

Graphite fundamentals improve strongly

The 2.54% slump in the Dow on Friday was not what anyone was expecting, in the light of the news flow that has been giving room for continued optimism. However, it is a salient reminder that the market always has the capacity to surprise on the downside just when everyone starts to feel comfortable. The first reaction is "what the...?", and then you start to ask "why?"; but there is often no obvious answer.

The commentaries out of the US suggested that the sell-down happened because of disappointing earnings figures. Perhaps they were disappointing, but share prices should adjust rather than collapse. The Dow kept falling all day as traders took advantage of the opportunity to sell into the fear. Now, in Australia, there will be heightened nervousness on Monday as our traders try to guess whether this is the start of something serious, or just an intra-trend volatile event. There is no way of telling at this juncture. As they say when a bushfire flares up, it is a case of "watch and act". It is likely that we are entering a period of increased volatility, with that volatility bringing both risks and rewards.

Our charts have only been completed up until the close of business on Wednesday, due to my departure to attend a number of conferences in Capetown. Thus the Sentiment Index does not take into account the movements that will follow on from Friday night. Given that quite a few stocks had come back to support lines, and that any selling on Monday is going to breach these lines, we should expect that the Index will ratchet down by this time next week.

Graphite outlook is improving

We had a graphite boom in Australia a few years back at a time when graphite prices were falling. It didn't make fundamental sense, but everyone was wanting to get onto another high-flying graphite stock like Syrah. It was all about the stock market. Then the sheer number of graphite stocks, and the lack of tangible progress in the development of almost all of these projects, led to money leaving the graphite sector in favour of lithium. The graphite sector went into reverse and the location of many of the projects in Tanzania, with shifting taxation goalposts, did nothing to help the sector.

Now, with the passage of time, we are beginning to see which companies really have something tangible and which were just promotional vehicles. At the same time we are all on standby to see just how Syrah's project goes through the commissioning phase, as the level of success here will set investor expectations on all other graphite projects.

The graphite price has also started to recover with the turnaround coinciding with China announcing a doubling of demand for anode material from 50,000 t to 100,000 t, in 2018. Thus graphite is starting to be a fundamental earnings story rather than a stock market play.

Looking first at Kibaran ...

Some of the graphite companies at the Arlington Pre-INDABA Conference this week have presented a bullish scenario for graphite that should be considered. Look at Kibaran Resources (KLN) with a modest market capitalisation of \$41m. We have always viewed KLN as one of the more responsible companies with good fundamentals, but it has never really made much of a splash in the stock market.

Nevertheless, KLN is advancing a 60,000 tpa concentrate project that has been designed to fit into the market rather than dominate it. The treatment process involves a two stage flotation circuit to produce a 94-97% carbon grade concentrate. The DFS calculated a capex figure of US\$88m. Between KFW, EFIC and Nedbank there is potential to raise up to US\$80m in debt, but it is likely that debt levels will be limited to US\$65m, with the balance to come from an equity issue.

KLN has negotiated off-take and sales agreements with blue-chip customers for most of its production, which will go into Japan and Germany rather than China. ThyssenKrupp, Sojitz and EGT have agreed to take 20,000 tpa, 14,000 tpa and 10,000 tpa respectively, at market prices.

Commenting on the market for its product, KLN quotes a 40% increase in the price of graphite over the past six months. Chinese battery anode manufacturers are doubling their capacity in 2018, while at the same time the government is cracking down on Chinese graphite suppliers that are breaching environmental guidelines. Thus the economics look much better than they did six months ago.

The final step in getting the mine development going is for the Tanzanian government to release the details of the new regulations that affect royalties, taxation and local content. Assuming these come out over the next month or two, and they are acceptable, KLN could commence construction and development in time for commissioning in Q1 of 2019.

A separate, stand-alone project being pursued is a 20,000 tpa battery grade graphite plant. An important aspect of this is the development of new processing technology that avoids the use of hydrofluoric acid, which is a nasty chemical used to remove silica from concentrates. Having processed a 200 tonne bulk sample in the test work, Kibaran believes it can produce a 99% carbon concentrate for < 150µm flake graphite.

Total graphite demand for electric vehicles is expected to increase to 850,000 tpa by 2030. Japanese and Korean demand is forecast to grow by 300-400% from now until 2025, increasing from 20,000 t in 2017, to 66,000 t in 2020, and 120,000 t in 2025. KLN aims to supply 30% of this market.

Without going to the effort of estimating earnings for KLN, we can say that it seems to have ticked all the boxes in a sensible scale development. It is likely to be the next

serious graphite producer on the ASX, having gone through a rigorous process to get to this point.

... and also Next Source Materials

Next Source Materials is a Canadian-listed company operating in Madagascar. It sees that the big growth areas for graphite are in the battery market and graphite foils, which currently account for only 16% and 10% of graphite demand respectively. According to Benchmark, demand for EV battery power will increase from 31 GWH today, to 571 GWH in 2025.

Next Sources aims to bring the Molo project on-stream late this year at an initial rate of 17,000 tpa of concentrates, at a very modest capital cost of US\$18.4m. Operating costs are expected to be US\$433 pt ex the plant, and US\$688 pt cif Europe. It says it will get 97-99% grades on a simple flotation circuit, and this can be upgraded to 99.97%.

Subsequent expansions to 34,000 tpa and then 51,000 tpa are planned, with the first of these costing US\$55m. Each phase is expected to have payback period of less than two years, which suggest good profitability.

Interestingly, it announced plans to raise C\$5m in March, C\$7m in June, C\$8m in August and then C\$5m in November, to enable the start of production in December. This is a very unusual approach and not one that would be supported if the company was Australian based. We would prefer to see one raising rather than a drip feeding approach, as there is always an overhang when companies are *cum* raisings. The market capitalisation of Next Source is currently C\$37m, so the proposal to raise a total of C\$25m misquote an expansion of issued capital.

The projects sounds very impressive if the numbers presented are indeed accurate, but one can't help but presume that there is a large degree of promotion and salesmanship at work here. We will watch with interest.

Pantoro upgraded to a "buy"

PNR has been one of the favourite gold stocks in our gold portfolio for a while, on the belief that the Nicolsons project near Halls Creek could be shaping up as another Norseman-style gold district. Equally as important is the belief that management is very capable and it knows what it is doing. So, I was pleased to see that Hartleys has upgraded its recommendation from a "hold" to a "buy".

Pantoro is joining the increasing number of companies that are using advanced ore sorting techniques to increase head grades to the mill, effectively expanding output on minimal capital expenditure. It believes that it can reduce tonnages to the mill by 30-60%, increasing the head grade

1.4-2.5x (e.g. from 7 gpt to 11 gpt). The capital cost might be in the order of \$2.2m, giving annual production capacity of 80,000 oz.

PNR has been actively adding to its ground position in the region, which has always been very encouraging but with no mill previously within trucking distance, any earlier discoveries had no processing options. The orebodies tend to be narrow and high grade, more amenable to underground development under starter pits rather than bulking mining propositions. Not many companies have the skill base to develop these, but PNR has proved its competence with this style.

The Company is within a couple of months of being debt free. Its current cash balance is \$12.7m. Get ready for a re-rating to the institutional grade list.

Disclosure: Interests associated with the author owns shares in Pantoro.

Graphene is the answer to big problems in the World

Regular readers will know of my passion for graphene from numerous paragraphs that I have written over the past few years. Without saying any more, I'll refer you to the link below, which gives a timely reminder of the potential going forward.

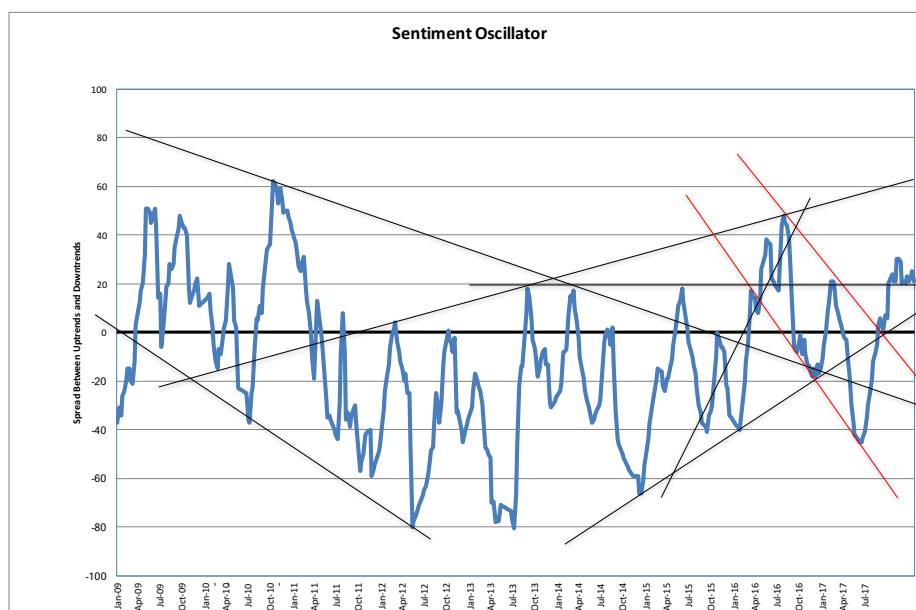
<https://singularityhub.com/2018/01/26/how-graphene-research-is-taking-aim-at-5-of-the-worlds-biggest-problems/#.WnJKjRkpdW0.mailto>

Trump is a GOAT president

Listening to the radio in the middle of the night, I heard an interview with a farmer from Wisconsin who was very supportive of Trump. He said that Trump could well be a GOAT president - *greatest of all time*. Previously a Democrat, this guy has jumped the fence to become a vocal Republican. While the liberals just try to denigrate Trump, many ordinary Americans have embraced him (as has the business community).

Good news on the US economic outlook continues to flow through with Exxon Mobil announcing US\$35bn in new US investments over the next five years. This program, partly inspired by the tax cuts, involves US\$20bn to construct chemical, refining, lubricant and liquified natural gas facilities along the Gulf coast that will create 12,000 permanent jobs.

Sentiment Indicator: A few stocks gave up the bull trend during the first few days of the week, giving a slight softening of the sentiment. There were 49% (51%) of the charts in uptrend and 26% (26%) in downtrend on Friday's close. Looking at the Sentiment Oscillator chart on below, it show that the market has been indecisive in recent weeks as investors decide whether the market should go higher or lower. Given the moves on the Dow, it is safe to say it will go lower before in its next move higher.



Detailed Chart Comments




NB. Only the bold comments have been updated. Comments in grey type are from previous weeks and will be less relevant.

Indices	Code	Trend Comment	
All Ordinaries	XAO	pullback from high	
Metals and Mining	XMM	pullback from high	
Energy	XEJ	pullback from high	
Stocks	Code	Trend Comment (updated comments in bold)	Main Interest
ABM Resources	ABU	new low, then a bounce	gold
Aeon Metals	AML	correcting from new high	copper + cobalt
Alacer Gold	AQG	holding uptrend	gold – production
Alkane Resources	ALK	down after hitting LT resistance	gold, zirconia
Acacia Resources	AJC	Sideways at the bottom	coal
Agua Resources	AGR	downtrend, wedge forming	phosphate
Alicanto Minerals	AQI	spike then a pullback	gold exploration
Allegiance Coal	AHQ	spiked higher - resumed LT uptrend	coal
Alliance Resources	AGS	spiked higher, then heavy correction	gold exploration
Altech Chemicals	ATC	heavy correction	industrial minerals - synthetic sapphire
Anova Metals	AWV	falling again	gold
Antipa Minerals	AZY	sideways	gold
Apollo Consolidated	AOP	hugging uptrend line	gold exploration
Archer Exploration	AXE	breached uptrend	magnesite, graphite
Argent Minerals	ARD	still in downtrend	polymetallic
Artemis Resources	ARV	down	gold, nickel
Aspire Mining	AKM	off its low	coal
Alta Zinc	AZI	sideways at lows	zinc
Aurelia Metals	AMI	correcting from new high	gold + base metals
AusTin	ANW	spiked higher	tin, cobalt
Australian Bauxite	ABX	continuing in downtrend	bauxite
Australian Potash	APC	wedge forming	potash
Australian Mines	AUZ	breached uptrend	cobalt/nickel
Australian Vanadium	AVL	continuing with steep rise	vanadium

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Avanco Resources	AVB	■	downtrend	copper
AWE	AWE	■	new high	oil and gas
Azure Minerals	AZS	■	down	silver
BHP	BHP	■	new high	diversified
Base Resources	BSE	■	weakening	mineral sands
Bathurst Resources	BRL	■	new high	coal
Battery Minerals	BAT	■	surged higher	graphite
BBX Minerals	BBX	■	testing uptrend	gold
Beach Energy	BPT	■	new high	oil and gas
Beadell Resources	BDR	■	around lows again	gold
Berkeley Energia	BKY	■	uptrend	uranium
Berkut Minerals	BMT	■	spiked to new high, then heavy fall	cobalt
Blackham Resources	BLK	■	new low	gold
Blackstone Minerals	BSX	■	consolidating near highs	gold, cobalt
Broken Hill Prospect.	BPL	■	strongly higher	minerals sands, cobalt
Buru Energy	BRU	■	strongly higher	oil
Canyon Resources	CAY	■	fallen back to support line	bauxite
Cardinal Resources	CDV	■	breached uptrend	gold exploration
Cassini Resources	CZI	■	rising	nickel/Cu expl.
Chalice Gold	CHN	■	on support line	gold
Cobalt Blue	COB	■	near highs again	cobalt
Comet Resources	CRL	■	near highs	graphite/graphene
Consolidated Zinc	CZL	■	continuing weakness	zinc
Corizon Mining	CZN	■	testing downtrend	cobalt
Crusader Resources	CAS	■	new low	gold/iron ore
Dacian Gold	DCN	■	new high	gold exploration
Danakali	DNK	■	testing uptrend	potash
Doray Minerals	DRM	■	testing downtrend	gold
Draig Resources	DRG	■	new high	gold
Eden Innovations	EDE	■	testing downtrend	carbon nanotubes in concrete
Emerald Resource	EMR	■	sideways to higher	gold
Evolution Mining	EVN	■	new high	gold
Excelsior Gold	EXG	■	slump, testing uptrend	gold
Finders Resources	FND	■	stronger	copper
FAR	FAR	■	sideways	oil/gas
First Cobalt	FCC	■	sideways	cobalt
First Graphene	FGR	■	heavy correction	graphite
Fortescue Metals	FMG	■	wedge forming	iron ore
Galaxy Resources	GXY	■	breached uptrend in heavy pullback	lithium
Galilee Energy	GLL	■	breached uptrend	oil and gas, CBM
Gascoyne Resources	GCY	■	testing steeper downtrend	gold
Global Geoscience	GSC	■	new high	lithium
Gold Road	GOR	■	new high	gold exploration
Graphex Mining	GPX	■	breached uptrend	graphite
Heron Resources	HRR	■	still down	zinc
Highfield Resources	HFR	■	rallying	potash
Highlands Pacific	HIG	■	testing uptrend	copper, nickel
Hillgrove Resources	HGO	■	back to highs	copper
Iluka Resources	ILU	■	surged higher	mineral sands
Image Resources	IMA	■	sideways within uptrend	mineral sands

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Independence Group	IGO		rallied to new high	gold, nickel
Intrepid Mines	IAU		sideways	copper
Karoo Gas	KAR		new uptrend started	gas
Kasbah Resources	KAS		breaching secondary downtrend	tin
Kibaran Resources	KNL		sideways	graphite
Kin Mining	KIN		breached ST uptrend	gold
Legend Mining	LEG		correcting lower	exploration
Lepidico	LPD		back to near highs	lithium
Lithium Australia	LIT		rising again	lithium
Lucapa Diamond	LOM		rally on new discovery	diamonds
Macphersons Res.	MRP		downtrend being tested	silver
Marmota	MEU		softer	gold exploration
MetalsX	MLX		new high	tin, nickel
Metro Mining	MMI		at highs	bauxite
Mincor Resources	MCR		holding uptrend	nickel
Mineral Deposits	MDL		uptrend steepening	mineral sands
Myanmar Minerals	MYL		testing downtrend	zinc
MZI Resources	MZI		testing downtrend	mineral sands
Northern Cobalt	N27		testing uptrend	cobalt
Northern Minerals	NTU		down again	REE
Northern Star Res.	NST		new high	gold
NTM Gold	NTM		surged out of wedge to confirm uptrend	gold
Oceana Gold	OGC		testing downtrend	gold
Oklo Resources	OKU		new high	gold expl.
OreCorp	ORR		strong rally	gold development
Orinoco Gold	OGX		steep uptrend	gold development
Orocobre	ORE			lithium
Oz Minerals	OZL		continuing in uptrend	copper
Pacific American Coal	PAK		testing new uptrend	coal, graphene
Pantoro	PNR		stronger	gold
Panoramic Res	PAN		on support line	nickel
Peel Mining	PEX		surge to new high	copper
Peninsula Energy	PEN		testing recent uptrend	uranium
Perseus Mining	PRU		breached downtrend	gold
Pilbara Minerals	PLS		correcting from highs	lithium/tantalum
PNX Metals	PNX		ticked higher	gold, silver, zinc
Red River Resources	RVR		holding longer term uptrend	zinc
Regis Resources	RRL		near highs again	gold
Resolute Mining	RSG		rallying off lows	gold
RIO	RIO		new high	diversified
Salt Lake Potash	SO4		less steep downtrend	potash
Saracen Minerals	SAR		uptrend	gold
St Barbara	SBM		strong	gold
Sandfire Resources	SFR		rising	copper
Santana Minerals	SMI		new low	silver
Santos	STO		steeply higher	oil/gas
Sheffield Resources	SFX		testing downtrend	mineral sands
Silver Lake Resources	SLR		breached downtrend	gold
Silver Mines	SVL		down again	silver
Sino Gas & Energy	SEH		confirming uptrend	gas

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Southern Gold	SAU	■	drifting lower	gold
Stanmore Coal	SMR	■	rising	coal
Sundance Energy	SEA	■	confirming uptrend	oil/gas
Syrah Resources	SYR	■	short term down heavily	graphite
Talga Resources	TLG	■	improving	graphene
Tanami Gold	TAM	■	down	gold
Tempo Australia	TPP	■	testing downtrend	mining services
Tiger Realm	TIG	■	spiked higher, off lows	coal
Torian Resources	TNR	■	new low	gold expl'n
Triton Minerals	TON	■	uptrend being tested	graphite
Troy Resources	TRY	■	back in downtrend	gold
Tyranna Resources	TYX	■	breached steepest downtrend	gold exploration
Vango Mining	VAN	■	but having a good rally	gold
Vimy Resources	VMY	■	new uptrend confirmed	uranium
West African Resources	WAF	■	uptrend	gold
Westwits	WWI	■	sideways	gold exploration/development
Western Areas	WSA	■	rallying	nickel
White Rock Minerals	WRM	■	new low	silver
Whitehaven Coal	WHC	■	gently higher	coal
WPG Resources	WPG	■	down again	gold
Wolf Minerals	WLF	■	new low	tungsten
Totals	49%	70	Uptrend	
	26%	37	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	32	22.2%	
Gold Exploration	15	10.4%	
Copper	11	7.6%	
Coal	9	6.3%	

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Weightings of Sectors Represented in the Company Charts			
Oil/Gas	9	6.3%	
Mineral Sands	7	4.9%	
Graphite	8	5.6%	
Zinc	7	4.9%	
Silver	6	4.2%	
Lithium	6	4.2%	
Nickel	4	2.8%	
Potash/Phosphate	5	3.5%	
Cobalt	6	4.2%	
Uranium	3	2.1%	
Bauxite	3	2.1%	
Tin	3	2.1%	
Diamonds	2	1.4%	
Iron Ore	1	0.7%	
Other	7		
Total	144		

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