

Energy Resources

Energy

Renewable

(Non Conventional)

- Solar Energy
- Water Energy
- Wind Energy
- Bio Mass

Non Renewable

(Conventional)

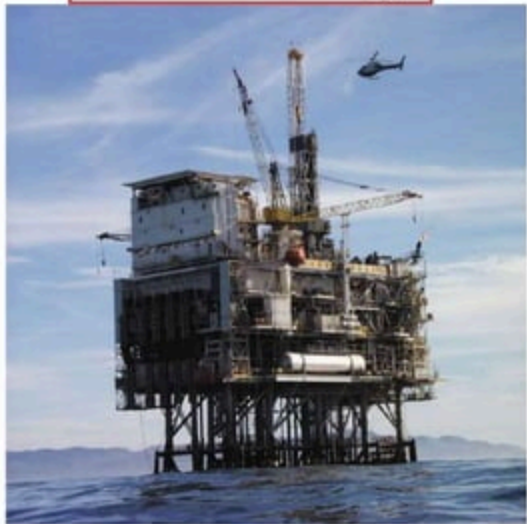
- Oil
- Coal
- Natural Gas

Snaps

Renewable Energy



Non Renewable Energy



Growing Energy Needs

Approximately 80% of the world's energy is produced by fossil fuels

➤ World demand for Oil rose from 436 MT in 1960 to 3200 MT in 1999

➤ Coal 1043 MT in 1960 to 2146 MT in 1999

➤ Natural Gas 187 MT in 1960 to 2301 MT in 1999

As per UN Reports

Growing Energy Needs

- Coal, Oil, Gas, Water constitute main sources of energy in India
- Commercial consumption of energy from coal (56%) & Petroleum (32%) other sources as Natural Gas, Water
- Traditional Sources of energy : wood, agriculture waste & animal residue
- Industrial sectors consuming about 50% of total commercial energy
- Industrial energy consumption sources: fertilizer, aluminum, textiles, cement, iron and steel and paper
- Farm sector energy consumption increased from 3.9% in 1951 to 32.5% in 1997

Growing Energy Needs

India rank 3rd amongst the coal producing countries in the world

Annual Consumption
(Per household)

- Electricity – from 7 kwh to 53 kwh
- Kerosene – from 6.6 kg to 9.9 kg
- Cooking Gas – from 0.33 kg to 3.8 kg

1970-71 to 1994-95

Renewable Energy Sources

- **Wind Energy:** In 2014, world can produce 3% of total electricity
- **Hydropower:** In 2015, Hydropower generated 16.6% of world electricity & 70% of all renewal electricity.
- **Solar Energy:** In 2014, less 1% of world total grid electricity
- **Geothermal Energy:** Heat to earth around 4600km down with 5000 degree temperature
- **Bio Energy:** Energy from living organism, bio-fuels provided 2.7% of world's transport fuels in 2010

Advantages & Disadvantages

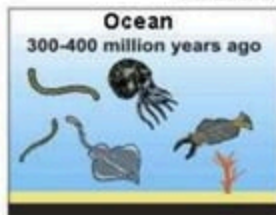
Renewable Energy

Non Renewable Energy Sources

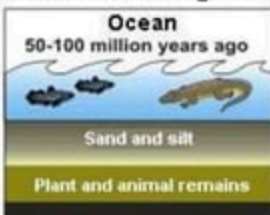
- **Crude Oil** : These petroleum products include gasoline, distillates such as diesel fuel and heating oil, jet fuel, petrochemical feedstocks, waxes, lubricating oils, and asphalt.
- **Natural Gas**: Natural gas consists mainly of methane, it can be used as a fuel or to make materials and chemicals.
- **Coal**: It's a sedimentary rock with a high amount of carbon and hydrocarbons.
- **Uranium** (Nuclear Energy): Uranium is the fuel most widely used by nuclear plants for nuclear fission. Uranium is considered to be a nonrenewable energy source, even though it is a common metal found in rocks worldwide. Uranium, referred to as U-235

Snaps

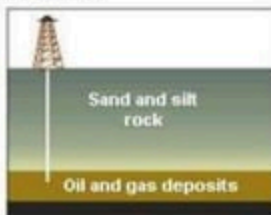
Petroleum and natural gas formation



Tiny sea plants and animals died and were buried on the ocean floor. Over time, they were covered by layers of silt and sand.



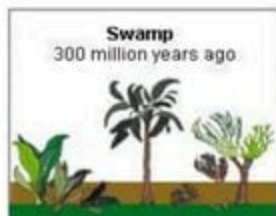
Over millions of years, the remains were buried deeper and deeper. The enormous heat and pressure turned them into oil and gas.



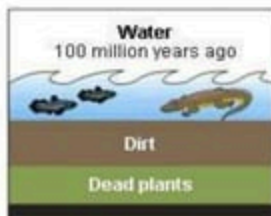
Today, we drill down through layers of sand, silt, and rock to reach the rock formations that contain oil and gas deposits.

Source: U.S. Energy Information Administration (public domain)

How coal was formed



Before the dinosaurs, many giant plants died in swamps.



Over millions of years, the plants were buried under water and dirt.



Heat and pressure turned the dead plants into coal.

Source: National Energy Education Development Project (public domain)

Advantages of Non Renewable

- Non-renewable energy sources cannot be replenished in a short period
- Non-renewable energy sources are abundant and affordable
- Non-renewable energy is cost effective and easier to product and use

Disadvantages of Non Renewable

- Once sources of non-renewable energies are gone they can't be replaced or revitalized
- The mining of non-renewable energy and the by-products they leave behind causes damage to the environment
- The burning of fossil fuels continues to rise producing high levels of carbon dioxide (CO₂) which climatologists believe is a [major cause of global warming](#).

Alternate sources of Energy

- Wind Power
- Solar Power
- Bio Mass Power
- Waste to Power
- Small Hydro Power



References

- www.mnre.gov.in
- www.yourarticlelibrary.com
- www.ei.gov