

Types of Non-Conventional energy:

1. Solar Energy
2. Wind Energy
3. Hydro energy.
4. Geo-thermal energy.
5. Biofuel.
6. Biogas energy.

Solar Energy:

Energy obtained from sun in the form of light & heat. Energy derived from solar radiation.

Solar energy received by the near earth space. i.e, approximately $1.4 \text{ kilojoules/sec}$ is known as a Solar Constant.

The heat energy obtained from sun is utilised in solar heating devices like solar cooker, solar water heater, solar furnaces etc. And the light energy is utilised in solar cells.

Solar Cookers: Box type solar cookers has an insulated box painted black inside. It is covered by glass plate which allows heat to enter inside but does not allow heat to escape out. It has a mirror which reflect.

more sunlight inside the box. The food to be cooked is kept in containers inside the box. Solar cooker can produce a temperature of 100° to 140°C .

Solar water heater;

Solar water heater has an insulated box painted with black inside with a system of copper tubes. It is covered with glass plate which allows heat to enter inside but does not allow heat to escape out. When water flows through the copper tube it absorbs heat & becomes hot.

Solar cell: Also known as a photovoltaic cell, it is a device that converts sunlight directly into electricity using photovoltaic effect. It is made up of semiconductor materials, such as silicon, which absorbs photons from sunlight & electrons are released. These electrons flow through an external circuit, & generates electric current. A single solar cell produces voltage of about 0.5 to 1V & produces about 0.7W electricity.

Characteristics of Ideal fuel:

1. High calorific value. - Fuel should possess a high calorific value means on combustion fuel should process lot of heat.
2. Moderate Ignition temperature: The temperature of the fuel at which ignition starts & continues to burn without further addition of heat is called Ignition temperature. Too high ignition temperature causes difficulty in building fire & too low ignition temperature may create safety problems during storage, transport & use of fuel.
3. It should have low smoke & Combustible matter such as ash. It should not give out harmful combustion products. This property depends on the nature of elements present in fuel.
4. The velocity of combustion should be moderate.
5. The fuel should be such that a safe & clean operation is ensured.
6. It should be safe, convenient and economical for storage & transport.
7. It should be inexpensive & readily available.
8. Easy to control.