

8.3.1 DEVELOPMENT OF ELECTRICITY

Society has become increasingly dependent on electricity over the last 200 years

1.1 Discuss how the main **sources of domestic energy** have **changed** over time

- 1.5 mil years ago Before: source of energy was sunlight or muscles, fire from wood
- 5000 years ago Wind and water – boats
- Industrial Rev. Coal – increased industrialisation 18th/19th Century
- **1831 Faraday and Henry** through discovery of **electromagnetic induction** (mechanical → electrical energy)
- **Today** – fossil fuels (**coal, oil, natural gas**) as well as **hydro, nuclear, wind and solar**
 - **Fuel burning** power stations to produce **heat energy**, boiling water to pass **steam** through **turbine**
 - **Hydro and Wind** – kinetic energy to turn turbines
 - **Nuclear** – heat from nuclear reactions
 - **Solar** – energy from sunlight

1.2 Assess some of the **impacts of changes** in, and **increased access** to, **sources of energy** for a community

- **Wood** and fire helped **keep animals away, cook food**, harden sticks for **weapons** and **warmth** for cold
- **Domesticated Animals** to produce **more food, transportation** and **population increase**
- **Wind and water** used for boats and windmills, meaning **more trading** and more **efficient production**
- **Coal** – **steam engine**, production of **steel alloy**, but **spread of diseases** and **pollution**
- **Coal gas** – street lighting for **safety** at night
- **Renewable resources** to reduce increased **environment issues** and **pollution**, such as acid rain
- Reduction of **housework** has caused increases in **women in the workforce** in society

1.3 Discuss some of the ways in which **electricity** can be **provided in remote locations**

- Remote places can use **small generators** where turbines are rotated by an **internal combustion engine** with **petrol or oil** – diesel fuelled **portable electricity generators**
- **Solar power or wind generators** may be used