

Be the
source

Where's
electrical energy
going to come
from in the
future?

Sustainability



Affordability



Security of Supply

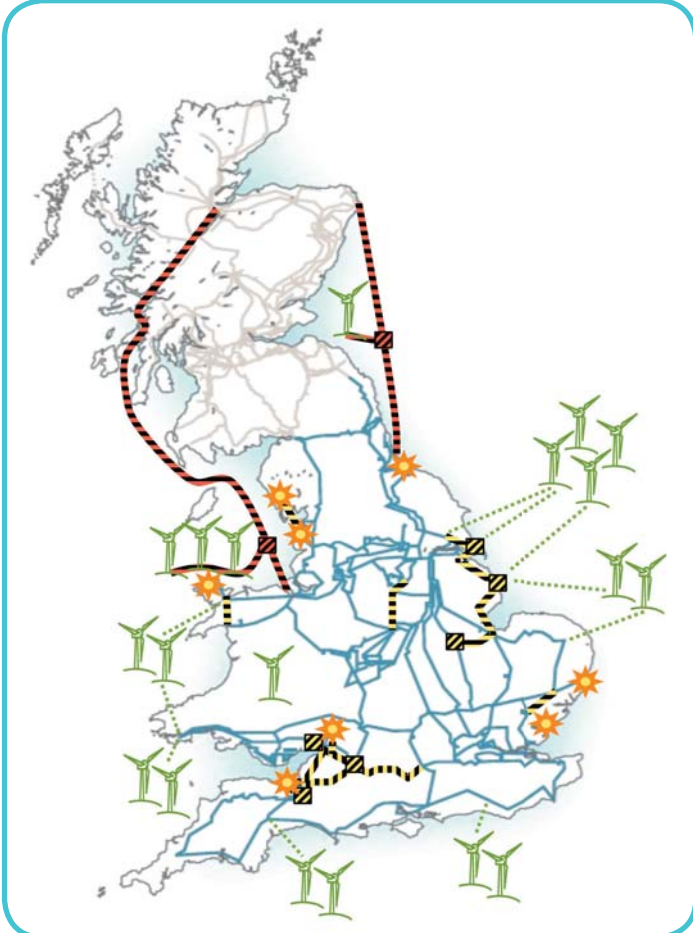
UK energy landscape is changing



Gas from UK sources
-25%
 of total supplies by 2020



Existing power station closures
-25%
 of total capacity by 2020



Developing sustainable energy solutions

Only a few years ago the big debate about climate change, our energy supplies and affordable energy were seen as three separate issues. It is clear now that they are all connected – we cannot respond to one without taking account of the others. They are different aspects of the same challenge – creating new sustainable energy solutions for the future.

Climate change: 80% reduction in Green House Gases, from levels in 1990, by 2050

Securing energy supplies: by 2020 70% of our gas will be imported

Affordable energy: a radical shift to low-carbon energy in ways that society can afford

- existing network
- future potential investment to connect Scottish renewables
- future potential onshore load related investment
- potential wind farm sites
- potential nuclear sites

Managing the transformation

Wind power to grow from about 3% of capacity today to

37%

The scale of the engineering challenge facing the energy industry matches the scale of the transformation that needs to be made to how we all use energy.

Changing the mix of power generated in the UK

The way energy is generated will change drastically over the next 20 years. The exact proportions for each energy source can only be estimated, but the trend is clear. As an industry, by 2030 we have to do the following:



Manage the huge shift away from using coal to generate electricity (from around one third of all energy generated today, to just 2% in the future).



Deliver a large increase in wind power – to over a third of all electrical energy generated. This brings with it the challenge that wind power is only available when and where the wind blows.



The electrical energy generated by nuclear power will increase to 31%. All but one of the nuclear power plants in the UK are due to close, with newer and larger plants being built on the same sites.

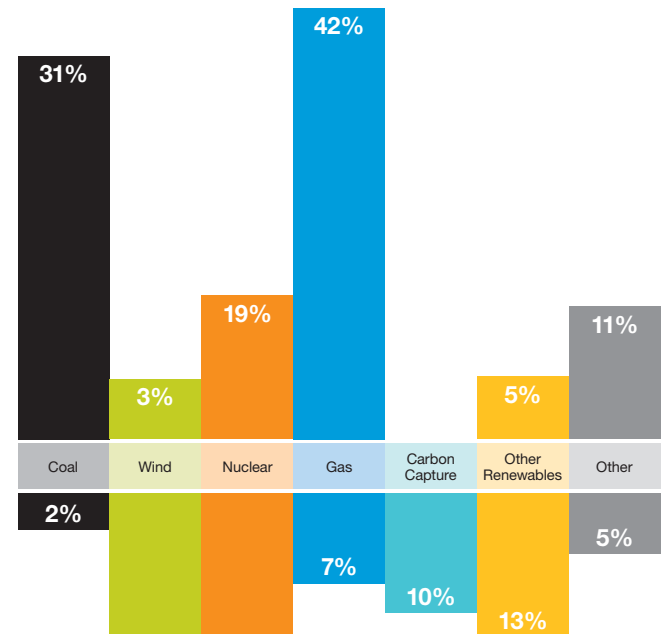


Introduce other renewable fuels, such as biomass, tidal and wave, which together are likely to amount to about 13% of the total electrical energy generated. Plus develop new technologies such as 'Carbon Capture and Storage', which will account for around 10% of the mix.

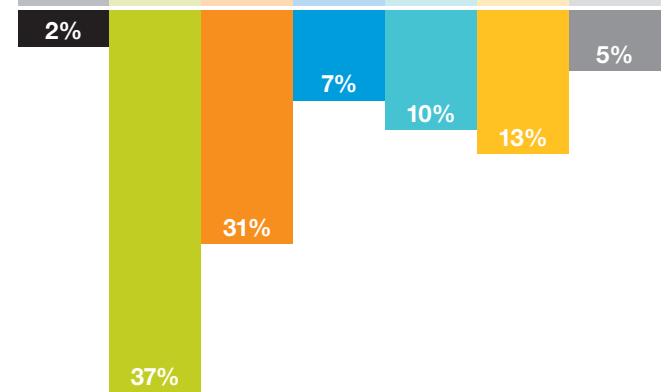


Gas, which is currently used to generate 42% of electrical energy, is expected to reduce to 7% for electricity. It will still be used to heat our homes but most of the gas will be imported.

The mix of UK electrical energy sources today



The mix of UK electrical energy sources in 2030



*This information is a scenario that represents a balanced approach to meeting renewable energy and CO₂ emissions targets in 2020 and 2030, in which electricity generation, heat and transport all contribute. It is a scenario not a forecast: environmental targets are always met. Gone Green is compatible with the Committee on Climate Change 4th budget (CCC4) and with the DECC Renewables Roadmap.

Education & Skills
National Grid
National Grid House
Warwick Technology Park
Gallows Hill
Warwick
CV34 6DA

www.nationalgrideducation.com

Securing our energy supply for future generations