

Decisions, Decisions – The Next Big Thing(s)?

The CEO of InvestorIntel keeps setting me higher hurdles to jump over. I am glad that she is not an athletics coach! This week's task was to come up with not one Next Big Thing but six, and elaborate upon them so that readers could try and guess which might really be the Next Big Thing in both our opinion and that of InvestorIntel's readership base of thinking investors.

The task was not as difficult in reality as it had seemed so here goes:

Build it and They Will Come – Production Leads Demand?

Specialty metals in new technologies have “form” in production leading demand. The best example of this is the 1960s and 1970s at the much maligned Mountain Pass where the upsurge in REE production led to the adoption of more REEs in applications and more research to put the excess production to good use. The rest is history. Some good examples of metals that may also produce this phenomenon are Scandium in solid fuel cell technology and lighting, Beryllium in sophisticated alloys and Antimony in hot metal battery usages. Scandium in particular has a particularly paltry current supply and accordingly demand is low. However if one believes that a big surge in supply can result in expansion of (known) applications in lighting, energy cells and aeronautics then the pertinent question is whether this is the Next Big Thing?

Base Metals as Technology Metals

Copper is of course the original “technology metal”. When the first electric charge ran down a copper (or aluminium) wire or the first telephone message was sent by Alexander Graham Bell it was well before most of the current crop of technology

metals were even in common use. Just because a metal is in relatively large supply does not mean it cannot be considered as a technology metal or that "all its likely applications are known". Aluminium due to its difficult processing requirements was a relatively high-value and low volume metal until the 1950s and most definitely was a technology metals. Nowadays it is the special alloying property that takes the merely mundane and lifts it to a higher plane. Good examples here are alloys of Aluminium and Scandium that should be seeing much more demand if only the Scandium was available in sufficient amounts to meet the challenge. Meanwhile Beryllium can be alloyed with both Copper and Aluminium to meet various high tech demands. Ironically Beryllium Copper alloys were used in more humdrum applications in the 1950s (like fishing rods) until driven out of use by price hikes.

Metals that are now gaining some traction in technology conversations that are bizarrely also DSO (Direct Shipping Ores) are Manganese and Chromite, with the former already well used in alkaline batteries but with potential to move up the ranks of battery applications to technologies with greater sophisticated traits and advantages.

Are base metals in technology applications the Next Big Thing?

Onshoring

The search for ever lower input costs and the rise of globalization (and the fall or removal of import duties) coincided to form, in the period since the 1980s, the base for global offshoring which essentially was the shift of jobs and production from Western economies to developing economies, particularly in Asia. This shift did not come without its risks and Western companies soon found their technology was being pillaged by "host" nations and that "just in Time" didn't work always to plan over very long distances. The costs of shipping spiked several years ago (before again slumping) and that refocused minds. Particularly as some functions

became less labour intensive then companies started to ask whether they actually needed technology-strong but labour-light functions located so far away and the tide turned.

The focus on resource security was low while globalization was ascendant but events in the Rare Earth space with China taking retaliatory action against Japan over an island dispute was a lesson that the Japanese took to heart and some other countries should have pondered whether they might be next. Surveys like that of the BGS and papers from the EU highlighted the criticality in the supply chain of various key technology metals.

Thus far onshoring has been driven just by value considerations but now the risk is not just of shipping but technology loss/theft and potential supply blockages in the event of "hostilities" be there trade fights or something more serious. That alone should be enough to worry governments but those looking for solutions from the bureaucracy of Western nations will look in vain. Now its private companies that are driving the process and having the factory alone is not enough. Every major industrial power needs to have a minimum of capacity to cover its strategic/defence needs for a metal either within its own borders or within friendly neighbours' territory. Relying upon "Oh, we have friendly relations with China" no longer cuts it when push comes to shove. Is this the Next Big Thing?

Rare Earths Out of the Valley of Death

Usually a mining sub-space has a few false dawns during a down period. One only has to look at the Uranium space to see the evidence for this. However Rare Earths have been in the doghouse since 2011 with nary the opportunity to stick the snout out of the kennel. The fist blow was prices for underlying minerals, followed by the wholesale collapse of the plethora of corporates with pretensions to pursue the metals, then investors being battered on all sides by the generalized

malaise in the mining space and finally when the rising tide is supposed to lift all boats, the Lithium space has stolen the limelight as the next go-go sector leaving Rare Earths with not a leg to stand on... in theory.

In a normal world promoters would have jumped back on the REE bandwagon figuring that soured investors would have forgotten by now what happened to them last time and that the allure of the electric vehicle would have had some spillover, and yet they have not.

That having been said, what comes around goes around and the brutal attrition has left a hardy band of survivors who are committed to the REE space rather than the fly-by-nights of 2009-11. Thus it is easier to spot who is serious because all of them are. Then again there are also far fewer to sift through. Prices are reportedly on the rise as China pushes the envelope on recapturing some value to its exports of this relatively scarce and strategic export. Put bluntly the Chinese are fed up with loss-leading on Rare Earths. So the question is whether this is the Next Big Thing?

Downstreaming

It was only a few decades ago that tyre companies owned their own rubber plantations, aluminium companies owned their own bauxite mines and edible oil companies grew palm oils. Faddish management consultancy theories resulted in the rise in Just in Time and the decline of vertical integration with the result being compartmentalisation and a "faith" that when an end producer of a product wants its raw materials they will be there. The supreme example of this naivety in our times is Tesla with its projection to the world that its supplies of raw metals (particularly Lithium and Cobalt) are none of its business. We await with eagerness the day when the smile is wiped from that company's face by some sort of supply meltdown. Another example of "hands-off" is Apple that wants to trumpet its purity and distance from the messy world of

Conflict Minerals in what is little more than covering the eyes and claiming “See No Evil”. Of course for the end-user to get into production of their raw materials is upstreaming. Downstreaming is the opposite with the raw material producer moving into the value added of the supply chain. Is this the next big thing?

Rationing of Specialty Metals

As we noted in a recent piece here, there is potential for a severe supply crisis in Cobalt (though not a certainty). The same potential exists in some other metals where there is little to no pipeline. While such things might be the stuff of which mining promoters’ dreams are made it can only happen if there is no immediate supply available. The way the industry has evolved into a trend of diabolically low prices and then swinging into crisis mode so fast that no-one can react with extra production is unlikely to change and if anything the day in which a “major” metal is found to be so lacking that even price cannot ration it (strangely uranium comes to mind as a potential candidate for this) draws nearer. Such a crisis (beyond Cobalt and one or two other minor metals, such as Tin or Lithium) probably won’t happen for another five years but it could become a real risk to a large number of metals in the 2020s. Is this the Next Big Thing?

Conclusion

So take your pick... which of these is the Next Big Thing.. maybe several are.. maybe they all are...

Publisher’s Note: Christopher Ecclestone will be unveiling “The Next Big Thing” at InvestorIntel’s 6th Annual Cleantech & Technology Metals Summit on May 15-16th in Toronto, Canada.

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Nemaska Lithium Inc. (TSX: NMX | OTCQX: NMKEF), Lynas Corporation Limited (ASX: LYC | OTC: LYSDY), Largo Resources Ltd. (TSX: LGO | OTCQB: LGORF), Neometals Ltd. (ASX: NMT), Alkane Resources Corp. (ASX: ALK | OTCQX: ANLKY), eCobalt Solutions Inc. (TSX: ECS | OTCQB: ECSIF), NioCorp Developments Ltd. (TSX: NB | OTCQX: NIOBF), NextSource Materials Inc. (TSX: NEXT | OTCQB: NSRC), Lithium X Energy Corp. (TSXV: LIX | OTCQB: LIXXF), Neo Lithium Corp. (TSXV: NLC), Wealth Minerals Ltd. (TSXV: WML), Talga Resources Ltd. (ASX: TLG), Scandium International Mining Corp. (TSX: SCY), Advantage Lithium Corp. (TSXV: AAL | OTCQX: AVLIF), Nano One Materials Corp. (TSXV: NNO), Lithium Australia NL (ASX: LIT), Avalon Advanced Materials Inc. (TSX: AVL | OTCQX: AVLNF), HPQ Silicon Resources Inc. (TSXV: HPQ), Search Minerals Inc. (TSXV: SMY), Argentina Lithium & Energy Corp. (TSXV: LIT | OTCQB: PNXLF), Robix Environmental Technologies Inc. (CSE: RZX), CBLT Inc./Green Swan Capital Corp. (TSXV: GSW), Matamec Explorations Inc. (TSXV: MAT | OTCQB: MHREF), Alix Resources Corp. (TSXV: AIX) and the TMX Group Limited.

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#CTMS2017 Contact Information: For more information on **InvestorIntel's 6th Annual Cleantech & Technology Metals**, please contact Neil Lock, *Summit Director* at +1 647 345 5486 or 604 380 4888 Neil@InvestorIntel.com. For regular updates on the **Cleantech & Technology Metals Summit**, please go to CTMS2017.com or follow us on twitter @CTMS2017.