

# The Rare Earths Market in Review – June 2020

written by InvestorNews | July 14, 2020

“I think Energy Fuels is serious about going into the rare earths business. What I was told is that they are going to begin by selecting a rare earths mineral produced in the United States...” States critical materials expert Jack Lifton, in an interview with the Technology Metals Show hostess Tracy Weslosky.

In the interview Tracy and Jack discussed some of the major news in the rare earths space for the month of June. Jack also commented on Lynas and shared his view on Alkane’s plan to demerge their poly-metallic and rare earths holding company Australian Strategic Materials Limited (ASM).

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# As Chinese rare earths' stock prices rally, pressure rises for the rest of the world...

written by InvestorNews | July 14, 2020

Rising [US-China tension](#) has resulted in some rare earths' stock prices rising sharply, particularly those in China. Given the recent US moves to introduce [critical materials legislation](#) it seems likely that the non-Chinese rare earth stocks will also rally strongly this year, particularly if the new bills and financial support are passed.

Let's start with a recap of the recent US support highlights for rare earths:

- May 18, 2018 – The US declared a [list of 35 critical materials](#). A large part of the list includes rare earths.
- May 2, 2019 – U.S. Sen. Lisa Murkowski and others submitted the [American Mineral Security Act](#)
- In mid May, 2020, Senator Ted Cruz submitted the [Onshoring Rare Earths Act – the 'ORE Act'](#)
- On May 28, 2020 US Representative Michael Waltz submitted the [American Critical Mineral Exploration and Innovation Act of 2020](#)

The ORE Act focuses on six critical materials – **Rare earths**, scandium, lithium, cobalt, graphite, and manganese. The Critical Mineral Exploration and Innovation Act directs the U.S.G.S. to complete updated resource assessments for each critical mineral. It has been reported that there will be a focus on **rare earths** and other so-called strategic minerals.

Then just last week rare earths expert and [Technology Metals](#)

[Show](#) host Jack Lifton [stated exclusively to InvestorIntel](#): “The US Defense Department has announced last week that it will seek \$1.7 billion for rare earths purchases in the 2021 National Defense Authorization Act that means the budget for fiscal 2021. In addition they will ask for another \$300 million (**a total of \$2 billion**), for rare earths for specialized weapons which they name as hypersonic missiles...”

Given all of the above proposed support to the rare earths sector, it is abundantly clear that the US is now finally moving rapidly to secure critical rare earths supply, particularly from US deposits, where possible. Current rare earths producers and listed rare earths stocks stand to be beneficiaries. Especially if they have US rare earths projects, but quite likely any non-Chinese rare earth juniors that can achieve funding and production should find very strong western demand for their products. Most of the western world is now looking to diversify their supply chains especially after the trade war and COVID-19 problems of the past 2 years.

Some rare earth miners with US projects include:

- MP Materials (private)
- Rare Element Resources Ltd. (OTCQB: REEMF)
- Texas Mineral Resources Corp. (OTCQB: TMRC)
- Ucore Rare Metals Inc. (TSXV: UCU | OTCQX: UURAF)

Some miners with US rare earth processing potential include:

- [Energy Fuels Inc.](#) (NYSE: UUUU | TSX: EFR) recently [stated](#) their White Mesa Mill in the USA could be used in future for rare earths processing.
- Lynas Corporation (ASX: LYC) has received US support for a planned US rare earths processing facility.
- Peak Resources (ASX: PEK) plan to have a US rare earths processing facility.

Some rare earth miners with Canadian projects include:

- [Avalon Advanced Materials Inc.](#) (TSX: AVL | OTCQB: AVLNF)
- [Appia Energy Corp.](#) (CSE: API | OTCQB: APAAF)
- [Search Minerals Inc.](#) (TSXV: SMY)

Some rare earth miners with Australian projects include:

- [Alkane Resources Ltd.](#) (ASX: ALK | OTCQX: ALKEF)
- [Scandium International Mining Corp.](#) (TSX: SCY)

## **Rare earths are vital ingredients for modern technology**



## **Closing remarks**

The massive recent news of two new rare earth/critical materials related Acts and a proposed “US\$2 billion towards rare earths in 2021”, appears to have been somewhat missed by the market. The Chinese rare earths stocks have already bounced leaving the potential rest of the world rare earth miners to play catch up.

News flow in future months should continue to be extremely promising for the rare earths sector following on from the tremendous news from the last few weeks.

Investors should not wait too long as any further increased US-China tensions, threats of China supply loss, or passing of rare earths related Bills, will likely send non-Chinese rare earth miners stock prices higher.

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# Alkane's disruptive technology to reduce metallization costs by +50%

written by InvestorNews | July 14, 2020

[Note from the Publisher: This InvestorIntel interview is about the [Alkane Resources Limited: Investment in Clean Metal Processing Technology](#) news release put out on June 6, 2019 that starts: "Alkane Resources Ltd (ASX: ALK) (Alkane) through its wholly owned subsidiary Australian Strategic Materials Limited (ASM) has executed a binding agreement with Zirconium Technology Corporation (a South Korean company) (Ziron Tech) to fund the final stage research and feasibility in relation to a clean metal process to convert metal oxide – including key Dubbo Project metals – to metals of high marketable purity (Technology)."

InvestorIntel did a follow-up column titled [Alkane deal with Ziron Tech to reduce metallization costs in excess of 50% for zirconium, hafnium, and titanium metals](#) on July 15, 2019 as we deem this news to be disruptive for the overall critical materials sector.]

"It is an electrolysis process. So it uses standard electrolysis but through a solid oxide membrane rather than a carbon electrode. That is a big step because it takes carbon out of the equation. The really exciting thing for us was, the solid oxide membrane that they use is a yttria stabilized zirconia. Here are two products that we will produce from Dubbo, we can actually produce yttria stabilized zirconia used in the process, so there was an added bonus for us. The beautiful thing about the process is that it generates only oxygen as waste material and produces high purity metals" States Ian Chalmers, Technical Director

of [Alkane Resources Ltd.](#) (ASX: ALK | OTCQX: ANLKY), in an interview with InvestorIntel's Tracy Weslosky.

Ian went on to say that the Ziron Tech Electrolysis Process is estimated to reduce metallisation costs by in excess of 50% and is applicable to the majority of Dubbo Project products, including zirconium, hafnium, titanium, neodymium and praseodymium. Ian also said that the process doesn't add much to the capital and operating cost of the Dubbo Project and expects that by the end of 2020 this technology will be available to the global critical material market.

To access the complete interview, [click here](#)

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## Alkane's Nic Earner on the Australian gold bull market

written by InvestorNews | July 14, 2020

Recently during [PDAC](#) 2019, Nic Earner, Managing Director of [Alkane Resources Ltd.](#) (ASX: ALK | OTCQX: ANLKY), shared an update on Alkane's Tomingley Gold Operations with InvestorIntel's Tracy Weslosky.

**Nic said:** "Australian gold right now is \$1800 an ounce. With most Australian gold mines, for instance our forecast on production this year is between \$1,050 and \$1,150. Think about those margins. Its really purple patch for Australian gold at the moment."

Alkane Resources Inc. is a multi-commodity company mainly focused in the Central West region of NSW, Australia. Currently Alkane has two advanced projects – the Tomingley Gold Operations and the nearby Dubbo Project. Tomingley commenced production in early 2014. Cash flow from Tomingley Gold Operations has provided the funding to maintain the project development pipeline and has assisted with the pre-construction development of the Dubbo Project.

The Dubbo Project is a large in-ground resource of zirconium, hafnium, niobium, yttrium and rare earth elements. As it is an advanced poly-metallic project outside China, it is a potential strategic and independent supply of critical minerals for a range of sustainable technologies and future industries. It has a potential mine life of 75+ years. The Dubbo Project is development ready, subject to financing, with the mineral deposit and surrounding land acquired and all major State and Federal approvals in place.

To access the complete interview, [click here](#)

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# **Nic Earner on Alkane Resources' 2019 gold investment strategy**

written by InvestorNews | July 14, 2020

“If you look at our gold investment strategy, we want to assist

companies to come into production and therefore make money for our shareholders..." States Nic Earner, Managing Director of [Alkane Resources Ltd.](#) (ASX: ALK | OTCQX: ANLKY), in an interview with InvestorIntel Corp. CEO Tracy Weslosky.

**Tracy Weslosky:** We want to talk about gold for the holidays. I was reading the New York Times this weekend and it said this is the one year that stuffing your cash in a mattress may have actually put you further ahead. Let us talk about gold. This would be a good time to invest in gold. Nic, what do you think?

**Nic Earner:** Naturally I am a bit of a gold bull. Certainly we are really happy with how the year has gone for Alkane Resources. We are in Australian gold. We have seen the rise and fall of U.S. dollar gold, certainly the Australian dollar has corrected broadly as well. Last financial year, which was finished in Australia at the end of June, we sold our gold for an average of around \$1,720.00 Australian. We have seen similar price levels this year in Aussie dollars. For a cost base, for us, of below \$1,000.00 an ounce Australian it has been a wonderful period of time. If you look historically, at the moment in Australian gold there has been sort of 9 or 10 quarters in real terms over the history at these price levels. Certainly it is an excellent time to have been in Australian gold.

**Tracy Weslosky:** Nic, in our last conversation you said at the end of September you had \$82.4 million in cash and bullion and you have been accruing that cash up. Talk to me a little bit about what you are doing with your gold acquisitions that you were working on.

**Nic Earner:** Thanks Tracy. We have been making investments into other near-term development prospects. There were two that we were chasing in Australia. One has been successful. One has been



unsuccessful. The successful one has been in Calidus Resources. The ASX ticker for that is CAI. They have got ground and reasonable prospects which are going through scoping and feasibilities at the moment up in the Pilbara region of Western Australia. We are helping them to get through to feasibility, just through. Investment they manage and we formed a technical committee to help maximize value of our investment. We really like that one. We like the size of the deposit. We like its exploration potential. We like its capacity to bring near-term development cash. With Explaurum we were looking to do a similar thing; to be part of a placement, help them go through to feasibility, but they were also subject to a takeover offer from another company called Ramelius. Ramelius increased their offer and the directors of Explaurum accepted that offer so Alkane is no longer part of that, c'est la vie. If you look at our gold investment strategy, we want to assist companies to come into production and therefore make money for our shareholders because in general you get this tension where you have raised the ounces on your resources, which you have to mine and it becomes a funding crunch point. Working through that point brings value for the next lot of investors or the same investors and we want to be part of that...to access the complete interview, [click here](#)

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## **Alkane's Chalmers on the**

# supply shortage of rare earths

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“Surprisingly the rare earth market still has not shown the jumps that we believe it would have by now. The equity market is still very skeptical of us. I think that is a combination of things. Eventually the customers, the equity market are going to lock on or understand that if we are going down this path, which we all believe we are going, then the demand for rare earth magnets is just going to have to increase dramatically and there is not the supply around at this point in time.” States Ian Chalmers, Technical Director of [Alkane Resources Ltd.](#) (ASX: ALK | OTCQX: ANLKY), in an interview with InvestorIntel Corp. CEO Tracy Weslosky.

**Tracy Weslosky:** Ian, the headlines everywhere, we have got U.S.-China trade negotiations happening. We have China and Canada at each other. What is happening with the rare earth market?

**Ian Chalmers:** That is a good question actually. It is pretty hard to summarize in a short space of time. Surprisingly the rare earth market still has not shown the jumps that we believe it would have by now. The equity market is still very skeptical of us. I think that is a combination of things. Eventually the customers, the equity market are going to lock on or understand that if we are going down this path, which we all believe we are going, then the demand for rare earth magnets is just going to have to increase dramatically and there is not the supply around at this point in time. At some point in the not too distant future the market is going to crack and we are going to see some really, really strong interest.

**Tracy Weslosky:** Ian I think we are both getting our updates on what is happening with Lynas for instance from just the general news media. What is your understanding of what is happening

right now?

**Ian Chalmers:** My understanding, and again like you I am just getting it from the public domain, is that Lynas had been instructed that they have to come up with a solution to the radioactive waste. Now in the meantime they have stopped production. I understand it was only initially for a month while this review was completed, but they have to come up with an issue to deal with the radioactive waste that is already on site. It is a serious problem, but it is a problem I do not believe the Malaysian government cannot resolve because there is too much outside influence on the Malaysian government. There is a strong relationship between Japan and Malaysia and really a lot of Lynas' product goes to Japan. I think I would be very surprised if the Malaysian government shut down the operation.

**Tracy Weslosky:** I really appreciate the update with that. Speaking of updates, considering the size and the magnitude of your critical material resource, can you give us an update on what is happening with the Dubbo Project?

**Ian Chalmers:** Basically the Dubbo Project is ready to go. We are continuing to work on offtake agreements. We are continuing to work on the finance. One of our major issues is our customers, particularly in the rare earth space keep wanting to see discounts. They want to see discounts to Chinese domestic price. In other words they are saying to us, yeah we will sign an off take contract, but you accept the 7%-8% vet as a discount and you put another small discount on top of that as the Chairman stated at the lead in to our annual general meeting back earlier in November...to access the complete interview, [click here](#)

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# Alkane Resources' Nic Earner on the supply challenges facing the critical materials sector

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"Our project stands ready to execute. We continue to look for market offtakes, strategic investment in Australia, government support as well. We wait and watch prices rise around for all of the commodities that we are in. We think that it is approaching a trigger where some of the customers must have to act and secure their supply chains." States Nic Earner, Managing Director of [Alkane Resources Ltd.](#) (ASX: ALK | OTCQX: ANLKY), in an interview with InvestorIntel Corp. CEO Tracy Weslosky.

**Tracy Weslosky:** Thank you so much for joining us because many of us, actually everybody at InvestorIntel is well aware of Alkane's Dubbo Project and being one of the leaders of critical materials in the world. Why do we not just start with an update on Dubbo please?

**Nic Earner:** Thank you Tracy. Our project stands ready to execute. We continue to look for market offtakes, strategic investment in Australia, government support as well. We wait and watch prices rise around for all of the commodities that we are in. We think that it is approaching a trigger where some of the customers must have to act and secure their supply chains.

**Tracy Weslosky:** In your critical material food chain we have got

zirconium, hafnium, rare earths and niobium. Did I get the highlights or am I missing any?

**Nic Earner:** You did get the highlights. Thank you.

**Tracy Weslosky:** Okay. Of course we have all been watching the geopolitical tensions caused between the United States and China. I was reading a little bit more about what is happening specifically with the niobium and the ferroniobium steel and how this is actually affected by this. Can you talk to this a little bit more?

**Nic Earner:** With increased use in vanadium in particular niobium is a key substitute for vanadium. We are seeing both high-strength low-alloy steels rising in their use, but as well as that we are seeing vanadium-flow batteries starting to emerge. Vanadium itself is taking off and it is dragging niobium with it as a substitution. Niobium is at the highest prices we have seen in quite some time. It is into the plus \$40 range, which is really, really, really interesting. As well as that we also have the fact that CBMM based in Brazil, single largest producer, 85% of the market, is out there. All of those things are combining. People are a little bit worried that there is a shortage. They are looking for alternative supply. They are looking for substitutes for vanadium and there is a lot of price pressure with not many new supply options out there.

**Tracy Weslosky:** Okay. In addition to that, of course, we have had a couple of the rare earths leaders saying, okay, they are back. Rare earths are back. I am not seeing the rise or the lift in the share prices yet, but we are watching and we are noticing an increase in people going to the rare earth columns and reading about them and sending us emails. Can you talk to us about rare earths and their demand right now?

**Nic Earner:** Fundamental demand continues to rise. CAGRs are 6%

generally. A lot of it is driven by renewable energy and the rise of electric vehicles. A lot of the forecast in the future are almost all driven by electric vehicles and the rise of renewables and higher efficiency domestic devices. We are right to see that interest is rising so people are saying, hang on a minute, particularly like we talked before about the tensions between China and the U.S...to access the complete interview, [click here](#)

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## Nic Earner on the Australian gold bull market, Alkane's M&A deals and the Tomingley Gold Mine

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"At the end of September we had \$82.4 million in cash and bullion. We have been accruing that cash up. We looked at the kind of gold investments that are a little smaller than what the majors might want. Think in that 50,000 to 100,000 ounce per annum range that people do not really go for. They tend to be a bit unloved by investors. We look at how can we contribute to those and become a major investor in those and then use our expertise to help develop them and therefore create value for both companies." States Nic Earner, Managing Director of [Alkane Resources Ltd.](#) (ASX: ALK | OTCQX: ANLKY), in an interview with

InvestorIntel Corp. CEO Tracy Weslosky.

**Tracy Weslosky:** Nic you just put out your most recent quarter announcements and it looks like you are right on track on your gold production. Can you give us a bit of an update please?

**Nic Earner:** We operate the Tomingley Gold Mine in the central west of New South Wales. In the last financial year we did just under 80,000 ounces of production. In the last quarter we did just under 15,000 ounces of production. It is an open cut mine that has been producing well for us. We are actually right now making the transition to go underground on that mine. We are very happy with how it is progressing.

**Tracy Weslosky:** Correct me if I am wrong. I saw a lot of drilling. It looked like a lot of drilling results in that 80-page update you had. Can you talk to us about some of the more outstanding updates?

**Nic Earner:** Compliance does drive a large appendix in all of these announcements. Alkane operated a heap leach gold mine at the town of Peak Hill, which is about 15 kilometers south of Tomingley from the mid-nineties to the mid-2000s. That corridor is quite prospective. We have been drilling about 4 kilometers south of our existing infrastructure, the Tomingley Gold Mine, where we have a mill and processing facility operating at present. Quite interestingly, we have 3 major prospective types. We think each of them is as large as a potential hit area or as our largest pit at Tomingley. We are drilling those right now, between now and Christmas. Those results will come out next year. We got some of the intersections circa, people will see in the announcement, circa 10 meters around that, sort of, 2 gram at different depths. A lot of mineralization and we are trying to define what may be economic and what may not be economic, so quite interesting.

**Tracy Weslosky:** Speaking of quite interesting and economic, I noticed you have been doing a number of M&A activities too, actually in the last month and a half. Can you talk to us about the highlights?

**Nic Earner:** Yeah, we have. At the end of September we had \$82.4 million in cash and bullion. We have been accruing that cash up. We looked at the kind of gold investments that are a little smaller than what the majors might want. Think in that 50,000 to 100,000 ounce per annum range that people do not really go for. They tend to be a bit unloved by investors. We look at how can we contribute to those and become a major investor in those and then use our expertise to help develop them and therefore create value for both companies. The first one that we did was a company called Calidus. They are up in the Pilbara region probably known to quite a few listeners for their whole conglomerate gold story, not that they are part of the conglomerate gold story. They have some very, very interesting surface mineralization...to access the complete interview, [click here](#)

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## **Nic Earner on the US Defense Act and our dependence on**



# Chinese rare earths

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"We do have the heavy rare earths, terbium, dysprosium, which others do not apart from Northern Minerals now at their pilot plant. We have a very good mix of the magnet rare earths and the heavy magnet rare earths. Then, of course, we have 40% of revenue coming from zirconium, a lot of uses there, 10% of our revenue coming from hafnium, which is an emerging technology metal. We see people using it in the light generation phone chips. Then we have 20% come from niobium. Certainly we would be one of the largest complexes and revenue generators. That is nearly US\$500 million of revenue a year." states Nic Earner, Managing Director of [Alkane Resources Ltd.](#) (ASX: ALK | OTCQX: ANLKY), in an interview with InvestorIntel Corp. CEO Tracy Weslosky.

**Tracy Weslosky:** Nic we are so delighted to have you. We really want to talk to you and get right into this U.S. Defense Act and how this might affect shareholders for Alkane Resources, as you are clearly the frontrunner for supply for magnet materials worldwide.

**Nic Earner:** Thanks Tracy. We are really hoping that this provides a catalyst to get Western companies, particularly those that want to supply U.S. Defense contracts, moving and motivated to shore up their supply chain. If you look at this act what it is saying is the U.S. will only or wants its contractors to only buy magnets from allied countries so this excludes buying magnets out of China and Russia. It not must happen immediately today because we all know the capacity for that to actually happen does not exist. It is saying, put your best foot forward, best endeavors. This is where the U.S. government is moving. These companies have to act if they want to make that regulation

now or into the future.

**Tracy Weslosky:** We have been talking and discussing sustainability for a number of years so we were delighted to see that the U.S. is putting a good foot forward. Of course, they do not have the supply. Let us talk about your timeline for getting to production. If I understand this correctly, and please do correct me, when you guys are in full production you will have the largest supply chain for magnet and battery materials in the world outside of China. Is that correct?

**Nic Earner:** I would like to think so, but no. Lynas will still be number one in that. If you look at Lynas' neodymium and praseodymium production, with their next program they are moving towards 6,000 tons per annum, which would put them at about 15% to 20% of the magnet market. That is as it stands today not in expanded demand. We in vanadium and praseodymium would be doing 1,200 tons. We do have the heavy rare earths, terbium, dysprosium, which others do not apart from Northern Minerals now at their pilot plant. We have a very good mix of the magnet rare earths and the heavy magnet rare earths. Then, of course, we have 40% of revenue coming from zirconium, a lot of uses there, 10% of our revenue coming from hafnium, which is an emerging technology metal. We see people using it in the light generation phone chips. Then we have 20% come from niobium. Certainly we would be one of the largest complexes and revenue generators. That is nearly US\$500 million of revenue a year. That is a substantial revenue base, but we would be definitely one of the frontrunners absolutely. More importantly we do not have offtake into China or a large Chinese shareholding either, which really means we can tick the U.S. Defense boxes.

**Tracy Weslosky:** I am still certain that most of the investors out there may not be clear on how unique this critical material market is. Now I was reading in your quarterly activities report

that your project, your Dubbo Project that we are referencing, could generate \$4.7 billion free cash flow at the 20-year base case...to access the complete interview, [click here](#)

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## Alkane's Nic Earner on the 'Critical Link' between lithium and rare earths

written by InvestorNews | July 14, 2020

May 18, 2018 – “This conference is going to focus a fair bit on the battery, but I am going to talk about what this battery drives, which in general is a rare earth permanent magnet. I think we can all agree on the scale of the trend. There is a trend occurring and it is one of the most fundamental and rapid shifts we have seen in consumer behavior in a generation. Rare earths, particularly the permanent magnets, are going into all these places, but the big change that is coming is the drivetrain...” states Nic Earner, Managing Director of [Alkane Resources Ltd.](#) (ASX: ALK | OTCQX: ANLKY), in a recent presentation at the 7th Annual InvestorIntel Summit – Buds, Batteries & Blockchain 2018.

**Nic Earner:** I am going to focus on industry dynamics as distinct from talking about our project. If that disappoints you, you can grab my colleague John or I and we can make it so that you regret ever asking us at lunchtime and also we can tell you the

joke I was going to tell you until I realized I was being recorded. I also have an update to our business case for our Dubbo Project coming out in May as well. That will have a lot more data. I do not need to convince this audience because we just heard there from Paul that there is a significant transformation in the specialty metal sector underway at the moment. Here is a Tesla. I love the fact that it has got no grill. I think that is the most subtle piece of marking I have ever seen in a car. I think it is fantastic. This conference is going to focus a fair bit on the battery, but I am going to talk about what this battery drives, which in general is a rare earth permanent magnet. I think we can all agree on the scale of the trend. There is a trend occurring and it is one of the most fundamental and rapid shifts we have seen in consumer behavior in a generation. Rare earths, particularly the permanent magnets, are going into all these places, but the big change that is coming is the drivetrain because actually rare earth magnets are being used in the devices inside doors and windows and wipers for quite a few years. Most major manufacturers have been debating, do or do they not incorporate rare earth permanent magnets inside their drivetrains and they are starting to do that now. The Tesla long-range vehicle has a rare earth permanent magnet. These magnets consume about 0.7 to 1 kilogram per vehicle of neodymium and praseodymium in the vehicle. Depending on how many bells and whistles you buy in this one or the Mercedes S Class you will be up at  $1\frac{1}{2}$  kilos in the other drive (inaudible) within the vehicle, but there is a minimum of 0.8. You are talking somewhere around  $1\frac{1}{2}$  kilos of rare earths in each electric vehicle. Numerous projections on this; I will not spend too long. We can see that from ground zero we are talking  $6\frac{1}{2}$  times the amount of rare earths. People can argue about the ups and downs to that, but broadly we can agree that there is a fundamental shift occurring in the market. It is really interesting. We as a company go looking for offtake contracts to

launch the project. The most common thing that I have heard across this last year has been, rare earths have got a problem there mate. Well, they actually do not say mate. That is me. They say, I know we have got a problem there, but we are going to get to that soon. We are so busy dealing with the lithium and cobalt supply chain issue at the moment that we will deal with rare earths later...to access the complete presentation, [click here](#)

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