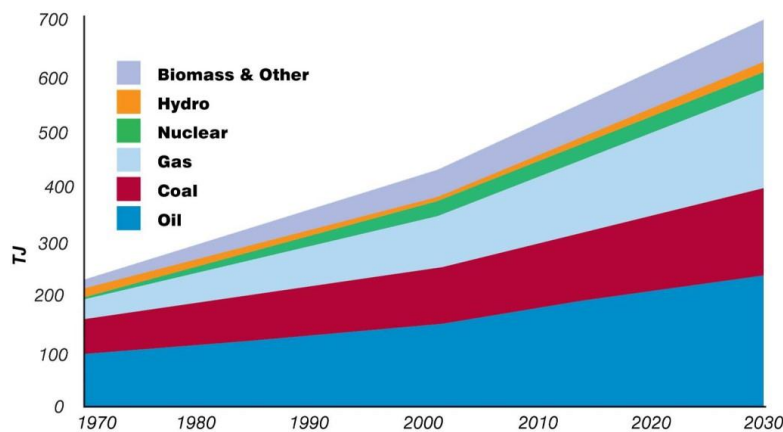


# COAL



Coal is a fossil fuel. It is a hard substance, and black color like a sedimentary rock composed of carbon, hydrogen, oxygen, nitrogen and various sulfides.

Coal is the second most important energy source in the world, supplying 25% of the primary energy and the first to be used by the modern industrial world to provide heat and electric power generation.



Its main use is in electricity generation in coal power plants. Industry is the second largest consumer, mainly the steel industry which uses coke from coal to fuel their

“Blast Furnace” and to make alloys of iron and coal to provide more strength and elasticity of materials. Charcoal is also used as raw material for plastics, dyes, perfumes and oils.

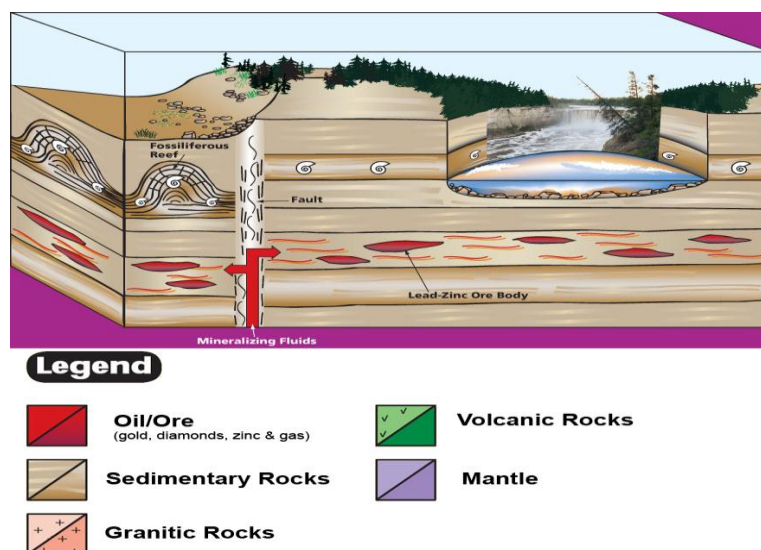


Its origin comes mainly from plant organisms such as trees, ferns and spores in swamps and shallow swampy regions that through photosynthesis absorbed inorganic compounds and energy from light to transform it into chemical energy and stored in molecular bonds.

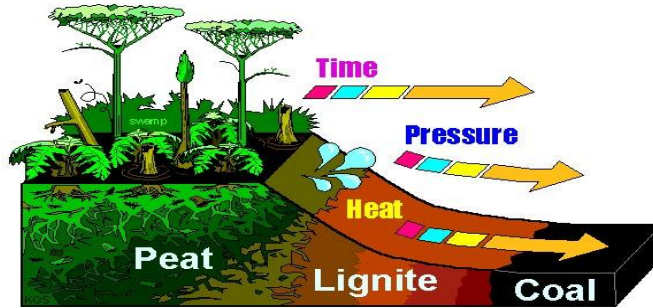
This process takes millions of years to occur, so that most of the coal with which we are formed between 345 and 280 million years ago during the Carboniferous period.



As these organisms and animals died, they were buried in the mud at the bottom of a basin, later the different geological processes and flooding eventually buried these materials in large layers of rock, clay and mud with high pressures and temperatures (including tectonic and volcanic movements) and certain bacteria in the absence of oxygen changed the chemical composition of these molecules by removing oxygen into smaller stable bonds with carbon and hydrogen with high energy.



There are three types of coal according to degree of carbonization that the organic matter has suffered (by age, pressure, temperature) anthracite, bituminous (used for steam and electricity for the chemical synthesis industry), lignite (used for power generators) and peat (coal predecessor).

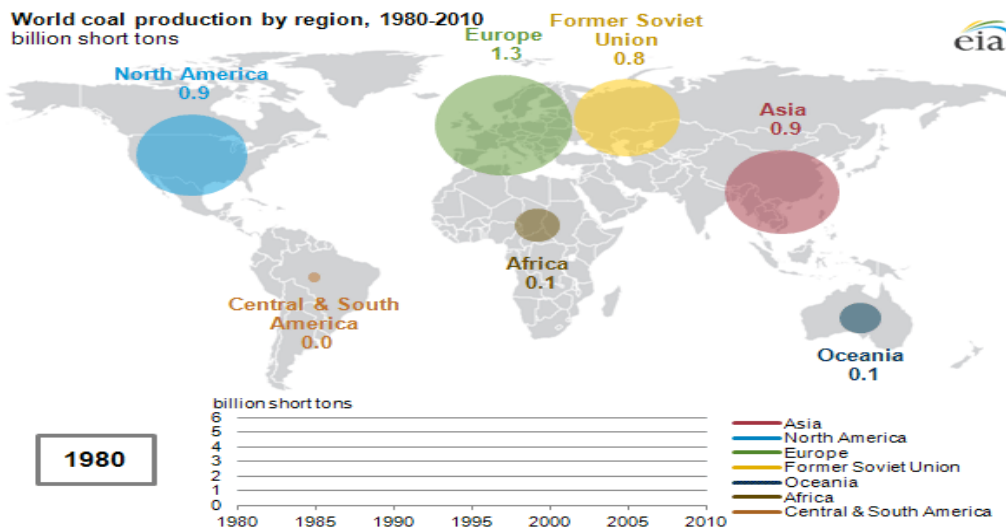


Anthracite coal is the hardest and has more carbon, which gives higher energy content, then the bituminous and lignite finally lower carbon contents and lower value. With sufficient pressure and heat, the coal can be converted to graphite which is almost pure carbon.

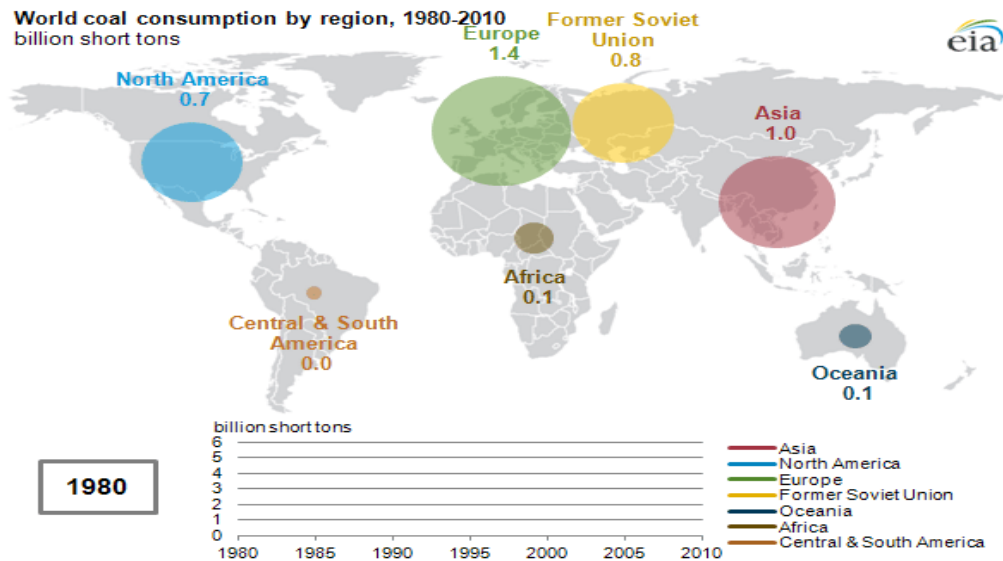


Coal is found in many parts of the world on land in more than 100 countries. It is mined from the earth through various methods from shots deep underground to open pit excavations.

The largest producers of coal in the world are China with 3 billion tons, United States (1 billion tons), India (500 million tons), Australia (400 million tons) and Indonesia (300 million tons). It is estimated that to date there are coal reserves for 133 years.



The world consumes annually about 7 billion tons of coal per year and consumption is expected to reach up to 10 billion by 2030. Worldwide coal reserves are estimated at around 860 billion tons, mainly located in the United States (23%), Russia (14%), China (13%) and Australia (9%).



In some types of coal exist certain amounts of sulfur and nitrogen ranging up to 10% of the total weight of coal which were trapped in two major forms (as a separate particle and iron together with chemical bonding to carbon atoms) and when burned can contribute to the formation of “acid rain” by the emission of sulfur dioxide into the atmosphere.

Source: <http://www.artinaid.com/2013/04/coal/>