



FACT SHEET

Coal

What is coal?

Coal is a fossil fuel formed by the accumulation and decomposition of plant material over millions of years. The energy of the sun is used by plants to extract carbon from carbon dioxide gas in the air. The plants then grow by turning that carbon into leaves, wood and flowers. The plants die and are buried and sometimes turn into coal. When we burn the coal the carbon combines with oxygen to form carbon dioxide and it is returned to the air. The quality of coal reserves is variable, with black coal having the highest energy content.

How is it used?

Coal has a number of uses. Coal is used in power stations. It is sometimes used for heating in homes, or for district heating in cold climates, and often as a source of heat for industry. Metallurgical coal is used in the process of making steel. Other uses are to produce fertilisers, drugs, dyes, soap, tar, gas, creosol, disinfectant and pesticides.

Coal power

Australia exports 82% of its black coal production. Of the coal used in Australia, about 80% generates electricity, 12% is used in metal smelting and the remainder is used in manufacturing.

Challenge

The high reliance on fossil fuel for power generation has resulted in the production of excessive quantities of carbon dioxide, one of the emissions generally understood to be responsible for the enhanced greenhouse effect – the increase in the world’s temperature due to the increased insulating effect of the earth’s atmosphere.

Source: CSIRO CarbonKids Curriculum Unit, Sustainable Energy for All, pages 25-32

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These educational resources are designed to introduce teachers and students to Australia’s use of ‘clean energy’ as one of the carbon dioxide mitigation options available for achieving significant reductions in atmospheric carbon dioxide emissions. Whilst not an exhaustive educational resource, it is intended to raise the awareness of school-aged students about our changing climate, clean energy practices and applications and the other alternative energy technologies that reduce greenhouse gas emissions.

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The materials in this educational resource have been developed by Angela Colliver from CSIRO Education.

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