

POWERWATCH IN BRIEF

The European power industry, 2008-13

1 June 2015

SECTION 1. EXECUTIVE SUMMARY

Europe's power sector has seen profound changes in recent times. These have been driven in part by policy interventions – clean energy subsidies, carbon pricing and emissions regulations. However the region has also been hit by worst recession since the 1930s, and the US shale gas revolution and coal glut continue to influence commodity markets. In this report we analyse how major policy and market developments have impacted the sector's progress towards decarbonisation by looking at the impact on capacity, generation, investment and emissions over 2008-13¹.

Introduction

- Over the last 30 years, Europe's power industry has been largely powered by fossil fuels – accounting for over 70% of generation in 1980. In absolute terms, generation from these sources continued to grow over the decades.
- EU policy targets to reduce emissions were set as early as 1997, but it wasn't until 2008 that policies to directly promote renewable alternatives moved to the fore. The **European Union's** 2020 Climate and Energy Package – also known as the 20-20-20 targets – spawned a large number of national renewable subsidy schemes, which together with the EU Emissions Trading System and the Large Combustion Plant Directive were designed to accelerate the decarbonisation of the EU power sector – the region's single biggest source of emissions.

EU trends

- National renewables subsidy schemes were very successful in attracting investment, with a total of \$577bn invested and 129GW of renewable energy assets built over 2008-13. This investment drove learning and pushed down costs, with the levelised cost of solar roughly halving over 2009-13 and that for onshore wind dropping 15%. Overall solar and wind capacity increased 164%, generation 158% and power sector emissions across the bloc dropped 15% by 2013.
- In 2008 the global financial crisis pushed Europe into recession. The economic contraction caused EU-28 power demand to fall 5% between 2008 and 2013, and emissions to fall 15% and the EU carbon price to crash. The increase in wind and solar generation from 4% to 10% of the EU-wide total put additional downward pressure on carbon.
- At the same time renewable energy investment was booming on the back of government subsidies that drove a rapid expansion of both utility-scale wind and solar facilities and rooftop solar PV. By 2010 and 2011, however, costs were beginning to balloon and governments began scaling back. Some reformed their renewables support programmes to reduce excessive returns and the rate of future investment, while others made retroactive changes to payments for existing projects, dramatically increasing country risk for investors. Clean energy investment peaked in 2011 at \$131bn, subsequently dropping 54% to \$60bn by 2013.
- The Large Combustion Plant Directive (LCPD) is on track to successfully close 35GW of emissions intensive coal- and oil-fired capacity by December 2015. The impact of these closures varies by country. The UK is particularly affected due to an ageing coal fleet.

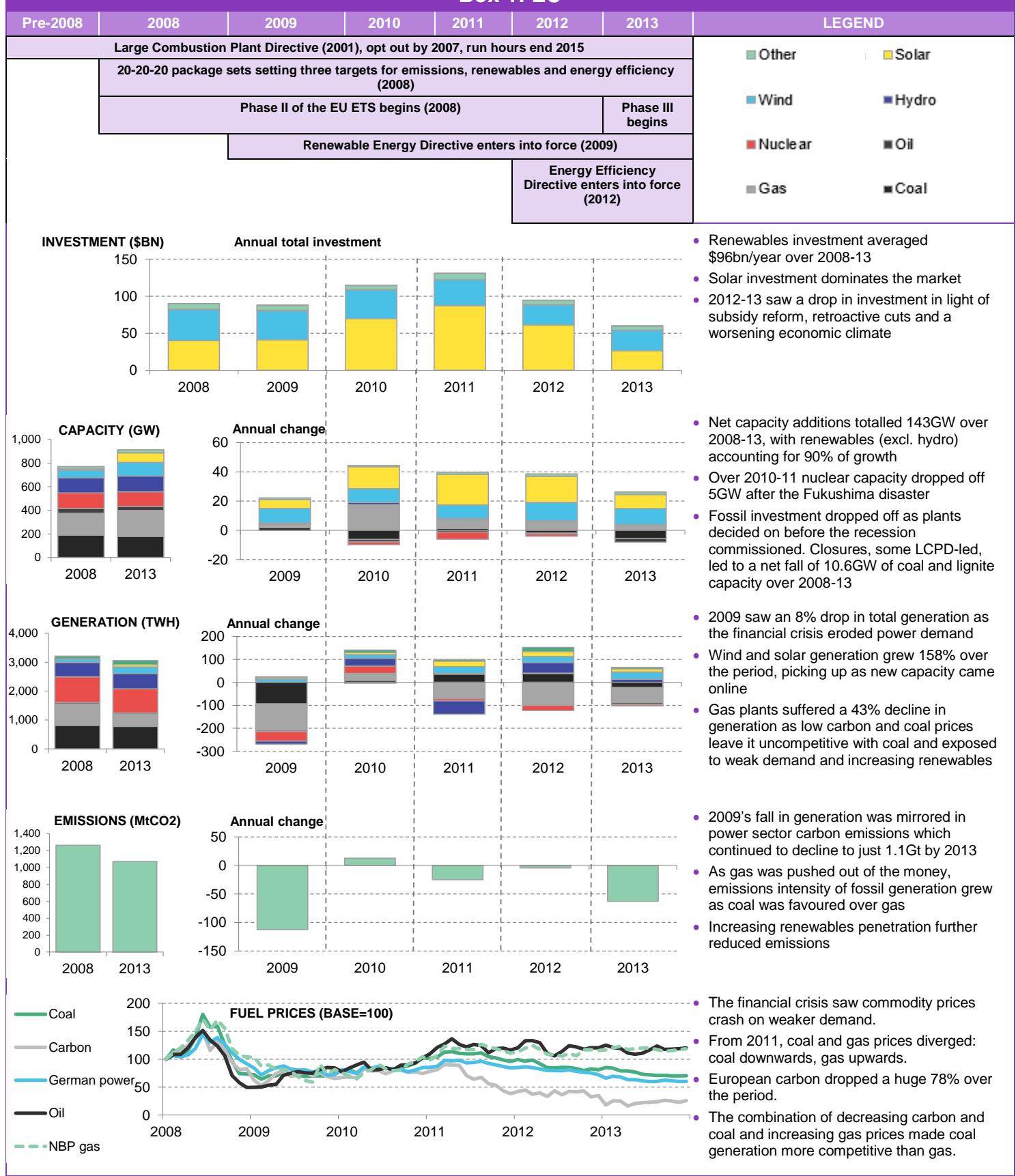
• 1 The report does not include an analysis for 2014 as not all the data was available at the time of writing. Included is a brief discussion of 2014 investment and emissions data.

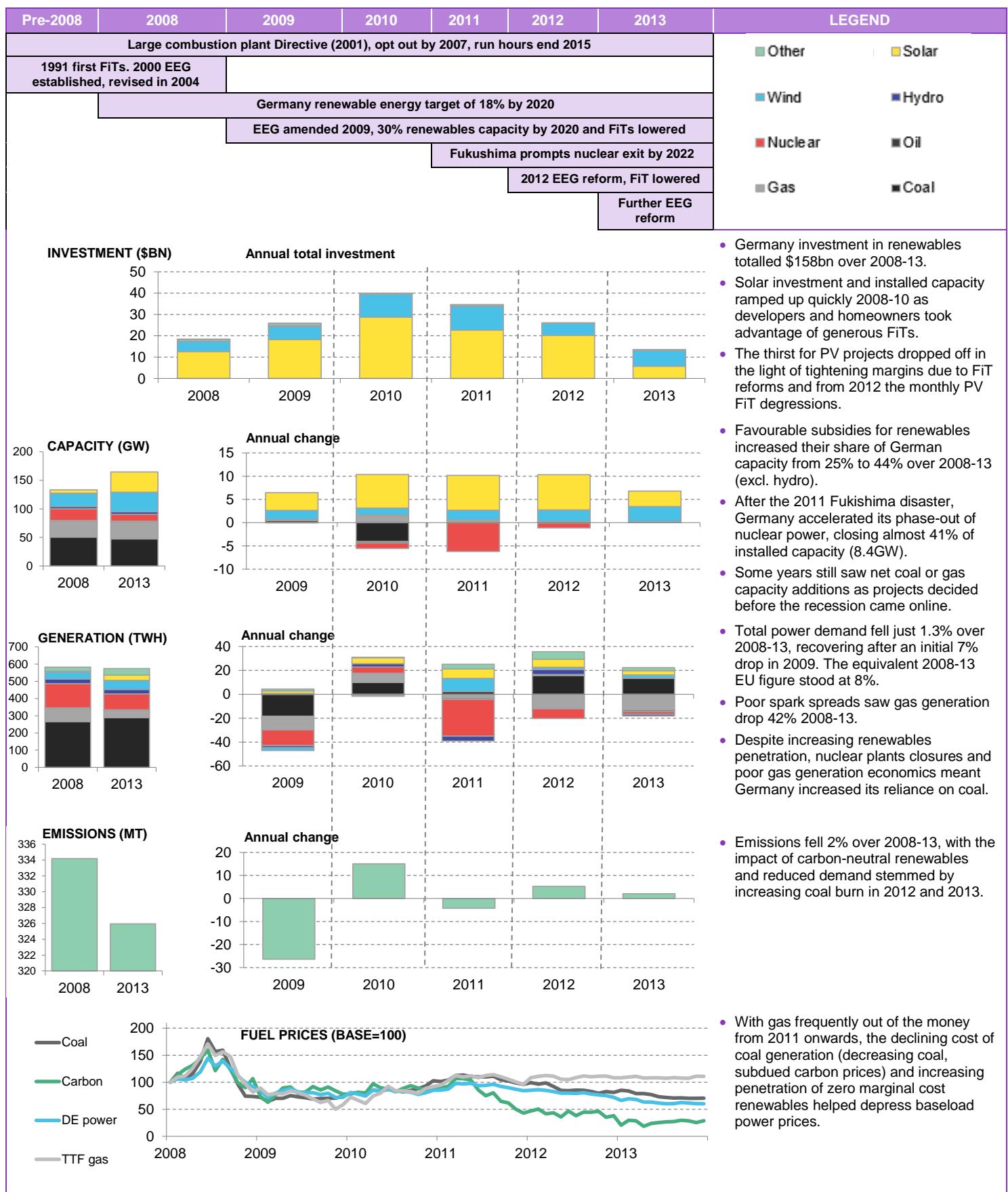
- Gas plants across Europe have been crippled by weak demand, increasing renewables generation and unfavourable commodity prices. As a glut of cheap coal flooded the market and with no material support from the region's carbon price which has languished below €10 since mid-2011, gas generation fell by 43% over the 2008-13 period, despite a 33GW increase in capacity.
- Although coal and lignite generation fell 4% in the same period, their share of fossil generation increased, from 51% in 2008 to 63% in 2013 increasing the emissions intensity of that part of the European fleet. This was primarily due to clean dark spread which strengthened on the back of low carbon prices, high gas prices and low coal prices.
- This set of complex dynamics meant that emissions varied considerably by country over the period, but the overall trend was downward. Total EU power sector emissions fell nearly 200Mt (15%) over 2008-13. However over 100Mt of that decrease happened in 2009 as a result of the recession.
- In 2014¹, EU investment grew for the first time since 2011, while emissions continued to decline – partly due to an abnormally mild winter. German emissions were down for the first time since 2011.

Country focus – UK and Germany

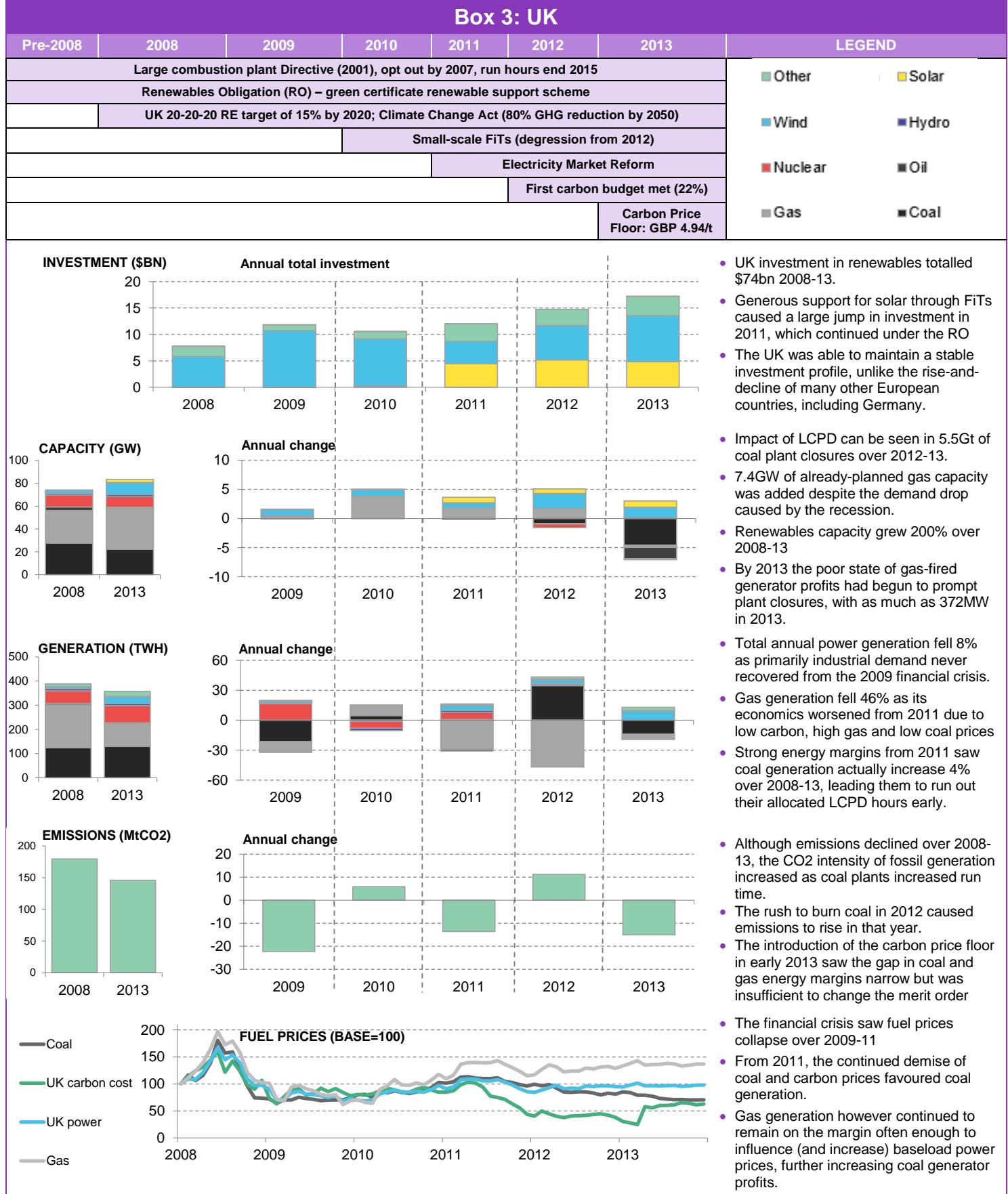
- Nowhere in Europe has the dash for renewables been more prolific than **Germany**. Solar and wind capacity grew 41GW over 2008-13 to 41% of total capacity, but because of its early-adopter status, by 2013 the country had landed its consumers with an annual cost of subsidy of around €20bn.
- The rapid growth of renewables combined with the recession and decline in the cost of coal acted to depress the German power market, with particularly stark implications for gas generators, whose generation dropped 42% over 2008-13. In February 2011 it became unprofitable to run gas for baseload (round-the-clock) power in Germany.
- Together with the accelerated nuclear phaseout, these dynamics called into question the historically stable business model of Germany's large traditional utilities. In 2013 share prices were down around 60% on 2008.
- Germany's decision to accelerate the phase-out of its nuclear fleet following the 2011 Fukushima disaster resulted in a generation gap of around 13% as 6GW of nuclear capacity was taken off-line. Low coal prices meant that by 2012 around half that gap had been filled by coal. As a result, emissions in Germany increased in 2012 and 2013, before dropping again in 2014 due in part to the mild winter.
- In the **UK**, renewables accounted for 14% of generation by 2013, up from just 4% in 2008. Investment was driven by a green certificate scheme, a feed-in-tariff and an additional carbon tax on top of the EU carbon price.
- With dark spreads high on the back of low coal prices and an impending additional carbon tax in the form of the carbon price floor, British coal plants that had opted out under the Large Combustion Plant Directive, rushed through their remaining allocated run hours, pushing emissions up 7.5% in 2012. The carbon price floor started in 2013, improving gas generator competitiveness and bringing emissions back down. Gas generation nevertheless suffered heavily over 2008-13, falling 46%.
- A strong year for offshore wind contributed to a 12% increase in renewables investment in the UK over 2014, far greater than across much of the EU.
- The growing impact of renewables on plant profitability, falling demand and depressed market conditions have provoked questions around the future of the wholesale market in Germany, UK and other major European countries.

Box 1: EU





Box 3: UK



ABOUT US

sales.bnef@bloomberg.net

Contact details

Seb Henbest Head – Europe, Middle East & Africa	shenbest@bloomberg.net +44 20 3525 7143
Jonas Rooze Head – EU Power & Carbon	jrooze@bloomberg.net +44 20 3525 8343
James Cooper Associate – EU Power & Carbon	jcooper58@bloomberg.net +44 20 3525 8310

Copyright

© Bloomberg Finance L.P. 2015. This publication is the copyright of Bloomberg New Energy Finance. No portion of this document may be photocopied, reproduced, scanned into an electronic system or transmitted, forwarded or distributed in any way without prior consent of Bloomberg New Energy Finance.

Disclaimer

This service is derived from selected public sources. Bloomberg Finance L.P. and its affiliates, in providing the service, believe that the information it uses comes from reliable sources, but do not guarantee the accuracy or completeness of this information, which is subject to change without notice, and nothing in this document shall be construed as such a guarantee. The statements in this service reflect the current judgment of the authors of the relevant articles or features, and do not necessarily reflect the opinion of Bloomberg Finance L.P., Bloomberg L.P. or any of their affiliates ("Bloomberg"). Bloomberg disclaims any liability arising from use of this document and/or its contents, and this service. Nothing herein shall constitute or be construed as an offering of financial instruments or as investment advice or recommendations by Bloomberg of an investment or other strategy (e.g., whether or not to "buy", "sell", or "hold" an investment). The information available through this service is not based on consideration of a subscriber's individual circumstances and should not be considered as information sufficient upon which to base an investment decision. BLOOMBERG, BLOOMBERG PROFESSIONAL, BLOOMBERG MARKETS, BLOOMBERG NEWS, BLOOMBERG ANYWHERE, BLOOMBERG TRADEBOOK, BLOOMBERG BONDTRADER, BLOOMBERG TELEVISION, BLOOMBERG RADIO, BLOOMBERG PRESS, BLOOMBERG.COM, BLOOMBERG NEW ENERGY FINANCE and NEW ENERGY FINANCE are trademarks and service marks of Bloomberg Finance L.P. or its subsidiaries.

This service is provided by Bloomberg Finance L.P. and its affiliates. The data contained within this document, its contents and/or this service do not express an opinion on the future or projected value of any financial instrument and are not research recommendations (i.e., recommendations as to whether or not to "buy", "sell", "hold", or to enter or not to enter into any other transaction involving any specific interest) or a recommendation as to an investment or other strategy. No aspect of this service is based on the consideration of a customer's individual circumstances. You should determine on your own whether you agree with the content of this document and any other data provided through this service. Employees involved in this service may hold positions in the companies covered by this service.