**ENERGY**

**Energy**

Energy is defined as the ability or capacity to do work.

**Fuel**

The substance that reacts chemically with another substance to produce heat or produce heat by nuclear process is called fuel.

The SI unit of heating value of fuel is JKg-1.

**Classification of energy sources.**

The source of energy area classified into

1. Primary
2. Secondary

**Primary Sources**

The sources of energy which can be used in the same form in which they occurs in the nature is called primary sources of energy. For eg: Wood, coal, crude oil.

**Secondary Sources**

Those spurces of energy which are derived from primary sources of energy are called secondary source of energy. For eg: coal gas, bio-gas, petrol etc.

**Based on replacing period energy can be classified into:**

1. **Non-renewable sources**
2. **Renewable Source**

**Non- renewable sources**

Non- renewable sources of energy are found to be accumulated in nature over a very long time abd they cannot be quickly replaced when exhausted at their place of origin.

For example: coal, natural gas, petroleum etc

**Renewable Sources**

Renewable source is the sources of energy that can be replaced immediately if they are exhausted at their place of origin.

For example: bio-gas, hydeopower, tidal energy, wind energy etc.

//Difference between renewable and non-renewable energy

**Major sources of energy**

1. **Solar Energy**

* The solar energy is the perpetual source of energy.
* Sun emits 2.7\*1024 KW energy every second.
* The earth gets 2.6\*1022 Joule energy every second.
* The total solar energy potential of Nepal is about 26.6 million MW.

**Limitations of Solar Energy**

1. Solar energy reaches the earth in a very diffused form. This diffused solar energy is too small for doing useful work. About 47% of the solar energy is reflected back by the atmosphere.
2. It is not available uniformly all the time and at all place.
3. It is not available during the night and cloudy days.

**Traditional uses of solar energy**

1. It has been used for drying clothes, obtaining salt from seawater, reducing moisture content in food grains after harvesting crops.
2. By the process of sun drying, solar energy has been used for the preservation of fruits vegetable fish etc.

**Present uses of solar energy**

1. Solar energy is used either by converting solar energy into heat or electricity.
2. Uses of solar energy does not produce any environment pollution.

**Solar Cell**

A device which convert solar energy directly into electricity is called solar cell.

**Solar Pannel**

A group of cells joined in a particular way is called solar panel.

**Sun as the ultimate source of the energy**

The green plants prepare food by the process of photosynthesis in the presence of sunlight i.e solar energy and all animals are dependent upon green plants for their food and get energy from plants. So bio-mass energy is the derivative of solar energy. Similarly fossil fuel, hydropower, wind energy are also bio-products of the solar energy. Hence sun is the ultimate sources of energy.

2.