Electricity Generation

Electricity is produced in different ways and using various fuels. Fossil fuels (mainly coal and gas), nuclear (uranium) and renewable sources, such as wind, biomass and solar, are the most common fuel sources. The UK has a broad mix of electricity generation which will continue to evolve over time as the industry reduces its carbon emissions.

Most of our electricity is generated at large power stations connected to the national transmission network. However, electricity is also produced in smaller scale power stations, which are connected to regional distribution networks, or even by individual households, (for example solar panels). The number and type of power stations we build is down to the individual energy companies. There are many companies in the electricity generation sector, from large multinationals to small, family-owned businesses running a single site.

The Facts

- Gas-fired power: Most of our gas-fired power is from Combined Cycle Gas Turbines (CCGT). This is a highly efficient form of electricity generation that is flexible to provide backup. CCGTs burn natural gas and the heat produced generates electricity.
- Coal-fired power: Historically, coal has been used to generate much of the UK's electricity. Coal is burnt and the heat created turns turbines. New Carbon Capture and Storage (CCS) technology is being developed to provide a future for clean coal.
- Wind: Wind power is one of the fastest growing forms of generation. The UK's wind resources, both onshore and offshore, have enormous potential which has led to a large increase in the amount of investment in the sector. Last year saw a 40% increase in the number of turbines being installed.
- Hydro: Hydro technology uses a flow of water to turn turbines and generate electricity. Generally these are tidal, wave or dam storage schemes.
- Nuclear: Nuclear power plants use the energy released from the nucleus of an atom to create steam which then drives turbines and produces electricity. Nuclear is a low carbon technology. Plans for a new British nuclear plant at Hinkley Point have recently been announced.
- Biomass: Biomass burns biodegradable material such as food waste, trees or animal manure to create thermal power.
- Solar: Solar panels capture the energy of the sun's rays and convert it into electricity. Solar power is growing as the panels become cheaper to produce. Many members of the public are installing their own solar panels to cut down on the amount of electricity they buy.

Average electricity generation mix in 2013 (DECC)			
Coal	36.3%	Gas	26.8%
Nuclear	19.8%	Renewables	14.8%%
Oil	0.7%	Other	1.5%%