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HALLGARTEN + COMPANY

Portfolio Strategy

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Model Resources Portfolio:
The Calm Before the Storm

Performance Review – October 2024

Model Resources Portfolio

The Calm Before the Storm

- + **Gold forged to record heights in the last month in a sign of growing nervousness on multiple fronts**
- + **The Gold/Silver ratio at 84 is essentially at the same levels that it stood at in early 2020**
- + **M&A is spreading to smaller & medium-sized gold explorers and developers**
- + **Antimony reportedly passed $30k per tonne, but then the Chinese spoiled the party by reopening exports. Surprise!**
- + **The Tin market is exceptionally tight with the Wa State in Burma really cracking the whip on illegal exports**
- ✘ **The Middle East conflicts are nearing a boiling point with the US elections providing an inflection point for actors to potential take initiatives in the power vacuum**
- ✘ **The Lithium prices took another leg down with the mothballing of more spodumene production becoming inevitable**
- ✘ **Nickels travails have no end in sight, so long term bulls must just hunker down and await the turn, no matter how many years that might take**

The Amateur Hour?

Metals trading is so easy… money for old rope… ask Metallgesellschaft, Refco, Sumitomo Metals, Noble.

In the last 18 months we have seen a variety of oil & gas traders, sensing an opportunity in metals needed to build clean energy infrastructure, announcing moves into the copper space, in particular, but inevitably into a wider range of base metals.

After the recent good years in their space, privately-owned energy traders Vitol, Mercuria and Gunvor have signaled the expansion of their metals trading desks, muscling in on the territory that hitherto has been the preserve of the likes of Trafigura Group, Glencore Plc and specific miners/end-users in base metals.

To effect these metal-trading desk build-outs, the interlopers have at times been willing to "overpay" to secure the best talent. But what is the definition of "best talent"? As is well-known Trafigura, despite its years in the business, has had two major scandals in recent years where the "talent" was found lacking.

Then we have the example of Geneva-based trading house IXM, which is the third-largest metals trader behind Trafigura and Glencore, and owned by Chinese miner, CMOC (i.e. China Moly). In recent years it has morphed what was formerly the metals-trading arm (acquired in 2018) of agricultural giant Louis

Dreyfus Co., and in recent years has forged (pardon the pun) a path into aluminium and other refined metals.

IXM's CEO, Kenny Ives, a former Glencore executive, who took the helm in 2022 went on a hiring spree while cutting other jobs and reshuffling teams internally. Ives was quoted recently in the Financial Times as saying, "We want people who are motivated by the competition and the opportunity to build something special". Hmmmm.

Then IXM, earlier this year, announced that it would be pulling back from the aluminum market. It might be said though, that the history of IXM itself is an early lesson in entering base metals trading as Louis Dreyfus acquired Mitsui's copper trading book in 2005, to launch it out of "boring softs" into exciting copper. "Beware of excitement" should be a motto in the metals trading space.

What do oil & gas traders bring to the metals trading space besides loadsamoney? We suspect that this trend of energy traders going *off-piste* will end in tears (and retreat). We also suspect this tendency says less about the attraction of copper et al. than about sentiments in the energy trading spaces indicating that the "fat years" are behind them.

Cut Down to Size on the Altiplano

All has not been plain-sailing in Argentine lithium for China as it grappled with a major set-back in late October when Eramet, the French mining giant that owns Eramine, announced it would repurchase that the entire minority stake (49.9%) of the Chinese group Tsingshan in the Centenario/Ratones project. The buyback operation was valued at US$699mn.

This is one of the projects which passed through in June of last year on our excursion across the altiplano, the report on which is [here](#).

The Centenario/Ratones *salar* is located at 4000m asl in the department of Los Andes. It is located 75 kilometers from the community of Santa Rosa de los Pastos Grandes.

After the commissioning of a pilot plant at the end of 2019, Eramine partnered with Tsingshan for the final construction of the plant in 2021. The backstory here is that Eramet (and France) wanted to put in an extra $600mn (around three years ago) and the Argentine government of the time, Alberto Fernandez, blocked it, forcing Eramet into the arms of the Chinese.

Now, the French group have decided to recover full ownership in the project and fully control ongoing development. Production was inaugurated at the beginning of July after an investment in the processing plant of around US$800mn.

The project, which operates utilizing a DLE technology, has a nominal capacity of 24,000 tpa of LCE. The firm expects to reach nearly four thousand tons of LCE by the end of 2024, while by 2025, towards the end of its growth curve, it estimates that the figure will climb to 24,000 tons of LCE per annum. The plant has a projected life of 40 years

Clearly, there must have been some sort of get-out (or rather buyback) clause and now the French have exercised it. This is the largest forced retreat by the Chinese in the Lithium space anywhere. It is notable that the transaction was not propelled by any government action, but rather by the absence thereof.

The implication here is that production that was entirely, or preponderantly, heading to China will almost certainly be heading to OEMs in the EU, making Argentina probably the largest source of Lithium for the European market. Quite a turnabout in fortunes for China (and for France).

Portfolio Changes

During the month, there were no changes to the Model Resources Portfolio.

Cobre (ASX:CBE) – PEA Divides to Conquer

Like many these days Cobre has decided to take a realistic approach to the development of its Ngami project in Botswana's Kalahari Copper Belt by coming up with a small starter operation escalating to a much larger facility.

In mid-October the company published a Scoping Study prepared by METS Engineering (METS) of Perth with input from AXT, ALS Metallurgy, Altair Mining Consultancy, B&S Geological and WSP Australia.

We have written quite recently on the company's proposed In-Situ Copper Recovery (ISCR) process to target the ~40km strike of chalcocite-dominant, fracture-hosted copper (and associated silver) mineralisation estimated at between 103mn and 166nm tonnes @ 0.38% to 0.46% Cu. This decision was based on recommendations provided in the Trade-Off Study.

In attempting to get over the issue of the quantum leap from being an explorer to production the PEA utilises a two-stage model designed to derisk and limit the initial capital investment. Thus, it uses a starter production plant (1.9k tpa copper) followed by full production at 40k tpa copper. The PEA integrates additional results from recently completed hydrogeological modelling and metallurgical testwork, which provide controls on well field design and recovery estimates.

***Table 1**. Capital Cost Summary*

Description	***Starter Plant Capital Cost Estimation***	***Full Production Capital Cost Estimation***
Total Direct Costs AUD	$34.3M	$244.8M
Total Indirect Costs AUD	$22.0M	$157.0M
Total Capital Cost AUD	$56.4M	$401.8M
Total Capital Cost USD	$36.7M	$261.3M

***Table 2**. Operating Cost Summary per annum*

Description	***Starter Plant Operating Cost Estimation***	***Full Production Operating Cost Estimation***
Total Operating Cost AUD	$18.6M	$110.8M
Total Operating Cost USD	$12.1M	$72.0M
AUD/t ROM	$9,754	$2,769
AUD/lb of copper	$4.42	A$1.26
USD/lb of copper	$2.88	**$0.82**

Using a rather conservative 40% recovery rate from the ISCR process, the study posits an NPV of AUD$1.042bn, an IRR of 88% and a payback of 0.45 of a year for the starter plant and 1.09 years for the full plant.

The Pre-tax Net Present Values (NPV) and Internal Rate of Return (IRR) were calculated at a 10% discount rate using a 30% to 60% copper recovery range and a long-term copper price of AUD$6.62/lb (USD$4.30/lb) and silver price of AUD$46.2/oz (USD$30/oz).

Next step will be a PFS to flesh this out, but the relatively simple nature of the "mining" process would imply that there are probably no surprises there. The main imponderable is the recovery factor.

Hopefully we shall be elaborating more on these plans in a full update note. In the meantime, we reiterate our **LONG** rating on Cobre and a 12-month target price of AUD 44 cts.

Metals X (ASX: MLX) – Getting Feisty

We long ago gave up on this sometime Tin story, which owns 50% of the storied Renison Tin mine in Australia. We overlooked the many SNAFUs and opportunities missed and kept it in the Model Resources Portfolio long beyond the point at which it was interesting merely because it was the second-best Tin exposure after Alphamin. The Tin sector was booming but the company was doing nothing to capitalize upon it beyond coat-tailing on Yunnan Tin operating the mine that MetalsX should have been operating. Then again whenever MetalsX management had been in the driving seat on any project they had tended to end up in a ditch (e.g. Aditya Birla). Eventually fatigue set in, and we ditched the position for some real Tin stories. Our thinking was Alphamin was from Mars and Metals X from Uranus.

Then much to our surprise, and that of many others, on the 24th of October, MetalsX advised the market that it had made an unsolicited approach to the Hong Kong-listed Greentech Technology International Limited to acquire all of the issued shares of Greentech for a price of HK$0.28 per Share and to cancel all outstanding options for an equivalent price, subject to compliance with the Hong Kong Code on Takeovers and Mergers.

Greentech has approximately 1.37 billion shares on issue, valuing the offer at around US$50mn.

Since around 2011, Greentech, via a wholly-owned subsidiary, had held an 82% interest in YT Parksong Australia Holdings Pty Ltd (with the other 18% held by Yunnan Tin). YT Parksong and Metals X each hold a 50% interest in the Bluestone Mines Tasmania JV. Thus, Greentech holds, indirectly, a 41% interest in the Renison mine on Tasmania's West Coast, the Mount Bischoff open-cut tin project and the Rentails tailings retreatment project there.

Yunnan Tin Australia TDK Resources Pty Ltd., a wholly-owned subsidiary of Yunnan Tin PRC, has been the offtake purchaser of the tin concentrates produced by Renison since 2010.

A lawsuit between various parties in Hong Kong courts makes interesting reading.

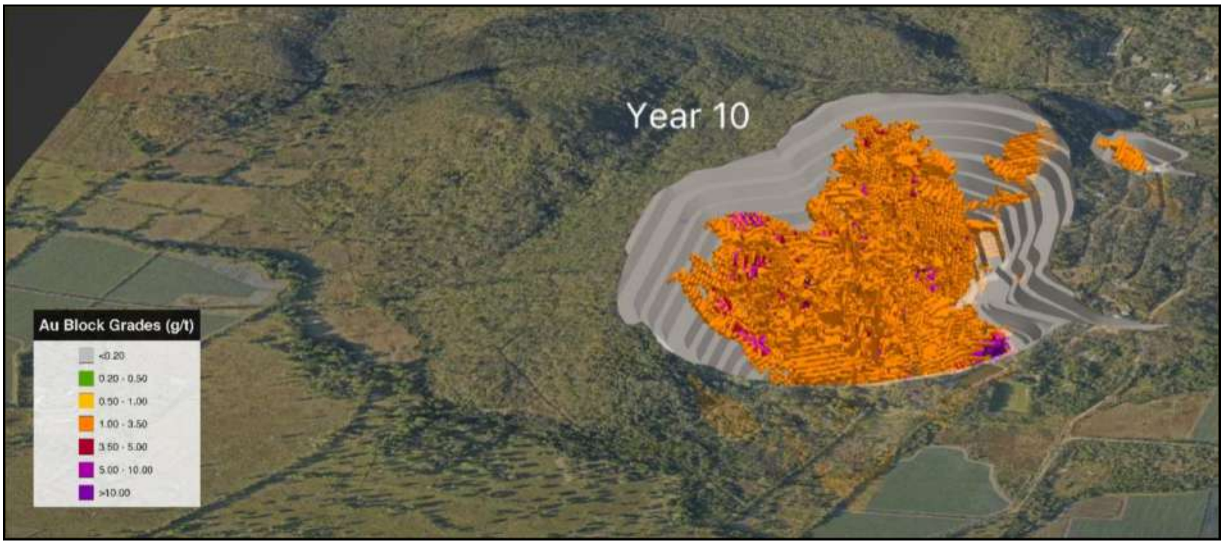
Our colleague was at the Tin conference in China last week and the representative of Greentech looked very sanguine indeed. This makes us suspect the possibility this whole transaction has its roots in the fact that Yunnan owning fifty percent of the largest tin mine in Australia, and also being the operator, is ultimately unsustainable and thus something that result in Bluestone ending up on the receiving end of a message from Canberra like that sent to Northern Minerals (ASX: NTU).

This might be the ownership restructuring you are having when you aren't having a forced restructuring.

Aura Minerals (TSX:ORA) – Swooping in on Bargain Buys

The ink was barely dry on our last Monthly, in which we added Aura Minerals to the Model Resources Portfolio, then the company went out and did a deal. In this instance, Aura will acquire all of the issued common shares of Bluestone Resources (TSX-v: BSR |OTCQB: BBSRF). The goal here is to gain a 100% interest in the Cerro Blanco gold project and the adjacent Mita Geothermal project.

Cerro Blanco is a near-surface high grade gold deposit, in Jutiapa, Guatemala, with a total of 3.1mn ozs (in the M&I categories). A Feasibility Study illustrated an asset capable of +300k oz per annum with first quartile cash costs over an initial 14-year mine life. The Year 10 pitshell is shown below:



The Mita Geothermal project is an advanced-stage, renewable energy project licensed to produce up to 50 megawatts of power.

The offer for Bluestone's stock is at approximately CAD$0.50 per share, representing a 51% premium to spot and a 40% premium to the 25-day VWAP on the TSXV. The consideration is to be paid in a combination of cash or Aura shares on closing and a contingent value right (CVR), representing a total enterprise value of up to US$74.3 million. Ergo, Bluestone shareholders will be able to elect to receive upfront consideration on closing consisting of either:

- a cash payment of CAD$0.287

- 0.0179 of an Aura common share, subject to proration
- or a combination of both

The upfront consideration will be subject to maximum aggregate Aura shares issuable of 1,363,272 (representing 50% of the upfront consideration).

Interestingly, Bluestone shareholders will also receive a CVR providing the potential to receive a cash payment of up to an aggregate amount of CAD$0.2120, for each Bluestone share, payable in three equal annual installments upon Cerro Blanco achieving commercial production.

The one fly in the ointment here is that, as disclosed in mid-June of 2024, Bluestone had received a notice from the Guatemalan Ministry of Environment challenging the approval procedure that approved the surface mining method for Cerro Blanco. Once again, we see that old bugbear or open-pit vs underground rearing its ugly head. If anyone can rethink this, it's Aura. We might note that the mooted strip was 2.7:1.

Bluestone has the view that environmental permit amendment met and exceeded the terms of reference provided by the ministry, and it adhered to Guatemalan law. We suspect Paulo Brito feels confident of his persuasive powers with the ministry.

We reiterate our **LONG** stance on Aura Minerals with a 12-month target price of CAD$19.

Parting Shot

A slightly old, but not ancient statistic, is that there were, as of December 2022, some 965 mining companies listed on the TSX-V. This number should be somewhat similar, if not highe,r these days. As we well know, Canadian mining companies never die. They go into one of two states, half-zombie or full zombie.

The half-zombie is the company that still looks like an explorer, has a functioning website (though usually out of date) and has executives who do the conference rounds intermittently trying to raise a bit of cash to keep the lights on. They have projects but haven't done anything to them in a year or two, as there is no cash, and only the impetus provided by minuscule flow-through financings and the imperative to spend the money "in the ground" even prompts a visit to site to grab a few rock-chip samples.

Full zombie explorers are in the inventory of promoters. The projects are known dogs but hopefully have a NI43-101 (not yet degraded to "historic" category) that can be dusted off as a QT (qualifying transaction) when the company does a swingeing rollback (hanging all legacy shareholders out to dry) and reemerges, *virgo intacta*, via an RTO. Wash, rinse, repeat.

Things are so bad these days in Vancouver that even the most permabull promoters are wailing like they are sitting by the rivers of Babylon. We would estimate that at least a third of the listed TSX-v "miners" are either half-zombies or full zombies. And the sausage machine of CPCs (capital pool companies) is still working away, producing charcuterie, most of which will end up in the trash.

What might prompt a Zombie Apocalypse, which cleanses the markets of the undead hordes? The permabulls will say that all you need is a market upturn. But in what? With the energy transition looking as sick as a parrot, the Rare Earths space having more companies than it needs and uranium having sufficient legacy players to not need new additions, what really is the point? We hear the cry, "More gold explorers!" but why? Don't we have way more than needed already?

If one imagines that there is a finite amount of money available for the mining space then surely, way less companies would mean more for those that are really doing something and could better put to work funds that are currently going towards "keeping at the lights on" in Zombieville.

Recent & Upcoming

In the last month we published an Initiation on Aurum Resources and an Initiation of 5E Advanced Materials and a review of the Heavy Mineral Sands (HMS) space and its evolving dynamics. In coming weeks, we should publish a writeup of our mine trip to Alpahmin's Bisie mine, an update on American Rare Earths, an examination of Energy Fuels' new HMS and REE silos, a review of Argentine-Chinese relations as they relate to the so-called "Energy Transition" and our Tungsten review.

MODEL RESOURCES PORTFOLIO @ END OCTOBER

	Security	Ticker	Currency	Price	Change last 12 mths	Change last mth	12-mth Target
LONG EQUITIES							
Diversified Large/Mid-Cap	Hochschild	HOC.L	GBP	2.27	171%	36%	£1.50
Base Metal Developers	Denarius Metals	DMET.NE	CAD	0.79	119%	41%	$1.15
Uranium	Sprott Physical Uranium	U.UN.to	CAD	17.96	5%	-2%	$20.00
	enCore Energy	EU.v	CAD	5.31	19%	10%	$4.90
	Energy Fuels	UUUU	USD	5.6	-27%	14%	$7.50
Zinc/Lead Plays	WisdomTree Zinc ETF	ZINC.L	USD	9.94	14%	8%	$14.00
	Luca Mining	LUCA.v	CAD	0.59	119%	0%	$0.70
Nickel Developer	Canada Nickel	CNC.v	CAD	1.02	-12%	0%	$2.15
Silver Explorer	AbraSilver	ABRA.v	CAD	3.10	103%	31%	$4.20
Silver ETF	IShares Silver ETF	SLV	USD	29.54	45%	12%	$24.00
Gold Producer	Soma Gold	SOMA.v	CAD	1.34	116%	205%	$0.85
	Aura Minerals	ORA.to	CAD	0.41	-95%	-97%	$19.00
	Asante Gold	ASE.cn	CAD	1.34	-1%	6%	$2.40
	Orvana Minerals	ORV.to	CAD	0.41	173%	21%	$0.60
	Talisker Resources	TSK.to	CAD	0.47	45%	24%	$1.10
Gold/Antimony Developer	Perpetua Resources	PPTA.to	CAD	13.81	211%	15%	$13.00
Metallurgical Coal	Colonial Coal	CAD.v	CAD	2.27	42%	-24%	$2.45
Royalties	EMX Royalties	EMX	USD	1.84	3%	9%	$2.50
Copper Explorers	Panoro Minerals	PML.v	CAD	0.29	123%	71%	$0.30
	Aldebaran Resources	ALDE.v	CAD	1.65	94%	70%	$1.32
Tungsten Producers	Almonty Industries	AII.v	CAD	0.83	66%	2%	$1.10
	EQ Resources	EQR.ax	AUD	0.05	-29%	0%	$0.08

MODEL RESOURCES PORTFOLIO @ END OCTOBER

	Security	Ticker	Currency	Price	Change last 12 mths	Change last mth	12-mth Target
LONG EQUITIES							
Graphite Developer	Blencowe Resources	BRES.L	GBP	0.05	2%	-2%	£0.09
	Kingsland Minerals	KNG.ax	AUD	0.23	12%	35%	$0.45
	Applied Graphite Technologies	AGT.v	CAD	0.15	206%	67%	$0.40
Lithium	Neometals	NMT.ax	AUD	0.09	-76%	13%	$0.30
	Century Lithium	LCE.v	CAD	0.38	-38%	46%	$1.10
Phosphate	MinBos	MNB.ax	AUD	0.043	-59%	-32%	$0.28
Scandium Developer	Scandium International	SCY.to	CAD	0.23	475%	35%	$0.40
Gold Explorer	Cabral Gold	CBR.v	CAD	0.32	167%	3%	$0.40
	Alpha Exploration	ALEX.v	CAD	0.72	13%	-23%	$1.00
	Desert Gold	DAU.v	CAD	0.08	100%	0%	$0.16
AgroMinerals	Millennial Potash	MLP.v	CAD	0.27	17%	35%	$0.32
Rare Earths	Rainbow Rare Earths	RBW.L	GBP	0.1275	-22%	25%	£0.30
	Neo Performance Materials	NEO.to	CAD	8.01	0%	-3%	$14.00
Tin	Alphamin	AFM.v	CAD	1.25	44%	23%	$1.50
	Rome Resources	RMR.L	GBP	0.45	n/a	60%	n/a
	Elementos	ELT.ax	AUD	0.08	-38%	-11%	$0.38
Mineral Sands	Sheffield Resources	SFX.ax	AUD	0.21	-55%	-32%	$0.72
Oil & Gas	Shell	SHEL.L	EURO	26.15	0%	-1%	£24.00
SHORT EQUITIES							
Shorts	Golconda Gold	GG.v	CAD	0.30	173%	0%	$0.15
	Blue Lagoon	BLLG.cn	CAD	0.12	-25%	0%	$0.05
	Aya Gold & Silver	AYA	CAD	17.80	156%	19%	$4.50

Important disclosures

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