

Summary

1 The National Audit Office has compiled this briefing for the Energy and Climate Change Select Committee. It provides a brief outline description of key features of the policy and regulatory framework for electricity generation and the nature of the transition required over the next 10 years to meet carbon reduction and renewable energy targets. To meet the statutory carbon budget, to reduce carbon emissions by 34 per cent by 2020 compared to 1990 levels, the last government expected the power and heavy industry sector to cut its emissions by 20 per cent by 2020. In order to meet the legally binding obligation established under the EU Renewable Energy Directive 2009 for renewable energy to account for 15 per cent of energy in 2020, there will have to be a sevenfold increase in renewable energy generation compared to 2008 levels.

- Part 1 describes the current market system for the generation and supply of electricity including the regulatory and policy framework. It also sets out the nature of the transition required over the next 10 years in order to meet the 2020 targets for carbon reductions and renewable energy.
- Part 2 highlights the various risks involved in the current system, the transition to a low carbon generating system, and the operation of a low carbon system.
- References to key documentation on which this briefing is based are set out in the annex.

Key Points

2 The arrangements currently in place for ensuring security of supply in relation to electricity generation in Great Britain have been robust and resilient; and Britain has not experienced system-wide problems of the sort which have occurred in some other developed countries.

3 There are three key challenges in maintaining secure and affordable electricity supplies while moving to a low carbon electricity generating system over the next decade and beyond:

- A quarter of Great Britain's electricity generating capacity will close in the next decade, and there will need to be substantial investment in up to 50GW of new capacity by 2020.
- Much of this new capacity is expected to come from the development of onshore and offshore wind farms, but the scale of deployment required involves significant planning, financial, engineering, and supply-chain risks. Other low-carbon technologies such as nuclear, carbon capture and storage, and marine energy are only expected to contribute substantially to low-carbon electricity generation after 2020.
- The transition to a low carbon electricity generating system will substantially change supply and demand pressures on the system, which bring significant new risks and uncertainties to its operation. These uncertainties may also delay current investment decisions.

4 The policies required to incentivise the move to a low carbon generating system will result in an increase in the price of electricity over the next decade, as all forms of low-carbon generation are more expensive than fossil-fuel alternatives. This could increase the challenges the Government faces in meeting the target set in accordance with the statutory obligation to avoid people living in fuel poverty.

5 This briefing reflects the previous government's plans and strategies. The new government has indicated that it will implement various initiatives to promote investment in low carbon generation. These include, in particular, support for a higher EU carbon reduction target, the reform of the Climate Change Levy, the introduction of a carbon price floor, an emissions performance standard, capacity mechanisms and changes to the Renewables Obligation to make it resemble more closely a feed-in tariff.