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Energy Resources

Energy is a fundamental concept in physics that is often defined as **the capacity to do work**.

Energy can be observed in different forms:

- **Light**: Sun, an electric light, candle, fire, flashlight, lightning
- **Heat**: Sun, a stove, candle, fire, a hot roof, inside a car that was parked in the Sun
- **Movement**: flowing rivers, wind, driving, riding, the movement of ocean waves

Humans require energy for their homes, transport, agriculture and industries. This energy comes in the form of chemical, mechanical, fossil, nuclear and renewable energy.

The most common forms from which humans derive the energy needed for their homes, transport, agriculture and industries are:

Fossil Energy, **Renewable Energy** and **Nuclear Energy**

FOSSIL ENERGY

Fossil Energy includes oil, gas and coal. It has taken millions of years to form the fossil fuels which we are using today. The supply of fossil fuels is limited.

Oil can be refined into petrol, diesel, paraffin and other liquid fuels used to power motor vehicles and to provide heat and light. Coal is normally burnt in large power stations to produce electricity

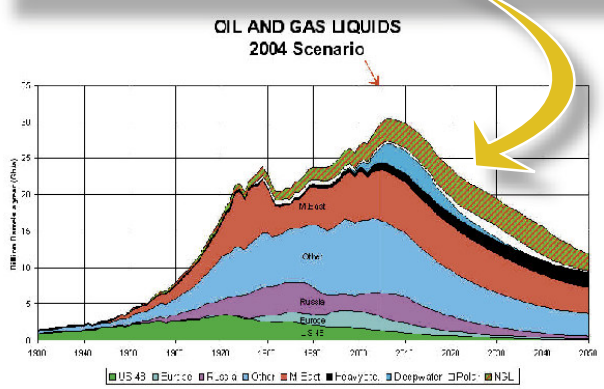
Fossil fuels cannot be recyled, thus once they are used, they cannot be reused.

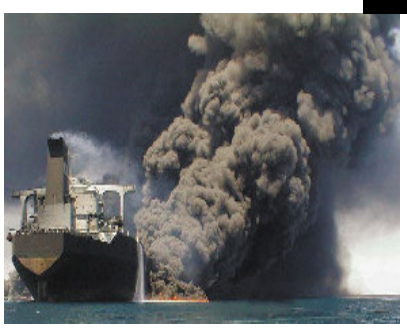
Although most of the world's energy requirements are satisfied with fossil fuels, these fuels are not distributed equally and have to be transported across great distances.

The exploitation and transport of fossil fuels results in large amounts of pollution. When oil is allowed to contaminate soil or water it may take many years for the affected ecosystems to recover.

Carbon dioxide is a gas that is released when fossil fuels are burnt. For the last 200 years, since we started burning fossil fuels in vast quantities, this gas has accummulated in the erth's atmosphere and is now contributing to global warming and climate change.

Fossil fuels are a finite resource. In recent years the reserves of fossil fuels have been decreasing, which has caused prices to increase. It is therefor important to find alternative energy sources.





RENEWABLE ENERGY

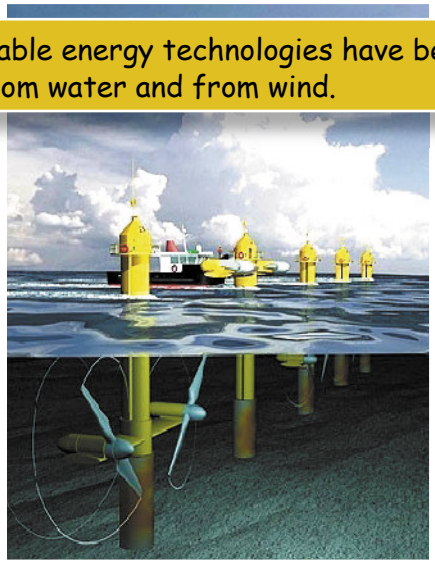
Most renewable energy resources come directly or indirectly from the sun. They are regarded as renewable because their source is virtually unlimited. If you use it, it renews itself instantly or within a relatively short time.

Renewable energy includes solar energy, wind energy, biomass energy, water energy and geothermal energy.

Renewable energy technologies are often also regarded as clean technologies since they cause far less pollution and have less negative environmental impacts than fossil fuels. This does however not always apply:

- Biomass energy (such as energy from wood) can cause significant pollution within homes and deforestation if trees are cut down faster than they can grow.

The support from governments and industry towards renewable energy is growing rapidly as the availability of fossil fuels is decreasing.



Renewable energy technologies have been designed to produce power from the sun, from water and from wind.

NUCLEAR ENERGY

Nuclear energy is produced from a mineral called Uranium. It is mainly used for the production of electricity. Although large amounts of electricity can be generated by a nuclear power station, a number of challenges remain unsolved:

- it is a finite resource, so it is not renewable
- the extraction and processing of Uranium pollutes the environment
- the left-overs from nuclear power stations are extremely poisonous for many thousands of years
- permanent and cost-effective nuclear waster disposal remains a major concern internationally

Nuclear energy can have destructive power.

The symbol of nuclear radiation.

Different types of nuclear power stations exist. This one, called Koeberg, is situated near Cape Town in South Africa.

Additional Information

http://en.wikipedia.org/wiki/Fossil_energy

http://en.wikipedia.org/wiki/Renewable_energy

http://en.wikipedia.org/wiki/Nuclear_energy

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