

# Iron and steel

Australia's high grade iron ore resources are amongst the world's largest. The U.S.S.R. and Canada have larger low grade resources but only Brazil has larger high grade resources. With about 10% of world production, Australia is the fourth largest producer of iron ore after the U.S.S.R., China and Brazil and the second largest exporter of iron ore after Brazil.

Iron ore has been mined from the **Middleback Ranges** of South Australia for the domestic iron and steel industry for around 70 years. However, the establishment of a large scale export industry did not begin until the mid 1960s when, following the delineation of vast resources of high grade ore in the Pilbara region of Western Australia and smaller deposits elsewhere, the long-standing Commonwealth embargo on exports of iron ore was lifted. Whereas reserves with mining potential were estimated at only 374 Mt in 1959, total economic demonstrated resources are now known to be of the order of 15 000 Mt, about 7% of the world's total.

The rapid development of deposits and associated growth of production and exports in the late 1960s and early 1970s were underpinned by the large and increasing iron ore requirements of the Japanese steel industry, the major export market. Production of iron ore rose from 7 Mt in 1965 to 51 Mt in 1970 and to almost 100 Mt in 1975. In line with a world-wide recession in the steel industry in subsequent years, pro-

duction declined to just over 70 Mt in 1983 but has since increased to around 95 Mt—see diagram 'Production and export of iron ore, 1965-86'.

About 90% of Australia's total production of iron ore is won from four major mines in the Pilbara region (**East Deepdale, Mount Tom Price, Newman and Paraburdoo**). Other production comes from smaller mines in the Pilbara, the **Middleback Ranges, Yampi Sound (W.A.)** and **Savage River (Tas.)**. Until 1983 iron ore was also mined at **Koolyanobbing**, west of Kalgoorlie, but ceased following closure of the Kwinana blast furnace, which it mainly supplied. Some ore from Koolyanobbing was used at Newcastle and Port Kembla, with the last shipments from stockpiled ore at Kwinana taking place in 1983.

Ore from the relatively low grade **Savage River** deposit is crushed and concentrated at the mine before being pumped as slurry through an 85 km-long pipeline to **Port Latta** where it is converted into pellets. In 1986 the shipment of pellets from Port Latta totalled 2.1 Mt, of which

1.5 Mt were exported to Japan and over 0.5 Mt went to domestic steelworks. Iron ore fines from the Middleback Ranges are pelletised at Whyalla and form the main feedstock for pig iron production there.

The bulk of Australia's iron ore production is exported (see Table 9 and the diagram below), largely from the Pilbara region as fines and lump ore. Japan accounts for around 60% of exports and Europe nearly 20%. The balance goes mainly to major new export markets opened up in recent years in China, South Korea and Taiwan Province.

Several mines are currently being developed or expanded in the Pilbara region. The **Channar** deposit, near **Paraburdoo**, is being opened up to supply the Chinese market. The **Nimingarra** deposit is being developed to allow an extension of mining in the **Shay Gap** area for a further 20 years. In the **Newman** area further mine expansion is taking place and at nearby **Yandicoogina** ore is being tested for potential use. Mining of the **McCameys Monster** deposit is planned to help meet a contract to supply iron ore to Romania.

Australia's major iron and steel making centres are at **Port Kembla, Newcastle and Whyalla**. Together they consume nearly 10 Mt of iron ore annually. In 1986 there were five operating blast furnaces with a total annual capacity of 5.7 Mt of pig iron. Although some of the pig iron produced is used in foundries for

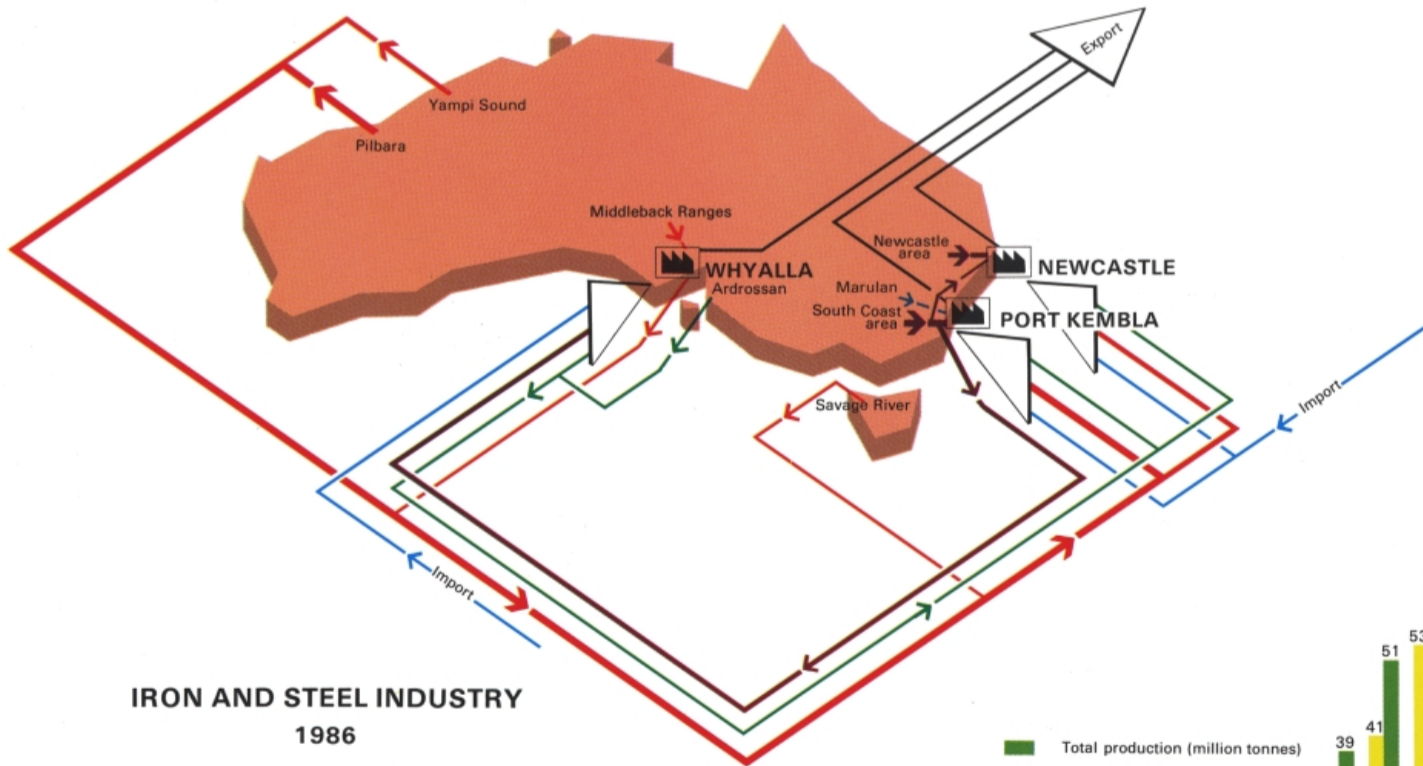
making cast iron most of it is used together with scrap for making steel. There are seven basic oxygen furnaces in operation with a combined annual capacity of 6.8 million ingot tonnes of raw steel (Port Kembla 3.8 Mt, Newcastle 1.9 Mt and Whyalla 1.1 Mt).

The raw steel is worked into many different forms. Port Kembla specialises in flat steel products whereas Newcastle concentrates on rod and bar products. Rolling mills at Whyalla produce long products, such as universal beams and columns for the construction industry, and rails and steel sleepers. Special steels, including stainless and alloy steels, are made in electric furnaces, the largest of which is at Newcastle. Tinplate is produced solely at Port Kembla.

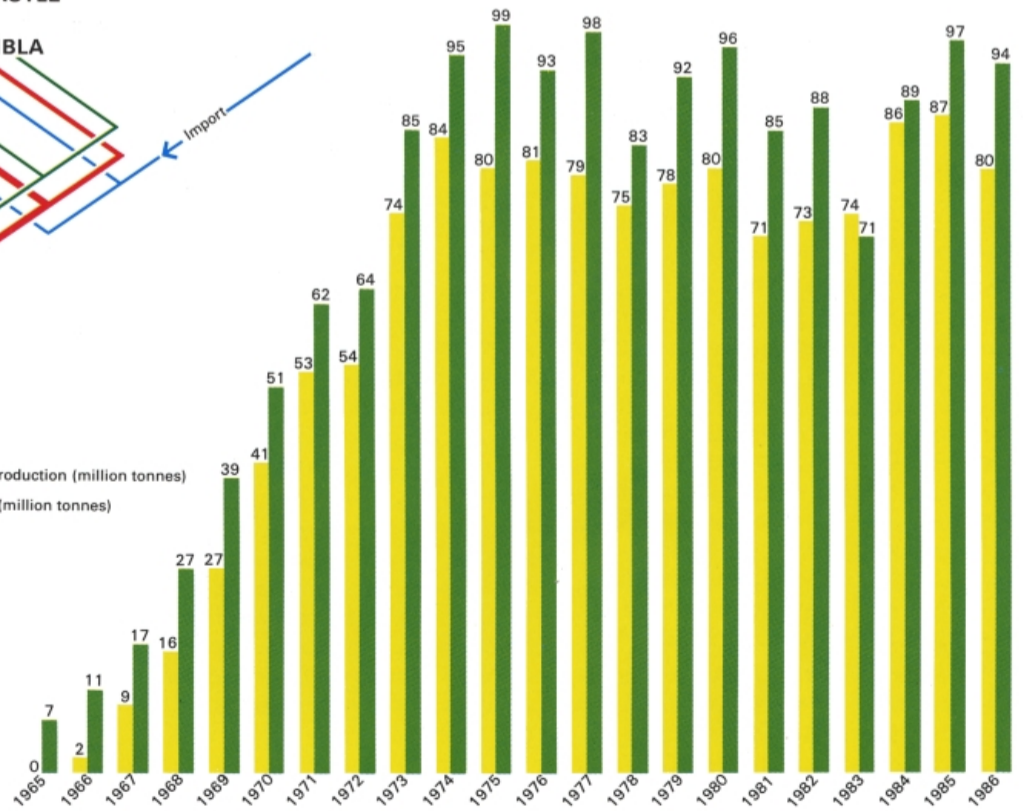
Currently over 1 Mt of iron and steel products (including raw steel) are exported annually. In common with many Western economies the outlook for the Australian iron and steel industry would appear to be one of slow but steady growth. Recent extensive plant modernisation has resulted in greater competitiveness on the world market and raised the possibility of increased exports.

Table 9. Iron and steel production, 1984-86

	1984	1985	1986
	thousand tonnes		
<b>Iron ore</b>			
Mine production for iron and steel making	89 046	97 447	94 015
Production of iron ore pellets	3 489	3 725	3 338
Exports including iron ore pellets	85 480	86 914	79 678
<b>Pig iron</b>			
Production	5 329	5 607	5 889
Exports	71	26	26
<b>Raw steel</b>			
Production	6 303	6 578	6 703
Exports	294	583	481

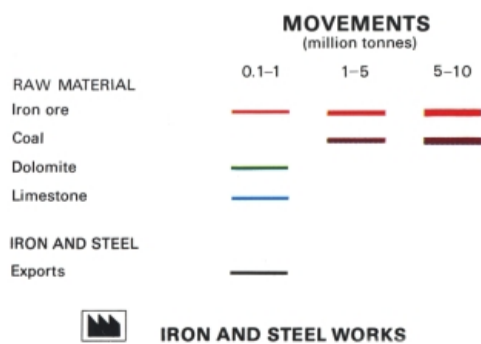


Legend for Figure 10:  
 ■ Total production (million tonnes)  
 ■ Export (million tonnes)



Australia: production and export of iron ore, 1965-86

## IRON AND STEEL INDUSTRY 1986



SOURCES: Bureau of Mineral Resources (1987) and Department of Transport (1987).