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HALLGARTEN & COMPANY

Portfolio Strategy

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Model Mining Portfolio:

China's Fleeting "Century"

Performance Review – May 2020

Model Mining Portfolio

China's Fleeting "Century"

- **Base metals remain firm but largely static during the month, which is comforting considering the poor economic outlook due to the virus crisis**
- **Silver staging a notable improvement in price and particularly in the silver/gold ratio**
- **Tin prices continuing on an upward trajectory**
- **The pushback against Sino-domination of resources proceeds apace with Australia having blocked two strategic investments by Chinese corporates**
- **Takeover action is bubbling away, particularly in the gold space**
- ✘ **Zinc's price recovery has become mired**
- ✘ **Backbiting in the Rare Earth space, between producers and wannabes, has resulted in the US DoD's funding of a pair of midstream processing projects being stalled**
- ✘ **There is widespread denial of the danger of a deep recession of Depression from the Wuhan virus**

China – How the Mighty are Fallen

Well, that was brief! If the American century lasted from 1918 to a certain date in September 2001, then the Chinese century might be said to have started around then, or more accurately from late 2008, until the Chinese New Year of 2020. Twelve years does not a century make….

Centuries in super-power terms do not end on a New Year's Eve with the ringing of bells but more often with the previous champion slinking off the field of battle with their tail between their legs. Just as 1918 was not the end of the British Empire (we would date that to the day in the Second World War when Churchill had to beg for Lend Lease), so the US did not expire with fall of the Twin Towers (though the *Pax Americana* certainly died a death that day) but instead the US limped on to the moment in 2008 when a goodly chunk of its all-conquering financial sector evaporated.

Dominance does not consist merely or economic or military power but also of intellectual influence (the much vaunted "soft power"). So despite its economic eclipse and its military diminishment, Britain's "soft power" has grown apace, particularly since the 1980s. Indeed, maybe America's best days of soft power are yet to come also. But for China we strongly suspect it has strapped on an all-powerful suicide vest, that has vaporized its "soft power" powerful, damaged its economic stance and left only its military standing. And even there the West's antennas have been activated and the old doctrine of Containment, so well-trammelled in the 1960s and up to 1975, has been dusted with friend and foe alike bolstering their bulwarks to constrain China in a Bamboo Encirclement as inescapable as a concentration camp for Uighurs.

The economic front intrigues us most. What were *sotto voce* alarm bells have now blasted forth loud and clear like the foghorn on the Queen Mary as the long-ignored Jeremiahs have invaded the bridge of the world's economic vessel and declared they want to make it a China-free zone. What does China-eclipsed look like? Is China just yet another Asian star that rises and plateaus? Why should it not follow the trajectory that Japan, South Korea and then Taiwan followed of climbing the economic rankings then sitting back to enjoy the success and buy Swiss watches and French handbags? Clearly ego has a big role here. Not content with having all the consumer geegaws the Chinese nation wants to be loved (or at least feared) as well. This was not on the agenda at any of its arguably more successful neighbours.

In over-reaching economically China made itself a boatload of enemies. Economic competition is one thing, but rapaciousness is quite another. The conversion of Burma into vassal state used for solely extraction of minerals (largely by *Gastarbeiter*) is so retro that it looks back as far into the past as the Californian and Australian goldrushes of the 1850s mingled with overtones of Japan's Greater East Asian Co-Prosperity Sphere of unfond memories. Beyond that there is the barely concealed race for resources and dominance, which was a "race" in which all the other participants were oblivious to their status as participants. This was an undeclared war in which everyone else was chanting "kumbaya".

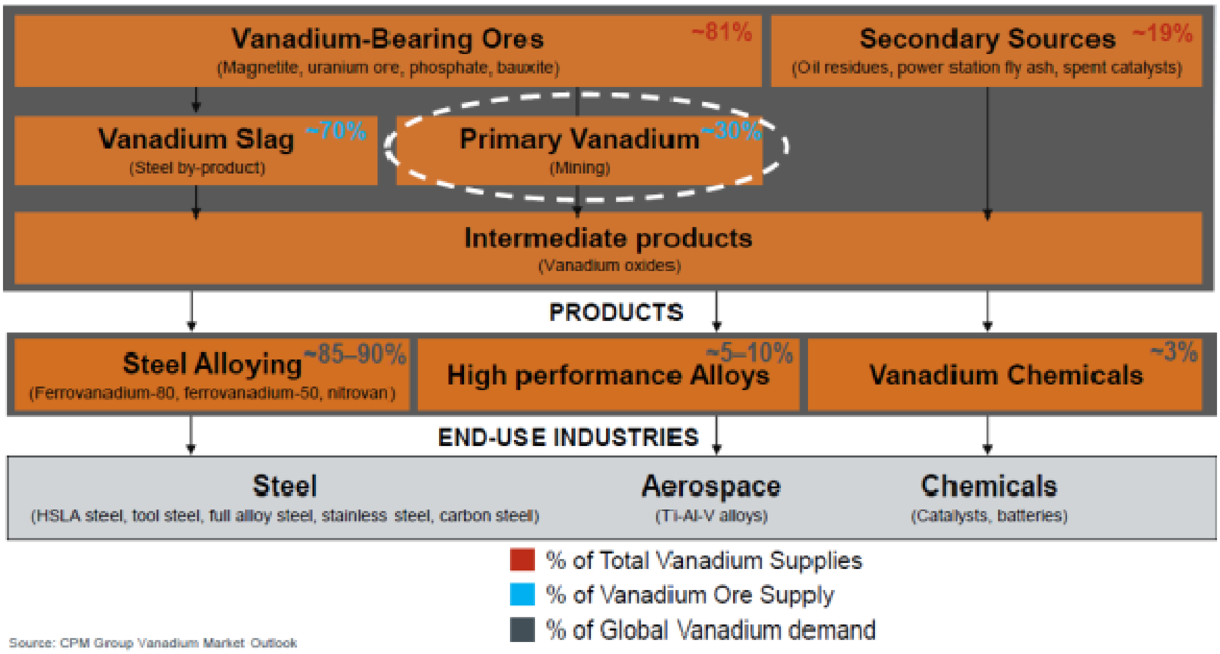
Not really understanding that "soft power" meant something more (and better) than an iron fist in a velvet glove the Chinese classically overplayed their hand on all fronts, economically, militarily and ideologically (what they think of as their "soft power"). The Wuhan virus's prime victim has not been an elderly rockstar or professor (or droves thereof) but China's street cred in the West.

Vanadium – One Man's Slag is Another's Man's Treasure

We guess it is rather iconoclastic to talk to investors in the mining space as to how one can avoid mining altogether by going for other means of extraction, but this is an entirely legitimate mode of thinking in the case of Vanadium, where for decades the main sources of the metal have been anything but "a hole in the ground".

The dynamics of the Vanadium supply chain are unique. In some ways we might compare the metal's supply chain (at least up until now) to that of Lead, where the chief source is recycling. In the case of Vanadium, however, the word "recovery" is more accurate as the metal is recovered from waste products of the production of other commodities.

The chart below (from the consultants CPM) shows that much of Western supply is sourced primarily from steel scrap, then mining, followed by secondary sources (which are in fact derived largely from "energy" industries whether petroleum processing or fly ash from the power generation sector). Indeed, an interesting anecdote is that during the Second World War the US fitted scrubbers to the funnels of its merchant fleet, so that Vanadium could be recovered from the ash of the heavy Venezuelan bunker oil that the ships were burning for fuel.



Source: CPM Group Vanadium Market Outlook

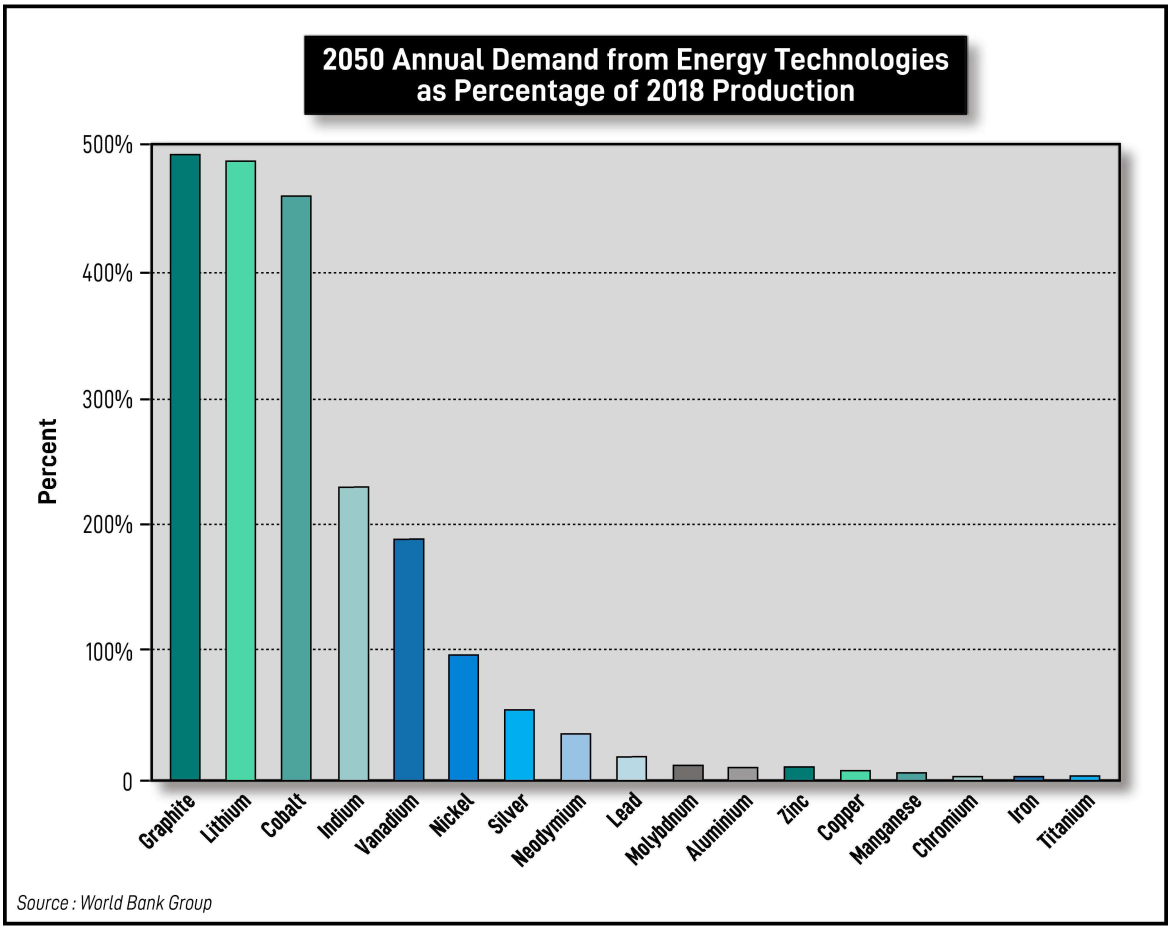
Approximately 75% of global Vanadium supply is produced in China and Russia from steel smelter slag while other countries produce it either from the flue dust or heavy crude oil, or as a byproduct of uranium mining. It is mainly used to produce specialty steel alloys such as high-speed tool steels. The most important industrial Vanadium compound, Vanadium Pentoxide (V_2O_5), which is used (primarily) as an alloy with steel and as a catalyst for the production of sulphuric acid.

Vanadium is recovered as V_20_5 contained in an intermediate slag which is formed between iron-making and steel-making in integrated steelworks (eg Panzhihua in China, Highveld in South Africa and Nzhny Tagil in Russia). At these steel plants the Vanadium contained in the iron ore is taken into solution in the iron during the ironmaking process. The hot metal is then oxidised and a slag, which contains between 10% and 25% V_20_5, is formed and removed before the hot metal is passed on for final steelmaking. The slag containing 10%-25% V_20_5 is then treated in a roast/leach process, the end product of which is Vanadates or Vanadium oxides.

VRBs – Powering Up

We don't need to rehearse here the virtues of the VRB technology. However, the battery application, combined with the potential for higher Chinese rebar specs have powered up Vanadium's price in recent years. The dilemma though is that VRB makers claim they need the metal at $10 per lb of V_2O_5 or less to be viable and so when it spiked to $30 in 2018 it killed its own Golden Goose and then went plunging down. The lesson at least for the short term is that for the VRB wave to continue moving forward it shall have to be underpinned by lower prices than many V-bulls predict. That also puts paid to many of the more high-opex projects doing the rounds.

To meet V-demand though (as the chart below shows) there will need to be a substantial increase in supply from the recent levels of production.



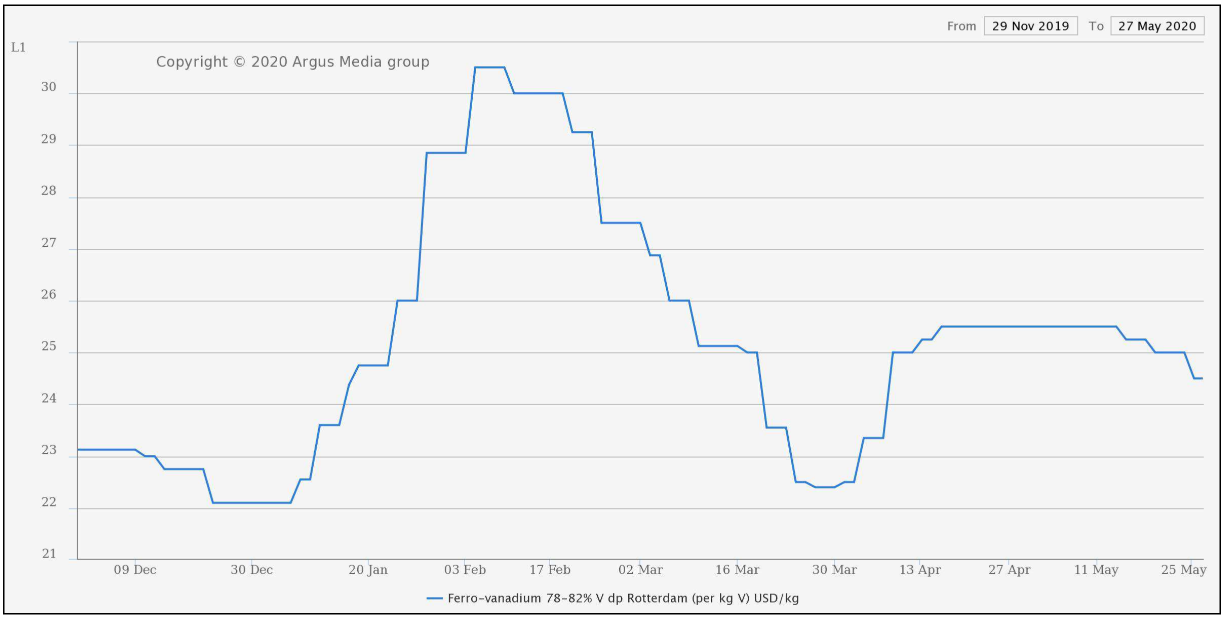
Vanadium Pricing

Even by the standards of specialty metals, where wild price gyrations, frequently occur, Vanadium has been exceptional in recent years. In 2017-18 in particular the vanadium price took off in a frenzied way that was partly driven by Chinese requirements for high V content in steel alloys used for rebar (as a response to a number of devastating earthquakes) combined with the general rush into battery metals that put VRBs on the radar screen of a wider audience.

This was the third surge in 15 years, whereas in the 25 years until 2005 there had only been one spike in Vanadium prices. As usual when this happens, the price went into steep retreat and nearly fell back to its 2016 lows. There was a suspicion that the Chinese also baulked at the high prices and instructed buyers to soft-pedal on the implementation of the higher V content rules in rebar.

Source: Bushveld

And here is a chart over recent months for Rotterdam delivery, still showing surprisingly wide fluctuations in prices.



Source: Argus Media

Next Steps

The solution to the V supply dilemma would seem to be low-cost production of V_2O_5 (i.e. recovery from slag or petrochemical sources) coming ahead of high-cost mining options. This seems rather obvious but to those obsessed with "hole in the ground"-led strategies it is entirely iconoclastic.

We recently wrote a review of Neometals/Critical Metals joint venture to recover Vanadium from stockpiles of this material in Scandinavia. The partners have the long-term slag supply agreement to be process slag from the SSAB steel mills in Oxelösund and Luleå in Sweden and Raahe in Finland The agreement provides access to at least two million tonnes of existing and future slag from SSAB steel mills. This provides a secure basis for a slag recycling facility capable of processing 200,000 tonnes of slag per annum without the need to build a mine and concentrator like existing primary producers. The clincher is that the Vanadium grade at the SSAB stockpile in Luleå is ~4% V_2O_5 and at both Oxelösund and Raahe is ~3% V_2O_5 making it one of the highest-grade Vanadium feedstock sources in the world. All without mining cost.

It's still early days for this venture but it has the unfortunate side effect of putting quite a number of Vanadium (mining) wannabes into the development slow lane. The joint venture reinforces our long-term admiration for Neometals, a stock we have had in our Model Mining Portfolio since 2009, and reiterate a **LONG** call and reaffirm our twelve-month target price of $0.45.

Portfolio Changes

We added a LONG position in Alphamin (AFM.v) to the portfolio during the month with a twelve-month target price of CAD 48cts. We shed the LONG position in Norzinc.

Aspermont – Going back to the Well

The mining-oriented media group, Aspermont (ASX:ASP), a Model Mining Portfolio constituent, announced a non-renounceable rights issue at the end of May. At its current price around $0.009 cts it has a market capitalization of AUD$19mn.

Aspermont provided their half year financial report on 26 May and then halted trading pending an announcement of a small fund raising. In the first days of June it announced a 1:14 non- renounceable rights issue at 0.007cents underwritten by respected Australian broker, Taylor Collison.

This issue is a positive due to:

- ASP being guaranteed a minimum of AUD$1.06mn by the 1st of July for a fee of $60,000
- Eligible shareholders can take up their rights and also apply for shares in excess of their entitlement
- Sub-underwriters (incl. two non-executive directors) will be allocated shares from shortfall and

be paid a fee

It's good to see this development as, while the company has no debt, it is riding out the storm. Its nascent events business has been pushed into the freezer as has happened to so many others. Unlike others though, this is not its bread and butter. Its subscription business by all accounts has held up well.

The eternal problem here is low liquidity and lack of attention in the markets. The liquidity is a self-inflicted injury as the management flatly refuses to consolidate the stock from its currently bloated number of shares outstanding and derisory stock price. It mouths the same old saw as many others of "waiting for a meaningful catalyst" which is the equity market equivalent of Waiting for Godot. Can one be regarded as a serious media group (which it is) with an unserious stock price denomination? We think not.

We maintain our **LONG** rating on the stock with a target price of 3cts on this stock.

Panoro Minerals – Dancing the Limbo

The price of Panoro Minerals, the Peruvian copper explorer, has been a long slow slide since its most recent high in late 2017. While things have scarcely been rosy for copper over that time they have not been this dire. With Wheaton Precious Metals as a funder and several majors either holding stakes or as partners one would have thought the stock more immune to the travails of the Red Metal.

We note that December 2019 saw big volumes from a single institutional seller who was selling as part a rebalancing of their portfolio. Most of the stock was bought by investors in Peru and Canada, a few high net worths and family office groups. There was no news driving the selling.

The problem for us is that the company stoutly refuses to develop its own properties. With this *Waiting for a Gentlemen Caller* strategy it is no surprise that investors get bored and drift away. The company has substantial identified mineral resources, but these are never enough to stave off terminal *ennui*.

At least the company is well-resourced at the moment and funded for its foreseeable needs. The US$14.45mn funding in place comes from Wheaton Precious Metals' Cotabambas Project streaming agreement. This pays for:

- All overheads to 2024
- Exploration program to 2024 including drilling at Humamantata Project, where funding is 100% from its partner JOGMEC. Work to restart as soon as restrictions are lifted in Peru, estimated to be in the next weeks
- Exploration program to 2021, including drilling at the Cotabambas Project, where funding will come from milestone payments due to Panoro from Hudbay Minerals from the sale of the Kusiorcco Project

In an interchange with management we were advised that, in these tough market conditions for base metal exploration, the company "will leverage its portfolio of projects and strategic partnerships to fund the advancement of the flagship Cotabambas project to reduce financing risk and share capital dilution". By "advancement" we are not presuming they mean developing. The market is also bored with "strategic partnerships" that don't lead to buyouts or a bid.

In recent times the company has identified a number of new prospects at the Cotabambas project:

- exploration drilling identified high grade Skarn and Porphyry mineralization at Chaupec target
- geologic mapping and sampling at Guaclle target has identified additional high grade Skarn and Porphyry targets

However as is well-known discoveries, no matter how promising, are not moving the dial for anything but gold companies of late.

Thus there are a number of frustrations from the investor side that we cannot argue with as we feel them also. The company is potentially leveraged to a strong copper price rebound and would definitely be substantially higher if copper could break above $3 per lb or, even better, over $3.20. So for the meantime we maintain our **LONG** rating on the stock with an adjusted twelve-month target price of 18cts.

Parting Shot

The culture wars in the Rare Earth space continue at full force with the *Know Somethings* doing battle with the *Know Nothings*.

The US government's pivot towards the domestic production of Rare Earths has let loose the dogs of War. Two disgruntled parties in particular have escalated over the last month from dark mutterings to full scale mud-slinging.

The beneficiaries of the DoD's move to promote alternatives to Chinese dominance of Heavy Rare Earths were Lynas (with its proposal for downstream processing in Texas) and the Mountain Pass mine in California. The key determinant was current production. The latter consideration meant nothing to the churlish losers. They did not even realise they weren't in the race because they have spent years dithering, while the two parties chosen have actually been producing some Rare Earths.

Amongst the left-behinds was a company that had decided to bed down with some of the sleaziest and most disreputable denizens of the mining space. Their agitation was pure sour grapes, with a campaign against Lynas's foreignness, and touting their own virtues as, sometime, Texans. The fact that their own dubious partners were also Antipodean seem to escape them. With Lynas's proposed plant in Texas the decision makers at the Pentagon had the choice between a real company with a real mine or the alternative of a project on a drawing board partnered with a downstream "plant" a few states over owned by people with whom, frankly, you would not want to be seen in public.

They turned up the heat even further during the month with a barrage of misinformation including some severely spurious lab results of "their technology" that happened to come from bench-scale tests at somewhere other than their much vaunted "facility". The rubes in the market believed it and its didn't take much "boggling them with science" for a particular hayseed of a Senator to start doubting the DoD knew what it was actually doing.

In the case of Lynas we have despaired before that they wouldn't know how to site a plant if their life depended upon it. First they wasted nearly half a decade, and nigh on a billion dollars, doing battle with of band of Malyasian politicians who were quite clearly lubricated by Chinese *baksheesh*. Now they have got themselves bogged down with the Tin-Man of Texas over a measly DoD grant. Why do they not up sticks and announce the plant will be in Alabama or Louisiana? After all the product for processing will be coming from either Malaysia or Western Australia, so Gulf of Mexico locations sound mighty inconvenient to us. Why not hit the Honorable Senator where it hurts?

If Lynas was to say "to hell with all this rubbish" and build its own plant (from its own resources) somewhere more convenient in the US, then the DoD might turn around to the sour-grape merchants and say "see, we didn't need to fund REE development after all". Texas can take a hike.

Revenge would be sweet indeed.

MODEL MINING PORTFOLIO @ END MAY

	Security	Currency	Price	Change last 12 mths	Change last mth	12-mth Target
Long Equities						
Diversified Large/Mid-Cap	Teck Resources (TECK.B)	CAD	13.08	-54%	7%	$18.00
	Metals X (MLX.ax)	AUD	0.09	-64%	13%	$0.14
Uranium	Uranium Participation Corp (U.to)	CAD	5.12	18%	4%	$6.00
	GoviEx (GXU.v)	CAD	0.16	-6%	0%	$0.17
Zinc/Lead Plays	WisdomTree Zinc ETF (Zinc.L)	USD	6.30	-19%	3%	$8.10
	Myanmar Metals (MYL.ax)	AUD	0.05	-17%	25%	$0.08
	Ascendant Resources (ASND.v)	CAD	0.12	-68%	0%	$0.30
	Telson Mining (TSN.V)	CAD	0.08	-75%	0%	$0.25
Silver Producer	Excellon Resources (EXN.to)	CAD	0.80	0%	51%	$1.10
Silver Explorer	Southern Silver Exploration (SSV.v)	CAD	0.57	217%	307%	$0.80
Silver ETF	IShares Silver ETF (SLV)	USD	16.66	20%	19%	$18.50
Gold Producer	Soma Gold (SOMA.v)	CAD	0.18	-88%	500%	$1.20
Coking Coal	Colonial Coal (CAD.v)	CAD	0.45	10%	73%	$1.10
Project Generator	Altus Strategies (ALS.L)	GBP	32.00	38%	-2%	£40.00
Copper Explorers	Panoro Minerals (PML.v)	CAD	0.08	-50%	-11%	$0.18
Tungsten Producer	Almonty Industries (AII.v)	CAD	0.53	-47%	2%	$0.80
Vanadium Developer	Vanadium Resources (VR8.ax)	AUD	0.02	-67%	0%	$0.04
Lithium	Neometals (NMT.ax)	AUD	0.17	-29%	6%	$0.45
	Lithium Power Intl (LPI.ax)	AUD	0.13	-50%	-7%	$0.30
Scandium Developer	Scandium International (SCY.to)	CAD	0.08	-47%	0%	$0.12
Gold Explorer	Cabral Gold (CBR.v)	CAD	0.13	-13%	-7%	$0.15
	BTU Metals (BTU.v)	CAD	0.21	31%	-13%	$0.42
	Gunpoint Exploration (GUN.v)	CAD	0.55	17%	12%	$0.75
Fertilizers	Verde Agritech (NPK.to)	CAD	0.57	-11%	33%	$0.90
Cesium et al.	Pioneer Resources (PIO.ax)	AUD	0.01	0%	0%	$0.03
Rare Earths	Northern Minerals (NTU.ax)	AUD	0.02	-75%	0%	$0.08
	Neo Performance Materials (NEO.to)	CAD	7.48	-39%	1%	$14.00
Tin Miner	Alphamin (AFM.v)	CAD	0.12	-37%	-8%	$0.48
Mining Media/Events	Aspermont (ASP.ax)	AUD	0.01	0%	0%	$0.03
Short Equities						
Shorts	NioCorp (NIO.to)	CAD	0.71	25%	1%	$0.40
	Texas Mineral Resources (TMRC)	USD	1.92	392%	98%	$0.30
	Abdn Standard Palladium Trust (PALL)	USD	182.23	46%	-1%	$180.00
	Galane Gold (GG.v)	CAD	0.13	160%	44%	$0.04

Important disclosures

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