

The United Kingdom

Key issues

Further investment in the UK electricity network infrastructure and generation is needed for delivery of 2020 targets. In particular, greater interconnection is needed.

Successive legislative and regulatory changes are increasing the complexity of the UK market, and may be of concern given the level of investment required. There is a need to ensure that the interventions are in line with Internal Market and State Aid rules⁵²⁹ and support the integration into the wider internal energy market. Existing and future support schemes should provide a stable framework for investments whilst keeping costs of the energy transition towards a decarbonised electricity generation to a minimum.

Consumer confidence in the sector is relatively low. Further action is needed to address wholesale and retail price formation and transparency. The UK should also ensure both wholesale and retail markets are open to new entrants by removing barriers to entry. Another key issue is to ensure that support for fuel-poor and other vulnerable consumers is appropriately targeted.

1. General overview

Energy consumption in 2012 (202.3 Mtoe) was largely based on fossil fuels and to a lesser extent on nuclear energy. Renewable energy sources were less important in the overall energy mix than in other Member States (4.1%). The UK's 2020 renewable target is 15%, lower than the EU average. Final consumption of electricity in 2012 was broadly unchanged on 2011.⁵³⁰ The power generation mix in 2011 (363.8 TWh) remained dominated by gas-fired power generation (with a share of 40.2%) and solid fuels (29.5%). The renewable share of generation in 2012 increased to 10.1%.

⁵²⁹ On 18 December 2013 the Commission opened an in-depth investigation to examine whether UK plans to subsidise the construction and operation of a new nuclear power plant at Hinkley Point in Somerset are in line with EU state aid rules.

http://ec.europa.eu/competition/elojade/isef/case_details.cfm?proc_code=3_SA_34947.

⁵³⁰ Digest of UK energy statistics (DUKES), Chapter 5.

Figure 1: Gross inland consumption mix 2008 – 2012 (source: Eurostat)

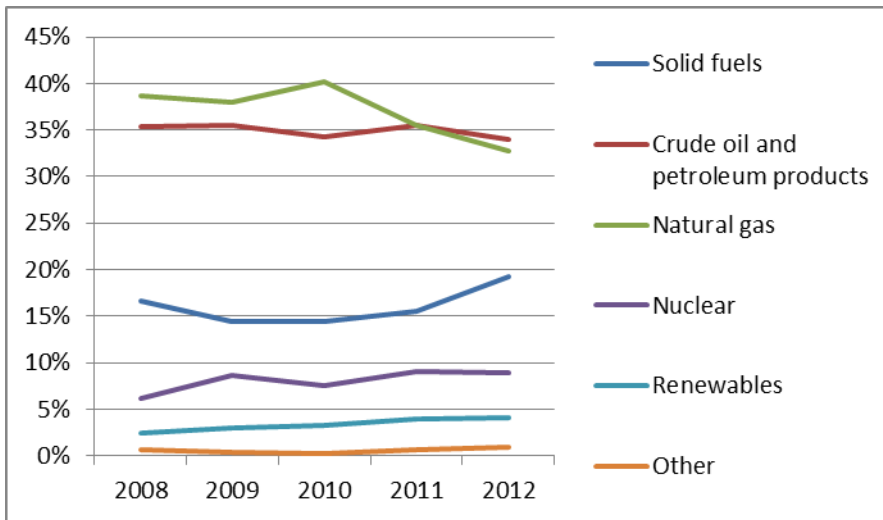
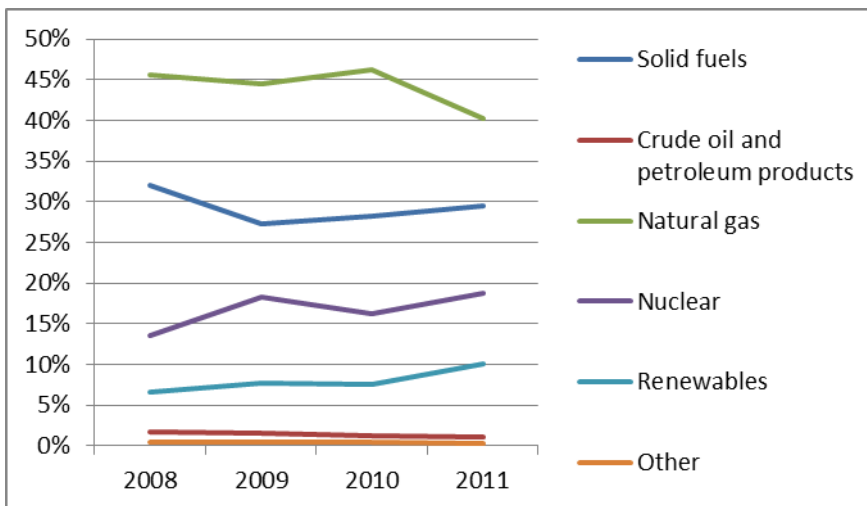


Figure 2: Gross electricity generation mix 2008 – 2011 (source: EU Energy in Figures – Pocketbook 2012 and 2013)



In December 2013 the UK adopted the Energy Act as part of the Electricity Market Reform (EMR) programme. The key elements include support for low carbon generation through Contracts for Difference – a form of feed in premium - , an Emissions Performance Standard set at 450g CO₂/kWh – preventing new unabated coal plants and a capacity market. The UK has also introduced a carbon price floor in addition to the existing EU Emission Trading System (ETS).⁵³¹

EMR is intended to deliver the first step of a transition towards a low carbon energy system by 2050. These reforms promote renewables and new nuclear through Contracts for Difference. The expected changes to the energy mix mean that the running of thermal plant would change, so a capacity market is also planned to ensure enough investment for security of supply.

⁵³¹ The Carbon Price Floor is a tax on fossil fuels used to generate electricity with levels designed and adapted on a yearly basis to ensure a certain minimum effective carbon price, which came into effect on 1 April 2013.

The Department of Energy and Climate Change (DECC) was positive that the UK had achieved its interim target for renewables by 2012.⁵³² However, some within industry have criticised a lack of certainty caused by changes to support schemes, lack of clarity about the market framework, and delays in developing grid infrastructure. Recent publication of the proposed support level for renewable technologies has improved this situation.

On 27 March 2014 Ofgem proposed to refer the market to the UK Competition and Markets Authority (CMA) to investigate whether there are further barriers to effective competition⁵³³.

2. Regulatory framework

General

The Third Package Directives have been transposed into national law.

National Energy Regulator

The energy regulator in Great Britain is Ofgem. The Northern Irish utility regulator is UREGNI. Ofgem regulates prices for networks, but retail tariff regulation was phased out by 2002 following the introduction of retail competition. Ofgem employed 729 staff in 2012/13. The staff number and budget has increased in recent years as it has major projects and price reviews underway.

Unbundling

National Grid Electricity Transmission (NGET) owns the onshore electricity transmission network in England and Wales and has been certified as fully ownership unbundled. In Scotland there are two onshore transmission networks which are owned by Scottish Power Transmission Limited and Scottish Hydro Electric Transmission plc. The GB onshore and offshore transmission network is operated by NGET in its role as System Operator. The Scottish TSOs have been certified under Article 9(9) of the Electricity Directive, which allows alternative arrangements to the standard unbundling models in limited circumstances. To date, Ofgem has also certified nine Offshore Transmission Owners (OFTOs) and two preferred bidders, as ownership unbundled.

The high-pressure gas transmission network in Britain is owned and operated by National Grid Gas plc, which is certified as fully ownership unbundled.

Ofgem has certified: (i) the BritNed electricity interconnector on the ground of an exemption granted in accordance with Article 22 of Directive 2003/55/EC ("Second Package Exemption"); (ii) the IUK gas interconnector (until 3 March 2015 on the ground of being in a substantially similar position to someone benefiting from a Second Package Exemption and thereafter on the ground of full ownership unbundling provided that it demonstrates that it passes the ownership unbundling tests at that time);(iii) the BBL and SNIP gas interconnectors as fully ownership unbundled; and, (iv) the Moyle and IFA electricity interconnectors as fully ownership unbundled. The interconnector between Ireland and Britain operated by EirGrid, the Irish TSO, has not yet been certified.

⁵³² DECC, UK Renewable Energy Roadmap: 2013 Update, 5 November 2013.

⁵³³ <https://www.ofgem.gov.uk/press-releases/ofgem-proposes-reference-cma-investigate-energy-market>.

In Northern Ireland, as in Scotland, Article 9(9) has been applied. The electricity grid is owned by Northern Ireland Electricity (NIE) and operated by the certified TSO, SONI, with the Irish TSO, Eirgrid, under the all Island Single Electricity Market. Bord Gáis Éireann and Mutual Energy own the gas-transmission assets in Northern Ireland and have been certified as TSOs. The sale of Phoenix Supply to Airtricity in June 2012 resulted in unbundling of the gas supply company from the gas distribution company (Phoenix Natural Gas) in the Greater Belfast area.⁵³⁴

3. Wholesale markets

Electricity

There are two main power exchanges in Great Britain: APX and N2EX. UK power futures exchange traded contracts are also available on the Intercontinental Exchange (ICE). In 2012, around 85% of power was OTC traded (down from 95% in 2011) and around 15% was exchange traded (up from 5%). The average day-ahead power price on the APX market was GBP 44.54 (EUR 53.89)/MWh in 2012.⁵³⁵ The England-France Interconnector (IFA) and BritNed interconnectors are participating in the North West European project on day-ahead market coupling and intraday trading.

The power generation market is moderately concentrated. Seven companies had market shares exceeding 5% and the largest three generated almost 45% of electricity consumed in 2012. In response to concerns about liquidity, Ofgem has introduced a new licence condition from 31 March 2014. This obliges six large vertically-integrated suppliers to post prices at which they will buy and sell a range of forward power products (a market making obligation). It also requires the eight largest generating companies to follow rules when trading with small independent suppliers.

Northern Ireland is part of the all-island Single Electricity Market (SEM) with Ireland. This is discussed in more detail in the separate report covering the Republic of Ireland.

Gas

UK natural gas production is decreasing, and in 2012 was down 14% on 2011 to 452 TWh.⁵³⁶ The majority of the UK's supplies are now imported, either from Norway, Continental Interconnection or LNG terminals. The wholesale gas market includes both OTC and exchange based trading (ICE and ICE Endex). The National Balancing Point (NBP) is the virtual trading location for UK natural gas. It is the most liquid gas trading point in Europe, with a churn rate between 10 and 20. The number of parties trading at NBP is high with a total of 222 licensed shippers, of which between 110 and 120 are usually

⁵³⁴ Ofgem, 2013 Great Britain and Northern Ireland National Reports to the European Commission, 22 August 2013.

⁵³⁵ <http://www.apxgroup.com/uncategorized/apx-endex-2012-volumes-up-by-12/>.

⁵³⁶ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/65800/DUKES_2013_Chapter_4.pdf.

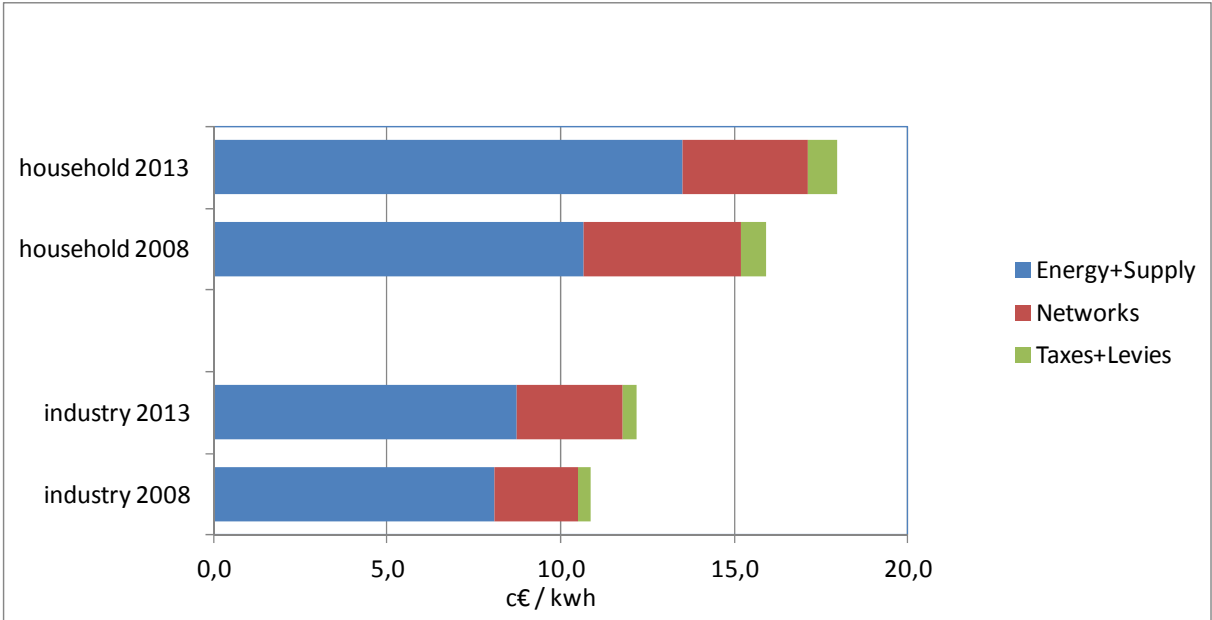
active on a daily basis⁵³⁷. Market concentration in is low, with the largest market share of physical and traded activity below 8%⁵³⁸.

4. Retail markets

Electricity

The retail electricity market has been open to competition since the late 1990s. At the end of 2012, there were 12 domestic and 24 non-domestic suppliers active in the market. The domestic retail market is characterised by the existence of six large, vertically integrated suppliers (the ‘Big 6’), which accounted for approx. 95% of the market in 2013, a drop of 4% since 2011. These are British Gas (Centrica), E.ON UK, EDF Energy, RWE npower, Scottish and Southern Energy (SSE), and Scottish Power. All of the Big 6 suppliers have a market share of above 10%. Market concentration at domestic retail level remained high with an HHI of 1,720. There were 12 small suppliers active in the market in 2012, with a combined market share of just 2%, up 1% from 2011.

Figure 3: Electricity price change by component 2008 – 2013 (source: Eurostat, energy statistics)



Gas

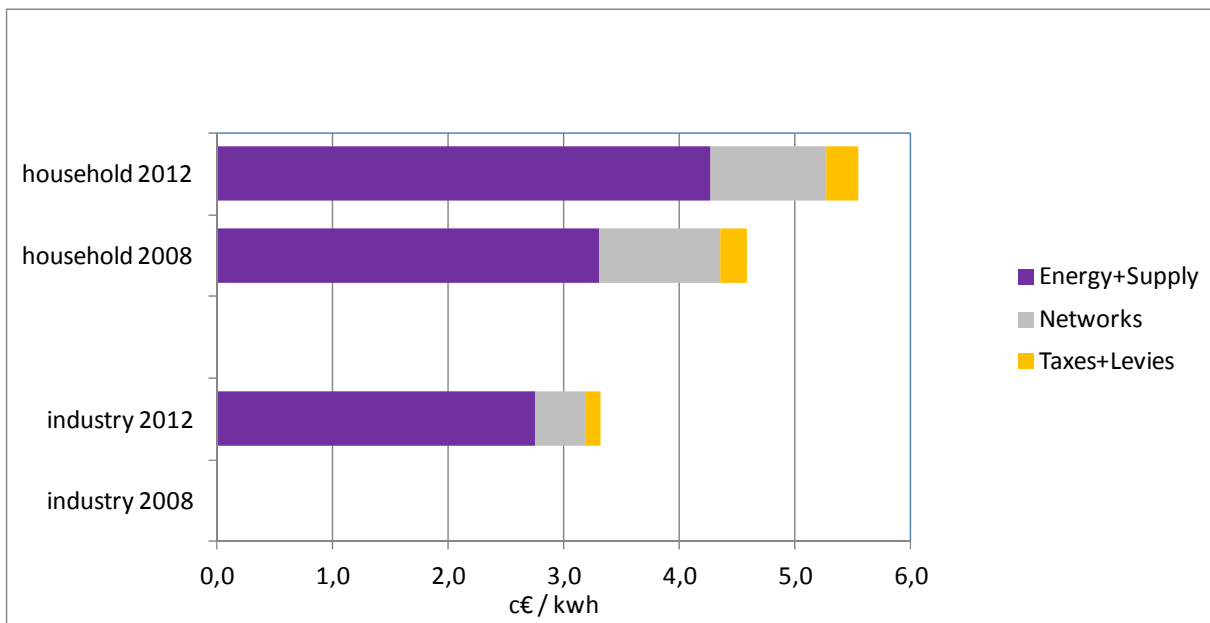
The British retail gas market is fully liberalised. At the end of 2012, 13 domestic and 30 non-domestic gas suppliers were active in the market. The so-called ‘Big 6’ suppliers supplied approx. 95% of the 22.3 million domestic consumers in 2013. British Gas (Centrica) is still the largest party active on the domestic market, with a market share of around 40%. Market concentration at the domestic retail level remained high with an HHI of 2,373 for smaller non-domestic customers; it was 2,189 and for

⁵³⁷ Ofgem, 2013 Great Britain and Northern Ireland National Reports to the European Commission, 22 August 2013.

⁵³⁸ Ofgem, 2013 Great Britain and Northern Ireland National Reports to the European Commission, 22 August 2013.

larger non-domestic customers 1,153. British Gas remains the leading supplier, with a market share of 40%.

Figure 4: Natural gas price change by component 2008 – 2012 (source: EC, EPCR metadata)



The British government has decided to replace all of the nation’s 53 million gas and electricity meters with smart meters. Smart metering roll-out⁵³⁹ is at an early stage, with mass roll-out planned from 2015. In both gas and electricity markets the larger suppliers are operating 89,400 domestic smart meters (0.2%) as well as 520,000 in smaller non-domestic sites.

5. Consumers

Switching and trust

Consumer overall assessment of retail electricity market is slightly below the EU average (69.3 points compared to 72.0, corresponding to 20th place EU-wide⁵⁴⁰) and saw a considerable decrease (of 3 points) between 2012 and 2013. The market also ranks 3rd lowest among 31 domestic services markets. The assessment of the retail gas market is 4th lowest in the EU (70.5 points compared to 74.1) and 5th lowest among domestic services markets. The overall score has slightly decreased between 2012 and 2013⁵⁴¹, continuing the downward trend observed since 2010. Both markets have particularly poor scores on trust in providers and overall consumer satisfaction, and above-average number of consumer complaints. The electricity market has the third highest share of overall consumer complaints in the EU and the highest share of complaints to third parties. At the same

⁵³⁹ Smart Meters, Great Britain, Quarterly report to end June 2013.

⁵⁴⁰ However the difference is not statistically significant.

⁵⁴¹ However the difference is not statistically significant.

time, both markets have above-average scores for choice of providers and actual switching. In the gas market, choice and actual switching rank second and fourth highest in the EU.⁵⁴²

In 2012, 12% of electricity users switched supplier and 11% of gas users switched supplier⁵⁴³. By European standards this is high. However the capacity of consumers to understand and choose the most appropriate tariff has been a concern. Ofgem found that more than three out of five consumers (62%) claimed they have never switched, meaning they are likely to be on standard tariffs with former incumbent suppliers and typically paying above the most competitive prices in the market⁵⁴⁴. The true proportion of those who have ‘never switched’ is probably lower, but it does suggest that many consumers feel they are inactive in the market.⁵⁴⁵

Also, many consumers have reported being confused by the number of tariffs on offer and their differing structures⁵⁴⁶. As a result, new rules have been introduced to limit the number and complexity of tariffs offered by suppliers. Online price comparability tools for electricity and gas are available. Ofgem has a Confidence Code for switching services, which many have signed up to⁵⁴⁷. A recent innovation has been “collective switching” (the first was organised by Which? and 38 Degrees in 2012).

Complaints and vulnerable customers

If complaints are unresolved after eight weeks, customers can seek redress through the Ombudsman, who has the power to make a financial award of up to GBP 10,000. Domestic consumers and micro businesses can go sooner if the company says it can do no more to resolve the complaint.

Ofgem has a Consumer Vulnerability Strategy⁵⁴⁸ and DECC reports on fuel poverty⁵⁴⁹. There are a number of measures targeted at vulnerable customers through the benefits system and fuel payment. Measures include a universal fuel benefit for older people and low-cost energy-efficiency measures through suppliers for those in receipt of certain benefits. Vulnerable customers are protected from disconnection in winter. Planned funding for energy efficiency under the Energy Company Obligation has been scaled back as a result of complaints about the impact on bills.

There is a “priority services register” managed by network companies and suppliers, which ensures the needs of vulnerable customers are met in the event of power cuts and in other situations. Awareness amongst consumers of these services is low, however, and Ofgem is reviewing how take-up of services can be improved.

⁵⁴² 10th Consumer Markets Scoreboard,

http://ec.europa.eu/consumers/consumer_evidence/consumer_scoreboards/10_edition/index_en.htm

⁵⁴³ <https://www.ofgem.gov.uk/ofgem-publications/74756/customer-engagement-energy-market-tracking-survey-2013.pdf>.

⁵⁴⁴ <https://www.ofgem.gov.uk/ofgem-publications/74756/customer-engagement-energy-market-tracking-survey-2013.pdf>.

⁵⁴⁵ <https://www.ofgem.gov.uk/ofgem-publications/39350/retail-market-review-final-domestic-proposals.pdf>.

⁵⁴⁶ <https://www.ofgem.gov.uk/ofgem-publications/39452/consumer-engagement-energy-market-information-needs-and-perceptions-ofgem.pdf>.

⁵⁴⁷ <https://www.ofgem.gov.uk/ofgem-publications/74615/confidence-code.pdf>.

⁵⁴⁸ <https://www.ofgem.gov.uk/ofgem-publications/75550/consumer-vulnerability-strategy.pdf>.

⁵⁴⁹ DECC, Annual Report on Fuel Poverty Statistics 2013, May 2013.

6. Infrastructure

The recent transmission price control (RIIO-T1) authorised around GBP 22 billion⁵⁵⁰ of investment in the gas and electricity transmission networks in Great Britain over the period 2013-2021. Ofgem approves large infrastructure investments as they arise throughout its 8-year period through Strategic Wider Works⁵⁵¹ (electricity) and incremental capacity provisions (gas).

Electricity

Existing interconnection includes the 1,000 MW BritNed interconnector with the Netherlands, the 2,000 MW IFA interconnector with France, and the 500 MW Moyle interconnector with Northern Ireland. The completion of the 500 MW EirGrid East-West Interconnector in 2012 increased interconnection between Britain and neighbouring countries from 3.5 GW to 4 GW.

However, the interconnectivity level is still low. As a result, around 10 GW of potential new interconnection projects to 6 different markets have been proposed. Under the guidelines for trans-European energy infrastructure, 17⁵⁵² electricity infrastructure projects of common interest were selected in the UK.⁵⁵³

As part of its Integrated Transmission Planning and Regulation project, Ofgem is reviewing whether to move from the current developer-led approach to more centralised planning of interconnection. The DECC also published the document 'More interconnection: improving energy security and lowering bills' in December 2013.

A competitive tender process is used to grant licences for electricity transmission connections offshore. The regime has delivered investment of over GBP 1.4 billion to date⁵⁵⁴.

Gas

The British gas system is interconnected with Belgium, the Netherlands, as well as with Northern Ireland and Ireland to the west (export only). The interconnector with Belgium (IUK) can flow gas in both directions (import 27 bcm/year and export 20.1 bcm/year). The BBL interconnector with the Netherlands has an import capacity of 19.3 bcm/year but does not allow physical reverse flow. The exit capacity at Moffat is 11.0 bcm/year. There are three LNG import terminals (Isle of Grain, South Hook and Dragon LNG) and one long range storage facility (Rough).

A number of gas projects of common interest were identified under the guidelines for trans-European energy infrastructure. These include projects to allow bidirectional flows between Great Britain, Northern Ireland and Ireland.⁵⁵⁵

The UK has designated the Secretary of State for Energy and Climate Change as the National Competent Authority (so called one-stop shop for Projects of Common Interest) by a Written

⁵⁵⁰ <https://www.ofgem.gov.uk/ofgem-publications/64003/pricecontrolexplainedmarch13web.pdf>.

⁵⁵¹ <https://www.ofgem.gov.uk/electricity/transmission-networks/critical-investments/strategic-wider-works>

⁵⁵² http://ec.europa.eu/energy/infrastructure/pci/doc/2013_pci_projects_country.pdf.

⁵⁵³ Regulation (EU) No 347/2013; OJ L 115, 25.4.2013, p. 39–75.

⁵⁵⁴ <https://www.ofgem.gov.uk/publications-and-updates/offshore-transmission-factsheet>.

⁵⁵⁵ http://ec.europa.eu/energy/infrastructure/pci/doc/2013_pci_projects_country.pdf.

Ministerial Statement to the UK Parliament on 18 November 2013. The one-stop shop is responsible for facilitating and coordinating the permit granting process for projects of common interest. The UK has to ensure now that the one-stop shop is functioning without any hurdles and that other measures foreseen for 2014 and 2015, including the publication of the manual on the permit granting process for project promoters, and the adoption of legislative and non-legislative measures streamlining the environmental assessment procedures are adopted timely.

7. Security of supply

Electricity

There are concerns about power generation adequacy in the mid-term. The introduction of a capacity market under Electricity Market Reform is in response to these concerns. There is a general expectation that generating margins will decrease to historically low levels in the middle of the decade.⁵⁵⁶ There is also an expectation that generating margins may decrease in Northern Ireland post 2020.⁵⁵⁷

Gas

Under the EU Gas Security of Supply Regulation, DECC published the National Emergency Plan. DECC's risk assessment⁵⁵⁸ reported that UK gas supply infrastructure is resilient to 'all but the most unlikely combinations of severe infrastructure and supply shocks' given the success of the market in responding to record demand and supply pressures in the winters of 2009/10 and 2010/11.

8. Key indicators

Electricity		Gas	
Number of companies representing at least 95% of net power generation	17	Number of entities bringing natural gas into country	23
Number of main power-generation companies	7	Number of main gas entities	6
Market share of the largest power-generation company	25%	Market share of the largest entity bringing natural gas	17%
Number of electricity retailers	32	Number of retailers selling natural gas to final customers	36
Number of main electricity retailers	6	Number of main natural gas retailers	7
Switching rates (domestic)	12%*	Switching rates for gas (domestic)	11%
Regulated prices for households – electricity	No	Regulated prices for households – gas	No
Regulated prices for non-households – electricity	No	Regulated prices for non-households – gas	No
HHI in power-generation market	1,483	HHI in gas supply market	N/A

⁵⁵⁶ <https://www.ofgem.gov.uk/ofgem-publications/75232/electricity-capacity-assessment-report-2013.pdf>.

⁵⁵⁷ <http://www.eirgrid.com/media/Generation%20Capacity%20Statement%202014.pdf>.

⁵⁵⁸ DECC, Risk assessment for the purpose of EU Regulation 994/2010 on security of gas supply, November 2011.

HHI in electricity retail market	1,720	HHI in gas retail market	2,373
Electricity market value ⁵⁵⁹ (bn€)	33.670	Gas market value (bn€)	20.696
Installed generation capacity (MW)	84,900		
Peak demand (MW)	56,200		
Number of smart meters installed (June 2013)	609,400		

*Domestic 12% across gas and electricity.

⁵⁵⁹ Market value is an estimation of the size of the retail electricity and gas markets. It is calculated using data on electricity and gas consumption in the household and non-household sectors (average bands) and annual average retail prices.