

MINERALS TRADE — A GLOBAL PICTURE

□ Which are the main mineral commodities traded?

Virtually all minerals and related products enter into world trade. Some are produced for local consumption, while others are transported to markets on the other side of the world.

Minerals such as sand & gravel for the construction industry are normally quarried close to their markets, since to transport them very far would incur further expense. Most trans-oceanic minerals trade is accounted for by mineral fuels (coal, oil, natural gas) and relatively low value 'bulk' minerals such as iron ore, bauxite, phosphate rock and kaolin. These minerals have, typically, low production costs but economic deposits are few. They are transported in a relatively crude form for further processing in the major industrial countries.

The ores of precious metals and many base metals, such as copper, lead, zinc and nickel, have high mining and processing costs and geographically restricted sources. Although there is a significant trade in their ores and concentrates, most of the output is smelted and refined in the country where they are mined and is then exported to the consuming centres as refined metal.



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□ Why is the trade necessary?

Minerals are essential to our existence, but they are not evenly distributed throughout the world. Geology and economic constraints have determined the location of those minerals that can be economically mined, so many have to be transported to where they are needed. Many low value minerals such as the aggregates (sand & gravel, crushed rock) are widespread and UK requirements are almost entirely supplied by domestic sources. In contrast, economic deposits of most metals are rare, and their higher value means that they can be transported over long distances and maintain their market value. The distribution of economic resources and processing facilities is determined by a number of factors:

- Geological processes that have concentrated useful minerals in particular areas, e.g. the numerous large copper deposits in Chile and Peru, the nickel deposits of Siberia and Ontario and the mineral sand operations of Australia and South Africa.
- Relatively low costs, made possible by either low-cost labour or cheap power, which can give a competitive advantage to a particular country or region. In some developing countries less stringent regulations that contribute to lower costs may in effect export environmental damage from the First World.
- International trade is more open than in the past but governments may occasionally intervene in the market with the imposition of tariffs and duties on either imports or exports in order to protect domestic industries.

□ In what forms are the commodities traded?

Some minerals require specialist transportation and loading/unloading facilities and others do not.

Crude petroleum, natural gas and bulk minerals, such as iron ore and coal, are transported in ships and rail wagons designed for this purpose and need dedicated loading and off-loading terminals. Aggregate minerals can also be transported by bulk carrier, normally over short distances. For example, within continental Europe the majority of international aggregates transport is by rail or inland waterway.

Other minerals and refined metals can be carried on pallets and in bags or drums, in standard containers. Precious metals and gemstones alone can stand the cost of transportation by air-freight.



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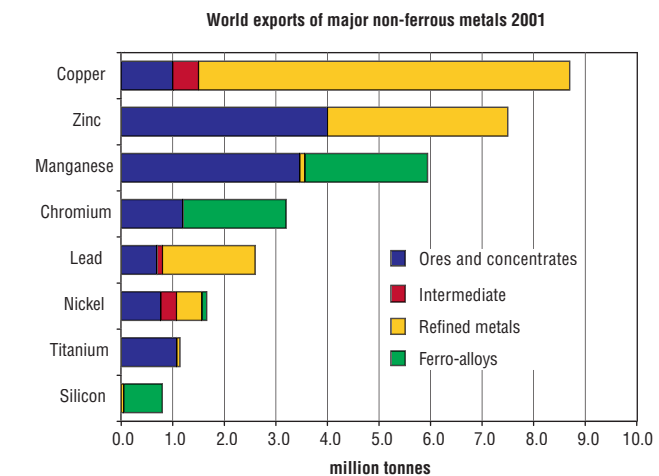


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□ What changes are happening in global minerals trade?

In the past ten years there has been a major increase in minerals and metals trade between 'western' countries and both China, which has rapidly become a major importer and exporter of a range of minerals, and the countries of the former Soviet Union, which export nickel, palladium, aluminium and ferro-chromium.

Indonesia and the Australasian region chiefly supply minerals markets in Japan, China, Korea, Taiwan and others, while exports from Africa and South America go to Europe and North America. There are major land-borne international trade movements within both North America and Eurasia.

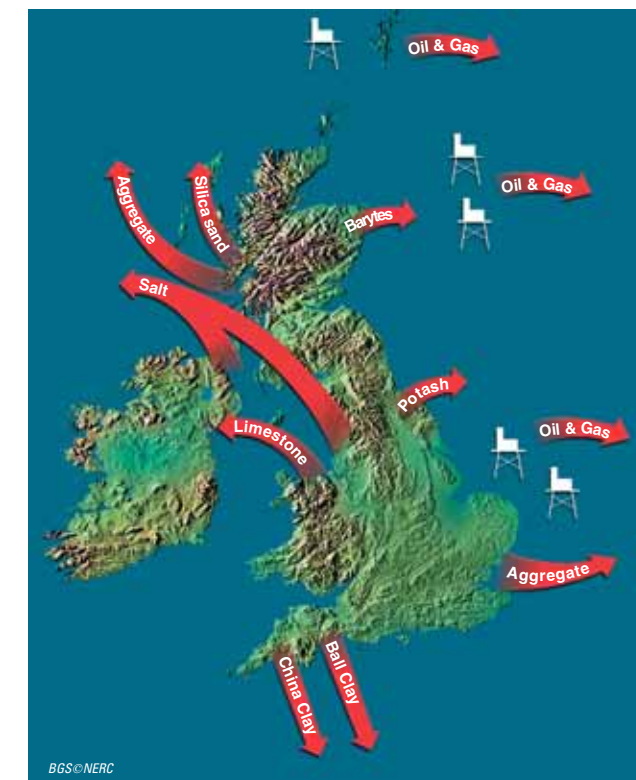
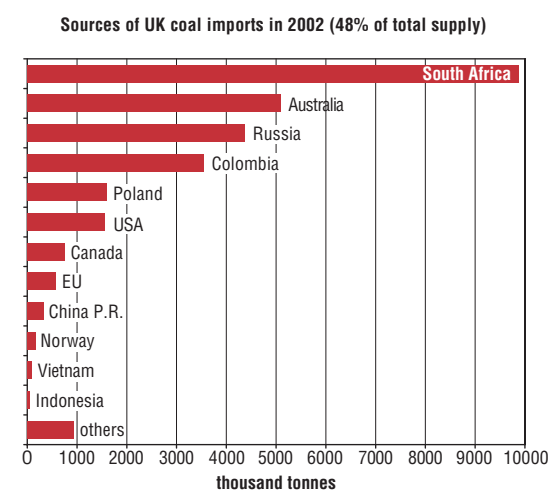


□ What is the UK's minerals trade position?

Oil, natural gas and china clay are major exports, by world standards. Exports of platinum-group metals and nickel are based on the processing of both scrap and imported primary materials from Canada and elsewhere. Exports of potash (more than 500 000 tonnes per annum) and barytes (50 000 tonnes per annum) from domestic mines are significant. The production of gypsum, salt and fluorspar is enough to meet the greater part of UK demand but for most other industrial minerals and their derivatives the UK depends on imports.

Coal, iron ore and non-ferrous metals are the largest imports. Large-scale imports of non-ferrous metal concentrates

ceased in 2002 with the closure of the zinc smelter in Avonmouth. Imports of coal, chiefly for electricity generation, have increased significantly with the closure of the majority of the country's deep coal mines since 1993. A recent development has been the increase (typical of many European countries) of the exports of scrap metal to the Far East, in particular China, to satisfy that country's rapidly increasing demand for metal. This had led to the closure of both the last copper refinery and the largest secondary lead refinery in the UK.



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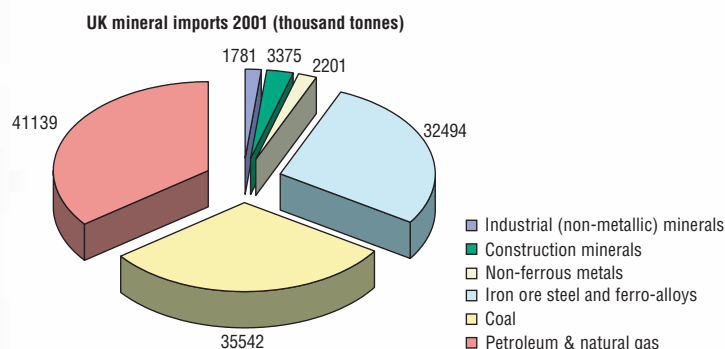
□ What commercial arrangements govern minerals trade?

The price of a mineral or metal paid by a consumer depends on the producer's stated price as modified by negotiation and the state of the market. The major base metals and the precious metals are traded on open markets, of which the best known is the London Metal Exchange (LME), which posts an 'official' daily price based on the trading activity and the range of prices agreed. Most trade is through private contracts but open market prices are very important price indicators used by all the parties concerned.

Prices of the bulk non-fuel minerals, such as iron ore, are almost entirely set by private contracts between major suppliers and consumers.

□ Past and future

International trade in metals and gemstones has been carried on since the Bronze Age, and inter-continental traffic in minerals of all kinds increased rapidly in the 19th and 20th centuries — and in the last century came to be dominated by the energy minerals, coal and oil. It will certainly continue into the foreseeable future since human industry cannot, yet, be decoupled from the unchanging facts of geology and geography.



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