

Electrical Engineering



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One of the largest global industries, the Electrical Engineering industry produces a broad range of products, ranging from consumer products to turbines, trains, power grids and power stations.

Historical development



Davenport's electric motor patent first shared the benefits of electrical engineering with the world.



"What hath God wrought" Morse invented and patented the electrical telegraph in 1837, paving the way for global communication.

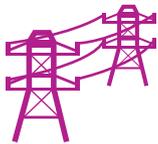


UK adults now spend longer each day on electronic media devices than sleeping.

The industry today

Electrical and electronic engineers form the world's largest professional association – The Institute for Electrical and Electronic Engineers has 430,000 members. Its goal is to 'advance technological innovation and excellence for the benefit of humanity'.

Major applications of electrical engineering:



Generation and delivery of electricity



Components for manufacture of electrical and electronic devices

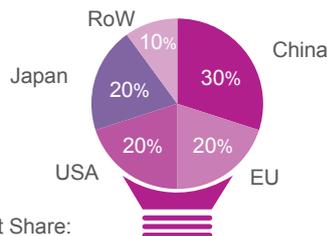


Consumer electronics

Major players in the industry



Estimated size of global electrical and electronic engineering industry.



Global Market Share:

Top three companies:



Samsung



General Electric



Hewlett-Packard

5 of the world's 10 largest manufacturing companies specialise in electrical and electronic engineering.

The future for the industry



Small - technology on a nano-scale sees micro-chips assembled from individual molecules and batteries smaller than a human cell.



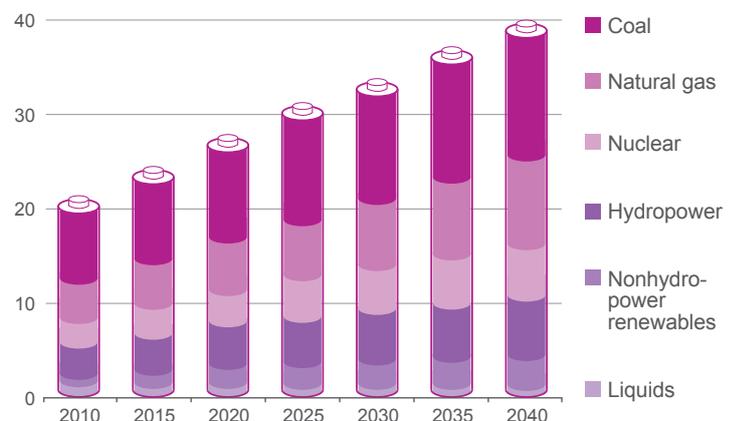
Green - Electrical and electronic engineering community focusing on new technologies in green information and communications technology, and electric vehicles.



Connected - Computing and telecommunications sectors vital in delivery of health services across the developing world via mobile care-givers with electronic devices.

All sources remain important and continue to grow in the next 25 years. Non-hydro renewables more than double in volume and are forecast to contribute 9% of all electricity generated in 2040.

Volume of electricity generated in trillion kwh



Insight

Replacing batteries with supercapacitors will provide electric vehicles, mobile telephony, renewable energy generation and nano-technology with smaller, more reliable power sources.



Harnessing renewable energy efficiently, reliably and on a massive scale essential to meet future demand for affordable electricity.



As standards of living rise in the Developing World, energy efficiency is key to controlling global demand for electricity.



To follow Estonia as the first country with a nationwide network of fast charging points for Electric Vehicles.