



# Niche carving

Some of the unsung steel metals are starting to enjoy their time in the sun.

By **John McIlwraith**

**T**he unprecedented demand for Australian iron ore – international analysts predict price increases of 50% next year – also contributes to prosperity for the minerals used in high quality steel alloys.

Australian explorers are intensifying their search for tungsten, molybdenum, manganese and vanadium, which are all in demand in that source of much of Australia's prosperity – China, Australia's biggest customer for iron ore. Manganese, an important metal in the steel industry, has been produced in significant volumes in Australia for many years.

Nickel, of course, is employed in the manufacture of stainless steel, but is a giant industry in its own right, with Australia a leading producer.

All these metals are critical in modern industry, providing attributes in steel that are essential in many applications.

Tungsten is a metal with a wide range of uses, the most important of which is as tungsten carbide, used in wear-resistant materials essential in the mining, petroleum and construction industries. It is also widely used in light bulb and vacuum tube filaments, as well as electrodes, because it can be drawn into very thin wire with a high melting point. There are dozens of other applications, providing a wide range of marketing opportunities.

Five Australian companies aim to launch tungsten mines, with three expected to be commissioned next year – by Thor Mining, Queensland Ores and King Island Scheelite.

In a recent study of the tungsten industry, Far East Capital warned that these companies faced the same problems that have impeded the rest of the resources industries – shortages

## STEELY RESOLVE

- The metals that are used to make high quality steels are starting to enjoy prosperity.
- In Australia there are several projects targeting tungsten, manganese, molybdenum and vanadium.
- As with iron ore, China is the main driver of the growth in demand for these metals.

of skilled labour, drilling rigs, delays in the delivery of equipment, and problems in government departments, which slow approval processes.

Thus its report, produced in October, noted that Queensland Ores, which had hoped to be in production at the beginning of 2008, faced delays of about four months; King Island Scheelite and Thor Mining postponed from March to December.

Paradigm Metals and Vital Metals are continuing promising exploration programs.

China remains the key factor in global tungsten markets. It is both the largest consumer and producer.

It contributes four-fifths of the world's supply, and has half of global reserves.

In the past it has subsidised mines, but subsidy levels have been diminishing and a number of mines have closed, down from 242 to 118 in the two years to 2005.

As with other commodities, the Chinese are aggressively seeking tungsten from overseas, which should offer opportunities for Australian companies.

These may also benefit from the need for global users to find sources outside China, as it requires all its production for domestic use.

Molybdenum is an essential element in building oil pipelines and nuclear power plants.

Two-thirds of the world's oil pipelines may have to be replaced because they do not have corrosion resistant molybdenum in their steel.

The metal has become fashionable enough to prompt the formation of a molybdenum investment fund by Sprott Asset Management in Canada.

According to Far Eastern Capital the metal's price has now reached the level reached by uranium two years ago.

There is currently no direct entry for investors into molybdenum production on the Australian Securities Exchange but it will be produced by Queensland Ores and Thor Mining, in conjunction with tungsten, when their mines are commissioned next year.

Other companies have prospects that will take some time to mature.



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In Australia there are three operating manganese mines, namely Groote Eylandt and Bootu Creek in the Northern Territory and Consolidated Minerals' Woodie Woodie in Western Australia. Mineral Resources reprocesses manganese tailings near the Woodie Woodie operation and manganese concentrate processing plants are located at Bell Bay in Tasmania and at Newcastle.

Industry leaders say the metal has attracted much greater interest in recent months after some global suppliers had withdrawn from the market.

Underlying demand remained strong with growth expected to average 7% a year, underpinned – as usual – by the Chinese.

Steel production accounts for up to 90% of demand for the metal.

Vanadium is becoming almost as valuable as semiprecious stones. At \$US40,000 a tonne the 55,000 tonnes a year produced globally almost requires armoured cars for its delivery.

It is essential in the car industry and in robust machinery because of its toughness and fatigue resistance in steel.

It has also been employed with aluminium to give the required


strength in titanium alloys used in jet engines and high-speed airframes. About 80% of vanadium is used as ferrovanadium or as a steel additive. Demand for the metal is expected to increase by 7% a year (a similar figure as for other alloy metals).

Only one Australian company, Windimurra Vanadium (the name is currently being changed from Precious Metals Australia), will be in a position to take advantage of this opportunity.

It will commission Australia's only vanadium mine in the second half of next year at the place that gives the company its new name, 600km northeast of Perth.

The mine is expected to produce 6400t of ferrovanadium a year, which will represent about 7% of the world demand, based on one of the largest proven vanadium reserves in the world.

This has the potential to make the company one of the world's lowest cost producers.

It recently signed a long-term contract for the supply of natural gas from Santos' John Brookes field in the Carnarvon Basin. 



*The huge iron ore demand has led to a corresponding demand in those "other" metals that often go with it in steel making.*