

Agua Ready to Take Advantage of High Fertiliser Prices with the Granting of the Operating Licence

Remember when, a few months ago, I questioned whether the move in the gold price was a blowout scenario. It looked like it at the time and subsequent movements lower have confirmed that this was indeed a blowout. It marked the end of a chapter but not the end of the story. The heat has come out of the gold and silver markets and the same with precious metals equities, but they will return to favour at some point. The best way to pick the bottom, and therefore the turnaround, will be by following the charts (which of course will be influenced by real world events).

The Sentiment Oscillator correctly called the correction in the market back in early February. Normally, you can expect a correction to last a few weeks and then there begins a period of bargain hunting for the next wave upwards. However, it is different here due to the imposition of the Iran War.

It was a stinker last week as many stocks moved lower. It started to look more like a bear market than a correction. The market has lost momentum while we have been waiting to see what Trump does next. Whereas previously the punters would have been looking for the time to buy on the dip, they have hesitated and are now becoming increasingly disengaged. That means they may take longer to react when the market does start to turn. That behaviour is symptomatic of a bear market rather than a short term correction.

Nevertheless, in the real world, it was a good news week for Agua last week and we comment on that below. We also have a further look at the HPA stocks to give a bit more insight.

Agua - All Systems Go with Operating Licence

Last Monday, Agua (AGR) announced the formal granting of the Operating Licence for the Tres Estradas phosphate project in southern Brazil. While the Company didn't ever doubt that it would come through, getting the exact timing was always in debate given the jurisdiction. Next week Agua can commence mining, and processing of the rock phosphate at the Caçapava processing facility will be happening early in June.

The timing couldn't be better in terms of phosphate markets. Prices have been rising because of the extreme shortage of phosphate product in Brazil. Expected gross profit margins were already good (*ASX releases disclosed expected revenue of > A\$220 pt, on cash operating costs of A\$65 pt*), but they are now looking much better. Whereas normal trade terms were for 30 and 60 day payment, the tightness of the market is suggesting that money will have to be paid upfront, therefore improving early cash flows. Then the ball is rolling for a long-life fertiliser business that will undergo a series of capacity expansions over the next few years.

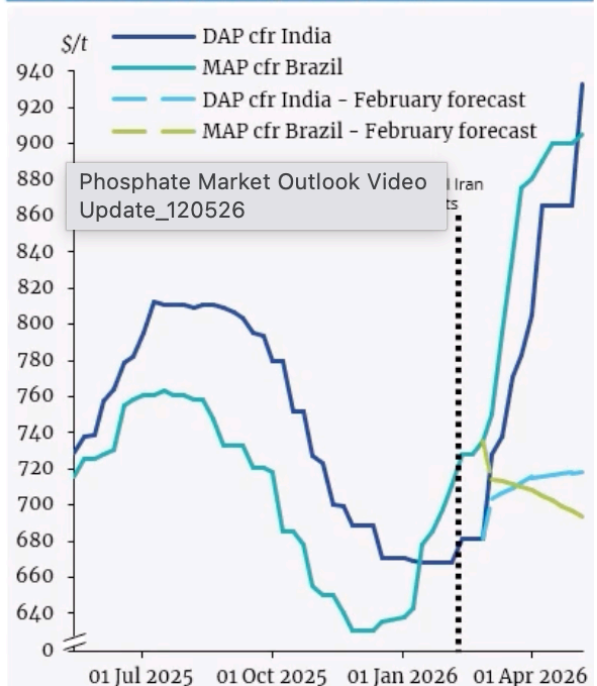
World phosphate prices have gone through the roof

The chart below, courtesy of Argus, shows the dramatic rise in fertiliser prices since February 28, when the Iran War started. It may be reasonable to think that the prices will fall when the war ends, but it is not that simple. Argus believes that prices will remain at elevated levels for longer due to;

- i) Chinese exports are not expected to resume until August at the earliest, and even then they will be constrained,
- ii) Saudi exports through the Straits of Hormuz will continue to be constrained and exports through an alternative southern port will have a much higher trucking cost, and
- iii) many global synthetic phosphate producers have been cutting back production due to raw material shortages and costs. A quick reversal is not easy.

Agua is almost unique in that its costs of production, and raw material sources, are essentially unchanged. Diesel prices will only have a small impact because of Brazil's domestic oil production. It can operate its business as usual, no matter how long the War lasts.

Weekly DAP/MAP prices year to date versus price forecast from February Argus Phosphate Outlook



Santa Barbara Gold Project Continues to Improve

Narrow, high-grade gold mines are never easy, and Santa Barbara has been no exception. Performance was disappointing last year notwithstanding the early enthusiasm. However, optimisation initiatives undertaken at the end of the year are bearing fruit. The emphasis has been on keeping costs under control, and improving grade and recoveries rather than chasing volume.

The report last week is testament to the appropriateness of this strategy with head grades being 10-12 gpt, achieving 10.3 gpt recoveries in the last batch. The sinking of two internal shafts to open up a second level now provides for development of more working faces and a gradual improvement in tonnages whilst keeping a strong focus on grade. Santa Barbara continues to be an exciting high-grade gold development asset that is expected to continue to improve from here with more drilling and development.

Convertible loans have been extinguished

In a move that was designed to improve the balance sheet, almost all of the convertible loans used for mine development last year has been converted to equity (\$150,000 left). Thus the Company is much more match fit and focused on the impending cash flow from the phosphate mine.

Disclosure: Interests associated with the author own shares in Aguia Resources and the author is a Non-Exec. Chairman

Getting Back to the HPA Discussion

As I said, there are two ASX-listed companies leading the charge in the HPA manufacturing business. One company, AEM, is using the well-established chloride leach process while the other, Alpha HPA, is using its own proprietary SX technology. They are using different processes to get to a similar outcome, but both are commercially dependent upon qualification by the buyer. That qualification process may address which is the better process, if it comes down to that.

Ramp-up of facilities

Both companies have produced HPA material for qualification testing by customers. AEM could be producing hundreds of tonnes in 2026 as it completed a commercial scale plant in 2025, of a couple of thousand tonnes p.a., but actual deliveries will depend on receipt of customer orders and completion of qualification testing. Alpha HPA reported sales of five tonnes on Q1 of 2026, from its Stage 1 plant but it will take until the second half of 2027 to get to materially higher production levels with commissioning of its larger scale Stage 2 plant. It is also worth noting that Alpha HPA has binding sales in the semiconductor sector meaning they have got full supply chain qualification in place.

AEM anticipates that capacity levels could be lifted to 6,000 tpa in 2029, upon further capex estimated to be US\$215m. Alpha HPS will be spending around \$500m to get to 5,000 tpa of HPA capacity and associated products.

Removal of Alpha radiation impact

The uranium in the matrix of a chip emits an alpha radiation or "alpha particle" which causes "bit flips" or "soft errors" that can cause 0 to switch to 1 in binary terms, when processing data. Each time it flips, the calculation has to be redone with consequential waste of time and energy. The alpha particles emitted will eventually ionise a chip and cause it to fail. As an example, a 1 ppb of uranium will only cause a flip up to four times in an hour. A >10 ppb uranium content can cause more than 100 blips per hour. Less is better.

For a long time High Purity Silica (HPS) has been the go to material in chips for this application and it has been preferred because it doesn't emit Alpha radiation (provided the best quality silica is used). As engineers are trying to get better performance out of chips, more heat is being generated which HPS can't remove fast enough. HPA has been identified as a superior material for this application, which can improve chip productivity due to much more efficient heat transfer (~3x). However, it is necessary to remove any residual uranium that could lead to Alpha radiation in the HPA for it to meet the semiconductor customer specifications.

Both companies understand the need to reduce Alpha radiation below detectable levels, and both claim that they can achieve this. AEM has optimised its ion exchange circuit to remove uranium before the precipitation of aluminium chloride. Similarly, Alpha removes uranium in the SX stage before crystallising aluminium nitrate. Both intermediate products then go to the pyrometallurgical stage for HPA production. AEM removes the chloride at this stage just like Alpha removes nitrate at the same juncture.

Selling Prices for HPA

In assessing the potential profitability of an HPA production facility, one must consider the price most likely to be received. I was reminded that HPA is not a generic product with an easily discernible price. As I said last week, the product is not fungible. Competition in the market is not based on price alone as each product is designed with a specific buyer in mind and selection is performance based. Some high-end buyers will want the best specs, while others may be less demanding, depending on the intended uses. Price will always be a factor as well.

Last week I suggested US\$32/kg, but what will customers really pay? Is it what one producer may be receiving on trial samples or is it what a consultant is telling us, based on observed prices across a very small field? At the end of the day it comes down to what will work, for both suppliers and consumers. Once a buyer locks in a quality for a specific product, that will consummate the relationship and the demand, and that will set the price.

Both companies are expecting cash costs of less than \$10/kg, so if a sale price of US\$30/kg can be achieved, it suggests a great profit margin.

For the thermal filler application for AI semiconductors, the industry does appear to have conducted a trade study of HPA vs other alternatives such as boron nitride. Due to HPA's superior mechanical strength and much improved heat transfer vs HPS, the industry has landed on HPA. It should be noted that boron nitride is more thermally conductive than HPA but is not mechanically tough enough to withstand the rigours of data centre operations.

A1 Needs Better Cooling for Chips

An associated issue to consider when talking about semiconductor chips and AI is the cooling issue. It is great that HPA can lead to the faster processing speeds that AI needs, but there is the associated issue of dispersing the heat thereby generated.

A research paper by UBS back in February highlighted the need for better cooling of semiconductor chips, saying that HPA composites could improve heat dissipation by a factor of 2-3x, thereby reducing junction temperatures by 4-5°C. Global implementation of this reduction could save an enormous amount of electricity; 20-30 TWh & 1 Mt of CO2 emissions. But the story doesn't stop there. It just opens the door to further heat being generated through faster processing, back to higher levels.

The Bottom Line

With a market capitalisation of over \$900m, and government debt facilities totalling \$400m, Alpha HPA is a notable size. The fact that it has been working on this project for many years, and making steady though slow progress, means that it has more substance than many other technology companies that were built on early "hot air".

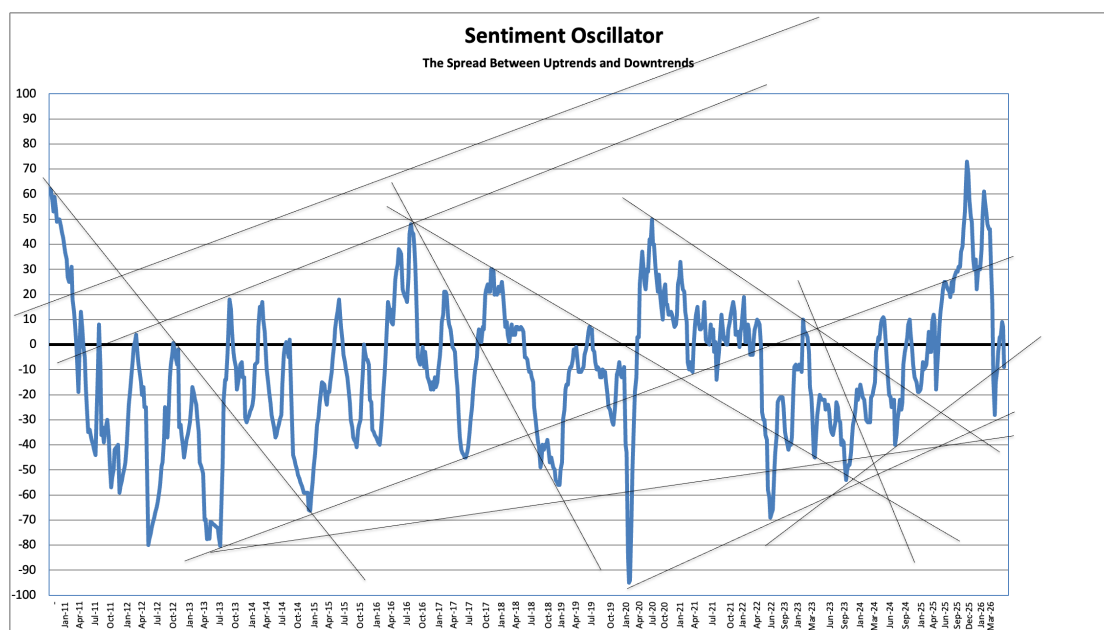
AEM comes with a long history of optimising its process in Canada, and has had its fair share of difficulties along the way. But it seems to have overcome them as it is in the final straight.

Both companies are still in the ramp-up phase, more or less. Both companies are world leaders and well positioned to benefit from the growth in the sector with better cooling technology in data centres being a parallel theme.

Their process circuits offer some differences, and in the normal course of business it is not unusual for one company to emphasise advantages over the other. Whether the professed advantages are material or not will be dependent upon future outcomes and further technological developments. Also, at the end of the day, it depends upon how exacting the buyers of the product will be and this comes down to their tolerance levels. Pricing is always a factor. There is room for both companies in a free world, and perhaps others. See addendum below.

Addendum regarding kaolin based HPA hopefuls

Patrick Sinclair of Andromeda Metals (ADN) has contacted me to advise that ADN is "still in the game" as a kaolin-based potential HPA producer. It has been working for seven years and come up with a novel process that can achieve a 99.9985% purity at lab scale, disclosed in a Scoping Study. That is interesting and worthy of a subsequent, closer look. With a share price of 0.8¢ and a market capitalisation of only \$36m, there is plenty of upside if it can improve the purity levels and get access to the large sums of capital that will be required. If AEM and A4N proceed to profitability, the confidence that these will instill could flow down the feeding curve.



Sentiment Oscillator: Sentiment eased notably last week, falling below equilibrium to hit a support line. There were 32% (38%) of shares under coverage in uptrend, and 41% (31%) in downtrend.

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		rallying	
Metals and Mining	XMM		rallying	
Energy	XEJ		still above trend line	
Stocks	Code		Trend Comment (updated comments in bold)	Main Interest
Aguia Resources	AGR		sideways	phosphate, gold
Akora	AKO		down	iron ore
Alkane Resources	ALK		correcting lower	gold
Alicanto Minerals	AQI		recovering uptrend	base metals, silver, gold
Alligator Energy	AGE		down	uranium
Alpha HPA	A4N		down	HPA
American Rare Earths	ARR		rising again	rare earths
American Tungsten & Antimony	AT4		resumed downtrend	antimon
Anax Metals	ANX		recovering uptrend	copper
Andean Silver	ASL		back to trend line	silver
Arafura Resources	ARU		shallower uptrend	rare earths
Ardea Resources	ARL		testing support line	nickel
Ark Mines	AHK		down	rare earths
Astral Resources	AAR		down	gold
Aureka	AKA		weaker	gold exploration
Auric Mining	AWJ		sideways	gold
Aurora Energy Metals	1AE		testing downtrend	uranium
Aurelia Metals	AMI		improving	copper + base metals
Aurum Resources	AUE		correcting lower	gold exploration
Australian Gold and Copper	AGC		down	base metals, silver, gold
Australian Rare Earths	AR3		collapse through support	rare earths
Australian Strategic Materials	ASM		stil in downtrend	rare earths
BHP	BHP		back in uptrend	diversified, iron ore
Ballard Mining	BM1		testing short term downtrend	gold
Ballymore Resources	BMR		sideways	gold exploration
Barton Gold	BGD		testing downtrend	gold exploration
Beach Energy	BPT		sideways	oil and gas
Beetaloo Energy	BTL		pullback on placement	gas
Bellevue Gold	BGL		softer	gold
Besra Gold	BEZ		off its highs	gold
Black Cat Syndicate	BC8		down	gold
Boab Metals	BML		breaching uptrend	silver/lead
Brazilian Rare Earths	BRE		at highs	rare earths
Brightstar Resources	BTR		easing again	gold
Caravel Minerals	CVV		down	copper

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Carnaby Resources	CNB		breached downtrend	copper
Castile Resources	CST		testing downtrend	gold/copper/cobalt
Catalyst Metals	CYL		down	gold
Cazaly Resources	CAZ		still in downtrend	rare earths
Centaurus Metals	CTM		new high	nickel/cobalt/HPA
Challenger Gold	CEL		down	gold
CNG Resources	CGR		testing downtrend	gold exploration
Cobalt Blue	COB		down	cobalt
CuFe	CUF		another new high	bismuth, Cu, Au
Cyprium Metals	CYM		risen to resistance line	copper
Emmerson Resources	ERM		new high	gold
EQ Resources	EQR		downtrend starting	tungsten
Estrella Resources	ESR		sideways	manganese
Evolution Mining	EVN		down	gold
Felix Gold	FXG		rising	gold exploration, antimony
Finder Energy	FDR		down	oil/gas
First Graphene	FGR		sideways	graphene
Flagship Minerals	FLG		sideways	gold
Gateway Mining	GML		down	gold exploration + gallium
GBM Resources	GBM		down	gold
Genesis Minerals	GMD		down	gold
Globe Metals and Mining	GBE		testing uptrend	niobium
Gold 50	G50		rising again	gold exploration + gallium
Golden Horse	GHM		down	gold exploration
Great Boulder Resources	GBR		sideways	gold exploration
Green360 Tech	GT3		breached downtrend	kaolin
Hamelin Gold	HMG		spike out of downtrend	gold exploration
Hawk Resources	HWK		down	scandium
Heavy Minerals	HVY		breached downtrend	garnet
Hillgrove Resources	HGO		rising	copper
Iltani Resources	ILT		breached downtrend	antimony
Iluka Resources	ILU		rising again	mineral sands
Investigator Resources	IVR		falling	silver
Jupiter Mines	JMS		sideways	manganese
Kaiser Reef	KAU		down	gold
Kingfisher Minerals	KFM		back into downtrend	copper expl.
Kalamazoo Resources	KRZ		good rally	gold
Kalina Power	KPO		breached downtrend	data centre power
Koba Resources	KOB		testing downtrend	uranium
Larvotto Resources	LRV		testing uptrend	gold, antimony
Litchfield Minerals	LMS		rising	copper exploration
Lindian Resources	LIN		down	rare earths + bauxite
Lode Resources	LDR		down	antimony, silver
Lotus Resources	LOT		collapse	uranium

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Lynas Corp.	LYC		surge higher	rare earths
Mammoth	M79		strong recovery	gold exploration
Many Peaks	MPK		correcting lower	gold exploration
Marmota	MEU		down	gold/uranium exploration
Matsa Resources	MAT		down	gold
Meeka Gold	MEK		down	gold
MetalsX	MLX		new high	tin, nickel
Meteoric Resources	MEI		on support line	rare earths
Metro Mining	MMI		sideways	bauxite
Midas Minerals	MM1		rising	lithium
Mithril Silver & Gold	MTH		still down	silver, gold
Native Mineral Resources	NMR		turning down	gold
New Murchison	NMG		down	gold
New World Resources	NWC		rising	copper
Nexgen Energy	NXG		breaching downtrend	uranium
Novo Resources	NVO		placement & heavy correction	gold exploration
Omega Oil	OMA		heavy correction	oil
Pacific Gold	PGO		on support line	gold exploration
Pacific Lime & Cement	PLA		rising	renewables, cement
Paladin Energy	PDN		breached uptrend	uranium
Pantoro Gold	PNR		down	gold
Patriot Battery Metals	PMT		on support line	lithium
Peninsula Energy	PEN		down	uranium
Perseus Mining	PRU		sideways	gold
Phosco	PHO		rising	phosphate
Pilbara Minerals	PGL		breached uptrend	gold
PolarX	PXX		down	gold exploration, base metals
QMines	QML		breached downtrend	copper
Regis Resources	RRL		down	gold
Revolver Resources	RRR		softer	copper
Richmond Vanadium	RVT		sideways	vanadium
RIO	RIO		new high	diversified, iron ore
Rox Resources	RXL		testing uptrend	gold
RTG Mining	RTG		near its high	copper
Rumble Resources	RTR		rising	zinc, gold, tungsten exploration
S2 Resources	S2R		down	gold exploration
Santana Minerals	SMI		correcting lower	gold
Santos	STO		rising	oil/gas
Sarytogan Graphite	SGA		down	graphite
Scorpion Minerals	SCN		testing downtrend	gold exploration
Siren Gold	SNG		down	gold exploration
Skylark Minerals	SKM		spike out of downtrend	gold exploration
Somerset Minerals	SMM		back to support line	copper exploration
Southern Palladium	SPD		down	PGMs

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Stanmore Coal	SMR		down	coal
St George Mining	SGQ		downtrend	rare earths, niobium
Stellar Resources	SRZ		on support line	tin
Sun Silver	SS1		down	silver
Sunrise Metals	SRL		surge higher	scandium
Tamboran Resources	TBN		lower	gas
Theta Gold	TGM		breaching downtrend	gold
Tivan	TVN		down	fluorite
Toro Energy	TOE		rising again	uranium
Torque Metals	TOR		breached uptrend	gold exploration + lithium
Toubani Resources	TRE		fallen to support line	gold
Verity Resources	VRL		down	gold
Vertex Minerals	VTX		down	gold
Waratah Minerals	WTM		testing uptrend	gold exploration
Westgold Resources	WGX		down	gold
West Wits Mining	WWI		down	gold
Whitehaven Coal	WHC		breached uptrend	coal
White Cliff Minerals	WCN		sideways	copper exploration
WIN Metals	WIN		down	gold
Yandal Resources	YRL		down	gold exploration
Totals	32%	46	Uptrend	
	41%	58	Downtrend	
		143		

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	35	24.5%	
Gold Exploration	26	18.2%	
Copper	14	9.8%	
Rare Earths	11	7.7%	
Uranium	8	5.6%	
Oil/Gas/Hydrogen	6	4.2%	
Silver	6	4.2%	
Iron Ore/Manganese	5	3.5%	
Antimony	4	2.8%	
Lithium	2	1.4%	
Graphite/graphene	2	1.4%	
HPA/Kaolin	2	1.4%	
Nickel	2	1.4%	
Scandium	2	1.4%	
Tungsten	1	0.7%	
Tin	2	1.4%	
Coal	2	1.4%	
Bismuth	1	0.7%	
Niobium	1	0.7%	
Potash/Phosphate	2	1.4%	
Vanadium	1	0.7%	
PGMs	1	0.7%	
Mineral Sands	1	0.7%	
Bauxite	1	0.7%	
Cobalt	1	0.7%	
Other	4	2.8%	
Total	143		

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