

Tin solders on

IT is the glue that binds circuit boards — and tin may be the overlooked future hot tech metal. *The Outcrop* by Robin Bromby.

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Your correspondent has been banging on about tin for — well, possibly far too long.

Yet the metal's moment in the sun has never quite happened: something always comes along to derail the case that tin is the place to be. I mean, weren't we all convinced a few years back that the looming exhaustion of a huge South American mine was going to plunge the world into a tin shortage crisis?

Then, almost without warning, along came Myanmar suddenly to move huge volumes of alluvial tin into Chinese smelters. And there have been plenty of other tin disappointments since the tin market exploded in 1985.

And *Outcrop* has been greeting every step forward. Indeed, on 18 October 2007 this column proclaimed that "We're back in the tin business", the news that week being an announcement by Metals X that it was not only reopening Renison Bell in Tasmania but also the Apple Isle's other tin iconic operation, Mt Bischoff, at which work had stopped in 1914, before which it had been one of the world's richest tin mines.

The most recent revivification followed the argument that tin's future lay in technology applications, especially in solder. That story seems to have faded of late — but indications are that it is likely to explode back on to the commodities scene, with the time line possibly out somewhere in 2020 (which is actually not that far away).

Of late, too, the Chinese tin smelters have been cutting back output due to lack of concentrate. According to the International Tin Association (ITA), Yunnan Tin closed for 50 days from 11 November; two others have closed part of their smelter operations for an indefinite period; Gejiu Jinye has closed entirely for an indefinite time, while five others have suspended work for between 15 and 30 days.

China put itself in the position of becoming reliant on Myanmar tin, which now provides 40% of concentrate. Initially this allowed Chinese smelters to buy tin more cheaply and also, incidentally, give the middle finger to other foreign suppliers.

But everyone knew that this was only a short-term strategy; the Burmese were working very old mines, but the grades were reduced to between 1% and 2%. "Deeper

mineralisation is still promising," says ITA, "but difficult to exploit because of the high temperatures and hot water."

Large stockpiles of ore had been built up in Myanmar in recent years and used to bolster concentrate production, but these stockpiles are projected to be depleted by the end of this month.

Apart from Burmese intervention, the tin price has been hit by the trade war threat (electronic goods being a major user of tin, and this sector is unsettled due to trade war threats), while China's tin demand has been faltering due to economic weakness in that country.

Ross Strachan at Capital Economics warns that these factors could drag tin down to US\$18,000/t by the end of 2019 (compared to \$19,180 overnight on the LME).

But after that it will rebound strongly, he adds. The recovery will be driven by a recovery in Chinese demand, partly due to the cyclical upturn in auto sales and offtake from new uses such as robotics. Also, says Capital, while new mines may come on stream (the Bisie mine in DR Congo is due to begin production next year), overall ore depletion and fading Burmese output will see the market tighten.

Reuters reported last week that the ITA seems to have been caught off guard by the emergence of tin in the technology super-cycle, putting it up there with lithium and cobalt.

The report cites a recent Massachusetts Institute of Technology study that identified tin as the metal that stands to gain most from the coming electric vehicle and energy storage revolution — in fact, far more than the aforementioned lithium and cobalt.

"Tin is the glue, quite literally in the form of solder, that binds circuit boards together," *Reuters* reported. "That puts it centre stage as the world moves beyond electric vehicles to advanced robotics and the internet of things."

Reuters, after noting that the ITA has now been alerted by the MIT report and is gearing up to research this issue, added: "Moreover, no one seems to have told the tin market", in reference to the sluggish price of tin.

At the same time, there has been a breakdown in the certification process in Indonesia, so that some tin trading has been suspended by the Indonesia Commodity and Derivatives Exchange. This unhappily coincided with Myanmar's export downturn.

This news will, however, give some cheer to Australia's tin players.