

Peninsula Energy is leading the race to new uranium production

This week we have taken a break from commenting on short term stock market influences caused by speculation regarding inflation and interests rates. Rather, we have stepped back to look at the bigger picture. Uranium and nuclear power are becoming increasingly important elements in the quest for zero emissions, so we are seeing continuing support for ASX-listed uranium companies. However, having shares in a uranium company doesn't mean you will make money beyond near term speculation. Longer term investors have a smaller range of stocks from which to select. Peninsula Energy is one of the few companies that offer opportunity in both time frames so we have provided an update on that company.

We are going through monetary tightening and there is increasing speculation that we will transition into a recessionary period, which traditionally causes a softening of metal prices. However, there are more recent influences at work that mean the traditional methods of analysing mining stocks are less relevant. Think the alternative energy push and global political power struggles. These are the new imperatives that we have to take into account in looking at future movements in mining and resource stocks.

Peninsula Energy is well ahead of the pack

Stock market punters frequently underestimate the risks involved in taking projects from the pre-development stage to actual commercial production. Gold projects are usually the easiest to estimate but uranium projects are amongst the most difficult due to a range of factors that include regulatory approvals, marketing of product and project specific metallurgy. Anyone who thinks it is an easy path to production should think again.

It is with this recognition in mind that Peninsula stands out as the earliest, lowest risk entry in the uranium producing sector at present. It has been along the path and has already overcome all material speed bumps. Now it is ready to push the button to restart a long life uranium mine in Wyoming, USA. That can happen within the next six months.

Being able to sell the stuff is a challenge

The world of uranium buyers is limited to nuclear power utilities and these are very conservative. There are probably not more than 40 buyers in the market. None of them like to be dependent upon a small number of suppliers. They want diversity of supply and frequently limit individual contracts to 200-300,000 lbs. They are also cautious about buying uranium from single mine companies that are yet to prove their reliability. That means that new producers have to deal with a number of buyers. Contracts take time to negotiate in a process that I had first hand experience of when Peninsula was in the pre-production phase some years back (I was a director of Peninsula at the time).

Peninsula has been in the market since 2016

Peninsula has been an active and reliable participant in the uranium market since 2016. For some of this time it was selling from its own production, whilst at other times it was a buyer of uranium on the spot market for delivery into its sales book. Even when mine production was suspended it maintained a good status in dealing with the utilities. That makes it easier to negotiate additional contracts as it prepares to recommission the Lance ISL Mine.

Over the last few years the Company has been earning revenue of US\$8-9m p.a. selling into its sales book with pounds being bought on the spot market at lower prices. Back in mid 2021, it purchased another 300,000 lb at US\$31/lb. Currently, Peninsula has sales contracts in place out to 2030, covering 400-450,000 lb of uranium, at estimated prices of US\$56-58/lb.

DFS confirms a restart will be very viable

Peninsula released its DFS in August 2022, with all the parameters coming up positive. It is now expected to commit to the reopening of the mine using low pH recovery techniques that will be more effective than the previously employed alkaline leach method.

The capex for the Stage 1 restart is only US\$60m (to achieve positive cash flow) over a two year period, to get to a production rate of 820,000 lbs p.a. C1 cash costs will be very low at US\$16.34/lb, but AISC and AIC numbers are US\$39.08/lb and US\$45.74/lb respectively. Production will increase to 2 Mmlb p.a. in Stage 2 .

You need to remember that cash flow from ISL operations takes time to build up, a feature that is similar to heap leach operations in a gold mine. Also, capital expenditure estimates need to include progressive well field development costs throughout the life of an operation. That explains why the AIC figure is so much higher than C1 cash costs. Total capex over a 14 year period is actually US\$290m, but most of this will be funded by cash flow from operations.

The life of the project based on Ross and Kendrick locations is currently 14 years, but this will be extended as Barber's resources are upgraded. Previous studies had included Barber and a maximum production rate of 3 Mmlb p.a., but the increasingly stringent reporting standards in North America, where the project is located, preclude the inclusion of Barber until additional confirmatory drilling is undertaken. This would cost around \$10-20m, to be incurred over a 10 year period. Nevertheless, it is pretty safe for us to assume this is all procedural.

The strategic nature of US uranium production

Russia and its satellite states have been big suppliers of uranium to the USA in recent years but attitudes are changing. Increasing nationalistic sentiment is leading to the US wanting home grown uranium supplies, so

Peninsula is well placed in this regard. If the US Government does build a US\$1.5bn nuclear fuel stockpile, what better place to source it from than Wyoming?

The Bottom Line

Peninsula is the most de-risked, pre-production uranium company in the market having solved the technical issues and cleared the regulatory hurdles. There should not be any undesirable surprises from this point. It will need US\$60m over the next couple of years as it ramps up production to the point of positive cash flow, but as at 30 June it has US\$7.5m in the bank and about US\$15m in uranium inventories. The additional funding is only incremental and not an obstacle.

Nuclear power is a developing Achilles Heel

As we know, nuclear power could go a long way to solving the issues of global warming caused by excess carbon emissions, but how long will it take for activists to acknowledge this view? Then how long will it take for the politicians to act upon it?

According to an article in Foreign Affairs, "... *global nuclear energy generation will need to double between now and 2050 for the world to achieve net-zero emissions*" pp. 73-43, Jan/Feb 2020. There were 72 nuclear reactors planned as of 2018, with more than 50% being built by Russian companies and 20% by Chinese ones. Only 2% were being built by US companies. Here is another barrel over which the communists and fascists can hold the Western world.

The USA in particular needs to lift its game or risk another Achilles Heel in its quest to maintain dominance on a global scale. Global politics revolve around energy, be it traditional sources such as coal, gas and oil, or other sources. Nuclear power will become increasingly important if zero emissions are anything more than a fantasy. Failure to implement an expansive nuclear policy in the near term will lead to long term failure. That is why the uranium sector is attracting so much speculative interest now, and why the uranium price has entered a new bull phase.

Traditional metals price cycle is secondary now

The traditional method of estimating future metals prices, and therefore share prices of mining companies, has historically been intimately related to the business cycle. Periods of expansion and strong economic activity would lead to inflation which would be controlled by higher interest rates, as we are seeing now. Business activity would then slow and the subsequent period of contraction would lead to reduced demand for metals and commodity prices. Eventually the recessions would end and the economy would turn up again. That is the well understood business cycle but the dynamics are changing.

The push for alternative energy sources and the reversal of globalisation trends with the increasing aggression of non-democratic states such as China and Russia demand that we analyse commodity price movements differently. There are now two imperatives. The first is the challenge to produce the volumes of minerals needed for the supply chain of antimony, cobalt, copper, lithium, nickel and rare earths needed for various clean energy technologies. Greenies take note - we need more mining, much more, that we have now.

The second challenge is for Western democracies to free themselves from the highly vulnerable position of almost complete reliance of China, and to a much lesser extent Russia, for supply chains of technologies and alternative energy products. Until they do they run the risk of China using its capabilities to hold the world to ransom, as Russia is doing with gas supplies to Europe today.

China is working diligently to gain control of the supply of minerals from many African states, viewing that continent as one great big quarry to satisfy its demand for resources. China dominates the processing and refining of critical minerals with antimony and rare earths as outstanding examples. It accounts for two-thirds of the world's poly silicon and 90% of semiconductor wafers used to make solar power cells.

The ravenous appetite for alternative energy input materials is not going to be affected by the business cycle. It is dominated by the political and social agendas that override economics and common sense. Whether or not the climate change activists have got it right, we are all caught up in the rush for new supplies of a range of commodities that is exacerbated by vulnerability to an increasingly hostile Chinese Communist Party that is well aware of our Achilles Heel. That is why we, as investors, should be seeing expanding opportunities in mining and mining shares beyond historical cyclical movements.

Gascoyne rare earths raisings

The ducks are quacking so the rare earths companies continue to raise money. The flavour of the month continues to be the Chalba Shear Zone in WA's Gascoyne region. Hastings Technology Metals (HAS) has followed up on the \$150m convertible note deal with Wyloo with a \$110m placement at \$4.40 a share. That caused its share price to give back the gains it had made on the earlier announcements. It fell by \$1.07 or 20%. One may suggest it has probably seen its peak share price for some time.

Dreadnought saw its market capitalisation fall from \$425m to \$346m, or 14%, on an announcement that 35 out of 120 RC holes confirmed thick, high-grade rare earth mineralisation, hosted in monazite, at its Yin discovery. Maybe the market was looking for more judging by the market volume and the share price fall.

Dreadnaught described its project as being analogous to Hastings' Yangibana Project, 25 km to the NW, where it has 27.4 Mt at 0.97% TREO at a grade of 0.33% Nd₂O₃+Pr₆O₁₁. It says Yangibana is unique due to its high proportion of NdPr, but Dreadnought is obviously hoping to challenge this uniqueness.

Kingfisher Minerals (KFM) went into a trading halt on Friday as it sought to top up its cash levels following the enormous run in its share price. It was widely expected to do so. Terms are 9 million shares at 42.5¢ to raise \$3.825m, with 1 for 4 options exercisable at 70¢

Disclosure: Interests associated with the author own shares in Kingfisher.

The impact of speculators in markets

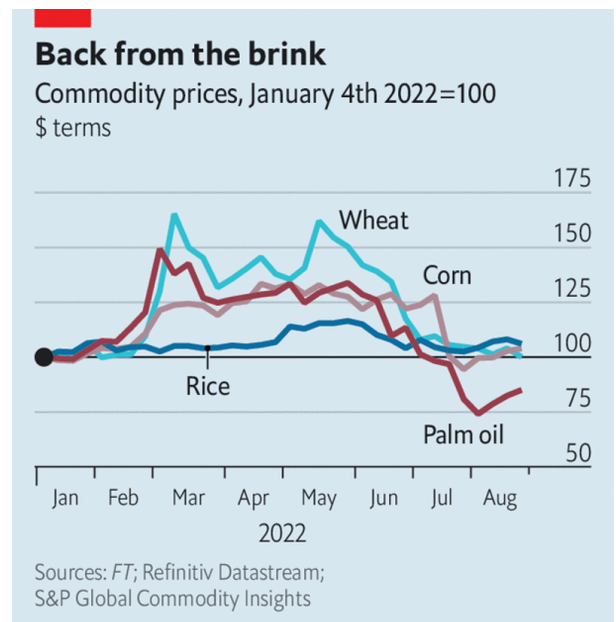
When I was a student of economics in high school I was taught that speculators were of benefit to markets as they help to add liquidity. They certainly do that, but what about when they become so prevalent that they actually distort the market?

Over time the velocity and volatility of markets have been increasing due to many factors. The availability of greater pools of money for speculation, derivatives and the reduction in transaction costs have been major contributors to this trend. We see it in the stock markets every day but this increase in activity also affects commodity markets. The practical effect is a distortion of pricing signals that are supposed to help match supply and demand over time.

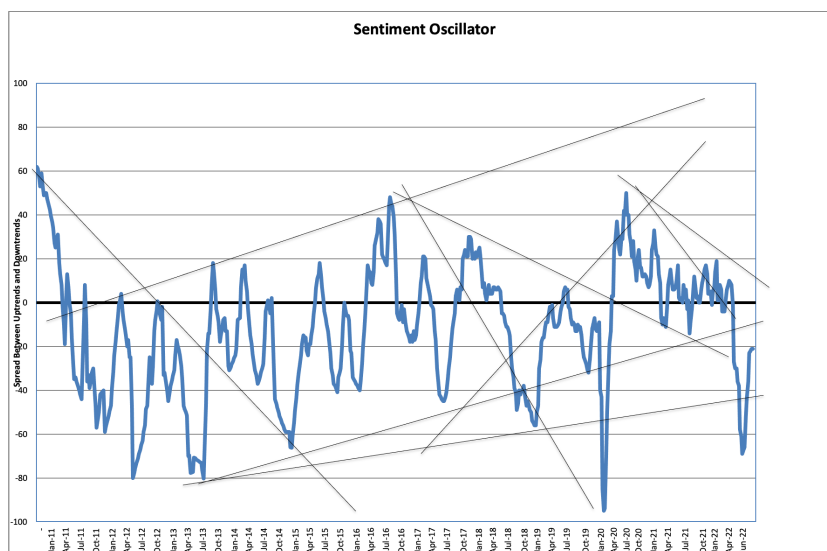
A good example of this in real life has been the performance of prices in some of the basic food commodities. The chart below, reproduced from The Economist, shows wheat prices spiking more than 50% on the outbreak of the Ukraine War. The panic this caused was disruptive at the time but more recently these commodity prices have slumped back to where they started from.

The point is simple. Speculation causes volatility and trading opportunities in the short term but spectators operate according to limited frames. As it is with commodities, so it is with our stock market. Traders must remember to take sensible profits along the way. Investors with large sums to deploy need to look beyond the noise made by speculators and rely more on strategic,

fundamental analysis that assists the deployment of large sums of capital.



The Economist



Sentiment Oscillator: Sentiment was steady over the week. There were 22% (23%) of the charts in uptrend and 43% (44%) 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	testing support line	
Metals and Mining	XMM	retaking recent falls	
Energy	XEJ	new high	
Information Technology	XIJ	breached ST uptrend	
Stocks	Code	Trend Comment (updated comments in bold)	Main Interest
A-Cap Energy	ACB	strongly higher	uranium
Alpha HPA	A4N	breached downtrend	HPA
Adriatic Resources	ADT	approaching resistance line	zinc, polymetallic
Advance Metals (was Pacific American)	AVM	down	coal, gold exploration
Alkane Resources	ALK	testing downtrend	gold
Alicanto Minerals	AQI	new low	base metals, silver, gold
Altech Chemical	ATC	bouncing off lows	HPA, anodes
Anteotech	ADO	new low	silicon anodes, biotech
Alto Metals	AME	at resistance	gold exploration
American Rare Earths	ARR	fallen back to resistance line	rare earths
Antilles Gold	AAU	still down	gold
Arafura Resources	ARU	good bounce	rare earths
Ardea Resources	ARL	testing support	nickel
Aurelia Metals	AMI	new low	gold + base metals
Australian Potash	APC	sideways through downtrend	potash
Australian Rare Earths	AR3	at lows	rare earths
Auteco Minerals	AUT	recovering	gold exploration
Arizona Lithium	AZL	failed at resistance line	lithium
Azure Minerals	AZS	failing at resistance line	nickel exploration
BHP	BHP	back to lows after dividend payment	diversified, iron ore
Beach Energy	BPT	new uptrend confirmed	oil and gas
Bellevue Gold	BGL	breached downtrend	gold exploration
Benz Mining	BNZ	breached downtrend	gold
Black Cat Syndicate	BC8	new uptrend commenced	gold
Blue Star Helium	BNL	sideways through downtrend	gas, helium
BMG Resources	BMG	down	gold exploration
Boab Metals	BML	failed at resistance line	silver/lead
Breaker Resources	BRB	testing downtrend	gold exploration
Buru Energy	BRU	sideways	oil
Calidus Resources	CAI	new low	gold
Capricorn Metals	CMM	slump	gold
Caravel Minerals	CVV	at resistance	copper
Castile Resources	CST	down	gold/copper/cobalt
Celsius Resources	CLA	sideways at lows	copper

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Chalice Mining	CHN	down	nickel, copper, PGMs, gold exploration
Chesser Resources	CHZ	new low	gold exploration
Cobalt Blue	COB	rising	cobalt
Cyprium Metals	CYM	new low	copper
Dateline	DTR	testing downtrend	rare earths
De Grey	DEG	breaching resistance line	gold
E2 Metals	E2M	new uptrend commenced	gold exploration
Ecograf	EGR	surge out of downtrend	graphite
Element 25	E25	new uptrend commenced	manganese
Emerald Resources	EMR	trying to recapture uptrend	gold
Empire Energy	EEG	new uptrend commenced	gas
Euro Manganese	EMN	surge higher	manganese
Evolution Mining	EVN	new low	gold
Firefinch	FFX	suspended	gold
First Graphene	FGR	breached downtrend	graphene
Fortescue Metals	FMG	failed at resistance line	iron ore
FYI Resources	FYI	sideways through downtrend	HPA
Galena Mining	G1A	testing steepest downtrend	lead
Galilee Energy	GLL	softer	oil and gas, CBM
Genesis Minerals	GMD	down	gold
Genmin	GEN	rising	iron ore
Gold Road	GOR	breached downtrend	gold
Great Boulder Resources	GBR	but approaching resistance line	gold exploration
Hastings Technology Metals	HAS	surge higher then fall on placement	rare earths
Hazer Group	HZR	still in downtrend	hydrogen
Heavy Minerals	HVY	still in downtrend	garnet
Highfield Resources	HFR	new low	potash
Hillgrove Resources	HGO	breached downtrend	copper
Iluka Resources	ILU	testing resistance line	mineral sands
Image Resources	IMA	down	mineral sands
ioneer (was Global Geoscience)	INR	testing resistance line	lithium
Ionic Rare Earths	IXR	rising again	rare earths
Jervois Mining	JVR	breached downtrend	nickel/cobalt
Kaiser Reef	KAU	recovering from lows	gold
Kingston Resources	KSN	improving	gold
Krakatoa Resources	KTA	breaching downtrend	rare earths
Kingfisher Mining	KFM	down	rare earths
Kingwest Resources	KWR	good rally	gold
Legend Mining	LEG	new low	nickel exploration
Lepidico	LPD	recovering from lows	lithium
Lindian Resources	LIN	another new high	bauxite
Lion One Metals	LLO	breached uptrend	gold
Los Cerros	LCL	new uptrend breached	gold exploration
Lotus Resources	LOT	sideways through downtrend	uranium

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Lucapa Diamond	LOM		new uptrend forming	diamonds
Lunnon Metals	LM8		rising	nickel
Lynas Corp.	LYC		slump	rare earths
Magnetic Resources	MAU		new low	gold exploration
Mako Gold	MKG		failed at resistance line	gold exploration
Marmota	MEU		sideways	gold exploration
Marvel Gold	MVL		new low	gold exploration
Matador Mining	MZZ		new low	gold exploration
Mayur Resources	MRL		strong rise from lows	renewables, cement
Meeka Gold	MEK		surge on drill results -capital raising	gold
Megado Gold	MEG		back to downtrend	rare earths, gold exploration
MetalsX	MLX		new low	tin, nickel
Metro Mining	MMI		slump out of new uptrend with a placement	bauxite
Mincor Resources	MCR		recovering from lows	gold/nickel
Mithril Resources	MTH		down	gold/silver
Musgrave Minerals	MGV		testing downtrend	gold exploration
Nagambie Resources	NAG		stronger	gold, antimony
Neometals	NMT		rising	lithium
Northern Star Res.	NST		strong rise	gold
Nova Minerals	NVA		breached resistance - new upend commenced	gold exploration
Orecorp	ORR		at lows	gold development
Oz Minerals	OZL		new high on BHP takeover moves	copper
Pantoro	PNR		new low	gold
Panoramic Res	PAN		down	nickel
Peak Resources	PEK		rising	rare earths
Peel Mining	PEX		breached steepest downtrend	copper
Peninsula Energy	PEN		sideways	uranium
Poseidon Nickel	POS		still down	nickel
Perseus Mining	PRU		down	gold
Provaris Energy	PV1		rising	hydrogen
PVW Resources	PVW		breached downtrend	rare earths
QMines	QML		new low	copper
Queensland Pacific Metals	QPM		sideways	nickel/cobalt/HPA
Red River Resources	RVR		new low	zinc
Regis Resources	RRL		testing downtrend	gold
Regergen	RLT		testing downtrend	gas, helium
Resource Mining Corp.	RMI		sideways	nickel exploration
RIO	RIO		new low	diversified, iron ore
Rumble Resources	RTR		secondary downtrend	gold exploration
S2 Resources	S2R		sideways	gold exploration
St Barbara	SBM		on support line	gold
Sandfire Resources	SFR		heavy fall	copper
Santos	STO		uptrend	oil/gas
Saturn Metals	STN		sideways	gold exploration

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Silex Systems	SLX		new high	uranium enrichment technology
Silver Mines	SVL		down	silver
South Harz Potash	SHP		still in downtrend	potash
Southern Cross Gold	SXG		pullback	gold exploration
Stanmore Coal	SMR		surge higher	coal
Strandline Resources	STA		strong rise	mineral sands
Sunstone Metals	STM		downtrend	exploration
Talga Resources	TLG		testing steepest downtrend	graphite
Technology Metals	TMT		down	vanadium
Tesoro Resources	TSO		new low	gold exploration
Theta Gold Mines	TGM		strong rise from lows - at resistance	gold
Thor Mining	THR		sideways through downtrend	gold exploration
Tietto Minerals	TIE		breaching downtrend	gold
Turaco Gold	TCG		bouncing from lows	gold exploration
Vanadium Resources	VR8		testing downtrend	vanadium
West African Resources	WAF		holding uptrend	gold
Westgold Resources	WGX		down	gold
West Wits Mining	WWI		new low	gold
Whitehaven Coal	WHC		new high	coal
Yandal Resources	YRL		new low	gold exploration
Zenith Minerals	ZNC		breached steepest downtrend	gold exploration
Zinc Mines of Ireland	ZMI		new low	zinc
Totals	22%	32	Uptrend	
	43%	62	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	22	15.3%	
Rare Earths	12	8.3%	
Nickel	11	7.6%	
Copper	9	6.3%	
Oil/Gas	8	5.6%	
Iron Ore/Manganese	6	4.2%	
Zinc/Lead	5	3.5%	
Lithium	4	2.8%	
Uranium	4	2.8%	
Graphite/graphene	3	2.1%	
Potash/Phosphate	3	2.1%	
Coal	3	2.1%	
Mineral Sands	3	2.1%	
Silver	2	1.4%	
Bauxite	2	1.4%	
Vanadium	2	1.4%	
Cobalt	1	0.7%	
Tin	1	0.7%	
Diamonds	1	0.7%	
Other	10		
Total	144		

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