

Hillgrove is a promising copper recovery story

The news that BHP is walking away from the bid for Anglo America will likely lead to reduced enthusiasm for copper stocks in the short term, though the general thematic remains in place. This chapter of the copper story has run its course.

This week we feature Hillgrove, a copper producer that has recently restarted the Kanmantoo Copper Mine in South Australia. It should benefit from the renewed investor interest in copper, and the stronger copper price we have been seeing. The is also a small price on the specialist copper explorer, Copper Search.

Hillgrove on Track to be a Profitable Copper co.

I've been following the Kanmantoo Copper Mine story since BH South owned it in the 1970s. More recently we have provided commentary in 2021, noting that the grade profile of the open pit orebody had been over-estimated when the mine was restarted. By 2015/16, the mine was operating under severe financial stress as a result. A rescue package was initiated but debt had blown out to \$70m (it has since been repaid). The operation was placed on care and maintenance in late 2020. Yet, at the time there was hope that underground extensions could provide new life.

This is a mine site that has been around for multiple generations of activity. It seems that the more the geologists look, the more they find. This, underground iteration of activity, has only just started. If you look at the recently released presentation, you will see that there are about seven orebodies that have potential for depth extensions.

Impressive intercepts got the ball rolling again

Optimism was vindicated in May 2021, with the reporting of three deep holes. The best one returned 170m at 1.01% Cu and 0.11 gpt Au from 339m down hole, including a higher grade interval of 23m at 2.48% Cu and 0.24 gpt Au. The share price doubled on the back of the ASX release. A subsequent Underground Stage 1 Plan was announced based on a Mineral Resource of 5.7 Mt at 1.1% Cu and 0.3 gpt Au in December 2021. The restart of the mine was estimated to cost \$26m at the time. This was covered by a \$39m placement at 5.3¢ in March 2023.

Kanmantoo is almost an urban mine, less than an hour's drive from downtown Adelaide, in the Adelaide Hills. Its location ensures availability of a local workforce and good infrastructure in what is generally regarded as a mining-friendly State.

Underground development commenced in May 2023, and the formal decision to proceed was made a month later. The crushing circuit was commissioned in December 2023, and the first concentrates were produced in February 2024, in-line with guidance.

While the plant has capacity to process 3.6 Mtpa, designed for the earlier open pit operation, this exceeds the deliverability of the underground ore. The mill will only operate at about 1.4 Mtpa for the foreseeable future, on a campaign basis.

Over-call on grade is most useful ...

So far the Company has avoided the issue it suffered from with the open pit operation; over-estimation of the grade. Attention to detail has enabled a positive reconciliation of the block model, at times up to 20% overcall. This will be very positive if it continues.

... as is the higher copper price

The jump in the copper price has come at the perfect time for Hillgrove. There is some flexibility with the grade it pulls out of the ground with the ability to mine material that might have otherwise been left in the walls.

Hedging is a necessary strategy with many base metals mines but it shaves the upside on the higher prices. With only 30% of production hedged, Hillgrove still offers good exposure to the higher copper price.

The strong earnings power of Kanmantoo

Hillgrove is another one of those companies that is impeded in what it can say about future earnings due to compliance and the need for reserves. Thus, there is no official guidance, but a half smart analyst can work out numbers from what has been released. The starting point is the Economic Assessment released a year ago. That said the plan was to produce 14,000 tpa of copper in concentrate on a throughput of 1.4 Mtpa. Using a ball park copper price of US\$4.70/lb and all up costs of \$9-10m p.a. (about US\$3.00/lb), Hillgrove could be generating A\$5m per month cash flow or \$60m p.a. With a market capitalisation of around \$163m, this places the shares on a modest cash flow multiple of < 3x.

Another benefit of the higher copper price is the ability to drop the cut-off grade a little by taking incrementally wider cuts into the wall rock. There is a gentle gradient of copper grade that can enable greater tonnes per vertical metre - always an important factor in maximising cashflow.

The Bottom Line

The Hillgrove share price has been reasonably well supported during the recent bear market. It didn't collapse, though it didn't do anything spectacular either. The recent market enthusiasm for copper stocks has been helpful and the shares are trading at recent highs with a market capitalisation of around \$163m.

The Company is now debt free and generating positive cash flows. There is a significant JORC Exploration Target of 60-100 Mt at 0.9-1.2% Cu that could underwrite a long term future for the Company, particularly if the copper price maintains long term strength.

Hillgrove offers good leverage to the copper price based on existing production as well as blue sky appeal in extensions and new discoveries. It is a more conservative way to play the copper cycle than the myriad of speculative exploration companies on the market.

Copper Search about to drill two wildcat holes

There is a school of thought that says the best place to find another orebody is where one has already been found. That is evidenced by the Hillgrove example above, where better exploration methodology and deeper drilling has found previously undiscovered orebodies. That is what is known as brownfields exploration and it usually comes with lower risk, but it still requires luck.

Greenfields exploration is generally higher risk as it goes where no man has trodden before. As each decade passes and the virginal ground available to prospectors gets smaller and smaller, explorationists are increasingly using geophysics to discover "blind" orebodies - those without surface expression. Some cynics say that geophysics are great for identifying orebodies once they have been found, preferring traditional geological methods, but that is a bit harsh.

Last week we mentioned a standout anomaly that Legacy is about to drill test, near Cadia. This week we had a look at another two targets inspired by geophysics, owned by Copper Search (CUS). Copper Search is a one project, one commodity company that has been focusing on the Karari Shear Zone in the northern Gawler craton in South Australia for the last five years. So far it has spent \$2m on geophysical surveys and \$3.5m on drilling. Bonanza success has eluded it too date, but it has claimed "technical success" with small intercepts up to 0.3-0.5% Cu. It is in the right geological environment for IOCG deposits, but it needs to find a proper orebody.

In pursuit of this goal the Company is about to drill two deep holes to test two geophysical anomalies. At **Paradise Dam** there is a changeability anomaly at depths of 500-750m. At **Douglas Creek** there is a more classic, pipe-like anomaly measuring 1,400m x 800m, at a target depth of 300-750m. Success in either of these holes could mean a "company maker."

The Bottom Line

This is a high risk/high reward copper exploration play. The geological analysis is valid and interesting. It is not a case of digging over some other company's discards. It is a brand new play. If either one works, shareholders will be ecstatic. Unfortunately many companies drill these sort of targets without any commercial success, so it is not advisable to bet the house on success upfront.

In a similar vein, it is not wise for a company to gamble its future in the same scenario. Copper Search has \$2.6m in the bank, so it can afford to risk the \$800,000 that these two holes are expected to cost. But what if they are unsuccessful and the share price tanks (it has already moved up in anticipation)? The Company could end up being impoverished.

Taking a balanced approach, Copper Search passed the hat around last Tuesday and placed \$2m at 10¢ with 1 for 2 attaching options, exercisable at 15¢. This will take the cash level above \$4m.

As is usual the share price has come off since the trading halt was lifted, from a high of 14¢ to 11.5¢ at the time of writing ... and that is before the placement shares become tradable. The challenge will be to keep speculation at elevated levels in the lead up to the drilling. However, there is the risk that traders will sell the shares to reduce their exposure, whilst keeping the options to maintain leverage to any discovery. That is the catch 22 when options are attached. They detract from share price performance ... but they are good for traders.

There will be some speculative market activity around these holes over the next few months, so there should be some trading opportunities. Having two prospects, rather than one, provides a second cherry to bite into in the event of disappointment in the first hole. You have to be in it to win it.

Disclosure: FEC will receive modest fees on the raising as some of its clients participated in the placement.

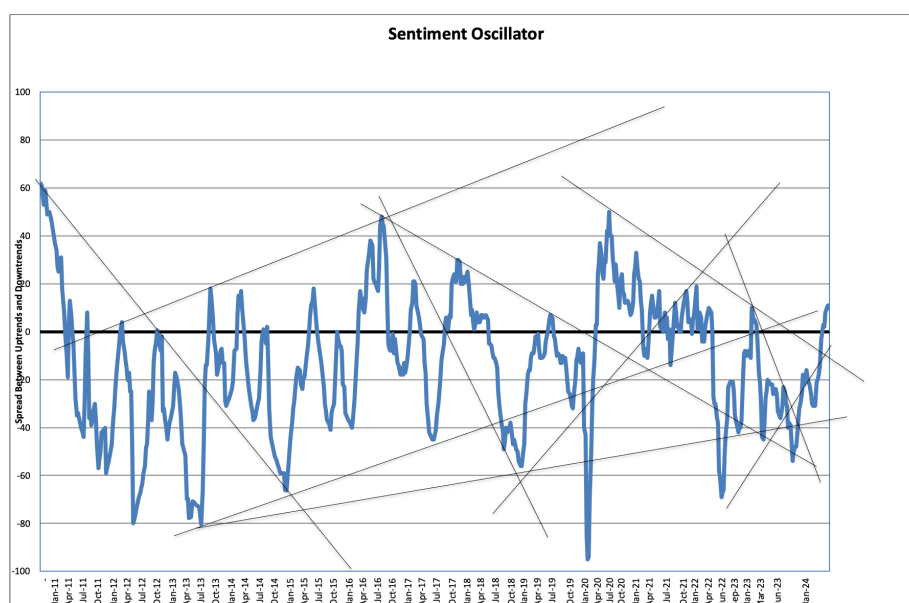
CSIRO is having its strings pulled on nuclear

A few days ago the ABC ran a story on nuclear power costs, quoting a report done by the CSIRO - another government organisation that seems to play to the woke crowd. As soon as I heard that the report opined that nuclear power was twice as expensive as any other source of electricity I thought "what rot!" Then Jim Chalmers got on the radio and started to play politics, condemning the Liberal Party's nuclear power policy. This was obviously a report manufactured for political gain.

Fortunately there has been an article in The Australian (28/5/24) whereby Judith Sloan has taken the time to point out the flaws in the CSIRO report. The bottom line is ... garbage in, garbage out. Key assumptions in the report were described as ridiculous.

As an example, it assumed a capacity factor wind and solar to be 48% and 52%, when the real numbers are actually 25 and 33%. The capacity factor for nuclear should be > 90%, but the CSIRO had it down as low as 53%. The report is dismissive of the inconsistency of wind and solar power and the need for backup power sources when the sun doesn't shine or the wind doesn't blow. Then there is the transmission issue - getting the renewable energy into the grid. The life of a nuclear power plant can be 80 years but the report limits it to 30 years. Solar and wind facilities are assumed to last for 25 years.

This is just another disgraceful example of a deceitful government pushing its own agenda to match its narrative and that of its friends, besmirching the good CSIRO name in the process. Why am I not surprised? Nuclear power advocates may have to argue their case more aggressively to overcome the deceit.



Sentiment Oscillator: Sentiment was steady. There were 39% (39%) of stocks in uptrend and 29% (28%) in downtrend at the close of the week.

Detailed Chart Comments

NB. Only the bold comments have been updated. Comments in grey type are from previous weeks and will be less relevant. Please note that this list is a cross section of the market. It IS NOT a list of recommendations.

| Indices | Code | Trend Comment | |
|---------------------------------------|------|--|---------------------------|
| All Ordinaries | XAO | slump, testing uptrend | |
| Metals and Mining | XMM | surge higher, then pullback | |
| Energy | XEJ | still under long term downtrend line | |
| Information Technology | XIJ | surge to new high | |
| Stocks | Code | Trend Comment (updated comments in bold) | Main Interest |
| 5EA Advanced Materials | 5EA | back to lows | boron |
| Advance Metals (was Pacific American) | AVM | collapse on placement | coal, gold exploration |
| Agua Resources | AGR | new high | phosphate, gold |
| Alkane Resources | ALK | testing downtrend | gold |
| Alicanto Minerals | AQI | fallen back to lows | base metals, silver, gold |
| Alligator Energy | AGE | recovering | uranium |
| Almonty Industries | All | rising | tungsten |
| Alpha HPA | A4N | upside breakout from wedge | HPA |
| Altech Chemical | ATC | breaching downtrend | HPA, anodes |
| Alto Metals | AME | volatility while new uptrend is forming | gold |
| American Rare Earths | ARR | consolidating | rare earths |
| Anax Metals | ANX | heavy slump | copper |
| Anteotech | ADO | sideways at lows | silicon anodes, biotech |
| Arafura Resources | ARU | pullback | rare earths |
| Ardea Resources | ARL | spiked higher | nickel |

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| | | | | |
|--------------------------------|-----|--|--|----------------------------|
| Arizona Lithium | AZL | | strong rally | lithium |
| Astral Resources | AAR | | spike out of downtrend | gold |
| Averina | AEV | | down heavily | phosphate |
| Aurora Energy Metals | 1AE | | breached support | uranium |
| Aurelia Metals | AMI | | rising | copper + base metals |
| Australian Gold and Copper | AGC | | steep rise | base metals, silver, gold |
| Australian Rare Earths | AR3 | | breaching downtrend | rare earths |
| Australian Strategic Materials | ASM | | strong rally but hit LT resistance line | rare earths |
| BHP | BHP | | corrected lower | diversified, iron ore |
| Barton Gold | BGD | | rising gently | gold exploration |
| Beach Energy | BPT | | testing uptrend | oil and gas |
| Bellevue Gold | BGL | | breached uptrend | gold |
| Besra Gold | BEZ | | collapse to new low | gold |
| Black Cat Syndicate | BC8 | | rising | gold |
| Boab Metals | BML | | down | silver/lead |
| Brazil Critical Minerals | BCM | | down on placement | rare earths |
| Brazilian Rare Earths | BRE | | rising wedge | rare earths |
| Brightstar Resources | BTR | | uptrend | gold |
| Calidus Resources | CAI | | testing downtrend | gold |
| Caravel Minerals | CVV | | strong rise | copper |
| Carnaby Resources | CNB | | collapse on Scoping Study, testing support | copper |
| Castile Resources | CST | | rallying | gold/copper/cobalt |
| Catalyst Metals | CYL | | new uptrend | gold |
| Cazaly Resources | CAZ | | forming a base | rare earths |
| Celsius Resources | CLA | | stronger | copper |
| Cobalt Blue | COB | | down again | cobalt |
| Cyprium Metals | CYM | | breached downtrend, surged higher | copper |
| Emerald Resources | EMR | | rising, new high | gold |
| Empire Energy | EEG | | breached support | gas |
| EQ Resources | EQR | | breaching downtrend | tungsten |
| Evolution Energy | EV1 | | new low | graphite |
| Evolution Mining | EVN | | rising | gold |
| First Graphene | FGR | | spiked higher | graphene |
| Fortescue Metals | FMG | | rallying | iron ore |
| Genesis Minerals | GMD | | rising | gold |
| Globe Metals and Mining | GBE | | steeply higher | niobium |
| Gold 50 | G50 | | new uptrend | gold exploration + gallium |
| Great Boulder Resources | GBR | | sideways at lows | gold exploration |
| Group 6 Metals | G6M | | down | tungsten |
| Hamelin Gold | HMG | | sideways through downtrend | gold exploration |
| Hastings Technology Metals | HAS | | collapse to new low | rare earths |
| Heavy Minerals | HVY | | new low | garnet |
| Hillgrove Resources | HGO | | rising gently | copper |
| Iluka Resources | ILU | | improving | mineral sands |

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| | | | | |
|--------------------------------|-----|---|----------------------------|------------------------------------|
| ioneer (was Global Geoscience) | INR |  | rising again | lithium |
| Ionic Rare Earths | IXR |  | down | rare earths |
| Jervois Mining | JVR |  | new low | nickel/cobalt |
| Jindalee Lithium | JLL |  | back to lows | lithium |
| Jupiter Mines | JSM |  | rising | manganese |
| Kaiser Reef | KAU |  | improving | gold |
| Krakatoa Resources | KTA |  | steep rise on niobium news | rare earths |
| Larvotto Resources | LRV |  | rising | gold, antimony |
| Lindian Resources | LIN |  | breached downtrend | rare earths + bauxite |
| Li-S Energy | LIS |  | sideways | Lithium sulphur battery technology |
| LCL Resources | LCL |  | new low | gold/nickel exploration |
| Lotus Resources | LOT |  | rising | uranium |
| Lucapa Diamond | LOM |  | new low | diamonds |
| Lunnon Metals | LM8 |  | testing uptrend | nickel |
| Lynas Corp. | LYC |  | rallied to meet resistance | rare earths |
| Marmota | MEU |  | rising | gold/uranium exploration |
| Mayur Resources | MRL |  | breached uptrend | renewables, cement |
| Meeka Gold | MEK |  | rallying | gold |
| MetalsX | MLX |  | rising | tin, nickel |
| Meteoric Resources | MEI |  | sideways | rare earths |
| Metro Mining | MMI |  | new high | bauxite |
| Midas Minerals | MM1 |  | slump | lithium |
| Mitre Mining | MMC |  | steep rise | silver |
| Nagambie Resources | NAG |  | another new low | gold, antimony |
| Neometals | NMT |  | new low | lithium |
| Newfield Resources | NWF |  | breached downtrend | diamonds |
| Nexgen Energy | NXG |  | breached uptrend | uranium |
| Northern Star Res. | NST |  | rising | gold |
| Nova Minerals | NVA |  | down | gold exploration |
| Novo Resources | NVO |  | down | gold exploration |
| Pacific Gold | PGO |  | breached downtrend | gold exploration |
| Paladin Energy | PDN |  | new high | uranium |
| Pantoro | PNR |  | rising again | gold |
| Patriot Battery Metals | PMT |  | testing downtrend | lithium |
| Peninsula Energy | PEN |  | sideways | uranium |
| Perseus Mining | PRU |  | at highs | gold |
| Provaris Energy | PV1 |  | down | hydrogen |
| QMines | QML |  | new low | copper |
| Queensland Pacific Metals | QPM |  | testing downtrend | nickel/cobalt/HPA |
| RareX | REE |  | new low | phosphate, rare earths |
| Regis Resources | RRL |  | rising | gold |
| Regergen | RLT |  | rising | gas, helium |
| Richmond Vanadium | RVT |  | testing downtrend | vanadium |
| RIO | RIO |  | rising again | diversified, iron ore |

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| | | | | |
|-----------------------------|-----|---|----------------------------|----------------------------|
| RTG Mining | RTG |  | rising | copper |
| Rumble Resources | RTR |  | new low | zinc exploration |
| S2 Resources | S2R |  | gentle downtrend | gold exploration |
| Sandfire Resources | SFR |  | rising again | copper |
| Santos | STO |  | weaker | oil/gas |
| Sarytogan Graphite | SGA |  | down | graphite |
| Siren Gold | SNG |  | rising | gold exploration |
| South Harz Potash | SHP |  | new low | potash |
| Southern Cross Gold | SXG |  | spike to new high | gold exploration |
| Southern Palladium | SPD |  | rising again | PGMs |
| Stanmore Coal | SMR |  | testing downtrend | coal |
| Stellar Resources | SRZ |  | uptrend | tin |
| Summit Resources | SUM |  | new high | niobium, rare earths |
| Suvo Strategic Minerals | SUV |  | spiked higher | kaolin |
| Talga Resources | TLG |  | rallying | graphite |
| Tamboran Resources | TBN |  | rising again | gas |
| Theta Gold Mines | TGM |  | rising again | gold |
| Thor Energy | THR |  | down | uranium |
| Tietto Minerals | TIE |  | surge on takeover approach | gold |
| Torque Metals | TOR |  | breached downtrend | gold exploration + lithium |
| Vanadium Resources | VR8 |  | new uptrend | vanadium |
| Venture Minerals | VMS |  | back to recent high | tin, tungsten |
| Vintage Energy | VEN |  | new low | gas |
| Voltaic Strategic Resources | VSR |  | at lows | REO + lithium |
| Vertex Minerals | VTX |  | breached downtrend | gold |
| Walkabout Resources | WKT |  | sideways | graphite |
| Warriedar Resources | WA8 |  | breached downtrend | gold exploration |
| West Cobar | WC1 |  | new low | rare earth + lithium |
| Westgold Resources | WGX |  | testing downtrend | gold |
| West Wits Mining | WWI |  | correcting lower | gold |
| Whitehaven Coal | WHC |  | testing uptrend | coal |
| Zenith Minerals | ZNC |  | new low | gold exploration |
| Totals | 39% | 54 | Uptrend | |
| | 29% | 40 | Downtrend | |
| | | 137 | Total | |

Guides to Chart Interpretations

- Charts usually go pass from one trend (up or down) into the other via a period of indecision and uncertainty during which the trend can either recover or change. This period is signified by the orange colour. The orange represent both the greatest risk and greatest reward possibilities.
- Once a chart is in confirmed up or downtrends it is not uncommon for 10-20% of that trend to have already transpired.
- There are trends within trends. The focus of this chart review is the immediate trend that affects the sentiment i.e. it can be a downtrend within a long-term uptrend.
- Not every chart warrants a new comment every week. The new comments are in bold type. Grey type comments may be dated.
- Individual charts provide a single view. It is valuable to look at charts of other companies in similar commodities, and the overall sentiment is also very valuable. Not many stocks can swim against the tide.
- We periodically add or delete charts, some times for obscure reasons. If a chart consistent gives poor signals or is very erratic, we may delete it. Sometimes we add a chart because we want to see what all the fuss is about. We do have a preference for charting stocks that we cover in our research as well.

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- Errors and omissions may occur from time to time, especially in fast moving markets.

Amber Lights in Tables: Just a reminder if when the amber light is used in the table – it is when the charts are ambiguous or when there is a change of trend taking place. If a chart is breaching a downtrend it can either be a positive sign or a trap. Only once it has done more work can it be confirmed as a new uptrend. Maybe it is a new uptrend (or conversely a new downtrend); the risk takers can decide to jump on board early (or sell). They will maximise their profits (or minimise their losses if indeed it is the start of the new uptrend (downtrend). More risk-averse investors should wait a little longer, being prepared to give up some of the gains in return for greater certainty.

| Weightings of Sectors Represented in the Company Charts | | | |
|---|------------------|-----------|--|
| Sector | No. of Companies | Weighting | |
| Gold | 28 | 20.4% | |
| Gold Exploration | 16 | 11.7% | |
| Rare Earths | 13 | 9.5% | |
| Copper | 10 | 7.3% | |
| Uranium | 7 | 5.1% | |
| Lithium | 6 | 4.4% | |
| Oil/Gas | 6 | 4.4% | |
| Nickel | 5 | 3.6% | |
| Graphite/graphene | 5 | 3.6% | |
| Iron Ore/Manganese | 4 | 2.9% | |
| Potash/Phosphate | 4 | 2.9% | |
| Coal | 3 | 2.2% | |
| Tungsten | 3 | 2.2% | |
| Tin | 3 | 2.2% | |
| Silver | 3 | 30.0% | |
| Diamonds | 2 | 1.5% | |
| Niobium | 2 | 1.5% | |
| Vanadium | 2 | 20.0% | |
| Zinc/Lead | 2 | 1.5% | |
| Mineral Sands | 1 | 0.7% | |
| Bauxite | 1 | 0.7% | |
| Cobalt | 1 | 0.7% | |
| Other | 10 | | |
| Total | 137 | | |

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