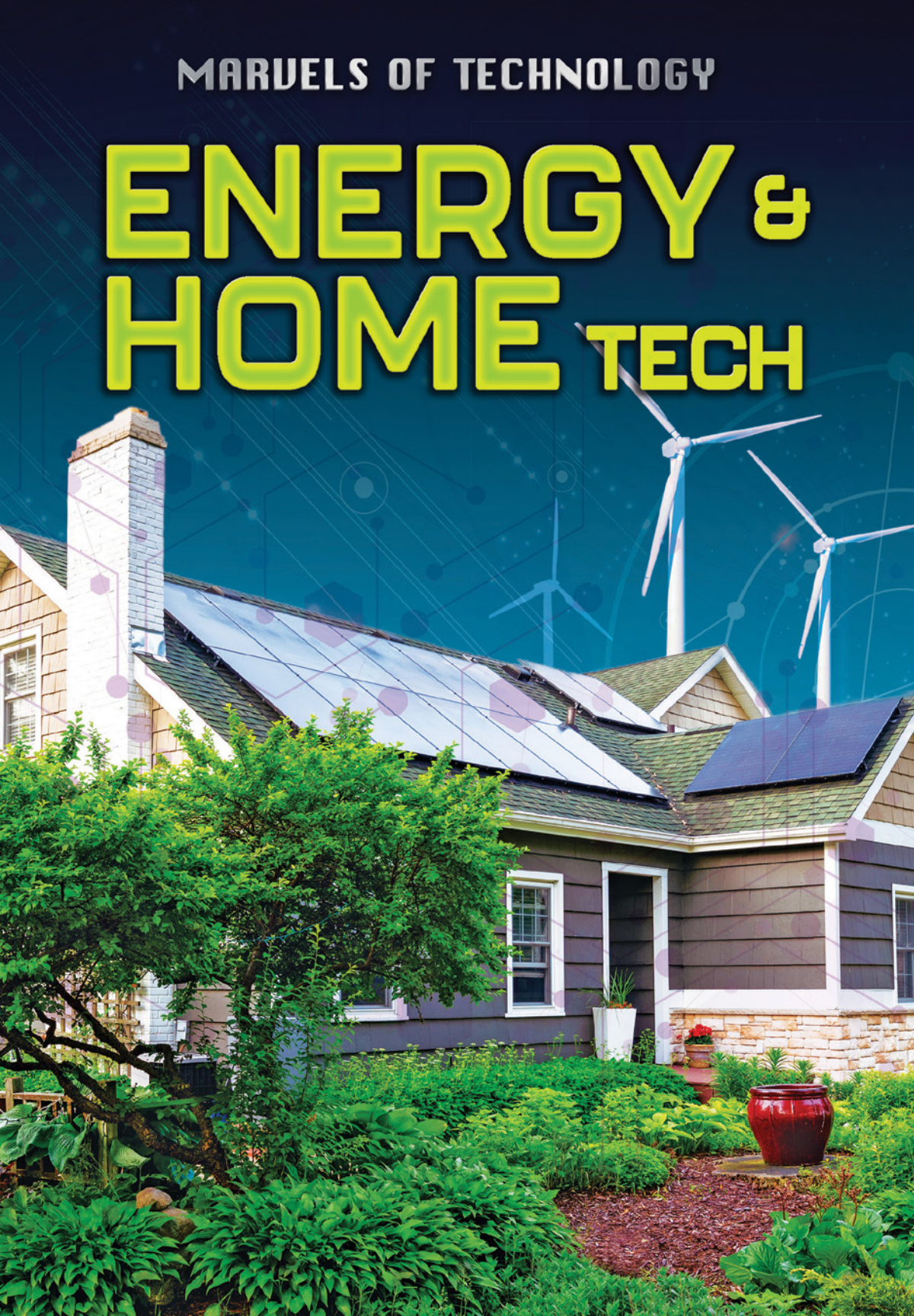
MARVELS OF TECHNOLOGY

ENERGY & HOME TECH



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Charging Our Lives

At its most basic, technology is simple. It's the application of scientific knowledge to create things that solve problems and make our lives easier, safer, and sometimes even more friendly to the environment. But what technology can do is pretty amazing.

Meeting Our Needs

New technologies are developed to meet the needs we have. For example, it's a lot of work to wash and dry clothes. But automatic washing machines can do most of that hard work for many people.

Solving Problems

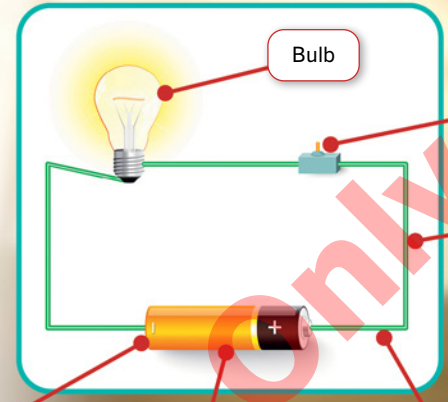
Technology changes as our needs change. When fossil fuels are burned, they release carbon dioxide into the atmosphere, which traps heat. As a result, our planet is warming and our climate is changing. Solar power and biofuels are alternative energy sources that have been developed to reduce our use of fossil fuels and their associated heat-trapping gases being pumped into the atmosphere.

Designing the Home of Tomorrow

Every day, designers are working to solve global warming and climate change by developing ways to generate energy without burning fossil fuels. Their main goal is to make our energy sources cleaner and more sustainable while also making our homes safer and more comfortable.

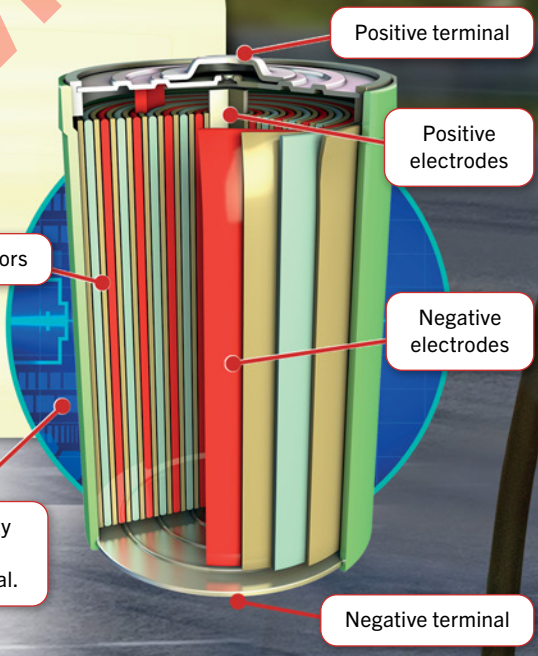
Batteries

Batteries contain chemicals that store energy until needed. They provide a mobile source of power. Each battery has a positive and negative terminal. When the two terminals are connected by wires, they form a circuit. The circuit allows electrons to flow from the negative terminal to the positive terminal in order to power a device.



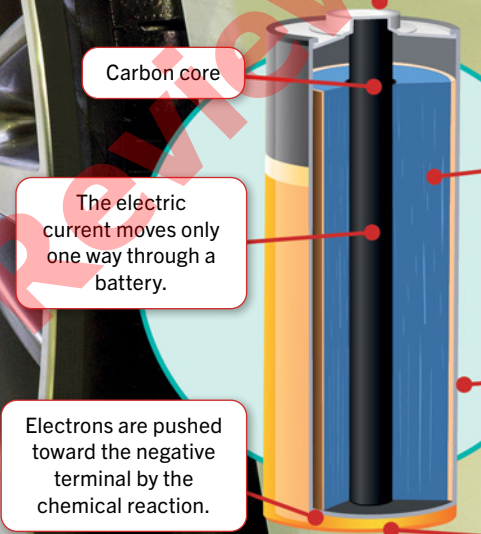
Rechargeable Batteries

Some batteries are rechargeable. A hybrid car engine turns a miniature electric generator, called an alternator, to feed electric current back into the battery to recharge it. The batteries in phones, tablets, and laptops use electricity from wall plugs to recharge. The electrical energy is converted into chemical energy inside the battery.



DID YOU KNOW? Recycling your batteries is better for the environment.

Electric cars have batteries that power an electric motor. They can be recharged using electricity from a charging unit.



INVENTOR

Inventor: Alessandro Volta

Invention: Battery

Date: 1799

The story: Italian physicist Alessandro Volta invented the first electric battery, called the voltaic pile. It provided a steady, portable flow of electrical current. Other inventors have adapted Alessandro Volta's battery to develop more advanced energy storage technologies.

Electric Power

Electricity can be generated by burning fossil fuels, such as coal, oil, and gas. It can also be created by harnessing the power of wind, water, the sun, or nuclear reactions.

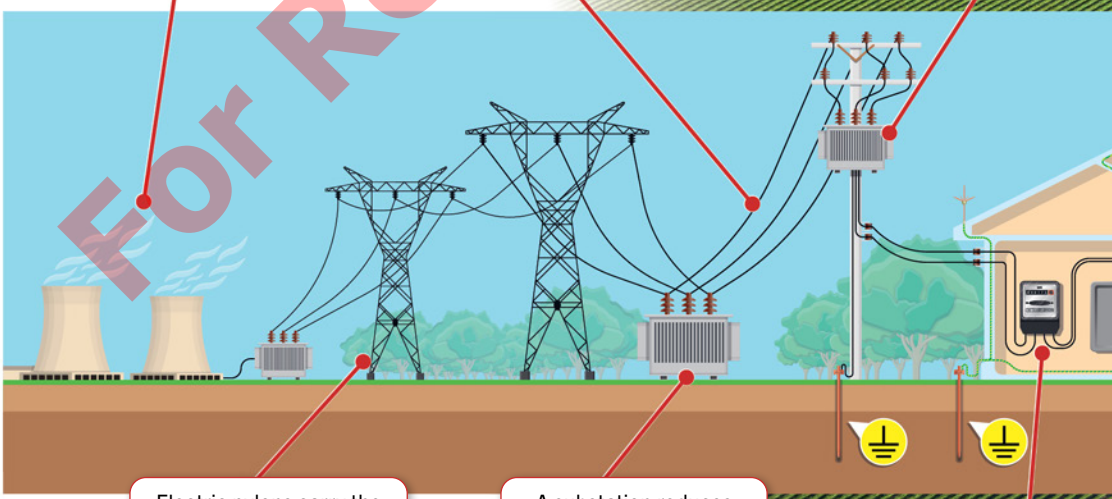
Hydropower

Dams store water in reservoirs. When water is released from the reservoir, the water flows through a turbine, making its blades rotate. The mechanical energy is converted into electrical energy, which creates power in the generator.

In power stations, high-pressure steam or water turns a turbine. This causes a magnet to spin inside coils of wire. As the magnet rotates, it produces electricity.

An electrical charge travels through high-voltage wires.

Transformers on top of the distribution lines reduce the voltage again so the electricity can safely power our homes.



Electric pylons carry the high-voltage wires over long distances.

A substation reduces the voltage and passes it to distribution lines.

Electric meter

INVENTOR

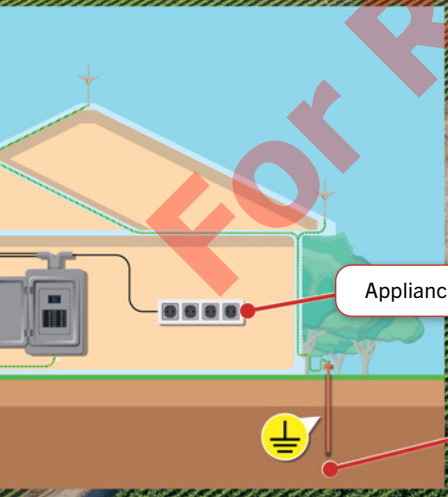
Inventor: Michael Faraday

Invention: Electric generator

Date: 1831

The story: British inventor Michael Faraday invented an electric generator. It had a magnet, which moved inside a coil of copper wire to create an electric current.

Electricity is generated when the wind turns the blades of a wind turbine. The more wind there is, the more electricity that is generated.



Appliance outlets

An earth electrode is a pipe or other conductor that is partly buried. It conducts electricity safely into the ground.

DID YOU KNOW? In 1882, Thomas Edison opened the first electric power plant. It sent power to 85 customers in New York City.