

Australia riding to the rescue of tungsten



Non-China consumers of tungsten have had some respite from concern regarding Beijing's dominance of the metal's production due to the existence of stockpiles, particularly in the United States. But, according to one new producer, Australia's **Carbine Tungsten (ASX:CNQ)**, "the strategic stockpile in the U.S. is expected to be consumed during 2015 and this should logically lead to further concentrate demand". But can the mines now in existence meet that demand?

And recall, too, that in 2013 the U.S. Department of Defense issued a report on the country's stockpile requirements for critical metals. Tungsten was the sixth most urgent priority (after tin, antimony, aluminium oxide, silicon carbide and yttrium). Japan and the European Union also rate tungsten as one of the critical metals for which security of supply is required.

China has played fun and games with tungsten just as it has with rare earths, starting with wrecking the global mining industry of those metals through its dumping program which began more than 25 years ago. As a result, in 2012 China still mined 86% of all the world's tungsten, consumed 59% of what was mined, and has about 55% of the known global resources. Now Chinese tungsten has the new tax system as applied to REE (rare earth elements), both to get around World Trade Organisation rulings and to maintain control of what leaves the country. The tax on tungsten exports is now 6.5%.

Like rare earths, too, the tungsten industry tends to be vertically integrated: the producers of the finished metal

prefer to have close ties with those who mine the ore. What with falling grades and rising prices facing tungsten Chinese miners, and snail-like progress in developing mines outside that country, the world looks facing a tungsten deficit from this year through to at least 2018. However, the price of ammonium paratungstate has faltered, but then so have the prices of many minerals as we move into a commodities secular bear market. One of the few non-China mines developed in recent decades, North American Tungsten's Cantung operation in Canada's Northwest Territories, recently had to lay off staff.

If you own a circular saw, that blade will contain tungsten, as do knives, cutters of all types. Its hardness makes it essential for special hard steels and alloys for jet turbine blades and rocket nozzles. Filaments in light bulbs, arch-welding electrodes are among its electrical uses (although new energy-efficient devices will see these applications shrink). Then there is tungsten jewellery if that is your taste: in fact, it is for many Americans with tungsten the metal of choice for 20% of rings now slipped on third fingers at the alter or the marriage registry.

Its main attribute is strength at high temperatures, its melting point being 3,420°C – the highest melting point of all metals. It would need to reach 5,555°C, which is the temperature on the surface of the sun, to make it boil. It occurs in two forms: wolframite and scheelite.

For Western and Japanese customers, it is most important that new mines get up and running outside China in order to overcome any additional export restrictions that might be imposed by Beijing. Japanese interests are already closely associated with two Australian projects.

Indeed, it looks like Australia is coming to the rescue.

The country once had one of the world's largest mines, now being revived by Carbine Tungsten. Another emerging contender

is a mine on an island in Bass Strait (between the Australian mainland and Tasmania) that began operations more than a century ago but was then abandoned when China flooded the world with cheap tungsten in the late 1980s and early 1990s.

Carbine Tungsten owns the Mt Carbine mine in far north Queensland, worked until the 1980s. Mitsubishi Corp has been providing finance as the Australian company brings the mine back into production and is buying the concentrate as Carbine treats the old tailings dumps. Carbine is now working to be in a position to tackle the hard rock deposit.

Japan is also involved in another north Queensland operation, the Watershed project owned by **Vital Metals (ASX:VML)**. The government-owned Japan Oil, Gas and Metals National Corp (usually known as Jomtec) owns 30% of the project but is looking to pass that on to one of the private companies, with Mitsubishi and Sumitomo being mentioned as possible private sector partners. Watershed was discovered in the 1980s by Utah Development but never progressed as tungsten prices collapsed. Vital is planning a 10-year open pit operation. It says the project is one of the 10 largest unexploited tungsten deposits outside China.

A U.S. company was also involved in the discovery of another tungsten project (still in exploration stages). Tilba in Western Australia was found by Union Carbide in the 1970s and is now being progressed by **Tungsten Mining (TGN)**.

But back to the emerging producers. **King Island Scheelite (ASX:KIS)** owns the Dolphin project located on King Island, part of the state of Tasmania. This deposit was mined between 1917 and 1990, at the latter date becoming another casualty of Chinese actions. Reopening has been long coming: KIS acquired the deposit 10 years ago, and still needs to raise the development money. It is aiming to be in production next year should it be able to do so.

Australia is also involved with the Hemerdon tungsten-tin project in southern England, owned by **Wolf Minerals (ASX:WLF)**, and now under development.