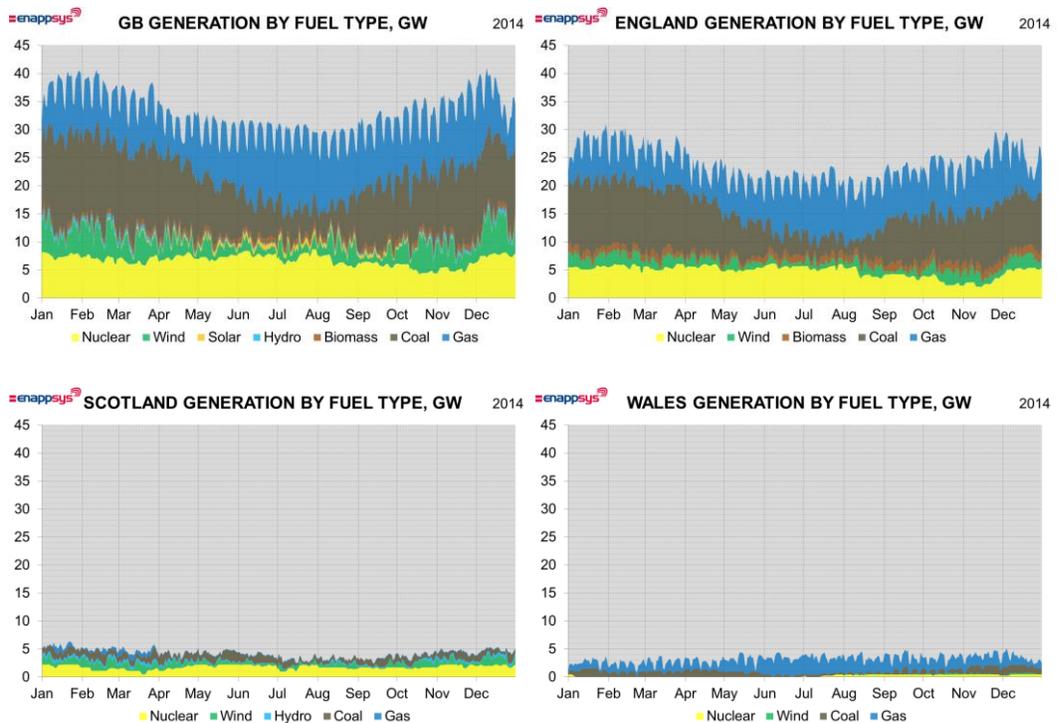
Generation Fuel Mix

2014 was most notable for a big decrease in the noted levels of generation at coal-fired power stations, dropping 23% from the previous year. This came about as levels of installed capacity at coal plants fell 10% from 2013 and as gas prices were lower over the summer period, increasing levels of gas-fired generation at the expense of the least efficient coal plants.

The year also saw a 9% decrease in levels of nuclear plant generation as the Heysham 1 and Hartlepool nuclear plants were taken offline after the discovery of boiler spine cracks at Heysham 1.

Offsetting this loss of generation was a 4% decrease in levels of overall demand, an 8% increase in levels of gas-fired generation and large increases in levels of renewable generation; with levels of renewable generation increasing 29% from the previous year.

This fuel mix activity can be seen in the following chart, alongside further charts showing levels of generation by fuel for England, Scotland and Wales:



This by country breakdown of the fuel mix highlights the increased levels of renewable generation in Scotland, as Scotland continues to install wind farms at a rapid pace with

24% of overall generation at wind farms originating in Scotland, despite Scotland providing only 12% of the overall generation for all fuel types.

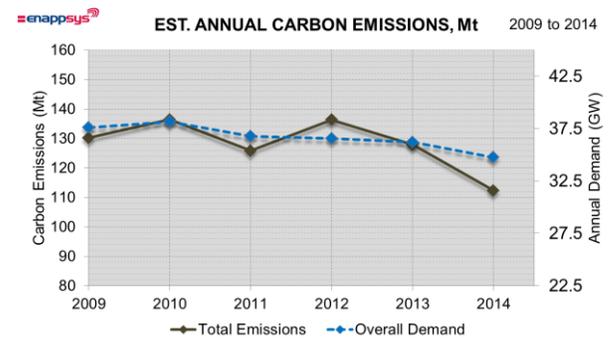
These increased levels of wind generation in Scotland were the most visible part of a broader increase in the renewable share of the overall fuel mix with the share of generation from renewable sources (biomass, hydro, solar and wind) increasing from 10.5% in 2013 to 14.1% in 2014 and with the share of generation from wind farms increasing from 7.7% in 2013 to 9.2% in 2014.

Impact on Carbon Emissions

The overall impact of these higher levels of renewable generation coupled with the reduced levels of generation from coal-fired power plants were much lower levels of carbon emissions with total carbon emissions in 2014 estimated by EnAppSys to be 112Mt down 12% from 128Mt in 2013 and down 18% from 136Mt in 2012.

This came as the emissions from coal-fired plants were estimated to have fallen by 22Mt (or by 23%), which was primarily offset by a 2Mt increase in levels of CCGT emissions and a 3Mt increase in levels of biomass emissions, which measures against the overall 15Mt reduction in emissions in 2014.

Of this it can also be noted that the carbon estimated to have been saved as a result of the total levels of wind generation was 13Mt which implies that the overall emissions would have been likely to have been 8Mt higher had wind generation levels been more in line with those seen in 2010 (when they were much lower).



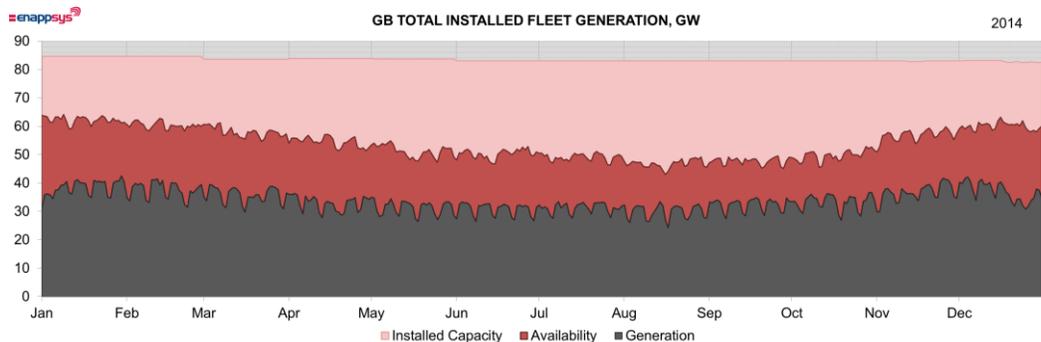
Generation by Fuel

In 2014 the overall levels of generation remained fairly flat throughout the year as a result of the mild winter weather, leaving a fairly comfortable margin between supply and demand throughout the year. This margin was only ever tight in October/November when wind generation levels remained low with power plants being slow to return from summer outages.

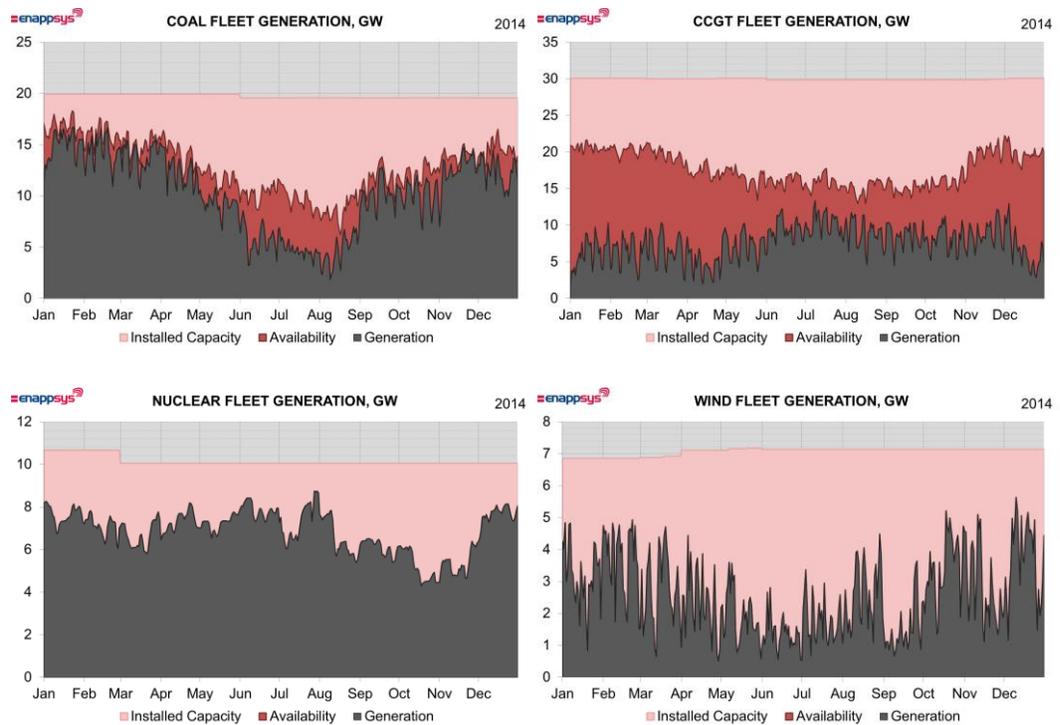
Power plants (and especially coal plants) will undergo major periods of maintenance in the summer months, often being unavailable for much of the summer. This activity was repeated in 2014 and reduced the available capacity in the summer, but did not affect the system due to the lower levels of electrical demand in the summer months.

By November most units had returned to service once again and as the wind picked up in December (with overall levels of wind generation typically being highest December to February) the system was very comfortable in these months and looking comfortable heading into 2015.

The capacity, availability and generation for the total installed fleet can be seen for 2014 in the following chart:



This can then be broken down into the levels of generation by each of the main fuel types active in the GB market with this activity shown in the following four charts showing the same activity at the Coal, CCGT, Nuclear and Wind fleets:



In the summer, gas prices were depressed to much lower than usual levels and between the beginnings of June and September this resulted in increased levels of generation at CCGT (Combined Cycle Gas Turbine) plants at the expense of coal plants.

During this period it can be seen that coal plants were not generating at their limits of availability with coal plants more typically seeing generation as a high percentage of availability as a result of coal typically being the lowest cost fuel in the market.

This is unusual, but the lull in levels of availability at coal-fired plants in the summer is typical, with the former being the main contributor to the 23% decrease in levels of coal-fired generation in the year beyond the 10% loss of coal-fired capacity since 2013.

Also notable from the above was the reduce availability for the nuclear fleet in the second half of 2014 with minor issues at plants resulting in precautionary outages contributing to this reduced levels of availability (and hence generation). In this analysis, it is worth noting that nuclear plants, like wind farms, will always generate at their full availability.

The final chart shows levels of wind generation with an usual peak in August resulting in lower electricity prices over this period and with the typically high levels of wind generation in the winter half of the year notable from this chart.

About EnAppSys

Enappsys is a specialist information business providing both electricity and energy market data, systems and applications to parties with an interest in the UK energy market.

The company provides a range of services from access to energy data, analytical services, provision of consultancy services and development of bespoke energy data applications.

Enappsys is focused on providing information and analytical services covering the energy sector and is actively growing the business to provide products with enhanced analysis and forecasting capabilities and extending the geographic and sector coverage beyond the UK and the electricity market.

The company's business objective is to make available timely, optimal and insightful information, analysis and systems to the energy sector to ensure all sizes of company have the best available tools and information to make informed decisions and to optimise their business strategy.

Enappsys was formed in 2003 to support and provide IT development and services to businesses working in the UK energy sector.

At its formation the business was focused on the English electricity market which in 2003 had been completely restructured with the introduction of the New Electricity Trading Arrangements (NETA) from which Enappsys got the name for the NETA Reports Data Service.

Enappsys has continued to develop its services to this market and through the extension of the arrangements to the UK via the British Electricity Trading Arrangements (BETTA) to the current day.

To find out more about EnAppSys contact the company at about@enappsys.com or visit the company's website at www.enappsys.com.