

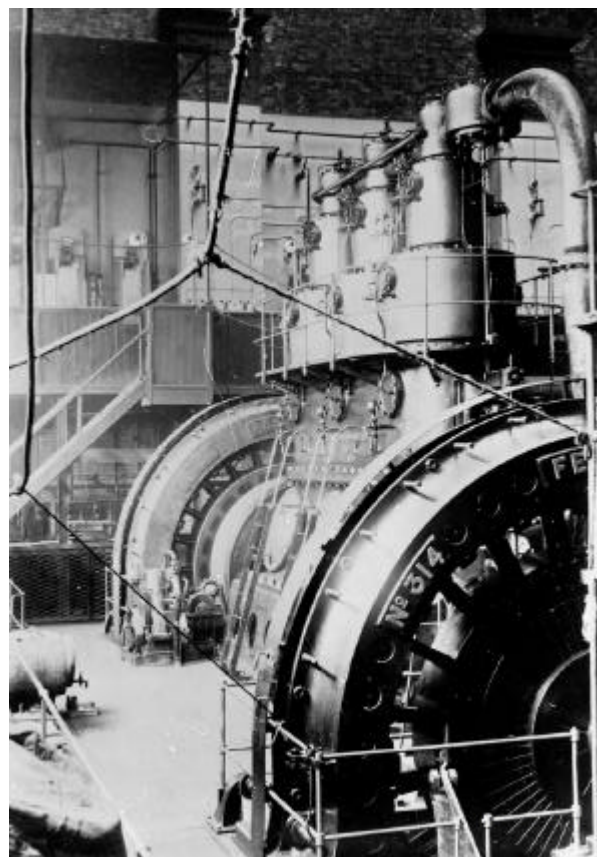
Electricity in Britain

The Museum holds a number of major collections relating to the British electricity supply industry and Manchester-based electrical engineering companies. Its archive collections include the company records of the Electricity Council and Ferranti, the photographic archive of GEC, Trafford Park, and personal papers of GEC employees. Object collections include those of Norweb, Ferranti, the Electricity Council and the local electrical engineer G. S. Fowler.

The electricity that we take for granted today has only been readily available since the 1880s. Below is a series of important dates in the history of electricity experimentation, generation and supply.

- 1800** The Italian physicist Alessandro Volta invented the Voltaic pile, the first battery capable of producing high electric currents.
- 1808** The English chemist Humphrey Davy demonstrated a carbon arc lamp, the first type of electric lamp.
- 1820** The Danish scientist Hans Christian Oersted found that a needle suspended from cotton moved in the presence of a 'live' conductor connected to a Voltaic battery. He had discovered that electricity and magnetism are interrelated.
- 1821** The English scientist Michael Faraday experimented using Oersted's idea. He discovered that a magnet could be made to rotate around a current-carrying wire, or vice versa, thus forming an early electric motor.
- 1831** Faraday discovered electromagnetic induction. He used this finding to make a dynamo, consisting of a magnet rotating inside a coil of wire. The magnet set up an electric current in the wire.
- 1876** The Jablochkoff candle, an improved type of carbon arc lamp, was introduced. It was widely used for lighting in public places.
- 1878** Joseph Swan exhibited the first incandescent carbon filament lamp at a meeting of the Newcastle-on-Tyne Chemical Society. Arc lamps were too bright for domestic use, whereas the new lamps were smaller and more manageable.
- 1881** The Swan Electric Light Co. was formed. The Edison Electric Light Co. was formed in the same year. The two merged in 1883 to form the Edison & Swan United Electric Light Co. Ltd.
- 1881** The first public electricity generator in Britain was installed in Godalming, Surrey.
- 1882** The Electric Light Act was the first public measure dealing with electricity supply.
- 1882** Dr John Hopkinson, professor of electrical engineering at Kings College, London and consulting engineer to English Edison Electric Light Co. patented his three-wire system of direct current distribution.
- 1886-** 'Battle of the Systems' – alternating current (AC) versus direct current (DC). John
- 1900** Hopkinson and Sir William Thomson (from 1892, Lord Kelvin) supported DC; Sebastian Ziani de Ferranti and Prof. Sylvanus Thompson supported AC. AC is now used for distribution.

- 1897** The British physicist John Joseph Thomson confirmed the existence of the electron, the sub-atomic particle which carries electric charge.
- 1900** Several Acts of Parliament were passed whereby power companies were granted rights in perpetuity to supply electricity to authorised undertakings and for industrial and manufacturing purposes.
- 1926** The Electricity Supply Act introduced the first effective national co-ordination. The Central Electricity Board was created to concentrate the generation of electricity in a limited number of power stations. These stations were to be interconnected by a national grid, which was largely completed by 1935.
- 1947** The first atomic reactor in the UK opened at Harwell. The Electricity Act brought the power supply in England, Wales and southern Scotland under public ownership. Fourteen area electricity boards were created with shared responsibility for the retail distribution of electricity to consumers. The British Electricity Authority (BEA) was created to co-ordinate generation and main transition. It was renamed the Central Electricity Authority (CEA) in 1954.
- 1948** On the 1 April, the BEA and Area Electricity Boards became responsible for electricity generation and supply.
- 1956** The world's first commercial nuclear power station opened at Calder Hall, Cumbria.
- 1957** The Electricity Act created the Electricity Council and the Central Electricity Generating Board (CEGB). The Electricity Council was set up to promote the electricity supply industry in England and Wales. The CEGB took over responsibilities from the CEA.
- 1986** A nuclear reactor at Chernobyl exploded. Ten years later, nuclear fallout continued to affect some British farms.
- 1990** The Government privatised the electricity supply industry, excluding nuclear power stations. Electricity generation was split between National Power, Powergen and Nuclear Electric. The regional electricity boards were also privatised: for example, NORWEB became United Utilities. As a result, they ceased to hold regional monopolies to supply electricity.



Ferranti alternators at Deptford Power Station, London, c. 1900.

For more information:

- Read** Poulter, J. D. *An early history of electricity supply*. London: Peter Peregrinus Ltd, 1986.
 Hannah, Leslie. *Electricity before nationalisation*. London: Macmillan, 1979
 Hannah, Leslie. *Engineers, managers and politicians: the first fifteen years of nationalised electricity supply in Britain*, London: Macmillan, 1982.
- Visit** The Museum's National Electricity Gallery