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FAR EAST CAPITAL
The Mining Investment Experts

**Weekly Commentary**

16 October 2021 *On Friday's Close* Analyst : Warwick Grigor

# How many people really understand hydrogen?

## *How many people really understand hydrogen?*

Politicians and promoters seem to be talking about hydrogen as a wonderful new source of energy, but this isn't quite right. It is not a primary source of energy like gas or coal. It is more like a battery, storing energy after it has been made, and it has to be manufactured, not found. Whether or not it is "green" depends upon how it is made.

Emphasising this point, at the moment the world produces about 90 tpa of hydrogen valued at US$150bn. It is almost exclusively done by converting fossil fuels, accounting for 6% of the world consumption of natural gas and 2% of the coal. In the process, it emits more than 800 Mt of carbon dioxide. Tell me how that helps reduce the $CO_2$ emissions. Quite obviously, it doesn't. So, what are the politicians rabbiting on about? Why are many companies saying that they are great green hydrogen plays? What have they got that others don't have? Let's look more closely.

Given that you need a source of energy to make hydrogen, and fossil uses are being avoided, you then have to look at renewable energy sources such as hydro, wind or solar. The resultant hydrogen would then be called "green". Hydrogen would offer a medium for storing renewable energy - much like a battery. You have to subsequently invest in transport logistics infrastructure and developing technology to turn that hydrogen into useable energy, or burn it in conjunction with natural gas if the objective is a source of heating. Whatever the intended use of hydrogen, the world still needs to develop the processes further, and therefore at a lower delivered cost than what we are seeing today.

There is a developing colour-based jargon to characterise hydrogen according to the source of manufacturing;

- grey hydrogen comes from converting fossil fuels (used today in fertiliser and petrochemical industries),
- blue hydrogen involves the same, but with carbon capture and sequestration, at questionable cost,
- green hydrogen involves the use of renewable energy to power water-based electrolysis,
- pink hydrogen comes from using nuclear power and
- turquoise hydrogen involves methane pyrolysis - thermal cracking of methane, biogas or natural gas to release hydrogen, or catalytic pyrolysis.

The grey is the cheapest form of manufacturing hydrogen, and everything else involves a premium. Grey costs about US$1/kg, depending upon the price of natural gas … which is currently skyrocketing. Blue hydrogen is expected to cost twice as much but sequestration is still an issue. Green is expected to cost US$4-5/kg, and this is where the promoters are predicting big reductions in cost due to economies of scale. Pink is probably the cheapest but I haven't seen any quoted figures yet. The optimists all say that the costs of all of the colours will come down closer to $1-2/kg by 2030, but that shouldn't just be assumed without evidence of progress.

When assessing the merits of any hydrogen wannabe company of the future, you have to identify how it is going to make that hydrogen and determine whether its process is competitive or not (ignoring the fact that using gas and coal is still the cheapest method to make hydrogen). How efficient is any particular project in both capital costs and operating costs for production of a given amount of hydrogen energy, relative to other prospective producers? For hydrogen to become cost competitive, we need to see the cost of renewable energy continue to fall much further because the major cost component is the electricity used. Electrolysers themselves also need to become more efficient, be they proton-exchange membranes (PEMs) or some newer technology.

McKinsey is predicting that a lift in global electrolyser capacity from todays level of 3GW to 100GW by 2030, could give economies of scale that would cut the hydrogen cost by 65-75%. More aggressively, Morgan Stanley is saying that the cost of green hydrogen will fall to that of grey hydrogen within 2-3 years. Time will tell.

*(I note there is some discrepancy between the above production numbers and the press report last week that Fortescue Future Industries is planning 2GW of hydrogen production capacity, which will more than double the global production rates. Someone hasn't got the numbers quite right, but hey, it is still a good promotion).*

Once the hydrogen is made, it needs to be transported to the ultimate point of consumption. Maybe it can be done via pipelines but it would be more likely to happen through compression or liquification in specialised ships such as the ones being pioneered by Global Energy Ventures, or through the use of a liquid carrier such as ammonia or methyl-cyclo-hexane. It could even be transported in hydrogen saturated salts like the technology that Global Electriq is developing, which provides one of the safest transport methods. Whatever the route, the hydrogen market cannot be developed much further without significant investment in logistics. That is where the big capital expenditures need to occur.

There isn't uniformity of opinion on the possible applications of hydrogen in the aircraft industry. While hydrogen can deliver 3x the energy density of kerosene, by the litre it carries 3,000x less. It needs to be liquified at a temperature of -253$^0$C, but it would still occupy every cubic centimetre of the plane's cargo and passenger capacity. Economics still need to be established.

So, when promoters are saying they are going to be producers of hydrogen, are they really just saying they are going make it from one of the many different routes, or are they saying they are going to get involves in the transport and logistics side of the business? If they are going to make it from renewables - which anyone can do - are they just emphasising that they have a route to market for renewable energy rather than solid batteries? I can't see why the market should be getting so excited about hydrogen so early in the process. There are still many hurdles to overcome and there aren't really any barriers to entry. Where are the super-profits for industry going to come from, to justify the stock market enthusiasm, as opposed to normal rates of return? Perhaps the answer lies in new, developing technologies that can introduce efficiencies over and above economies of scale. We should be focusing on these with one example being ASX-listed Hazer Group, one of the global leaders in developing methane pyrolysis technology developed at the University . of Western Australia. There are others, but again, economics need to be proven.

Making Australia a big producer of hydrogen is a reasonable objective, but calling Australia a world powerhouse of hydrogen implies that we will proceed to become a major exporter. That means we need to develop the seaborne transport logistics solution, which brings into focus Global Energy Ventures and its objective of designing and building tankers for compressed hydrogen. The big winners will be suppliers of infrastructure and logistical solutions, and those that can deliver new technology, more so than the companies spending the capital.

*Disclosure: Interests associated with the author own shares in Global Energy Ventures.*

## Looking for companies on no-one's radar

I love finding stocks that are obscenely cheap with very little turnover, and figuring out why they find themselves so isolated in the market. If there is a history of failure or bad management and they are doing time in purgatory then the market probably has got it right. However, there may be other circumstantial reasons such as inexperience or lack of exposure in the market place. If they are an unknown entity and they have projects of merit, they could be hidden gems. I'd rather take a position in this type of company than one which is universally known, such that all of the potential buyers are already set and waiting for delivery on promotion. I recently identified Megado Gold as one such opportunity.

## Megado Gold isn't on the radar yet

The Megado Gold (MEG) story is not complicated. In fact, it is very simple. It is a gold exploration company that has been acquiring prospective ground in the Adola Gold Belt in the Arabian-Nubian Shield, in Ethiopia. Rather than paying big money to a middleman or promoter to get set, it is getting set through a process of doing its homework and applying for licences from the government - as opposed to paying big money to a middleman/promoter.

The Company has the benefit of Chris Bowden's five years of in-country experience with Ascom Precious Metals, during which he led the discovery of a 1.5 Moz resource at a grade of 1.8 gpt (since his departure it has increased to 2.3 Moz). The Ascom exploration team came along with Chris to Megado with the objective of emulating the earlier success. Thus it has an intimate knowledge of the regional geology and operating conditions, with a good understanding of the regulations and the customs that give a significant advantage over any subsequent companies that may arrive on the scene. Some call this the first mover advantage.

### *A regional treatment plant is looking for more ore*

The Adola Gold Belt already hosts a significant gold mine that has been operating for 23 years. The privately-owned Lega Dembi plant has been treating the 3 Moz Lega Dembi orebody at a rate of 1.5 Mtpa, with supplementary feed coming from the 0.6 Moz Sakaro deposit, but the ore reserve is nearing exhaustion. The open pit has reached its design depth of 200m with grades recently in the order of 3.5-4 gpt. Maybe the mining can continue to operate on an underground extension, but we understand that there has not been enough work done to enable the possibility. With Sakaro also nearing the end of its life, the possibility of an idle mill nearby could open up accelerated gold production opportunities for Megado … provided it can prove up a mineable orebody.

### *Portfolio of gold exploration projects*

Megado has four projects in the Adola Gold Belt in the Southern Ethiopian Shield and one in the Western Ethiopian Shield. All are 100% owned except Babicho, which is 80% owned. Even though Ethiopia hosts six known > 1 Moz deposits, Megado is of the view that this is just the door opener to what looks like the start of a gold exploration boom.

Prospect selection was preceded by the running of spectral analysis with Landsat 8 imagery to identify clay alteration zones, a method previous used successfully by Chris Bowden. Having identified these, field reconnaissance work then identified a number of coincident quartz veins and an independent review led to the pegging of prospective ground. The entire length of the Adola Gold Belt was assessed with this approach.

**Babicho** (80%) is located only 45 km from the Lega Dembi treatment plant. The geology seems to have similar alteration characteristics to that mine, with oxidation levels generally 20-30m deep. Early sampling and trenching has demonstrated a 2 km long soil anomaly at the Roba Shakisso Prospect, with widths in the general range of 6-11m, at grades of 2-3 gpt. Unfortunately the follow-up diamond drilling that tested beneath these trenches didn't come up with numbers as good. The Company acknowledged that these holes were probably drilled prematurely, without a sufficiently rigorous target definition work. There have been personnel changes since then, so it aims to not make the same mistake again. The next round of drilling is expected after the end of the wet season, perhaps in November or December. Twenty shallow RC will drill for the all important structure to gain a better understanding of the mineralisation. There is 17 km of shear structure strike length to be evaluated.

The **Chakata** licence (100%) is strategically located only 5 km from the Lega Dembi mine, covering 9 km of the same sort of structure. At the GT prospect, the best drill result was 11m at 2.88 gpt from a depth of 22m beneath a trench that returned 25m at 2.57 gpt, within a broader 47m zone that assayed 1.55 gpt. So, there is early encouragement on which to follow up.

The rest of the licences cover early stage, greenfields exploration projects. **Mormora** (100%) is located 40 km south of Lega Dembi. It has only been sampled in the past with positive grades reported. **Dawa** (100%), Megado is still going through permitting process to gain initial access. Work by previous owners has identified significant amounts of gold in sampling and limited drilling but the Company is still researching the historical data. **Dermi Dama** is still under application. It is located immediately west of the sizeable Kentcha lithium/tantalum mine and the different rock types offer opportunities for more than just gold e.g. lithium and rare earths.

### *Finances are somewhat limiting right now*

Megado's financial position is modest, with a cash balance of around $2m, but it will need to raise additional funds if it wants to undertake meaningful field work such as drilling. However, management finds itself in the position where a downtrend has taken the share price down to deliver a market capitalisation of less than $7m. Does the company raise money now, at highly dilutionary prices, or does it seek to get the share price higher. The trouble is that if everyone thinks there is a placement coming, it is common practice for the punters to hold off until they see the terms of an issue. It is game of chicken and egg. Sometimes we see a share price pumped up ahead of a placement to make the issue price look more attractive, which is often very annoying as well as being spivvy. The share price often comes down heavily afterwards. Maybe, if there is no rush to raise the money, a more equitable approach would be to have an entitlement issue such as a 1 for 3 issue. Marketing of the entitlement would be a good opportunity for the company to promote its merits.

You never know; there may be some investors that like what they see and are happy to buy into the stock even though they know there is an issue coming, if an entitlement issue gives them the ability to apply for over-subscriptions. As we have mentioned before, there is never enough stock to go around at the discounted prices even if the placement route is followed. Personally, my approach is to buy at least some of the stock I want now, hoping that I might get more in a placement or a subsequent issue.

### *The Bottom Line*

Megado is a grass roots exploration company in the very early stages of prospect definition and assessment. The geology is good but the location in Ethiopia is regarded as "exotic". Not everyone would be comfortable with the location and the reports of military activity in the north could worry some investors, but Megado's projects are about 1,000 km to the south of the hot zone, and four days' drive away. The market capitalisation of less than $7m takes all the risk factors into account, but there is no pricing in the stock for potential exploration success.

## *Strong assays from Alicanto's Sala silver project*

During the week, Alicanto (AQI) released more results from its high-grade silver project in Sweden, Sala. The eye catching headline quoted grades of 663 gpt silver over 1m in one intercept, and 41% over 1.1m zinc in another, both in in massive sulphides. This is consistent with the historical grades from mine production and exploration results released earlier this year.

As is usually the case, we shouldn't over-analyse individual results like these, no matter how good they are. If reported assays are ridiculously high grade, then we need to place them in perspective with the overall population. The real question to ask is how repeatable they are likely to be in a mining situation. Given we are looking at an historical mining location, we can also look back to see what was achieved previously.

I've been looking at many silver projects in the Americas in recent months. The best of them have super high-grades of silver and associated metals over true widths of 0.5-1m, within larger, lower grade widths that would be appropriate for mechanised mining. Alicanto seems to be reporting similar assays and dimensions at Sala, placing it up there with the best of them.

### *But what might a resource look like?*

The two most important parameters to contemplate in a resource are volume and grade, and then you start the process of engineering to work out the geometry and what is actually mineable. AQI is looking at something that is showing a strike length in the order of 600m, with a depth potential of 500m in the first instance, starting from surface. The high grade component could be 4-5m wide, but this could extend to 10-20m wide at a lower grade. The tonnage could be anything from 4 Mt to 16 Mt, or more. High grades could be 600 gpt AgEq and low grade might be 250 gpt AgEq. That would translate into a silver resource of 80-130 Moz, depending on whether you high grade or low grade the operation. All these numbers are guesstimates.

Looking at other silver projects in operation, Los Gatos (NYSE:GATO) has a 9.6 Mt orebody, treating 800,000 tpa at a grade of 648 gpt AgEq. It is capitalised at US$1bn. Ruprice (ASX:ADT) has a resource of 7.3 Mt at 485 gpt AgEq, with capacity of 800,000 tpa. It is capitalised at US$420m.

Alicanto is capitalised at only A$44m today. What is its resource and grade going to be? What could the resultant market capitalisation be? It doesn't have a resource yet, but if our crystal ball numbers are in the ball park, there is substantial blue sky not yet priced into the stock.

*Disclosure: Interests associated with the author own shares in Alicanto.*

## *Andean Mining IPO is imminent; $6m raising*

After many months of dealing with the ASX, the Andean Mining IPO is about to happen. Remember that this is a high-grade copper/gold VMS project in Colombia, with very good metallurgical characteristics and potentially a very high value based on contained, recoverable metal. (including silver and zinc). We have written research previously, which is still relevant on the technical aspects. It is on the FEC web site.

The Lead Manager and Sponsoring Broker is Novus Capital, with Cadmon Advisory also acting as Broker to the Offer. Far East Capital Limited does not have a formal role, but it will be offering advice to the Board on a pragmatic basis. There is a Pathfinder document we can send you if requested, in advance of the formal Prospectus. Please advise if you wish to see either, or both.

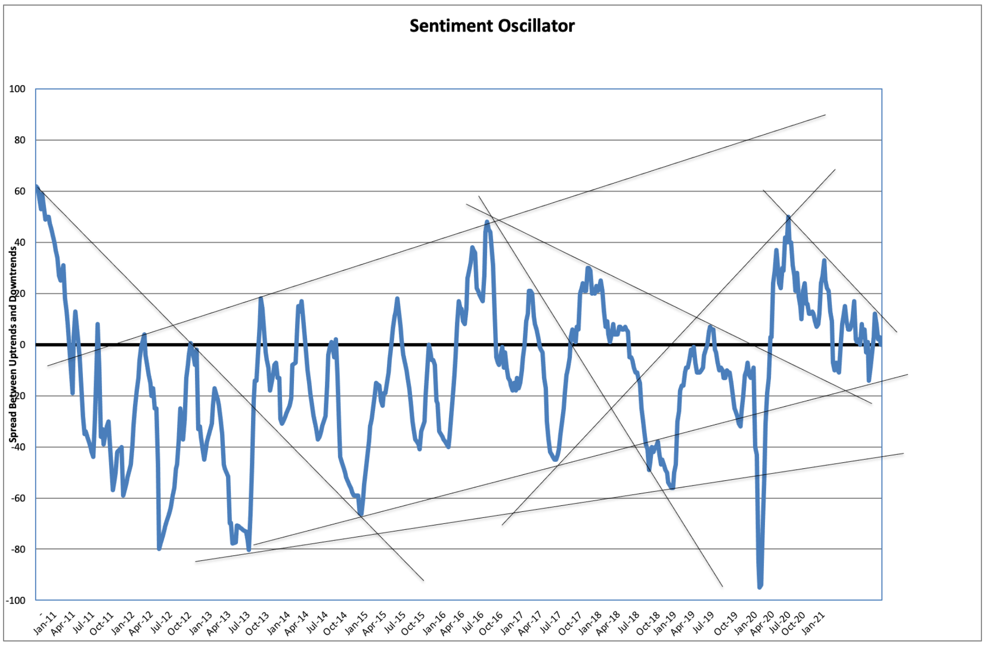
*Disclosure: Interests associated with the author own shares in Andean.*

## Los Cerros research released by Sprott

I saw last week that Sprott's Capital Partners' analyst released a research note on Los Cerros (LCL) that valued it at 36¢ a share. While Sprott has a vested interest, as they co-managed the recent $20m LCL placement, the analyst who wrote the research has a good reputation in the market. I note that his valuation was based on an assumed resource of 3 Moz, 4 Mtpa throughput of ore grading 1.13 gpt, a 1.7: waste to ore ratio and annual production of 225,000 oz p.a. Capex was estimated at US$345m. I don't have any grounds for disputing these numbers but I also haven't scrutinised them closely. The point is that a leading analyst is taking the company and the project very seriously, and he thinks the share price should be three times higher.

*Disclosure: Interests associated with the author own shares in Los Cerros.*

We have added Benz Mining BNZ) and American Borates (ABR) to our chart coverage.




**Sentiment Oscillator:** Sentiment was at equilibrium at the ned of the week. the week. There were 31% (33%) of the charts in uptrend and 31% (33%) in downtrend on Friday's close.

## 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 | | resent to resistance line | |
| Metals and Mining | XMM | | strong rally | |
| Energy | XEJ | | rising | |
| **Stocks** | **Code** | | **Trend Comment (updated comments in bold)** | **Main Interest** |
| Alpha HPA | A4N | | sideways | HPA |
| Adriatic Resources | ADT | | slump below trend line | zinc, polymetalic |
| Alkane Resources | ALK | | down | gold |
| Alicanto Minerals | AQI | | pullback on good drill result | base metals, silver, gold |

| | | | | |
|---|---|---|---|---|
| Altech Chemical | ATC | | breached downtrend | HPA, anodes |
| Alto Metals | AME | | sideways | gold exploration |
| American Borates | ABR | | rising | borate |
| American Rare Earths (was BPL) | ARR | | rising | rare earths |
| Antilles Gold | AAU | | testing downtrend | gold |
| Arafura Resources | ARU | | rising | rare earths |
| Ardea Resources | ARL | | sideways through support line | nickel |
| Aurelia Metals | AMI | | risen to meet resistance line | gold + base metals |
| Australian Potash | APC | | down | potash |
| Australian Rare Earths | AR3 | | new high | rare earths |
| Auteco Minerals | AUT | | resumed uptrend | gold exploration |
| Azure Minerals | AZS | | softening | nickel exploration |
| BHP | BHP | | rallying | diversified, iron ore |
| Beach Energy | BPT | | rallying | oil and gas |
| Bellevue Gold | BGL | | testing support | gold exploration |
| Benz Mining | BNZ | | down | gold |
| Blue Star Helium | BNL | | strong rise | gas, helium |
| BMG Resources | BMG | | surged higher | gold exploration |
| Boab Metals | BML | | in a secondary downtrend | silver/lead |
| Breaker Resources | BRB | | * | gold exploration |
| Buru Energy | BRU | | slump | oil |
| Calidus Resources | CAI | | rising again | gold |
| Capricorn Metals | CMM | | surge to new high | gold |
| Caravel Minerals | CVV | | testing downtrend | copper |
| Celsius Resources | CLA | | breached downtrend | copper |
| Chalice Mining | CHN | | testing uptrend again | nicklel, copper, PGMs, gold exploration |
| Chase Mining | CML | | breached downtrend | nickel/copper/PGE |
| Chesser Resources | CHZ | | down | gold exploration |
| Cobalt Blue | COB | | new uptrend being tested | cobalt |
| Cyprium Metals | CYM | | continuing down | copper |
| Danakali | DNK | | long term downtrend | potash |
| De Grey | DEG | | shallow downtrend | gold |
| Develop Global | VXR | | rallying | zinc |
| E2 Metals | E2M | | shallower downtrend | gold exploration |
| Ecograf | EGR | | new downtrend | graphite |
| Element 25 | E25 | | testing downtrend | manganese |
| Emerald Resources | EMR | | rising again | gold |
| Euro Manganese | EMN | | down | manganese |
| Evolution Mining | EVN | | down | gold |
| Firefinch | FFX | | strongly higher | gold |
| First Graphene | FGR | | back to support line | graphene |
| Fortescue Metals | FMG | | down | iron ore |
| FYI Resources | FYI | | collapse out of uptrend | HPA |
| Galena Mining | G1A | | breached downtrend | lead |

| | | | | |
|---|---|---|---|---|
| Galilee Energy | GLL | | down | oil and gas, CBM |
| Genesis Minerals | GMD | | testing downtrend | gold |
| Genmin | GEN | | back in downtrend | iron ore |
| Gold Road | GOR | | weaker | gold |
| Hastings Technology Metals | HAS | | rising again | rare earths |
| Hazer Group | HZR | | new uptrend | hydrogen |
| Highfield Resources | HFR | | down | potash |
| Hillgrove Resources | HGO | | breached downtrend | copper |
| Iluka Resources | ILU | | new high | mineral sands |
| Image Resources | IMA | | sideways | mineral sands |
| Independence Group | IGO | | new high | gold |
| ioneer (was Global Geoscience) | INR | | testing uptrend | lithium |
| Ionic Rare Earths (Oro Verde) | IXR | | recovering long term uptrend | rare earths |
| Jervois Mining | JVR | | breaching uptrend | nickel/cobalt |
| Jindalee Resources | JRL | | testing uptrend | lithium |
| Kairos Minerals | KAI | | down | gold exploration |
| Kingston Resources | KSN | | down | gold |
| Kingwest Resources | KWR | | surge out of downtrend | gold |
| Latitude Consolidated | LCD | | back to recent lows | gold |
| Legend Mining | LEG | | turned down at resistance line | nickel exploration |
| Lepidico | LPD | | breached uptrend | lithium |
| Lindian Resources | LIN | | new high | bauxite |
| Lithium Australia | LIT | | heavy slump | lithium |
| Los Cerros | LCL | | down | gold exploration |
| Lotus Resources | LOT | | rising | uranium |
| Lucapa Diamond | LOM | | rising from lows | diamonds |
| Lynas Corp. | LYC | | heavy fall | rare earths |
| Magnetic Resources | MAU | | back to highs | gold exploration |
| Mako Gold | MKG | | down again | gold exploration |
| Manhattan Corp | MHC | | stronger out of downtrend | gold exploration |
| Marmota | MEU | | rallying | gold exploration |
| Marvel Gold | MVL | | new high | gold exploration |
| Matador Mining | MZZ | | breached downtrend | gold exploration |
| Megado Gold | MEG | | down | gold exploration |
| MetalTech | MTC | | new high then heavy fall | gold |
| Meteoric Resources | MEI | | down heavily | gold exploration |
| MetalsX | MLX | | new high | tin, nickel |
| Metro Mining | MMI | | back to lows | bauxite |
| Mincor Resources | MCR | | new high | gold/nickel |
| Musgrave Minerals | MGV | | risen to meet resistance line | gold exploration |
| Neometals | NMT | | new high | lithium |
| Northern Minerals | NTU | | breached ST uptrend | REE |
| Northern Star Res. | NST | | down | gold |
| Oceana Gold | OGC | | testing downtrend | gold |

| | | | | |
|---|---|---|---|---|
| Oklo Resources | OKU | | testing downtrend | gold expl. |
| Orecorp | ORR | | heavy correction after placement | gold development |
| Orocobre | ORE | | new high | lithium |
| Oz Minerals | OZL | | rising again | copper |
| Pacific American | PAK | | off its lows | coking coal |
| Pantoro | PNR | | breached support line | gold |
| Panoramic Res | PAN | | breakout on the upside | nickel |
| Peak Minerals | PUA | | new low | copper exploration |
| Peak Resources | PEK | | down | rare earths |
| Peel Mining | PEX | | testing downtrend | copper |
| Peninsula Energy | PEN | | new high | uranium |
| Poseidon Nickel | POS | | breached uptrend | nickel |
| Perseus Mining | PRU | | rising | gold |
| Pilbara Minerals | PLS | | new high | lithium |
| Polarex | PXX | | spike higher | polymetallic exploration |
| Queensland Pacific Metals | QPM | | new high | nickel/cobalt/HPA |
| Red River Resources | RVR | | testing downtrend | zinc |
| Regis Resources | RRL | | new low on large financing | gold |
| Renergen | RLT | | rising | gas, helium |
| RIO | RIO | | testing steep downtrend | diversified, iron ore |
| Rumble Resources | RTR | | breached downtrend | gold exploration |
| Salt Lake Potash | SO4 | | voluntary suspension | potash |
| St Barbara | SBM | | testing downtrend | gold |
| Sandfire Resources | SFR | | rallying | copper |
| Santos | STO | | rising | oil/gas |
| Saturn Metals | STN | | breached short term uptrend | gold exploration |
| Sheffield Resources | SFX | | breached uptrend | mineral sands |
| St George Mining | SGQ | | risen to resistance line | nickel |
| Silex Systems | SLX | | heavy correction | uranium enrichment technology |
| Silver Mines | SVL | | down | silver |
| Sipa Resources | SRI | | testing downtrend | general exploration - Ni,Cu, Co, Au |
| South Harz Potash | SHP | | surge higher | potash |
| Stanmore Coal | SMR | | new high | coal |
| Strandline Resources | STA | | pullback | mineral sands |
| Sunstone Metals | STM | | surged higher | exploration |
| Talga Resources | TLG | | still in downtrend | graphite |
| Technology Metals | TMT | | testing uptrend | vanadium |
| Tesoro Resources | TSO | | new low | gold exploration |
| Theta Gold Mines | TGM | | testing downtrend | gold |
| Thor Mining | THR | | strong rise | gold exploration |
| Tietto Minerals | TIE | | strong rise | gold |
| Titan Minerals | TTM | | sideways | gold |
| Vimy Resources | VMY | | surge through downtrend | uranium |
| West African Resources | WAF | | new high | gold |

| | | | | |
|---|---|---|---|---|
| Westgold Resources | WGX | | turned down at resistance line | gold |
| West Wits Mining | WWI | | strong rally | gold |
| Western Areas | WSA | | surge higher | nickel |
| Whitehaven Coal | WHC | | surge to new high | coal |
| Wiluna Mining | WMC | | gently higher | gold |
| Yandal Resources | YRL | | testing uptrend | gold exploration |
| Zenith Minerals | ZNC | | placement and downtrend | gold exploration |
| Zinc Mines of Ireland | ZMI | | softening | zinc |
| Totals | 31% | 45 | Uptrend | |
| | 31% | 45 | Downtrend | |
| | | 144 | 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.
- 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 | 30 | 20.8% | |
| Gold Exploration | 26 | 18.1% | |
| Nickel | 13 | 9.0% | |
| Copper | 10 | 6.9% | |
| Lithium | 7 | 4.9% | |
| Rare Earths | 8 | 5.6% | |
| Oil/Gas | 6 | 4.2% | |
| Iron Ore/Manganese | 6 | 4.2% | |
| Zinc/Lead | 5 | 3.5% | |
| Mineral Sands | 4 | 2.8% | |

| | | | |
|---|---|---|---|
| Potash/Phosphate | **5** | **3.5%** | |
| Uranium | **4** | **2.8%** | |
| Graphite/graphene | **4** | **2.8%** | |
| Coal | **3** | **2.1%** | |
| Bauxite | **2** | **1.4%** | |
| Silver | **2** | **1.4%** | |
| Cobalt | **1** | **0.7%** | |
| Tin | **1** | **0.7%** | |
| Diamonds | **1** | **0.7%** | |
| Other | **6** | | |
| Total | **144** | | |

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