

# Which energy sources for the future? – I



Electricity is needed to power electrical appliances, machinery and different forms of transport. The source of energy has to come from somewhere and it can be either sustainable or unsustainable.

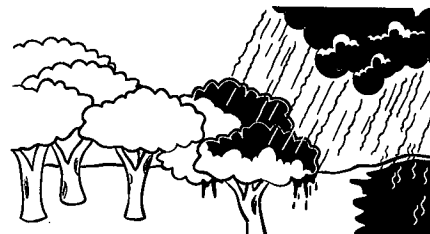
Sustainable sources of energy will not run out. They are available for this generation and for all generations that follow. Examples of sustainable energy sources are the sun (solar energy), wind, water, tides and the heat from the earth's core (geothermal energy). Producing electricity this way creates relatively little pollution.

Unsustainable sources of energy are those produced by fossil fuels; coal, oil and natural gas that formed millions of years ago from the remains of dead plants and animals. They are unsustainable because once they are used up, they can not be replaced. We now know that burning fossil fuels to generate electricity creates environmental problems that damage the health of the planet; for example:

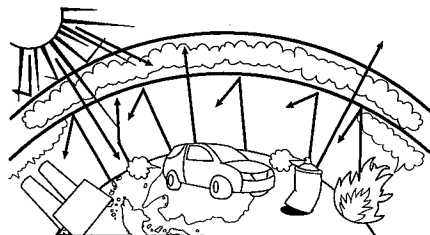
**Toxic waste:** Toxic waste from fossil fuel combustion can seep into soil and water, damaging plant and animal life and destroying ecosystems.



**Acid rain:** Burning fossil fuels releases damaging gases that rise into the atmosphere, and can combine with water vapour and fall as acid rain. Acid rain damages plant and animal life, and the soil, inhibiting crop growth.



**Greenhouse gases:** The gases released from fossil fuels have the effect of trapping heat within the Earth's atmosphere. This may cause global warming and changes to the climate. If changes to climate do occur, rainfall may decline and average temperatures may rise.



**Ozone layer depletion:** The Earth is protected from certain types of harmful sunrays by the ozone layer, which works like a protective blanket within the atmosphere. The build up of certain manufactured gases has depleted the strength of the ozone layer and allows greater amounts of types of harmful solar rays to reach the Earth's surface.



**Oil slicks:** Transport accidents involving liquid fossil fuels have caused environmental disasters; for example, oil slicks from damaged oil tankers have spread across beach and ocean, destroying local habitats and wildlife.



Access to sustainable sources of energy varies across the globe.

- Regions with high volcanic activity can make use of geothermal energy.
- High altitude areas or those with exposed coastlines favour wind energy.
- Areas in the tropics where the hours of daylight are relatively constant throughout the year, could effectively utilise solar power.

We need electricity but we don't need to burn fossil fuels to produce it. Renewable energy sources can be used to generate electricity with minimal impact on the environment.