

Welcome to the Future, Critical Metals' Ventures Discover Reality

Way back in 2011 there were nearly 250 rare earth themed junior mining ventures looking at 400 "deposits" mainly in Canada and Australia. Today, just two of them are producing, Lynas Rare Earths Limited (ASX: LYC) and MP Materials Corp. (NYSE: MP) (the successor in interest to the bankrupt Molycorp of yore). These two ventures, even then, stood out from the pack by their common purpose of delivering a value-added product, individual separated (or blended) rare earth chemical forms, in the case of Lynas, and "magnets," in the case of Molycorp. All of the others, without exception, stated that their saleable product would be a "mixed con." This was the great "con" of the rare earths' boom and bust of 2010-2013.

A concentrate of a mixture of all of the rare earths, from which the chemical elements that interfere with the separation of those rare earths into individual, or purposely blended combinations, of individual rare earth salts, is what is targeted to be produced at a mining operation where the ore is "mined," concentrated, cracked and leached, and then is chemically processed to remove elements that interfere with the next step, selective separation of the individual elements in a form required for the next step in the supply chain that ultimately results in a finished product for sale to consumers.

For the rare earths this concentrate is, for practical purposes of safety and economics, a mix of rare earth carbonate solids. This should have been the initial target of 2011's 250 rare earth juniors. It wasn't. They overwhelmingly (other than Lynas and Molycorp) did nothing to advance towards this target. That turned out to be a good thing, because the

only non-Chinese customers for this “mixed con” before 2017 were Solvay in France (9,000 tpa capacity to produce individual rare earth salts), Silmet in Estonia (2,500 tpa), and assorted small operations in Asia, outside of China, with a combined capacity of perhaps 3,000 tpa. All of these bought their feedstock from China or (a tiny amount) from Russia at the time.

No 2011 junior sold a single gram of mixed con to the marketplace prior to 2017 (Lynas)

Why was the first 21st century, rare earth boom, such a bust?

Because none of them had the knowledge, education, experience or skill in processing or mineral economics to see that integration into a total rare earths supply chain targeted to a final product is necessary for **profitable operation**. Almost without exception the profitable part of the rare earth supply chain is concentrated in the metals, alloys, and magnet making end, and the only way to make a mine and separation system profitable is to distribute costs along a total supply chain. (America’s Energy Fuels Inc. (NYSE American: UUUU | TSX: EFR), which is operating on a total supply chain model through magnet alloys, is an exception, because it is able to make a profit selling a mixed carbonate due to the skill of its administrative and operation management and a unique, for North America, existing processing infrastructure).

If there is to be a domestic American, or European, total rare earth permanent magnet supply chain then there will have to be in place operating commercial rare earth separation systems, rare earth metals and alloys production, and rare earth permanent magnet production capability and capacity to support it.

In fact, if there are to be total domestic supply chains for any critical metals, then, not just a mine, but also all of the downstream elements of the supply chain have to be in

place before that can happen.

I note that for the cobalt chemicals necessary for the production of lithium-ion battery cathodes, the Canadian integrated cobalt processing junior, Electra Battery Materials Corporation (TSXV: ELBM | OTCQX: FTSSF), has entered into a supply agreement for cobalt concentrates from the world's largest non-Chinese producer, Glencore, to process that concentrate into fine cobalt chemicals for the battery manufacturing industry in its existing Canadian facility. When and if Electra can produce cobalt concentrates from its company-owned deposits there will already be in place the downstream operations to support that. In the meantime, it will buy feedstocks from others, and/or also toll them for others. Electra's management looks also to have given considerable thought to pricing, so as to ensure profitability.

This business model, to have in-house as much of the total final product supply chain as is necessary to be profitable, is the only practical business model for the production of critical metals and materials.

As of December 31, 2021, America's Energy Fuels (rare earths) and Canada's Electra (cobalt) are setting the pace for the future development of a North American critical metals' industry by commencing operations.

Happy New Year!

Tesla's decision to source

cobalt from Glencore raises concerns in the investment community about all electric vehicles

As we move towards electrification of the global transport fleet one of the biggest concerns is the sourcing of cobalt. That is because approximately 70% of the world's cobalt production comes from the Democratic Republic of Congo (DRC) – A country rampant with issues such as corruption, child labor and exploitation.

The recent Tesla's decision to source cobalt from Glencore, along with others (BMW, Samsung SDI, SK Innovation, GEM Co, and Umicore) is very concerning. It means that all these companies are totally reliant on the DRC (excluding BMW who has secured Glencore's Australian cobalt from Murrin Murrin) for cobalt. Furthermore it means that Glencore has locked in sales of about 82% of its current cobalt production, leaving very little available cobalt supply in the market.

The bigger question is: **'When will car and battery manufacturers and western governments start to support western cobalt miners?'** Until they do that the electrification of the transport sector will be heavily reliant on the DRC and China, which represents a huge risk to the supply chain.

There are several good quality cobalt options without resorting to the DRC and China. Yes they will need financing and support, but in the long run **some investment now is better than total disruption later.** For investors it would also be wise to support the non-DRC cobalt miners. Firstly they are generally very cheap right now, and secondly if they can make it to production they will have multiple battery and car

manufacturers lining up to secure a safe supply of cobalt. They may even pay a premium for safe cobalt supply.

The following cobalt miners do NOT source cobalt from the DRC and are worth serious investor consideration.

Producers (and country source of cobalt)

- Sumitomo Metal Mining Co. (TYO: 5713 | OTC: SMMYY) – Sources from Philippines and Madagascar.
- MMC Norilsk Nickel PJSC (LSX: MNOD | OTC: NILSY) – Sources from Russia.
- Vale SA (NYSE: VALE) – Sources from Canada.
- Sherritt International Corporation (TSX: S | OTC: SHERF) – Sources from Cuba and Madagascar.
- Conic Metals Corp. (TSXV: NKL) – Sources from Papua New Guinea.
- Korea Resources Corporation – Sources from Madagascar.

Juniors and potentially the next cobalt producers

- Aeon Metals Limited (ASX: AML)
- Ardea Resources Limited (ASX: ARL | OTC: ARRRF)
- Australian Mines Limited (ASX: AUZ | OTCQB: AMSLF)
- Bankers Cobalt Corp. (TSXV: BANC | OTCQB: NDEF)
- Blackstone Minerals Limited (ASX: BSX | OTC: BLSTF)
- BlueBird Battery Metals Inc. (TSXV: BATT | OTC: BBBMF)
- Brixton Metals Corporation (TSXV: BBB | OTCQB: BBBXF)
- Canada Nickel Company Inc. (TSXV: CNC)
- Canada Silver Cobalt Works Inc. (TSXV: CCW | OTCQB: CCWOF)
- Cassini Resources Limited (ASX: CZI) – To be acquired by OZ Minerals Ltd. (ASX: OZL | OTC: OZMLF)
- CBLT Inc. (TSXV: CBLT)
- Clean TeQ Holdings Limited (ASX: CLQ | TSX: CLQ | OTCQX: CTEQF)
- Cobalt Blue Holdings Limited (ASX: COB | OTC: CBBHF)
- First Cobalt Corp. (TSXV: FCC | OTCQB: FTSSF)

- Fortune Minerals Limited (TSX: FT | OTCQB: FTMDF)
- Fuse Cobalt Inc. (TSXV: FUSE | OTCQB: FUSEF)
- GME Resources Limited (ASX: GME)
- Havilah Resources Limited (ASX: HAV)
- Jervois Mining Limited (ASX: JRV | TSXV: JRV | OTCQB: JRVMF)
- Leading Edge Materials Corp. (TSXV: LEM | OTCQB: LEMIF)
- Power Group Projects Corp. (TSXV: PGP)
- Talon Metals Corp. (TSX: TLO) – Located in the USA

All of the above junior cobalt miners are located either in the safe jurisdictions of Canada or Australia and are featured on the InvestorChannel watchlist.

If the world wants to see a safe cobalt supply, free from the corrupt DRC issues, then the above junior cobalt miners will need to be supported. Together they can solve the problem of +70% reliance on DRC cobalt. The support that is needed is start up project funding (start up CapEx). USA, Europe, and other western governments can step in and offer low rate long term debt funding, just as what Japan did to support the start up of rare earths miner Lynas Corporation. Until this happens we will continue to be at the mercy of the DRC and Chinese supply chain.

“Cobalt is a key critical material needed in lithium-ion batteries used to make electric vehicles (EVs) – The Tesla Model 3 is by far the world’s best selling electric car”

Closing remarks

Demand for cobalt is set increase about fourfold over the 2020s decade based on my model forecast (assumes EV market share reaches 36% by 2030). This will most likely lead to severe cobalt deficits. New cobalt supply is extremely hard to bring on quickly, especially given most cobalt is produced as a by-product of copper and nickel production.

Cobalt is on the US list of critical materials for a good

reason. It is needed in aerospace, jet engines (and military applications), and is a key component in lithium-ion batteries (essential for EVs and consumer electronics). Yes the EV related battery industry is reducing the cobalt per battery; however the better quality NMC, NCA, and NMCA batteries all require cobalt to keep the battery safe. Not enough cobalt and you get thermal runaway (aka fire).

Just as what happened with uranium this year, and is likely to happen soon with rare earths; the US and Europe need to act now to develop a safe cobalt supply chain. If they don't act soon then the West will be totally at the mercy of the DRC/China supply chain, which makes the West very vulnerable should trade war issues, cobalt shortages, or other supply chain issues continue as I would expect will be the case. The latest concern is that Glencore is now facing a Swiss corruption investigation related to its DRC activities. What would happen to cobalt supply if Glencore was halted in dealings with the DRC?

The world's leading Li-ion battery supply chain expert Simon Moores (Benchmark Mineral Intelligence) appeared before the US Senate again last week warning that the US domestic supply chain build out is far too slow and that the US risks being left behind.

Let's hope that the West finally wakes up before it is too late.

Project 81 prepares to show

its hand

Following more than five decades of exploration, Project 81, an extensive collection of contiguous claims in proximity to the historic mining city of Timmins, Ontario, is about to show some of its hand. Historical drilling from the 60's reveals that the circa 70,000 hectare property could feature multiple viable gold and base metal targets, and a recent flurry of exploration work by owners Noble Mineral Exploration Inc. (TSXV: NOB) ("Noble") will culminate in an ocean of processed data this December, potentially resulting in massive stock volatility.

The exploration data is currently being compiled by renowned geophysicists Orix Geoscience after months of drilling and airborne electromagnetic surveys targeted areas that were identified as prospective. In anticipation of a 'big reveal' from such a large project, what follows is a rundown of what Noble has to offer to investors looking for their next major play, but, personally, I feel that the project represents a tremendous opportunity to capitalize on a relatively underexplored and massive section of one of Canada's most prospective regions.

Promising drill targets were identified through a combination of historical results and recent testing programs, including volcanogenic massive sulfide ore (VMS) targets that are thought to be similar to the geology of Glencore's Kidd mine at nearby Kidd Creek, the deepest base-metals mine on Earth and the nearest accessible point to the center of the planet as more than 150,000 million tonnes of ore has been mined from the site in just over 50 years.

If the old adage about the best deposits lying close to the best mines is to be believed, Project 81 stands a phenomenal chance of succeeding based on its size and position alone. Timmins, too, is widely known for being one of the richest

goldfields in the world, born out of the Porcupine gold rush of the early 1900s, it has since been home to the most prolific gold mines in Canada's history.

Crucially, Noble's CEO and President, Vance White, already has previous high-profile Ontario successes under his belt; Mr White was President and Director of Dickenson Group before it was bought out by Goldcorp in 1989, and the resource that sealed the deal went on to become the record-breaking Red Lake mine, coughing-up over 22 million ounces of gold and still producing to this day. A good team in a good location is one thing, but it will always be the geology that seals the deal for investors.

An airborne geophysical survey was recently completed over the northern 8 of 12 townships that lie within Project 81, and a wide range of targets were identified for further exploration. Among this work will be a gravity gradiometry survey of the entire 70,000 hectares that will more accurately identify and define the numerous mineral deposits throughout the area. This data will be released by mid-December when Orix has finished compiling all findings into a digestible format, but many anomalies have thus far proven enticing.

In particular, the Lucas target is a large granite-based anomaly that appears to be faulted straight through the middle. Typically, these shear zones are associated with significant mineral values; add this to the fact that the Lucas site has historically assayed up to 3.5 g/t Au, and we have a potential winner. Although with around 40 priority trends identified for exploration on the property, it likely won't be alone.

The property is so large that Noble are even optioning off sections of entire townships to other prospectors, which, combined with recent private placement closures, has returned the company millions of dollars in cash, stocks and contractual first year payments, and that's just since the

beginning of September. During Vance White's time there, the market cap of Dickensen went from Cdn\$2 million to well over Cdn\$100 million; with cash to spend and a gargantuan property in a region so prolific as Timmins, the results that tip the scale could be mere weeks away.

Furthermore, once fully established, it is thought that the company would separate its mineral assets into two distinct packages, with one focused on its gold-bearing assets and the other on its VMS, base metals and nickel assets. Any investor who chose to get in before the project progressed to this point would stand to benefit from both of these ventures in the future.

The 'hot' cobalt market and being at the right place at the right time

Peter Clausi, President, CEO and Director of CBLT Inc. (TSXV: CBLT) ("CBLT") in an interview with InvestorIntel CEO Tracy Weslosky discuss CBLT's principal cobalt assets, located in Ontario and Quebec, Canada. It is important to note that Canada is the third largest producer of cobalt in the world. Peter states CBLT's main gold and cobalt asset, located in Sudbury, Canada, is directly next-door to an actual producer, "the world-famous Sudbury smokestack owned by Glencore." Peter also discusses CBLT's competitive advantages, such as they spend shareholder's money wisely resulting in CBLT not having a lot of shares outstanding, meaning "value goes to shareholders."

Tracy Weslosky: Cobalt is very hot, not only for

InvestorIntel, but the overall market is very receptive to it. Let's just start with that you're in Canada, which is the third top producer of cobalt in the world.

Peter Clausi: That's correct.

Tracy Weslosky: Let's start with where you're located.

Peter Clausi: We like reliable mining jurisdictions so Canada's one of the best in the world. We're in British Columbia, Quebec and Ontario. Our principal assets are in Ontario and Quebec.

Tracy Weslosky: What I really like is that you're very close to an actual producer, Glencore. Is that correct?

Peter Clausi: Our main gold cobalt asset in Sudbury is directly next-door to the world-famous Sudbury smokestack now owned by Glencore.

Tracy Weslosky: I was reading a little bit about you because you seem to be a key speaker on the cobalt industry. I didn't know that 60% of the weight of my battery in my cellphone is from cobalt. Is that correct?

Peter Clausi: Cobalt is an amazing metal. It's in everything and we don't know it's there. There's a global shortage of it. Prices have been skyrocketing. 60% of the weight of your battery in your phone is cobalt. The new Tesla Model 3 that has been all over the news, every car needs 15 kilograms of cobalt. If they make half a million, that's 7½ million grams of cobalt just for one model of one car.

Tracy Weslosky: I have been speaking to CEOs in the public markets and saying, there's a lot of jets on the tarmac right now... why are we going to select CBLT? What makes you so competitive?

Peter Clausi: Management is horrifically cheap with the shareholders' money. We spend it well. We spend it wisely. As

a result we don't have a lot of shares outstanding. That means value goes to the shareholders. We have strong properties. We have strong teams and we were one of the early movers in this market. We bought good properties at great pricing...to access the complete interview, [click here](#)

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Cobalt has a new Robin Hood

Two big questions ought to be on the minds of cobalt producers and consumers around the world: can we get enough of it? Can we get it ethically? Peter Clausi, President, CEO and Director of CBLT Inc. (TSXV: CBLT), answers both with a resounding "yes". The Canadian cobalt producer is setting itself up to be that "yes" with a double-barreled approach: having an abundant supply of premium quality cobalt that is ethically and transparently sourced.

The board made a strategic decision to attack cobalt in early 2016, and since then, everything has been falling into place. Cobalt was reflected as the new focal point through a name and symbol change to CBLT, which was made official on June 20, 2017.

Changing the name is far from a superficial effort, as shown by the acquisition of 2,800 hectares to their cobalt portfolio in Gowganda, Ontario on March 28, 2017. Third party samples from the land show, in some areas, 6000 grams of silver per tonne, 14% copper, and – most importantly – 0.9% cobalt. This number seems unimpressive when compared to the surface samples

from CBLT's primary property in the world-famous Sudbury Basin, which carried up to 4.5% cobalt. But, believe it or not, 0.9% is far better than the 0.05% average ore reserve reported by Glencore for the area.

Canada is currently the third largest producer and processor of cobalt in the world and CBLT intends to be a major contributor to that ranking. The only countries generating a net total higher than Canada are the Democratic Republic of Congo (a producer), and China (a processor), both of which are busy in battle with the rest of the world over blatant violations of human rights. This is CBLT's second barrel: a transparent and ethical supply chain. With tech giants like Apple and Tesla running away from the blood cobalt that derives from child and (essentially) slave labour, Canada is the best logical choice.

If you look at the lithium-ion batteries used by these titans, by weight, cobalt represents 60% of cell phone batteries and 9%-15% of electric car batteries. The immense demand for cobalt is easy to see and it will only continue to rise. Take for example the announcement made late last year by Germany's Federal Council to phase out combustion engines in favour of electric vehicles by 2030. What will power all those cars? Lithium-ion batteries. That's a tall order that only cobalt can fill, as there are currently no economically viable replacements for this rare metal. If you like lithium, you have to love cobalt.

Peter doesn't only work. He also has a hobby: lowballing cobalt prices. In 2015, he ballparked \$20 per pound by December 2016. It's currently over USD\$26 per pound. His current analysis is \$35 per pound in 2018, and if the trend continues, surpassing that modest estimate seems plausible.

In the future, while we're texting from our self-driving electric cars, CBLT will be searching internationally for the metallic needle in the rocky haystack on politically stable

ground to gift the world with the cobalt it craves.

Largo's Mark Smith on processing the best vanadium ore in the world

Mark Smith, President, CEO and Director of Largo Resources Ltd. (TSX: LGO | OTCQB: LGORF) in an interview with InvestorIntel's CEO Tracy Weslosky discuss Largo's fully operational vanadium project in Brazil. Providing an overview on the Maracás project in Bahia, Brazil that is now turning a profit, Smith explains how Largo's ore grade is two to three times higher than any other available mines in the world. He also goes on to explain how Largo's processing facility is only a kilometer away, close to the Salvador port and the six-year off take agreement with Glencore. An expert on vanadium supply and demand, Mark will be presenting at InvestorIntel's 6th Annual Cleantech and Technology Metals Summit on Monday and Tuesday, May 15th and 16th in Toronto, Canada at the Omni King Edward Hotel.

Tracy Weslosky: Mark, can you give us an update please?

Mark Smith: It is pretty exciting. We've been working very hard at Largo. We had to take a facility that wasn't running well and we've got it running at nameplate capacity consistently right now. We have the best ore in the world to run through our facility, our operations team is in sync the way they need to be. They're smart. They're efficient at what they do. We are now producing some of the highest quality vanadium pentoxide in the world. We couple that with a market that has really turned around and prices have more than

doubled since December of 2015. We're actually making positive EBITDA, positive cash flow at Largo. We've got to tell you that the mood at the facility, the mood in the company is just very different because when you see that first profitable month it's amazing what that does for morale.

Tracy Weslosky: Based on that, Largo is making money, you're achieving milestones as you said you were going to do. I'm going to back you up just a little bit and have you explain to the audience out there: vanadium prices have actually doubled since last year – things have really changed and turned around, you might say for Largo?

Mark Smith: They have. That's due to two things, good operations and the price of vanadium. Let's not forget that although we talk about it doubling right now versus last year, last year we hit the lowest point in the history of vanadium pricing. Yes it is twice as good as it was last year and we are positive cash flow, positive EBITDA. We think the market has a long ways to go yet to really demonstrate what the supply and demand fundamentals are in the vanadium world...to access the complete interview, [click here](#)

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Cobalt crisis moves onto center stage

“The pace of change in the battery space has moved up a gear with the Cobalt crisis moving into centre stage and focusing minds on supply issues in the battery space, particularly as regards the “blue” metal.” – Christopher Ecclestone, EU

One does not usually expect a sober conference of traders and other players in the battery metals space to go all apocalyptic but that is what happened when the topic of Cobalt arose at the recent Argus Metals Week in London. As we all know the price for Cobalt has been on a tear, dragging along prices of Cobalt “stories” in its wake. While much of the move has been attributed to the Lithium ion battery dynamic we would note that long term underinvestment in the metal (particularly in development of primary mines) and the closure of Cu-Co mine capacity by Glencore during its late-2015 near-death experience also played a part.

Lift-Off

The pace of change in the battery space has moved up a gear with the Cobalt crisis moving into centre stage and focusing minds on supply issues in the battery space, particularly as regards the “blue” metal. The Cobalt producers have annual output of around 100,000 tonnes. The price of Cobalt has soared (though still not back to pre-2008 levels) and the chatter in markets has been of an imminent supply crunch in absolute terms that might precipitate rationing by price and possible switching to alternative technologies.

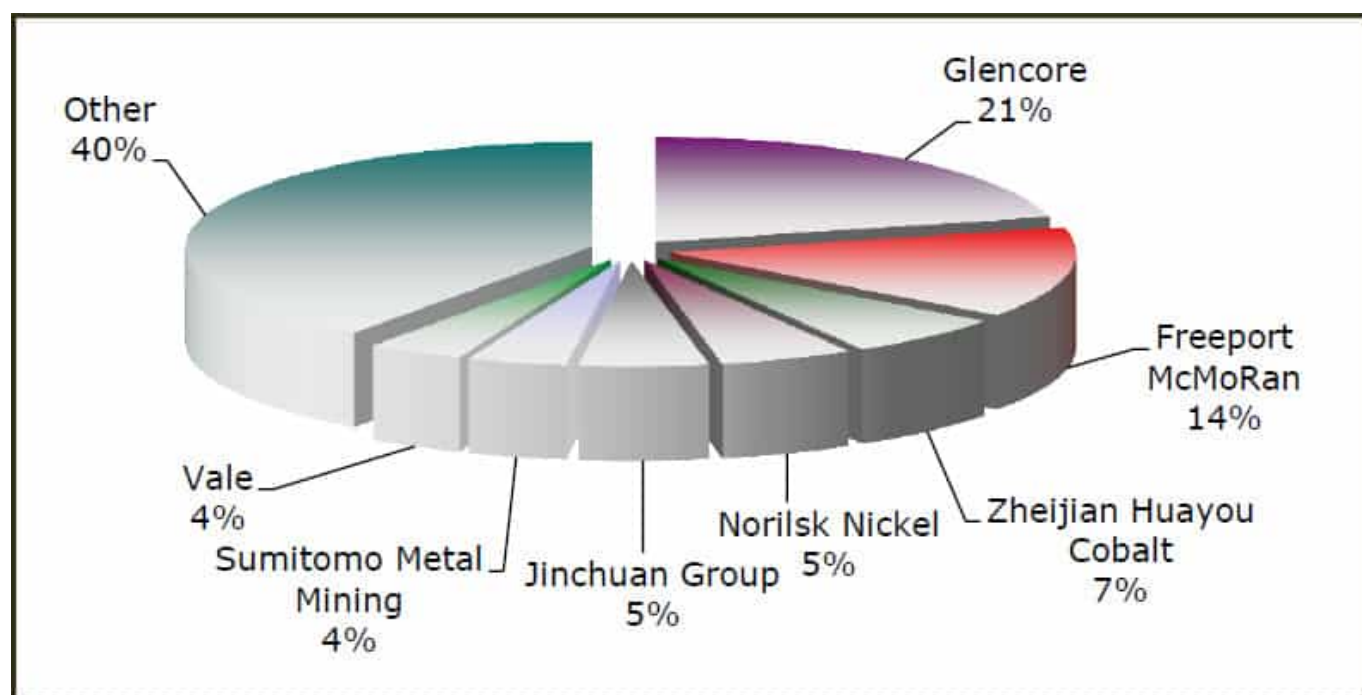
Cobalt Price
24.49 USD/lb
24 Mar '17



While opinions differed on just how steep the rise in prices might ultimately be, we perceived an even bigger threat in that there might be an absolute shortage of Cobalt, transitory or longer, in which case end-users (and by that we mean beyond just the battery space) may not be able to secure Cobalt for “love nor money” as they say in the classics. One might compare it almost to like a situation of war-time shortage when “nylons” or suchlike might have totally disappeared. Clearly in a rationing scenario there will not be governments (except maybe the DRC) in a position to ration supply and thus the advantaged parties will be those for whom the cobalt is only a tiny part of a high cost product (pharmaceuticals and electronics) while the most negatively impacted will be bulk users like paints and glass.

The problem is that while higher prices might produce elasticity in demand (depressing sales of some end products or prompting big price hikes or use of alternatives, where possible) the supply side is totally inelastic because of the lack of “turn-on-able” mines either in the primary or secondary category.

Glencore is due, in 2018, to bring the Katanga mine in the DRC back on line after a US\$430mn overhaul of its processing system. The operation has the potential to add as much 22,000 tonnes of cobalt. The chart below from Dorfman Anzaplan shows the current breakdown of global producers.



Beyond this there is no substantial pipeline. The long stalled primary mine project of eCobalt Solutions Inc. (TSX: ECS | OTCQB: ECSIF) in Idaho is one of the most advanced towards construction but even then we are talking several years at the least before a sellable product might appear. That company at least (after a long drought) has been able to raise quite a large amount of money in recent months to regain momentum towards production.

There are a handful of other projects in the works (though Dorfner Anzaplan claims that there are 46 active projects now, up from 10 at the same time last year). How many of these are credible is hard to gauge but we know some to be severely lacking in credibility both due to their very nature and also by the people involved with them.

The map below from SNL Global shows the spread of these theoretical projects in the first half of 2017. Geographically

the diversification looks good, at least.



So with a growing number of projects the picture for filling the production gap looks auspicious, but in fact it is not. Even if one third of these projects were “good”, most are still very formative indeed. If they went from 10 to 46 in number over 12 months then that signifies most have had little to no work done on them and we would also note that the real price liftoff was only in recent months so the bulk of these projects are of significantly less duration than six months.

That then in its own way confuses the market. It’s like a horse race where virtually none of the runners have seen a racetrack before. There is no “form”. That then means that punters do not know who to back and understandably place very small bets and spread them around. This does NOT make for a great financing environment. We have already seen in the Lithium space that few have put their money where their mouth is. Financings (except for a few choice or advanced names) have been little more than “maintenance” financings that pay to keep the lights on and fund the IR budget. Raises of sub-\$500,000 do not pay for meaningful drill campaigns that lead to a resource. We are seeing the same thing happen in Cobalt as occurred in Lithium. That stretches out the timeline for

the various staging posts on the way to production. Years to get a resource, then delays the PEA, then the DFS and BFS years later. Production then becomes little more than a twinkle in the eye. This solves no problem at all and will drive end-users insane with frustration at the dysfunctional equity markets in the mining space.

Battery Change?

While there is no direct “switch” out of Cobalt into other metals there are patents out there for other technologies, both currently employed and theoretical, that employ other metals and minerals such as Manganese (Lithiated Manganese Dioxide batteries), Titanium (Lithium Titanate batteries) and Antimony/Magnesium (Molten Salt batteries), Vanadium (Vanadium Redox Flow batteries) and in other metals. Conventional wisdom has it that battery manufacturers, particularly in the HEV/EV sphere, are committed to Lithium Ion batteries and will pay through the nose rather than retool or adapt. However, if there is a Cobalt shortage in absolute terms or supply becomes highly irregular then they may not have any choice but to consider the unthinkable, particularly when it impacts the economics of vehicle costs.

Solutions that involved Electrolytic Manganese open up the interesting possibility that EMD, the production of which is currently dominated by China, might be tempting as an alternative within China in light of that country’s lack of guaranteed Cobalt supplies. Watch this space.

Conclusion

The current rash of interest in the Cobalt space is all light and no heat. The situation now seems rather binary with the options being a slump when Glencore production feeds right through into the market OR one in which demand keeps rising, little new supply arrives and a crunch develops. Glencore now is interested in orderly markets and has benefitted massively

by enforcing discipline (mainly upon itself) in 2015 that then resulted in the rallies in Zinc and Copper than have put it back on a strong footing. The delayed effect of the 2015 cuts has now washed into the Cobalt space with soaring prices. Glencore are not going to want to damage this new *Goldilocks* scenario that they have engineered. Even better for them the lack of any up-and-coming producers means that they can now effectively control the market and pricing by being the swing producer for at least another half decade. Primary mines are likely to be smallish and not make a dent in supply even should they get to production. Megamines, particularly in the NiCo space, like Ambatovy are seen as dinosaurs and not likely to spur a rash of lookalikes for a very long time indeed.

This augurs a situation in which end-users end up like frogs in the steadily hotter water that only realise that it's boiling when they are well and truly cooked. We have had a mini-spike that has doubled the price to something like the levels that reigned pre-2008. There were speakers at the Argus event who mouthed the words "\$65 per lb" and it did not rattle the teacups. Even at such a high historical level there is little that such a price could engender in new production, particularly if Glencore just sit back and decide to enjoy the situation, eking out supplies into the market. This is not like the Hunt Brothers corner where householders were rifling through their drawers to find family silver to melt down. The only "stash" of Cobalt out there is the store of dead Lithium Ion batteries that householders have secreted (unintentionally around their houses in redundant electronics). When push comes to shove "Cherchez le scrap".