

Types of energy resources: On the basis

of sustainability and renewability the energy resources are classified as Conventional and non Conventional energy resources.

Conventional energy resources: The energy resources

which are used during 1950-1975 are called Conventional energy resources and are classified as Coal, oil, natural gas, nuclear fission and hydro power. These resources are also called as Non Renewable energy resources and are available at concentrated static stock in finite quantity. The various conventional resources are

1. Coal
2. oil
3. Natural gas
4. Nuclear fission.

Coal: A sedimentary organic rock that contains more than 50% Carbon material by weight and composed of C, H, O, N, S etc. is called coal. Coal is classified as

1. Anthracite
2. Bituminous
3. Sub-Bituminous and
4. Lignite.

Anthracite : (Used primarily for residential and commercial space heating and is known as best quality of coal. It is hard, brittle, lustrous black texture contains a high percentage of fixed carbon about 90-98 % and low percentage of volatile matter with low ash contents.) It is usually contains less than 15 % moisture content (with its calorific value 8600-8700 Kcal/Kg.)

Bituminous : (The coal has 75-90% carbon contents with 25-45 % volatile matters.) (This is dense coal of black or dark brown colour and usually has well-defined bands of contrasting bright and dull material.) (It is used primarily to generate steam for electric power plant.) Substantial quantities are used for power and heat applications in manufacturing as well as to make coke. (It is the most abundant coal) It has moisture content of less than 20 % with its (calorific value 8000-8500 Kcal/Kg.)

Sub-bituminous : (The coal is dull, dark brown to black in colour,) soft, bright, jet black, hard and strong. (Used primarily as fuel for steam-electric power generation) plant and have (its calorific value 7000 Kcal/Kg.) (The carbon contents varies from 75-85%.)

Lignite: (This coal's brownish-black color) has high moisture content of 30-50 % and is the lowest rank coal. (It is often called "brown coal" and is used almost entirely as fuel for steam-electric power generation and in domestic fuel.) (The calorific value of this coal is about 6500-7000 Kcal/Kg.)

(B) Oil : (The oil is versatile fuel and used for many purposes in all energy sector.) The 80% of oil sources are utilized in transport and household application. The world's rate of production of crude oil is continuously increasing but diminished slightly after 1980 because of oil crises. (It is estimated that by 2030 the 80% of oil reserves will be consumed with its rise in price.) Fig.1.2 shows that except Middle East countries rest of world has very limited reserves.

(C) Natural Gas (Natural gas is a mixture of hydrocarbon and small quantities of non-hydrocarbons that exists either in the gaseous phase or is in solution in crude oil in natural underground reservoirs.) The natural gas is a cleaner burning source of fossil fuel than oil or coal. It is now commonly believed to offer part of the solution to climate change and problems associated with poor air quality. Once considered