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The Nifty Copper Mine: A Forgotten Gem in the Paterson Range



The sign of a Copper resurgence is now plainly in sight

(source: Photo by Thom Milkovic on Unsplash)

In 2009, I looked at the Paterson range as a remote place that was full of opportunities for the brave. Logistics was challenging and only a well-funded company would make any headway.

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Samir, the managing Director of Cyprium Metals Limited (ASX: CPM), who had a coffee with Samso with me last month clearly stated that Cyprium Metals will be producing copper plate in 2022.

A New Copper Producer - An Overnight Success

Now if production does take shape in 2022, I think the current valuation for the company would look cheap now.

Things are Already Happening in the Paterson Range

Although there was the discovery of Telfer (Au, Cu, Ag), Kintyre (U), Woodie Woodie (Mn) and Nifty (Cu) in the 1980s, there have not been too many highlights recently. There has been more activities, but I still would not call it a busy highway.

What has been happening in recent times makes this region more accessible and known to the general ASX (Australian Stock Exchange) investor. Today we are looking at the Antipa Minerals and Rio Tinto JV at Citadel, Antipa and IGO Limited with the Paterson Province JV, Greatland Gold Havieron JV with Newcrest, and the discovery of O'Callaghan's Tungsten project by Newcrest (Mineral Resource in 2009). Then there is the Rio Tinto Winu Copper discovery.

The Copper Story

The sign of a Copper resurgence is now plainly in sight as the Copper metal price is now at over USD4 mark. With the rise of the EV revolution, there is an increasing interest in Copper price, and hence the Nifty Copper mine is going to be of greater interest.

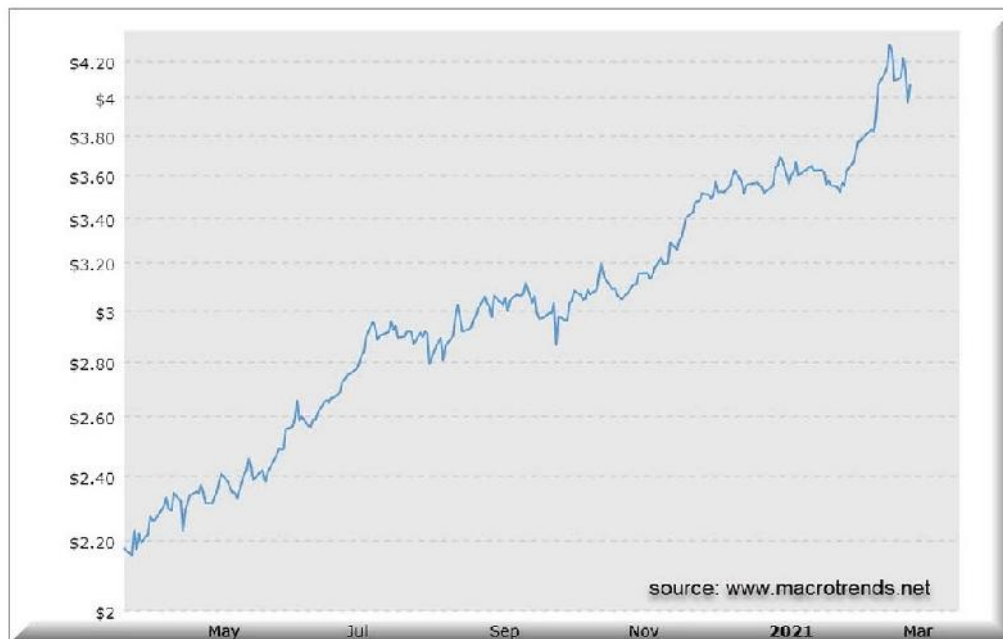
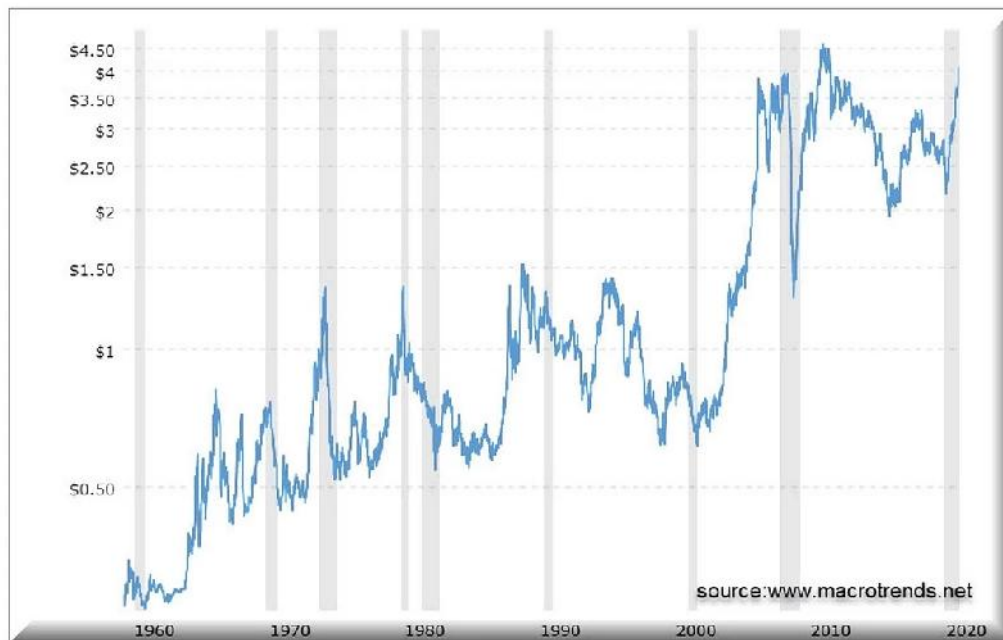


Fig 1: Copper prices over 70 years and the last 12 months clearly show a rising trend.

The Nifty Copper Deposit

The deposit was discovered in the 1980s by WMC Resources Limited. It is 450km east of Port Headland, Western Australia (See Figure 2). The deposit is owned by [Cyprium Metals Limited](#).

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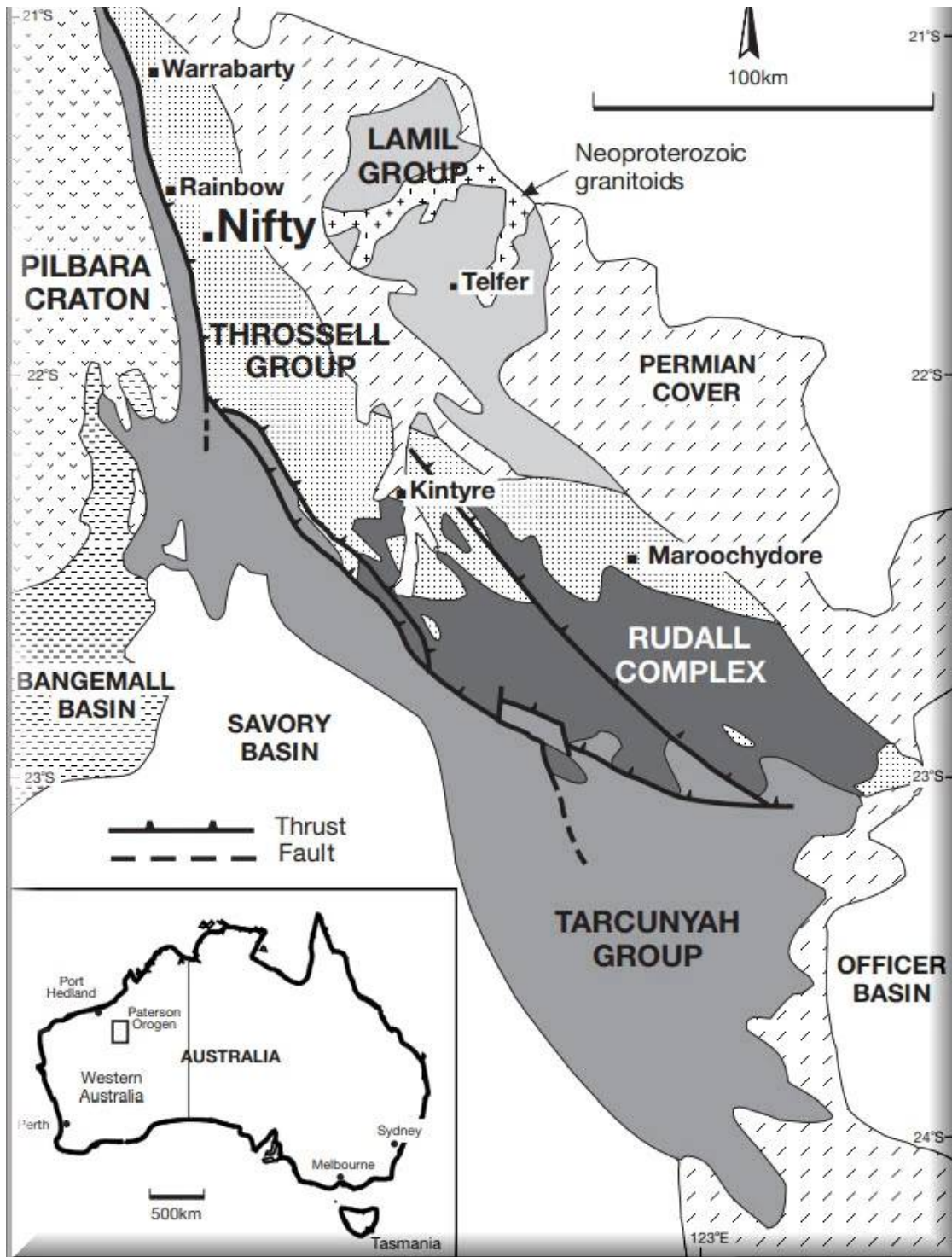


Figure 2: Simplified geologic map of the Proterozoic Paterson orogen, showing the distribution of major stratigraphic units and mineralized occurrences (modified from Hickman and Clarke, 1994). Inset map shows the location of the Paterson orogen in Western Australia. [1]



- **1993:** WMC commenced an open pit, heap leach, SX-EW operation on the relatively high-grade part of the oxide mineralisation.
- **1998:** Nifty was purchased by Straits Resources Limited with subsequent expansion of the heap leach operation.
- **2003:** Nifty and the surrounding exploration tenure was purchased by Aditya Birla Minerals.
- **2004:** Underground development commenced exploiting the sulphide resource via a decline from the open pit. Construction of the sulphide concentrator commenced in October 2004.
- **2006:** First copper concentrate produced. Open pit mining operations ceased.
- **2009:** Heap leach operations ceased.
- **2016:** Metals X Limited acquired Nifty through takeover of Aditya Birla Minerals Limited.
- **2021:** Cyprium Metals Limited acquires Nifty.

Geology [2]

Nifty is hosted within the ~850 to 824 Ma Yeneena Supergroup of the >24,000 km² Neoproterozoic Yeneena Basin, which in turn comprises part of the Paterson Orogen. The Yeneena Supergroup is subdivided into the Throssell Range and succeeding Lamil Groups. The Throssell Range Group is composed of the Coolbro and overlying Broadhurst Formations with the latter hosting both the Nifty and Maroochydore deposits.

The deposit is hosted by the upper carbonaceous shale to pelitic schist unit of the Broadhurst Formation, which in the deposit area has been divided into four informal members: the Footwall Beds, the Nifty Carbonate Member, the Pyritic Marker and the Hangingwall Beds.

The deposit comprises supergene oxide, sulphide and transitional mineralisation above stratabound hypogene sulphide mineralisation hosted by carbonaceous and dolomitic shales, principally within the Nifty Carbonate Member. Hypogene mineralisation is localised in the north-eastern limb and keel of the 15°SE plunging Nifty Syncline and extends for >1,300 m down plunge. Mineralisation is simple, with the only major sulphide minerals being chalcopyrite and pyrite, with minor sphalerite and galena.

What's the big deal with Nifty?

What makes me so interested in the Nifty project is the lack of exploration activity for at least a couple of decades. Ideas and technical advances over

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capital for the last two to three decades, numerous success stories have been appearing.

The discoveries over the last 12 months can be said to have been discoveries waiting to happen. All it needed was the added capital.

For many geologists, the discoveries were going to happen as soon as capital was added to the mix. The ground were always prospective but was just never explored mainly because of a lack of funding over the years.

In Australia, the number of copper producers, especially in the smallcap to midcap level of companies are very rare to nil. The production of copper in Australia is small compared to the rest of the world as you can see in Figure 2. With renewed interest in the metal and the capital market being favourable to fund projects, this could make something like Nifty very valuable.

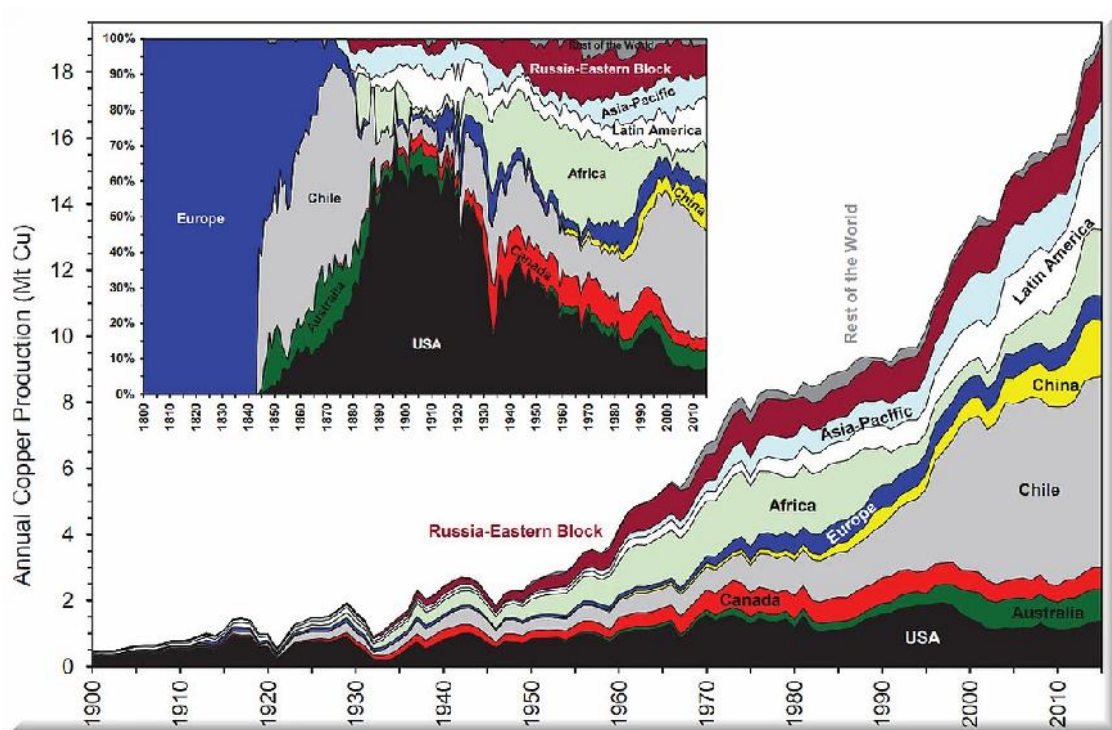


Figure 4: Metals X ASX announcement: 10 March 2020, Nifty Copper Mine Resource Update figure is proportional production over time; data synthesized from U.S. Bureau of Mines (1932–1993), Schmitz (1979), U.S. Geological Survey (1994–2014, 1996–2017), British Geological Survey (2001–2015), and *The Mineral Industry: Its Statistics, Technology, and Trade* (published by McGraw-Hill, 1982–1940). Note: data prior to ~1850 is clearly incomplete. [3]



There is a lot of talk about copper projects, but in Australia, there are not many that compare to Nifty in terms of potential time to production. There is a reported oxide and sulphide Mineral Resource of over 650,000 tonnes of copper (Figure 4). This is outside the 714,908 tonnes of copper metal that has been produced since its first production in 1993.

What is exciting is that the existing resource base remains open both up and down plunge of known mineralisation. With this in mind, the technical studies and in-fill drilling of existing open pit resource will begin soon. The new owners are optimistic in reopening the open pit strategy.

Ore Source	Measured			Indicated			Inferred			Total		
	Ore	Grade	Contained	Ore	Grade	Contained	Ore	Grade	Contained	Ore	Grade	Contained
	(Mt)	(% Cu)	(t Cu)	(Mt)	(% Cu)	(t Cu)	(Mt)	(% Cu)	(t Cu)	(Mt)	(% Cu)	(t Cu)
Sulphide	25.03	1.70%	426,700	7.46	1.32%	98,400	7.10	1.03%	73,400	39.66	1.51%	598,500
Oxide	1.43	0.91%	13,000	1.22	0.86%	10,000	1.68	0.83%	14,000	4.33	0.86%	37,000
Heap Leach	-	-	-	2.85	0.75%	20,000	0.46	0.66%	3,000	3.31	0.74%	23,000
Total	26.52	1.66%	439,700	11.53	1.11%	128,400	9.24	0.98%	90,400	47.30	1.39%	658,500

Figure 3: Metals X ASX announcement: 10 March 2020, Nifty Copper Mine Resource Update

If the new owners had said that their strategy is to look at the underground opportunities, I would be not writing this Insight. The open-pit strategy with the current copper metal price should work. However, this is something for the mining engineers to comment.



Figure 5: Nifty Copper Mine site layout (source: Cyprium M)

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Will the New Nifty be any better than the Old Nifty?

I have long believed that investing in an old project with legacy issues is merely looking for a disaster to be proven. However, the resource resurgence over the last twelve months has made me think differently. This cycle may be long enough and the project may be robust enough to work. Well, for now, it has made me rethink my thoughts as I see two factors that "seem" to make this cycle different.

The first is that the capital markets are now looking for rewards and the amount of funding already in the market is almost creating a self-fulfilling situation. The monetary stimulus that we are seeing and hearing all over this planet will drive economies to go into overdrive. We have all learned that a rising Dr Copper is a sign of economic recovery. It looks like it is happening as seen in Figure 1.

The second factor is that the EV Revolution will drive innovation that always leads to an aberration of how things used to work. The influx of capital into industry will make our version of an "Industrial Revolution". Remember, Copper plays a vital role in electronics, vehicles, telecommunications, electrical power generation and distribution systems, domestic and industrial piping, chemicals, currency, and general infrastructure.

Can the Resource Increase?

I found a paper that had some very interesting facts on initial resource/reserves and actual resources/reserves while mining.

According to the paper [3], there is a common trend of growing cumulative production over time (Table 1), showing good conversion of resources to reserves and then mine production (e.g., Mount Isa, Falconbridge). Some sites show a relatively constant total endowment over time (e.g., Alumbra, Lumwana, Sepon), although many show an increasing endowment over time, with some sites showing major increases (e.g., Olympic Dam, Collahuasi, Ok Tedi, Savannah, Antamina).

Project	Deposit type	Historical estimate	Code-compliant estimate	Other metals
Perlat, Albania	VMS	4 731 Mt at 1.91% Cu (~1980s)	18 51 Mt at 1.27% Cu (2014)	
B25-East Zone, Canada	VMS	~1.35 Mt at ~2.3% Cu (~1980s)	10 77 Mt at 1.25% Cu (2016)	Au, Zn
Bronson Slope-Iskut, Canada	Porphyry	91.6 Mt at 0.2% Cu (1996)	316.7 Mt at 0.14% Cu (2012)	Au, Ag, Mo
Captain, Canada	VMS	0 728 Mt at 1.15% Cu (1976)	2 912 Mt at 1.03% Cu (2011)	Au, Ag, Co
Devlin, Canada	Porphyry	0 24 Mt at 3.85% Cu (1995)	2 289 Mt at 1.87% Cu (2015)	Au
Explo-Zinc (Kistabiche), Canada	VMS	0 06 Mt at 0.69% Cu (1960s)	0 861 Mt at 0.31% Cu (2009)	Zn, Au, Ag
Mellvenna Bay, Canada	VMS	14.5 Mt at 0.9% Cu (2000)	29 4 Mt at 1.21% Cu (2015)	Pb, Zn, Au, Ag
Porte-aux-Moines, France	VMS	1 9 Mt at 0.76% Cu (unknown)	2 201 Mt at 0.8% Cu (2016)	Pb, Zn, Ag
Tombulilato, Indonesia	Porphyry	295 Mt at 0.57% Cu (~1980s)	400 6 Mt at 0.48% Cu (2015)	Au
Lomeros Poyatos, Spain	VMS	2 56 Mt at 0.8% Cu (~1980s)	30 35 Mt at 0.67% Cu (2012)	Pb, Zn, Ag, Au
Copper Creek, USA	Porphyry	45 Mt at 1.5% Cu (~1980s)	30 20 Mt at 0.64% Cu (2013)	Au, Mo
Sun (Picnic Creek-Hot), USA	VMS	18 41 Mt at 1.91% Cu (~1980s)	17 03 Mt at 1.03% Cu (2013)	Zn, Pb, Ag
Mufumbwe, Zambia	Sed-hosted Cu ¹	5 2 Mt at 2.3% Cu (~1980s)	7 Mt at 2.2% Cu (~2014)	

Table 1: Selected Historical Reserve / Resource Estimates vs. C (year in brackets) [3]

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(Life Of Mine) would be short. That was in 2008 and they are still mining very well today in 2021.

"These positive trends reflect the fact that mineable resources commonly grow for mining projects, demonstrating that the initial reserves and resources are sufficient for justifying mine development but that the geology and/or other factors are able to deliver an expansion of endowment over time. The shorter-term variations in resources and reserves can often be due to a period of lower market prices (e.g., Alumbra in 2015, Bingham Canyon and Ok Tedi over 2008–2009)" [3]

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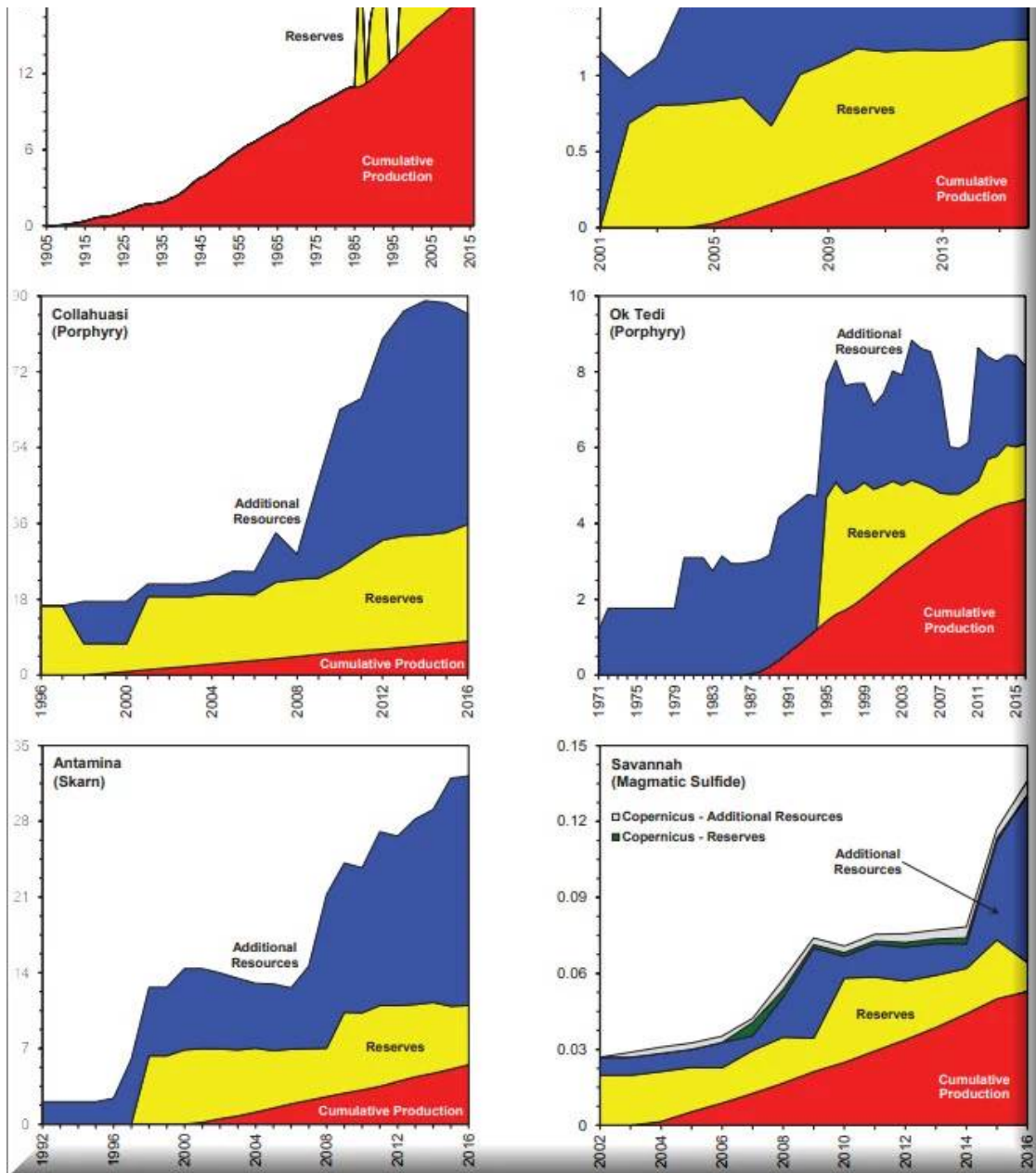


Figure 6: Examples of cumulative mine production (red) plus reserves (yellow) and additional resources (blue) over time for selected mining projects (note the additive nature and varying scales and time periods; all values are Mt Cu; other resources various colours; all data from government yearbooks, company reporting, technical and academic reports). Abbreviations: IOCG = iron oxide copper-gold, VMS = volcanogenic massive sulfide. [3]

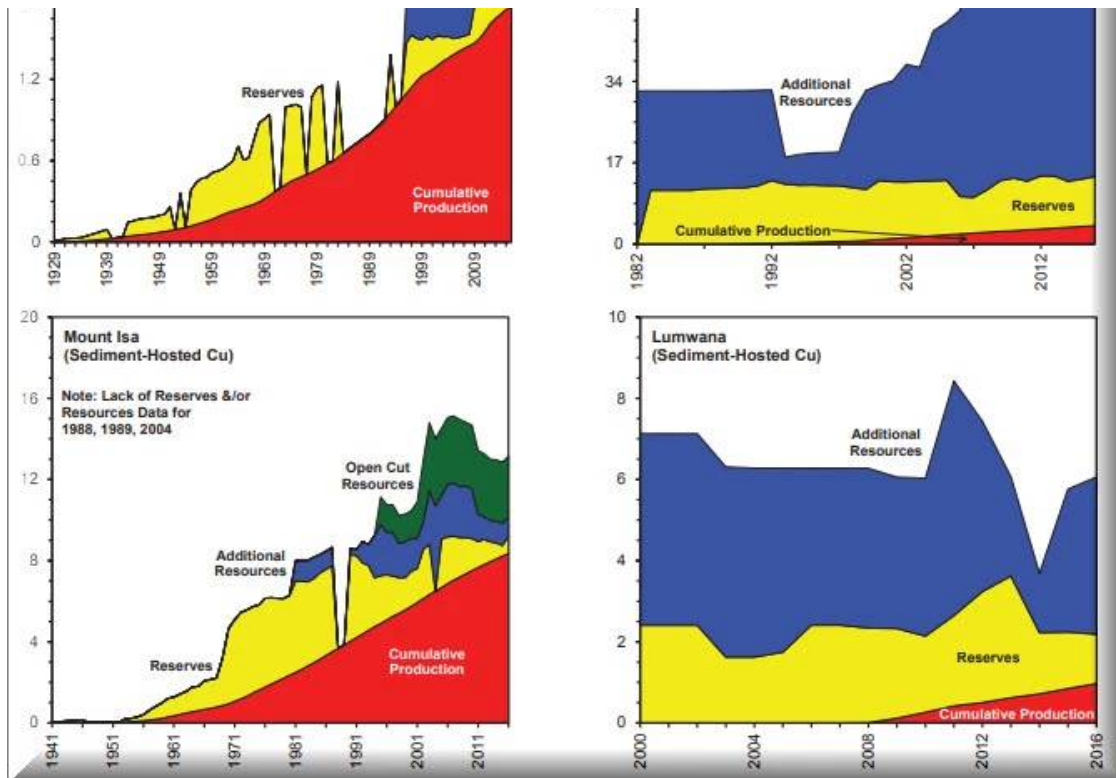


Figure 6 (cont): Examples of cumulative mine production (red) plus reserves (yellow) and additional resources (blue) over time for selected mining projects (note the additive nature and varying scales and time periods; all values are Mt Cu; other resources various colours; all data from government yearbooks, company reporting, technical and academic reports). Abbreviations: IOCG = iron oxide copper-gold, VMS = volcanogenic massive sulfide. [3]

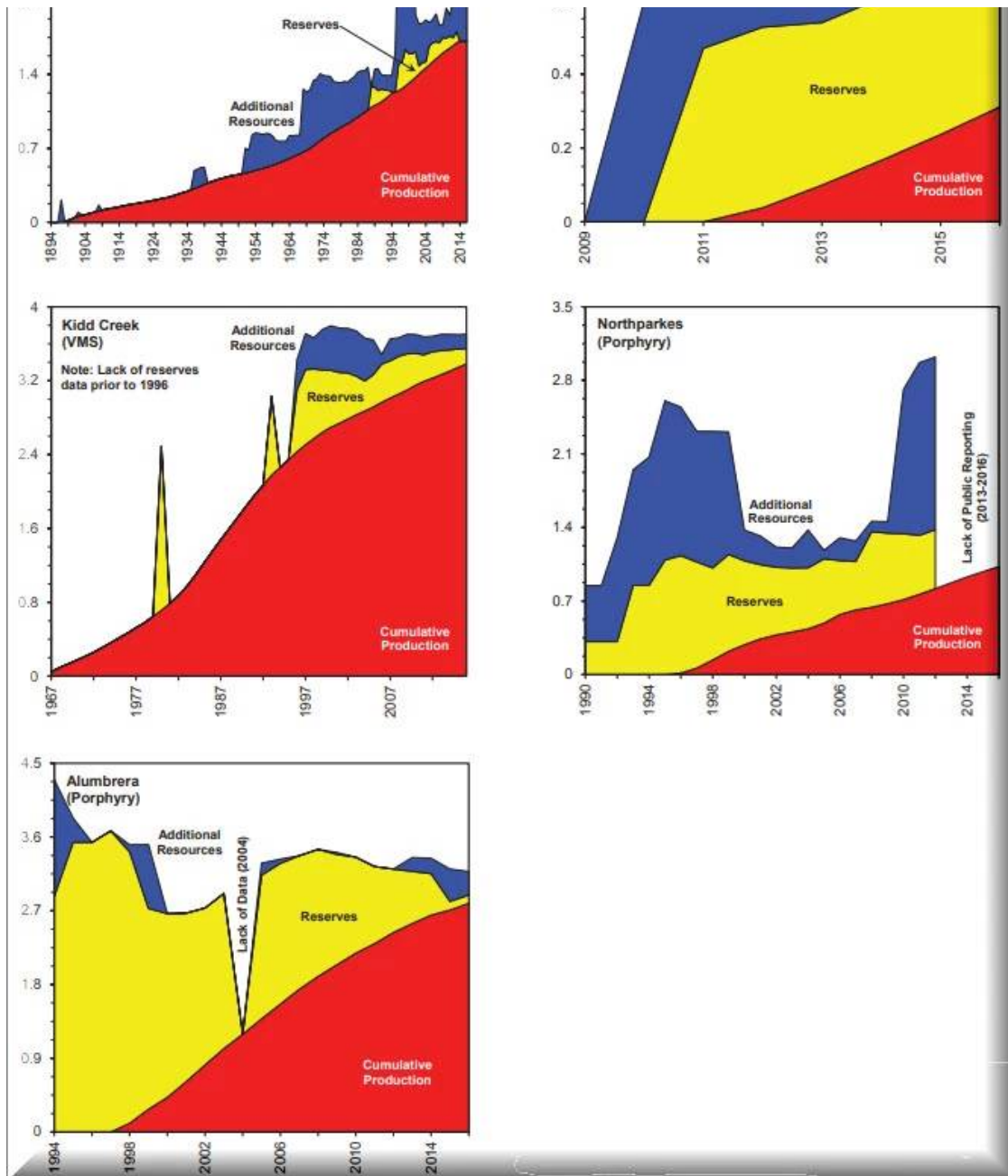


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What I remember about Olympic Dam is that it started as a Copper mine and ended up being the largest Uranium in the world. If you look at this from a geological and statistical

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and [BHP Limited \(ASX: BHP\)](#) are mining and shipping their iron ore at around the AUD\$20/tonne (in that range anyway). Newcrest has its [Cadia gold mine](#) at negative cost. The combination of copper and gold has meant that the gold is produced at [AUD\\$7.83](#).

What Does This Mean For Investors?

For investors, and existing shareholders, I think the market needs to see the ducks lining up. Obviously, management needs to muster the ducks together and start making it happen. At this point, I don't have any reason to doubt that this will not be happening. For me, looking at the company from an investing strategy, taking positions now may not be a bad idea. The way I see this is that a potential copper producer in 2020 with a market capitalisation of AUD25.62M (09/03/2021) looks cheap to me :-).

For those that have read till this sentence, a serious amount of DYOR (Do Your Own Research) may not be a bad idea. As I always say, DYOR is a good word, FOMO (Fear of Missing Out) is not a good word :-)

Currently, I do not hold any shares in CYM.

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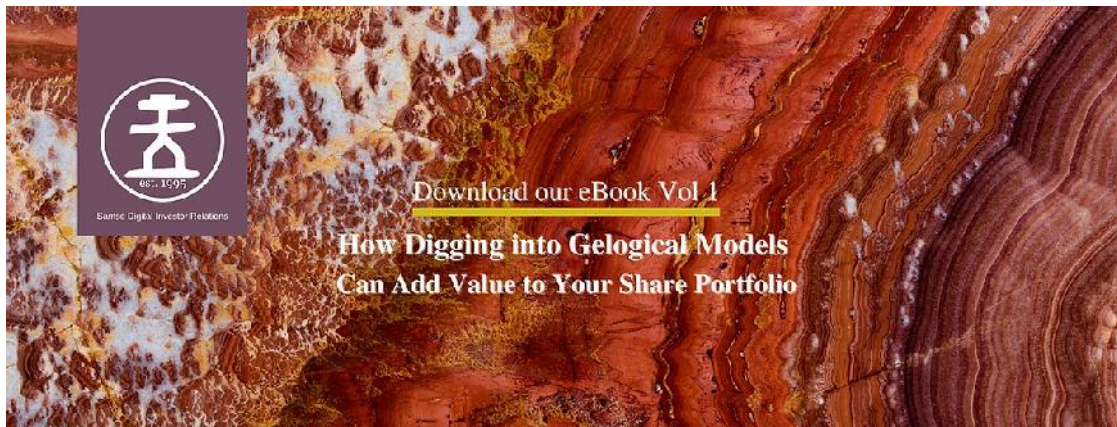


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