# Sources of Energy

The largest source of energy on land is sunlight. There are different purposes for which energy is needed such as for food, for lightning, transport, running machines etc.

A good source of energy should be-

- Cheap and easily available.
- Safe in handling and use.
- Do not cause any environment pollution.
- Easy to store and transport.

## Fuels

Materials that are burnt and used to store energy are defined as fuels. **For Example**, Wood, Coal etc.

### Features of Good Fuel-

- It should have high calorific value.
- It should not produce smoke while burning.
- Cheap and easily available.
- Easy to handle and safe to transport.
- Convenient in storage.

## Sources of Energy

There are two types of Sources of Energy - Conventional Sources of Energy and Non-conventional Sources of Energy. Conventional sources of energy include the fossil fuels such as coal and petroleum. Non-conventional sources include solar cooker, solar cell panel etc.

## Conventional Sources of Energy

**Fossil Fuels**

- These fuels are developed from fossils.
- They are present in limited amount.
- They are non-renewable sources of energy.

These fuels cause pollution. They release different oxides which causes acid rain which damages plants, animals, houses etc. Excessive release of carbon-dioxide also causes global warming.

Pollution by the fossil fuels can be controlled by increasing the efficiency of combustion process and using other techniques to escape the harmful gases.

**Thermal Power Plants**

Thermal power plant is used to generate electricity using heat. Burning of fossil fuels produces the steam which is used to run the turbines. This method helps in efficient transmission of electricity.

**Hydro Power Plants**

Use to convert potential energy of falling water into electricity. They are associated with dams. They do not cause any pollution. Dam construction also prevents flooding of rivers and also provide water for irrigation.

But there are certain disadvantages associated with hydro power plants. Large areas are needed for hydro power plants. Human settlement is affected as well as large ecosystems are destroyed.

**Biomass**

The dead remains of plants and animals is known as **Biomass**.

**Wood:** It produces biomass and can be used as fuel for a long time. It produces smoke during burning. It does not produce much heat.

**Charcoal:** When wood is burnt in limited supply of oxygen, it produces charcoal. Charcoal is a better fuel than wood as it has high calorific value. It does not produce smoke while burning.

**Cow Dung**: It produces lots of smoke. It does not completely burn. It has low calorific value. It also produces ash.

**Bio Gas:** Biogas plant produces biogas. It is an excellent fuel. It leaves no residue. Has a very high heat capacity. Biogas plant is used to treat farm wastes or energy crops. Biogas plant consists of large tank or digester. In this bacteria convert organic waste into methane gas using energy.

**Wind Energy:** Unequal heating of the water bodies and the landmasses by solar radiations will generate air movement and cause the wind to blow. This energy is used to generate electricity. It is an eco-friendly method and an efficient source of renewable energy.

## Non-conventional Sources of Energy

**Solar Energy**: solar energy is the ultimate source of energy. There are different solar energy devices such as Solar Cooker, Solar Water heaters, Solar cells etc.

Energy from the sea comes from surface waves and tidal power is obtained from kinetic energy of large bodies of moving water. Ocean water provide large amount of renewable energy.

Solar cooker use minimal fuel consumption and is a device that uses direct sunlight to cook or heat the drinks, food materials etc.

Solar cell is an electrical device that converts light energy into electricity. It is based on physical and chemical formula.

**Geothermal Energy**: energy from the rocks present inside the earth. It does not cause any pollution and economic also. But the disadvantage is that, it is not available everywhere.

**Nuclear Energy**: nuclear fission and nuclear fission helps in generation of nuclear energy. Fission involves the splitting of heavy nucleus of a radioactive atom. Nuclear fusion occurs when heavy nucleus is combined to release large amount of energy.

**Environment Consequences**

No source of energy is pollution free. They cause little or more pollution. Though solar cells do not produce any pollution, but its set up can cause environmental damage.

# Thank You

## Wisdom Education Academy Mob: 8750387081