National Electricity Network

Name: _____

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National Electricity Network

- National Network
- Coal Power Station
- Alternative Resources

Eskom (the national electricity network) is responsible for:

- Generating electricity
- Transmission over long distances
- Spreading to consumers

Interactive Network

- Change at one part of the network influences the other parts of the network
- A transmission system connects all the generating stations to the national network

Generating stations connected to one network

- Network overload disrupts the electrical supply
- The entire electrical system is more reliable
- Power stations are thus placed closer to sources
- One power station won't necessarily lead to a shortage of electricity for an area

Coal Power Stations

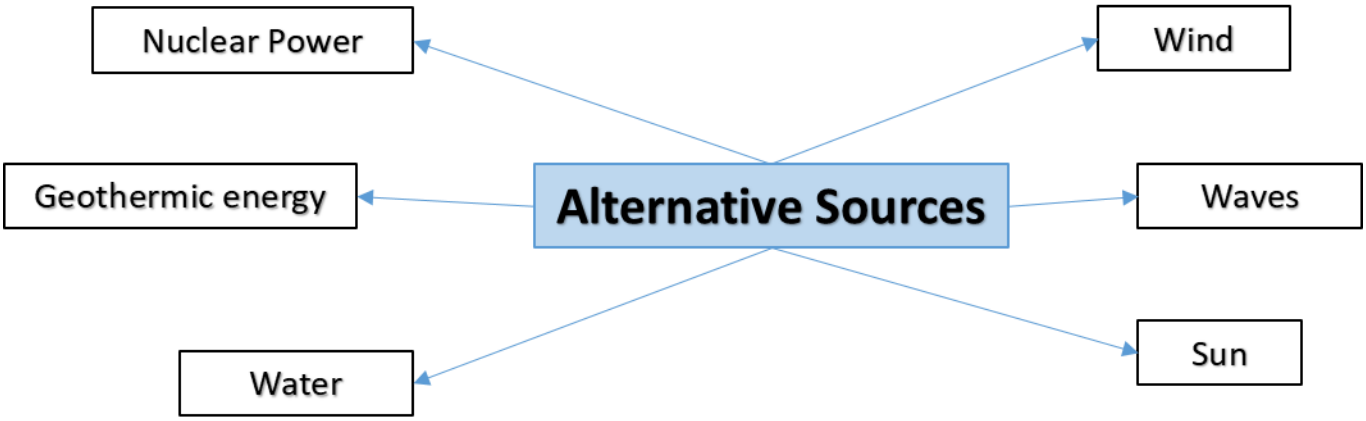
- Main source of generating electricity where coal is burned to boil water. The steam activates electrical turbines and generates electricity.
- Power stations are usually built close to a coal mine

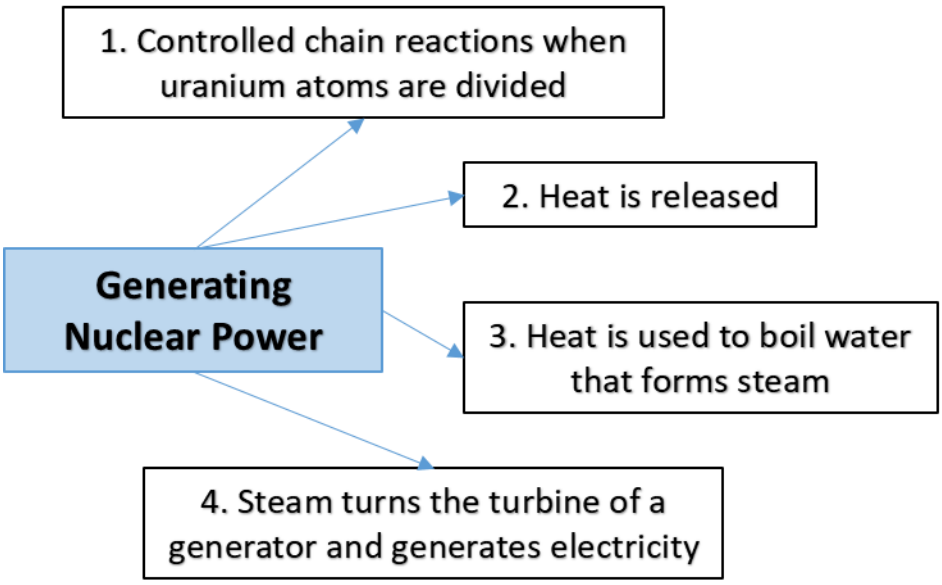
Process of coal burning power station that provides electricity

1. Coal is delivered to power stations
2. Coal is powdered and transported from the storing area to the kettles
3. Coal is burned to let kettle tubes, filled with water, boil
4. Steam moves through the pipes to a turbine to make the turbine turn at a high speed
5. The steam goes from the turbine to the condenser where it is cooled in water
6. Water flows back to the kettles
7. The central part of the generator is formed by the turbine force that rotates large magnets inside wire windings
8. Movement of the magnetic fields produces current
9. Potential difference is lowered by transformers for the consumer

Transformers

- Large power stations deliver 25000 volts
- For successful transport the potential is increased by the transformers
- For the consumer the potential is lowered


Nuclear Power
Wind
Geothermic energy
Alternative Sources
Waves
Water
Sun


1. Controlled chain reactions when uranium atoms are divided
2. Heat is released
Generating Nuclear Power
3. Heat is used to boil water that forms steam
4. Steam turns the turbine of a generator and generates electricity