

## SECTION THREE

# THE GLOBAL COAL MARKET

» Coal is a global industry, with coal mined commercially in over 50 countries and coal used in over 70. »

## Major Coal Importers, 2003

(Mt)	
Japan	162
Republic of Korea	72
Chinese Taipei	54
Germany	35
UK	32
Russia	24
India	24
USA	23
Netherlands	22
Spain	22

Source: IEA Coal Information 2004

The world currently consumes over 4050 Mt of coal. Coal is used by a variety of sectors – including power generation, iron and steel production, cement manufacturing and as a liquid fuel. The majority of coal is either utilised in power generation – steam coal or lignite – or iron and steel production – coking coal.

## Coal Production

Over 4030 Mt of coal is currently produced – a 38% increase over the past 20 years. Coal production has grown fastest in Asia, while Europe has actually seen a decline in production.

The largest coal producing countries are not confined to one region – the top five producers are China, the USA, India, Australia and South Africa. Much of global coal production is used in the country in which it was produced, only around 18% of hard coal production is destined for the international coal market.

Global coal production is expected to reach 7 billion tonnes in 2030 – with China accounting for around half the increase over this period. Steam coal production is projected to have reached around 5.2 billion tonnes; coking coal 624 million tonnes; and brown coal 1.2 billion tonnes.

## Coal Consumption

Coal plays a vital role in power generation and this role is set to continue. Coal currently fuels 39% of the world's electricity and this proportion is expected to remain at similar levels over the next 30 years.

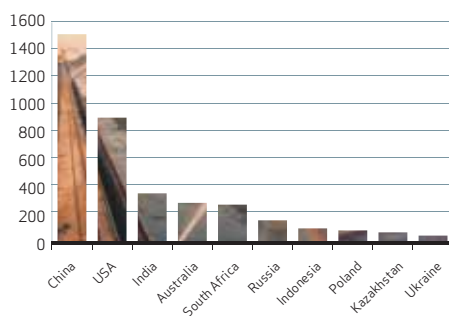
Consumption of steam coal is projected to grow by 1.5% per year over the period 2002-2030. Lignite, also used in power generation, will grow by 1% per year. Demand for coking coal in iron and steel production is set to increase by 0.9% per year over this period.

The biggest market for coal is Asia, which currently accounts for 54% of global coal consumption – although China is responsible for a significant proportion of this. Many countries do not have natural energy resources sufficient to cover their energy needs, and therefore need to import energy to help meet their requirements. Japan, Chinese Taipei and Korea, for example, import significant quantities of steam coal for electricity generation and coking coal for steel production.

It is not just a lack of indigenous coal supplies that prompts countries to import coal but also the importance of obtaining specific types of coal. Major coal producers such as China, the

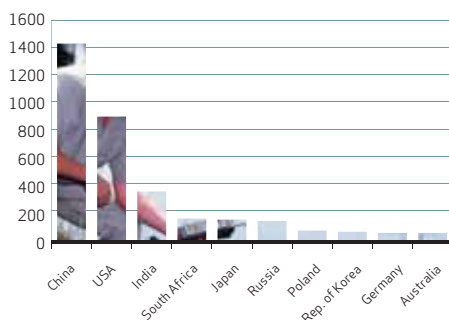
### Top Ten Coal Producing Countries Worldwide, 2003 (Mt)

Source: IEA 2004



### Top Ten Coal Consumers Worldwide, 2003 (Mt)

Source: IEA 2004



#### Definition

OECD is the Organisation for Economic Cooperation and Development. It is a group of 30 member countries who are committed to democratic government and the market economy.

USA and India, for example, also import quantities of coal for quality and logistical reasons.

Coal will continue to play a key role in the world's energy mix, with demand in certain regions set to grow rapidly. Growth in both the steam and coking coal markets will be strongest in developing Asian countries, where demand for electricity and the need for steel in construction, car production, and demands for household appliances will increase as incomes rise.

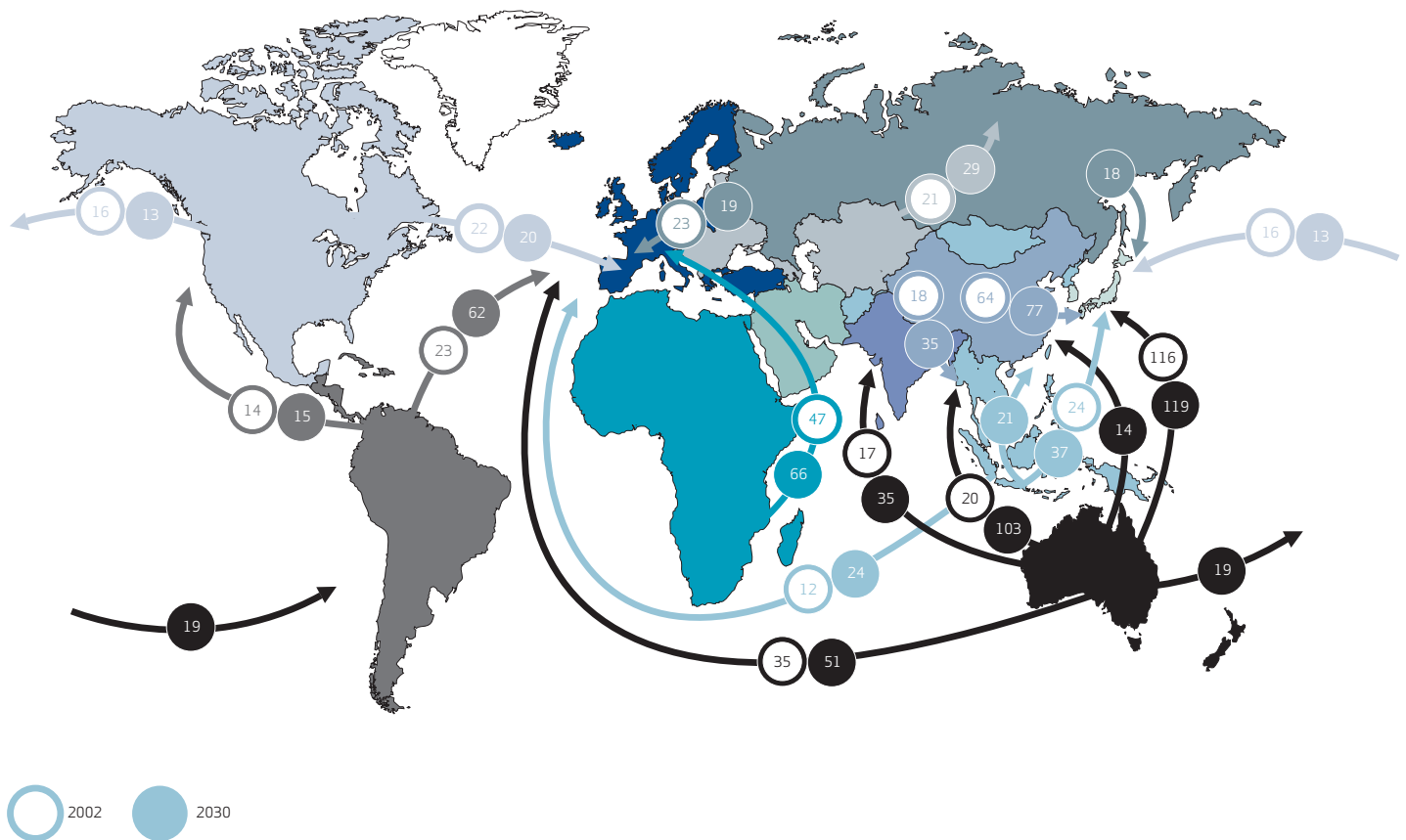
### Coal Trade

Coal is traded all over the world, with coal shipped huge distances by sea to reach markets.

Over the last twenty years, seaborne trade in steam coal has increased on average by about 8% each year, while seaborne coking coal trade has increased by 2% a year. Overall international trade in coal reached 718 Mt in 2003; while this is a significant amount of coal it still only accounts for about 18% of total coal consumed.

Transportation costs account for a large share of the total delivered price of coal, therefore international trade in steam coal is effectively divided into two regional markets – the Atlantic and the Pacific. The Atlantic market is made up of importing countries in Western Europe, notably the UK, Germany and Spain. The Pacific market consists of developing and OECD Asian importers, notably Japan, Korea and Chinese Taipei. The Pacific market currently accounts for about 60% of world steam coal trade. Markets tend to overlap when coal prices are high and supplies plentiful. South Africa is a natural point of convergence between the two markets.

Major Inter-Regional Coal Trade Flows, 2002-2030 (Mt)

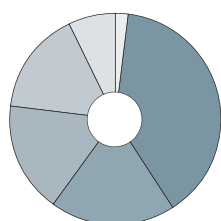


Source: IEA 2004

Australia is the world's largest coal exporter; exporting over 207 Mt of hard coal in 2003, out of its total production of 274 Mt. Coal is one of Australia's most valuable export commodities. Although almost three-quarters of Australia's exports go to the Asian market, Australian coals are used all over the world, including Europe, the Americas and Africa.

International coking coal trade is limited. Australia is also the largest supplier of coking coal, accounting for 51% of world exports. The USA and Canada are significant exporters and China is emerging as an important supplier. Coking coal is more expensive than steam coal, which means that Australia is able to afford the high freight rates involved in exporting coking coal worldwide.

### Total World Electricity Generation (% by Fuel, 2002)

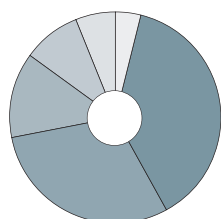


Coal	39%
Gas	19%
Nuclear	17%
Hydro	16%
Oil	7%
Other*	2%

\* Other includes solar, wind, combustible renewables, geothermal and waste

Source: IEA 2004

### Total World Electricity Generation (% by Fuel, projected for 2030)



Coal	38%
Gas	30%
Hydro	13%
Nuclear	9%
Other*	6%
Oil	4%

\* Other includes solar, wind, combustible renewables, geothermal and waste

Source: IEA 2004

## Energy Security

Minimising the risk of disruptions to our energy supplies is ever more important – whether they are caused by accident, political intervention, terrorism or industrial disputes. Coal has an important role to play at a time when we are increasingly concerned with issues relating to energy security.

The global coal market is large and diverse, with many different producers and consumers from every continent. Coal supplies do not come from one specific area, which would make consumers dependent on the security of supplies and stability of only one region. They are spread out worldwide and coal is traded internationally.

Many countries rely on domestic supplies of coal for their energy needs – such as China, the USA, India, Australia and South Africa. Others import coal from a variety of countries: in 2003 the UK, for example, imported coal from Australia, Colombia, Poland, Russia, South Africa, and the USA, as well as smaller amounts from a number of other countries and its own domestic supplies.

Coal therefore has an important role to play in maintaining the security of the global energy mix.

- >> Coal reserves are very large and will be available for the foreseeable future without raising geopolitical or safety issues.
- >> Coal is readily available from a wide variety of sources in a well-supplied worldwide market.
- >> Coal can be easily stored at power stations and stocks can be drawn on in emergencies.

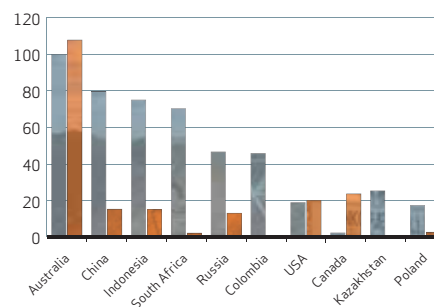
- >> Coal-based power is not dependent on the weather and can be used as a backup for wind and hydropower.
- >> Coal does not need high pressure pipelines or dedicated supply routes.
- >> Coal supply routes do not need to be protected at enormous expense.

These features help to facilitate efficient and competitive energy markets and help to stabilise energy prices through inter-fuel competition.

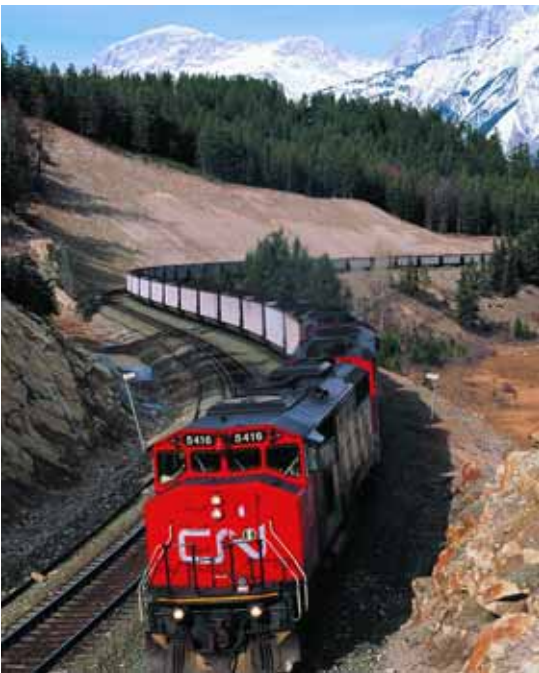
**Major Coal Exporters, 2003 (Mt)**

■ Steam  
■ Coking

Source: IEA 2004



### SECTION THREE END



Minimising the risk of disruption to our energy supplies is ever more important. Coal supply routes do not need to be protected at enormous expense.

Photograph courtesy of CN.