

Defining Criticality

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Everybody is claiming to have “Critical Metals/Minerals” these days. Desperados in the copper space are the most shameless at touting this claim, while the most ludicrous are those in the gold space (though that goes without saying).

But how to measure what is and what isn't critical?

Rankings

Criticality and Chinese dominance have become popular themes over the last decade with the British Geological Survey's (BGS) first Criticality ranking in 2011 (in the midst of the Rare Earth boom) firing the starting gun on a race between countries to define what is critical to their own circumstances.

All attempts at ranking criticality are bound to run into criticism with different pundits and different economies perceiving different needs. Moreover, circumstances change, as Cesium showed when it went from being dominated by the US to being dominated by China when the US, fecklessly, let Sinomines acquire Cabot's specialty fluids division. In our perception, Tungsten is not as critical as it was due to numerous non-Chinese developments in the pipeline.

Of all the Criticality lists the BGS one was the only one giving scoring to the metals and then producing degrees of risk to supply. Moreover, it gives the impression of being focused upon which metals are at risk (largely from China-dominance, though unstated) rather than saying (as the JOGMEC list does) that certain metals are critical for a specific (i.e. Japan's) economy.

Criticality as Semantics

Metals rankings have now become like radio stations' Top 40 lists of days gone by. However, it may just be a matter of international semantics as to what the word "critical" actually implies.

Some are saying that this means a metal is vital to an economy (which of course iron ore is to every economy) but others are interpreting it as being that the supply is in some way threatened or vulnerable. And the latter is where the China Factor is invoked. Europe meanwhile wants to fence-sit and pretends that it is not accusing the Chinese of wielding a big stick threatening EU industries (when really the Chinese are being threatening indeed).

The BGS by using the word "Risk" did not mince its words. Everyone knew what it meant. Chinese dominance meant supply could be turned off.

Rising Tide of Concern?

The financial media chattering about Chinese dominance of particular metals is one thing, but it is when the average householder gets concerned that the issue really becomes popular. Giving a speech several years ago on Erbium and 5G we noted that few, if any, of the public even knew that the jump from black & white TVs to colour TVs was made possible by Europium and behind that lay the Mountain Pass mine.

For the public, the new 5G technology seems to come out of the ether, literally, and thus it is not a good idea to ask too many questions about what metals make it happen because one would find out that (notwithstanding Huawei's involvement) the REE component (Erbium) in 5G largely is China-sourced or China-processed. Who amongst the Great Unwashed (or experts) can tell us where other 5G inputs, like Scandium, Cesium and Tantalum, come from?

Alarm bells though have been ringing in the C-Suites (of Germany and South Korea, more than Detroit) about the vulnerability of the EV “revolution” to Chinese machinations and that has set off a furious hunt for non-Chinese supply chains.

Curiously though, the European list does not include Lithium amongst the critical metals, though this is probably predicated upon its upstream supplies being mainly from “friendly” sources such as Australia, Argentina and Chile. But with China dominating conversion of Lithium into Lithium ion batteries (and having a stranglehold on Cobalt from the DRC) it does not pay to be so simplistic in calculating where one’s sources might be.

Ergo, with China being the principal midstream processor, can one be so blithely dismissive of the criticality of Lithium?

The various surveys that followed on the heels of the original BGS Criticality rankings now reinforce the sheer number of metals at risk, though as one can see below each agency producing these lists has differing views of the criticality of different metals within their remit.



We can note from the lists above that the US regards most metals as having some degree of criticality.

Conclusion

The critical metals space is torn with rising demand for metals that have seen little, to no, development since before the Commodity Supercycle even began and is now seeing a secular decline in Chinese production due to over-production, exhaustion and environmental devastation. This makes for a rather dramatic tug of war.

It is now clear that the genie set free by Trump’s seemingly

prophetic “Trade War” of the Chinese threat to supplies cannot be put back in its bottle. The “love” of the US industrial complex’s for cheap Chinese minerals has now even been called into question. We doubt that the East Asians (i.e. Japan, Korea and Taiwan) and the Germans can ever be easily lulled back into a false sense of security (of supply) by the Chinese.

The legacy of underinvestment and the lack of capital markets’ interest in specialty metals stories (beyond momentary pump-and-dumps) combined with the Chinese massive own goal in splurging its resource base in predatory pricing and, frankly, dumping over three decades has made for a secular crisis in metals supplies.

This crisis is likely to be enduring and will definitely result in the long-term higher prices (even shortages).

All the chatter does not provide money for projects. Unfortunately, it is only metal price spikes that seem to do so. The soaring price of Lithium and Cobalt in 2017 was a case in point and then the Vanadium surge of 2018. However, the REE putsch of mid-2019 waxed and waned so fast that no party got any financings done before the brief window of opportunity slammed shut.

Less sexier metals never even get their day in the sun. Tellurium or Cesium could quadruple and it would not generate more than a muffled whisper in the trade journals. The same for individual Rare Earths such as Erbium and Dysprosium.

We are of the opinion that the critical “state” of the metals world will remain as long as the West is not self-sufficient in its supply of specialty metals. The Chinese have shown themselves to be malevolent players and that was while they had the whiphand in many metals. As they start to lose their grip the frustrations will start to rise, already we are starting to

see some rancour in relations with Burma over neo-colonial resources policies being imposed by China on its neighbour. Other Belt-and-Road “beneficiaries” have found that Chinese largesse comes at a hefty price. Is this mere sparring or the first shots in a monumental struggle over the world’s most crucial mineral resources?

In retrospect, Trump’s “Trade War” of 2018-20 may be seen as the “phoney war” phase of a much bigger tussle over access to the world’s scarce specialty metals resources. The criticality rankings are the playlists for the background music as this plays out.

Note from Publisher: Next week – on Wednesday, November 9th in Toronto, the inaugural [Critical Minerals Summit](#) is on! To secure a delegates pass, [click here](#) – READ: [Summit to Address the Impact of the \\$1.2 Trillion EV Market Demand by 2030 on the Critical Minerals Sector](#)

Catching the world with our rare earths contingency pants down

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The rare earths market has had its ups and downs the past few years. In particular, the US-China [trade war](#) brought a new focus to the sector highlighting the world’s dependency on China for rare earths supply.

Then in early 2020 with much of China closed down by the

coronavirus the Chinese [rare earths supply](#) was put to test. While the Chinese market is often quite opaque, market pricing for key rare earths such as neodymium give an indication of the supply and demand dynamics.

Key rare earths price movements in 2020 as the China disruption was taking place

Neodymium (Nd) prices are up [4.28%](#) so far in 2020, despite the slowdown in industrial production of goods that contain neodymium. [Asian Metal](#) reports praseodymium (Pr) prices are slightly down in 2020, and dysprosium (Dy) prices are up ~5% over the past 2 months.

Neodymium 5 year price chart



[Source](#)

All of this suggests that despite the coronavirus chaos in China the key rare earths market remained very stable. It would appear from this that China's inventory was adequate to cover any mining disruptions; however, demand was also lower due to the industrial slowdown.

Experts view

In this [exclusive February 18, 2020 InvestorIntel video](#), rare earths expert Jack Lifton discussed with Tracy Weslosky the impact the coronavirus is having on critical metals:

Jack Lifton states:

*"(China) Shipments could stop at anytime.....logistics are compromised....**The coronavirus has caught the West with its contingency pants down**.....this is a warning bell for everyone in the world."*

Jack also revealed that we do not even know if the Chinese possess enough stockpiles of rare earths to handle their own demand, never mind the needs of Americans.

Rare earths are vital ingredients for modern technology and the world relies largely on China



[Source](#)

Lynas Corporation Limited

Outside of China, the rare earths supply chain is completely reliant on one company. That company is [Lynas Corporation Limited](#) (ASX: LYC). Lynas is the world's second largest supplier of rare earth materials, and the only significant rare earths producer outside of China. Most of Lynas' rare earths go to long term contracts mostly with Japan. This means if we get a rare earths supply disruption from China and higher NdPr prices, then Lynas Corporation will be the key global company to benefit. This is worth keeping in mind in case we get a second wave of the coronavirus outbreak in China.

The latest news with Lynas Corporation

- [February 3, 2020](#) – Australian government awards major project status to new Lynas WA plant. The Lynas Kalgoorlie plant will undertake cracking & leaching of rare earth concentrate from Lynas' Mt Weld mine, which is also located in Western Australia's Goldfields region. Lynas will also explore opportunities for additional processing in Kalgoorlie.
- [February 27, 2020](#) – Lynas Malaysia operating license renewed for three years.

The good news here for investors is that Lynas has achieved good

progress towards their new cracking & leaching (C&L) facility planned for completion by 2023. This will tie in nicely with the 3-year Malaysian license renewal given the relocation of the C&L facility to Australia should be able to be done in the 3 year time frame. This clears the cloud over the stock from 2019 when they had uncertainties over their Malaysian license renewal due to environmental concerns. This is good for Lynas and good for security of rare earths supply ex-China.

Lynas Corporation to diversify its rare earths operations under their 2025 plan



A summary of Lynas' progress towards their 2025 plan



[Source](#)

Closing remarks

Japan recently [announced](#) they plan to stockpile rare metals as part of an effort to reduce dependence on China. Let's hope the US and others finally get their act together to financially support the critical materials miners. This includes not only rare earths, but also the key EV metals cobalt and lithium.

The 2020s will be a decade of enormous technological advancements with AI, IoTs, robotics, electrification of transportation, renewable energy, and energy storage. All of these need a secure supply of the [35 critical materials as identified by the U.S. Government](#), including rare earths.

For now, the West is lucky to have [Lynas Corporation](#), but clearly we need many more great critical materials miners and processors to help build up our severely damaged local supply

chains.

As Jack said: *"this is a warning bell for everyone in the world."* Western leaders please listen and let's not get caught with our pants down!

Arafura Resources Gavin Lockyer on the U.S. growing interest in magnet metals

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"We are developing a project in Central Australia so in terms of political risk we represent a very low-risk jurisdiction. Our process is to mine, develop and process rare earth materials in Central Australia and then export neodymium-praseodymium oxides to the metal and magnet manufacturing industry, which typically sits offshore in places like Japan to a lesser extent Korea, predominantly China. The U.S. is definitely getting a growing interest in this as it is a strategic metal that feeds into high-performance magnets as you have rightly alluded to, which drive electric motors and also a range of defense applications." States Gavin Lockyer, Managing Director of [Arafura Resources Ltd.](#) (ASX: ARU), in an interview with InvestorIntel Corp. CEO Tracy Weslosky.

Tracy Weslosky: I will be honest with you; I am very excited about this interview. I mean, we have a lot going on in the news right now between China and the United States, and now Canada and China. That is making the world look to you for neodymium

and praseodymium in Australia. Is that correct or am I jumping to the wrong conclusions?

Gavin Lockyer: It is starting. We are starting to see some movement in that space. Geopolitical issues typically reflect into an increase in the neodymium-praseodymium prices. We hope to see that in the near future. What we are seeing is that there is a slight increase from North American investors and manufacturers in particular, starting to look up their procurement supply chains to see where are the critical metals being sourced from and what can they do to minimize their risk of supply disruption.

Tracy Weslosky: For those of you out there who may not be familiar with how exciting the magnetic material market actually is, the critical material market is, I am going to ask you Gavin, if you do not mind, just to give us a quick overview and re-review of who Arafura is in this market.

Gavin Lockyer: Sure. We are developing a project in Central Australia so in terms of political risk we represent a very low-risk jurisdiction. Our process is to mine, develop and process rare earth materials in Central Australia and then export neodymium-praseodymium oxides to the metal and magnet manufacturing industry, which typically sits offshore in places like Japan to a lesser extent Korea, predominantly China. The U.S. is definitely getting a growing interest in this as it is a strategic metal that feeds into high-performance magnets as you have rightly alluded to, which drive electric motors and also a range of defense applications.

Tracy Weslosky: Gavin what you have just alluded to, we did a piece about how the U.S. Defense law has market eyeing raw materials sources in Australia. Have you seen any additional phone calls from any military sources, of course, here in the

last month? What can you talk about?

Gavin Lockyer: There is not a lot I can talk about. What I can say is that there is certainly interest coming from both sides of the Pacific to be honest. The Australian government obviously has made a range of public announcements in which it endorses Australian resource and critical metals and materials for its allies and, of course, the U.S. is an important ally, as is Canada. We would expect, while we have had some discussions at Canberra and at Washington level, what I would really like to see is some of those industries that are reliant on the NdPr for their businesses actually start to come and talk to us a little bit more in a little bit more meaningful capacity because as you are well aware Tracy, the NdPr market is not a commodity market. There is not a LME on which it is traded and so for us to get our projects up and running we need offtake contracts which are defensible or are bankable basically...to access the complete interview, [click here](#)

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Arafura's Brescianini on the growing demand for magnet metals

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"We are dealing in a sector that is really starting to grow in the magnet space. Of course our rare earths go into magnets.

With all of the changes that are going on in the technology space, we are very well positioned to be able to feed that particular sector. As you know we are completing our definitive feasibility study. That will be out in the next couple of months. I guess investors would really start to understand the value proposition that Arafura offers.” States Richard Brescianini, General Manager of Exploration & Development at [Arafura Resources Ltd.](#) (ASX: ARU), in an interview with InvestorIntel Corp. CEO Tracy Weslosky.

Tracy Weslosky: Richard this is extremely timely that we are speaking to you with all of the current conflict between the U.S. and China and now with the Chinese conflict with the Canadians, everyone is looking to Australia for magnet metals. Would you agree?

Richard Brescianini: I would agree. We are a very, very stable country. We have been saying that for many, many years now. I guess what we are seeing play out in the geopolitical sphere really begins to reinforce that fact.

Tracy Weslosky: We just did a piece actually on how the U.S. Defense law has everyone also looking at Australia. We have got investors around the world looking at you. Would you not say now is the time to be looking at a company like Arafura?

Richard Brescianini: I think it is. We are dealing in a sector that is really starting to grow in the magnet space. Of course our rare earths go into magnets. With all of the changes that are going on in the technology space, we are very well positioned to be able to feed that particular sector. As you know we are completing our definitive feasibility study. That will be out in the next couple of months. I guess investors would really start to understand the value proposition that Arafura offers.

Tracy Weslosky: For those of you out there in InvestorIntel land and you are going, what are these rare earths? What are these metal magnets? I will tell you what they are. They are currently controlled by the Chinese and especially with the processing aspect. Of course, Arafura is well on your way with your processing techniques. Is that correct?

Richard Brescianini: That is correct. Just recently we put a statement out there that told the market that our entire processing operation will be located in Australia. We are not mucking about with having it in multiple countries or anything like that. We really want to be able to focus our operations in Australia for stability purposes. I guess your hearers or your listeners will know about some of the things that are playing out in Malaysia right now, which really reinforces our decision to keep it all in Australia....to access the complete interview, [click here](#)

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