



# Minerals and Energy Resources

## Mineral

A Mineral is a natural substance of organic or inorganic origin with definite chemical and physical properties. On the basis of chemical and physical properties of minerals, they can be classified into three main categories and they are:

- (i) **Metallic Minerals** such as iron, manganese, copper, lead etc.
- (ii) **Non-Metallic Minerals** such as graphite, phosphate, mica etc.
- (iii) **Energy Minerals** such as coal, petroleum and natural gas.

## Distribution of Important Minerals in India

- Minerals provide necessary base for industrial development of any country. India is endowed with a rich variety of mineral resources due to its varied geological structure but their distribution is highly uneven.
- Plateau regions of India such as the Deccan and Chottanagpur plateaus have a rich mineral distribution.

Minerals	Distribution	Highest Producing State
1. Coal	W.B, Jharkhand, Odisha, M.P and Chhattisgarh	Jharkhand
2. Copper	M.P, Rajasthan, Jharkhand and Karnataka	Madhya Pradesh (M.P)
3. Iron	Karnataka, Chhattisgarh, Jharkhand and Odisha	Odisha
4. Manganese	Odisha, Maharashtra, M.P, Karnataka, Andhra Pradesh	Odisha
5. Mica	Jharkhand, Andhra Pradesh and Rajasthan	Andhra Pradesh
6. Gold	Karnataka and Andhra Pradesh	Karnataka
7. Diamond	Panna (M.P) and Banda (U.P)	Madhya Pradesh
8. Limestone	Andhra Pradesh, Rajasthan, M.P, Gujarat and Chhattisgarh	Andhra Pradesh

## Uses and Conservation of Minerals

- Hard minerals are used as gems for making jewellery. Copper is used in a variety of items like coins, wires, pipes etc.
- Silicon, which is obtained from the mineral quartz, is used in the electronics and computer industries.

- Bauxite is refined to produce aluminium, which is used in automobiles, aircraft, electrical industry, buildings and in cookware.
- Mica is used to make electrical appliances and glass.
- Steel, which is obtained from iron ore, is used in every industry
- Minerals are the non-renewable resources. Thus, over exploitation of minerals is harmful for environment. Further, it is necessary to reduce wastage in the process of mining minerals. Recycling of metals is another way to conserve mineral resources.

## Energy Resources

Energy plays a vital role in our lives. We need energy resources for industry, domestic use, agriculture, transport, communication and defence. Energy resources are of two types:

### 1. Conventional Sources

- These are energy resources which have been in common use for a long time.
- Firewood and fossil fuels are two major conventional energy sources.
- Fossil fuels include coal (also known as buried sunshine), petroleum (also known as black gold) and natural gas.
- Hydroelectricity is electricity generated by river water falling from a height through a dam.

Energy Resources	Distribution	Highest Producing State
Crude Oil/Petroleum	Maharashtra, Rajasthan, Asom, U.P	Maharashtra (Mumbai High )
Natural Gas	K.G. Basin, Asom, Gulf of Khambhat, Tamil Nadu and Rajasthan	Asom
Coal	Raniganj , Jharia , Dhanbad and Bokaro in Jharkhand	Jharkhand

### 2. Non-conventional Sources

- These sources of energy are renewable in nature.
- Solar energy, wind energy, biogas, tidal energy, geothermal energy and nuclear energy are example of non-conventional sources of energy.
- They are usually more expensive than conventional sources because they need technological upgradation.
- India has a great potential for solar energy.

Types of Energy	Power Plants	States
Wind Energy	Muppandal	Tamil Nadu
	Perungudi	Tamil Nadu
	Kayattar	Tamil Nadu
	Satara	Maharashtra
	Jogimati	Karnataka
Geothermal Energy	Lamba, Mandvi	Gujarat
	Manikaran	Himachal Pradesh
	Puga Valley	Jammu and Kashmir
Tidal Energy	Tattapani	Chhattisgarh
	Gulf of Khambhat	Gujarat
	Gulf of Kachchh	Gujarat
Wave Energy	Sunderban	West Bengal
	Vizhinjam	Kerala
Solar Energy	Tirupati	Andhra Pradesh

