

ENERGY CRISIS AND ENERGY ALTERNATIVES



Fill in the blanks using words from the word list.

Word List: sunlight, electricity, strong, stations, fuels, polluting, out, oil, electricity, cooking, environment, world, methane, electric, solar, plant, energy, heating, gas, generate, cheap, dams, waves, New, out, stations, tides, crisis, cheap, burnt, cane, water, bills, power, years, earth, energy, mud, electricity, heating

With population growth comes increased usage of energy. The energy c_____ is the inability of the earth's resources to keep pace with the population's needs. The solution to the energy crisis is twofold – build more p_____ stations to supply more e_____, or reduce the usage of energy by building more energy-efficient devices.

There are 2 types of energy sources – non-renewable and renewable.

NON-RENEWABLE ENERGY SOURCES

- ◆ e.g. fossil fuels (coal, oil, natural gas) and nuclear energy (uranium, plutonium)
- ◆ Takes a long time to form (e.g. millions of years)
- ◆ Cannot be reused

Advantages

- ◆ Cheap
- ◆ Readily available
- ◆ Efficient
- ◆ Multipurpose (e.g. oil for cars, heating)

Disadvantages

- ◆ Running out
- ◆ Polluting or radioactive

RENEWABLE ENERGY SOURCES

- ◆ e.g. biomass, solar, wind, wave, tidal, hydroelectric, geothermal
- ◆ Takes a shorter time to form (e.g. decade or two)
- ◆ Can be reused or is very abundant

Advantages

- ◆ Won't run out
- ◆ Environmentally friendly

Disadvantages

- ◆ Geographically selected
- ◆ Inefficient

NON-RENEWABLE ENERGY SOURCES

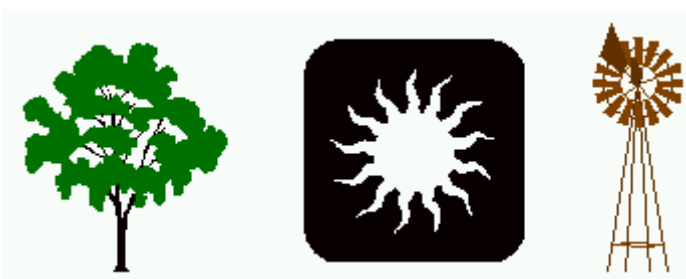


Fossil fuels began forming millions of y_____ ago. At the time when it is believed that dinosaurs roamed the e_____, forests of trees fell into swamps and were covered by silt and m_____. They gradually changed into the coal, o_____ and natural g_____ that we use today.

The advantages of using fossil fuels are that they are readily available at the present time and are c_____. They can also be used for many purposes e.g. coal can be b_____ in power stations to make e_____ and also in homes for h_____.

These fossil f_____ took millions of years to form, yet humans are using them rapidly in cars, power s_____ and factories. They will probably run o_____ within the next 100 years. So the disadvantages of fossil fuels is that they will run out, and also that they are p_____.

RENEWABLE ENERGY SOURCES



Biomass is plant matter that is used as an e_____ source. For example, timber can be burnt for both cooking and h_____ in many homes around the world. Methane gas that is flammable can be made from rotting p_____ vegetation in m_____ digesters. Also alcohol made from sugar c_____ can be used as an environmentally-friendly alternative to petrol.

Solar Energy can be used in many ways. Buildings can be designed to take advantage of the sun's warmth in the winter so that we don't use e_____ heaters. Solar hot w_____ heaters can reduce our electricity b_____. Photovoltaic or s_____ cells can generate

electricity. Solar energy is particularly useful here in Australia because of our abundance of s_____.

Hydroelectric Power Stations are initially expensive to build but are c_____ to run. They can be located in mountainous areas where water is stored in d_____ and then released to turn turbines that generate e_____.

Wind Energy from windmills can be used to g_____ electricity by turning turbines in the same way as in hydroelectric power stations. These are particularly useful in areas close to the coast where the winds are s_____ and continuous.

Wave and Tidal Power can be used to generate e_____ from the rise and fall of the w_____ and the t_____. These forms of power can only be utilised at the moment in places such as Darwin where the tide rises and falls through a considerable height very rapidly.

Geothermal energy is energy harnessed in areas of the earth that are near volcanoes or hot springs such as in Rotorua in N_____ Zealand. The heat can be used for c_____ and heating in homes. It can also be used to generate electricity by heating steam to turn turbines.

The advantages of using renewable energy sources is that they won't run o_____ and they are friendly to the e_____. Unfortunately, they are not as efficient in producing electricity as coal-powered power s_____. Also another disadvantage of solar, wind, wave, tidal and geothermal energy sources is that they can only be used in certain areas around the w_____.

Because Australia has a lot of sunlight and many places where we could use wind, wave and tidal power, more research must be done in these areas for our future e_____ use.