

# TYPES OF COAL

The process of coalification converts the plant material, which consists essentially of compounds of carbon, hydrogen and oxygen, to coal. Coal, in its purest form, consists of carbon only. The different grades or types of coal vary between relatively unchanged plant material and pure carbon.

There are a number of ways in which the different types of coal can be classified. Some classifications rely on the use to which the coal is put, for example coking coal or steaming coal.

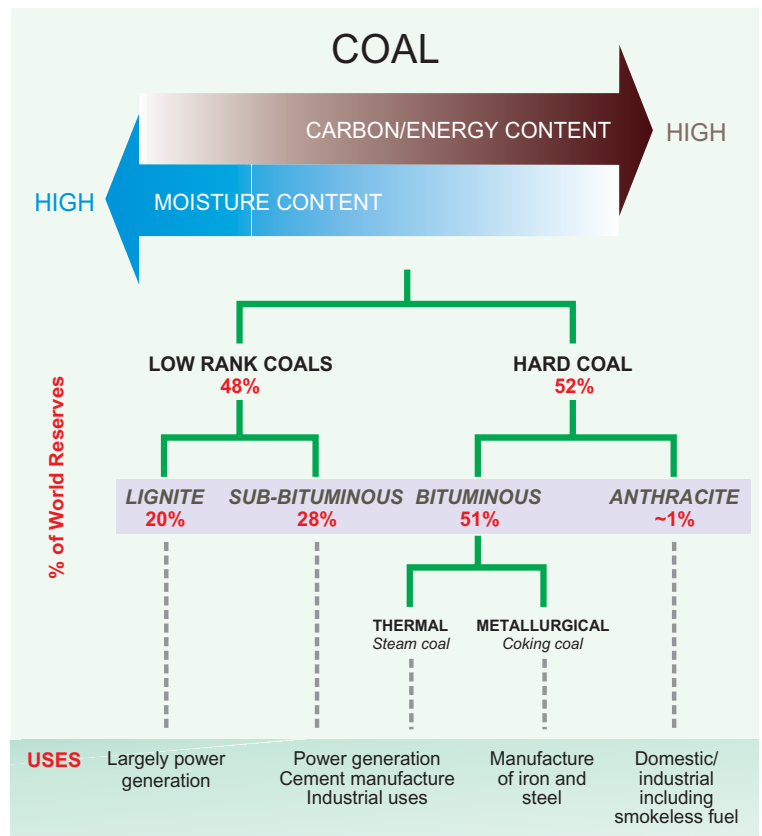
One common classification system divides coals into various rankings based on a range of properties. The order of rank of the coals from lowest energy-value to highest energy-value is:

- ◆ Peat
- ◆ Lignite
- ◆ Sub-bituminous
- ◆ Bituminous
- ◆ Anthracite.

## Did you know?



A walking dragline in an open cut mine may weigh as much as 2,500 tonnes, is as tall as a four storey block of flats, has a boom as long as a football field and costs as much as \$70 million.



*Types of coal and their uses.  
Image courtesy of World Coal Institute*

Another simple classification uses only black coal (also called hard coal) and brown coal (also called soft coal). The higher energy-value black coal includes anthracite and the bituminous coals. Brown coal includes lower energy-value lignite and peat.



Pure carbon has the highest energy value when burnt and therefore makes the most valuable fuel. Anthracites may contain more than 90% carbon with only a few percent of volatile materials. Lignite, on the other hand, may need to be dried to remove the over 50% of water it contains before the 50 to 60% of carbon is able to be burned.

*Dragline operating in an opencut coal mine.*

*Photo courtesy of BHP Billiton  
Mitsubishi Alliance*