

**Iluka Resources**  
**‘Diversifying the Rare Earths Supply Chain’**  
**Managing Director, Tom O’Leary**  
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**SLIDE 1 – Title slide**

Thank you and good morning. It’s a pleasure to join this year’s conference.

For a long time there has been consensus among the stakeholders in this room about the importance of magnet rare earths to the electrification of the global economy; and the opportunity this presents us.

But there has been less consensus – and instead discussion in more hushed tones – about what precisely are the impediments that have prevented the development of a sustainable rare earths industry.

For macroeconomic and geopolitical reasons that are self-evident, catalysing that sustainable industry is increasingly critical. And Iluka is playing a key role through our development of a refinery at Eneabba in Western Australia.

The first step toward finding a solution to a problem is recognising that there is one. Taking an industry view, being clear and transparent about the problem and its implications are essential if we’re to effect lasting change.

This has been a focus for Iluka in recent times with policymakers and the equity market. My purpose today is to share this perspective with you; and I look forward to our further discussions over coming years as together we build that sustainable industry.

**SLIDE 2 – Disclaimer**

**SLIDE 3 – Iluka Resources**

Iluka is a critical minerals company headquartered in Perth, Western Australia.

We’ve been operating for over 70 years and are the world’s leading supplier of zircon; and a major supplier of high grade titanium feedstocks, both classified as critical minerals.

Importantly, these products are not exchange traded commodities, and we sell them to a diverse spread of customers in all global markets via bilateral contracts.

Iluka has substantial experience navigating opaque markets; and we’ve been successful in capturing the true value of what we produce, while also reducing volatility and promoting stability for our customers and our customers’ customers. This has enabled us to reinvest in our business, develop new deposits and provide security of supply from a reliably consistent portfolio of Australian production assets.

In broad terms, we’ll be applying the same philosophy to our rare earths business.

Iluka's deposits contain the rare earth minerals monazite and xenotime, which are invariably found cohabitating the mineral assemblage with zircon and titanium minerals. The monazite and xenotime are concentrated, then separated from those other sand products, providing Iluka with a strong resource advantage.

We're currently building Australia's first fully integrated refinery at Eneabba. This is an infrastructure asset of global significance in the diversification of the rare earths supply chain. Eneabba is being developed in strategic partnership with the Australian Government, which has provided Iluka a \$1.25 billion non-recourse loan.

Our refinery will produce separated light and heavy rare earth oxides in material volumes. It will also have the capability to refine material purchased from third party suppliers, positioning Iluka as the Australian buyer and refiner of the production of emerging rare earths miners, which could previously only sell to China.

#### **SLIDE 4 – Rare earth supply chain dominated by China's vertical integration**

As everybody here well knows, China currently accounts for over 90% of all rare earth oxide production, and effectively 100% of supply for the key heavy rare earths, dysprosium and terbium.

These materials are essential to produce electric vehicles and wind turbines and in defence applications.

Combined with the direction of global geopolitics, this situation leads to some stark questions for Western and likeminded countries, which I posed to shareholders at Iluka's Annual General Meeting in May.

- Can we retain our automobile industries, or will they inevitably be lost to China?
- Will our flagship car makers be reduced to assembling EV parts supplied by Chinese companies?
- Are we prepared to be reliant on China for national defence planning and procurement?
- Does the global decarbonisation agenda remain subject to China's permission?

Put plainly, China's dominance of the rare earths supply chain has led to market failure; and this presents an existential threat to manufacturing in Western and likeminded countries.

#### **SLIDE 5 – Extensive government initiatives for critical minerals security**

Confronted with this uncomfortable reality, we tend to hear a common refrain – what are governments going to do about it?

Well, governments have taken a range of measures in the form of new legislation, policy initiatives, investment incentives and international cooperation agreements.

These of course apply to the broader suite of critical minerals. But for rare earths specifically, we have also seen public-private partnerships enacted between Lynas and the Japanese Government; MP Materials and the US Government; and Iluka and the Australian Government.

Furthermore, President Biden's recent announcement of tariffs on rare earth permanent magnets is a particularly important step for our industry. This was followed just last week by the EU increasing its tariffs on Chinese electric vehicles.

So governments have done rather a lot to encourage the diversification of the rare earths supply chain. But in order for these measures to be effective, I think the more pertinent question, particularly for this audience, is: *what is the industry – producers and customers – going to do to make itself sustainable?*

#### **SLIDE 6 – Current price settings for rare earths are not sustainable**

One thing we know for sure is that we cannot continue on the current path.

China has implemented a successful strategy over many decades to achieve an effective monopoly over the rare earths value chain.

And a key risk with any monopoly is pricing control.

The graph here shows the significant price swings of the China controlled Asian Metal Index over the past three and a half years.

Most telling is the price fall, from the peak in early 2022, which occurred almost immediately following what was effectively a Chinese Government directive to its rare earth firms to *“jointly guide product prices to return to rationality.”* The graph speaks for itself to demonstrate the impact of the intervention.

Looking ahead, independent forecasters point to a deficit of supply and increasing prices, yet the Asian Metal Index prices for rare earths remain at historic lows. And at today’s index prices, no producer, regardless of location, is making any money.

That’s less of a problem for China of course because its dominance throughout the value chain means it can choose where and when it will take profit or build market share for these products.

For those that are seeking security of supply: producers and consumers alike, the actions we take – as an industry - in response to this situation will ultimately determine the longevity and sustainability of our industry. This necessitates moving away from the artefacts that underpin China’s market power, including the Asian Metal Index.

#### **SLIDE 7 – Lessons from opaque markets**

While aspects of rare earths are unique, there are some parallels with other industrial minerals.

Iluka has for many years sold titanium and zircon products into opaque markets with consolidated industry structures.

For example, the offtake contracts put in place to underpin the development of our Cataby mine provide our pigment customers with supply certainty in an industry with few new sources of feedstock production. Under those contracts Iluka committed to reliable and consistent supply in return for a minimum floor price, that would have delivered a 10% project IRR, as well as exposure to upside market pricing. In the context of the pigment feedstock market, this pricing approach gave us the confidence to invest the significant capital required for projects of this type, and our customers the confidence that they would have product when they needed it on fair terms.

Another to consider is the uranium industry.

There are limited volumes of uranium sold on the spot market, with the majority of supply sold under long term contracts. This is an industry where customers need certainty and security of supply – and demand needs to be aligned with the timelines and commercial realities of developing new resources.

Sales contracts for uranium are typically negotiated bilaterally and contemplate fixed prices escalating over the term, market related pricing mechanisms, and often include floor and ceiling prices.

So there are approaches in other sectors which we can draw from in developing an approach appropriate for the rare earths industry which will promote both diversity and sustainability.

For Iluka's part, we've been clear that we will not inextricably link the price of our products – and thus our profitability – to market indices like the Asian Metal Index. Rather, we're working with likeminded customers to develop a pricing approach that reflects the true value of our products; and provides them security of supply.

### **SLIDE 8 – An alternative pricing mechanism**

That's all very interesting, you might say; but just how is Iluka going to achieve this?

To be clear, I'm not for a moment suggesting that it will be easy. But as I said earlier, solving a problem requires clarity and transparency about the approach.

With that in mind, we've included here a conceptual alternative pricing mechanism which contemplates:

1. The Parties agreeing a floor and ceiling price for each delivery period over the term of the contract
2. The Parties then having some time ahead of the delivery period to negotiate a price within the floor and ceiling boundaries to apply for the delivery period
3. The arrangements would contemplate provisions designed to ensure that, within the boundaries of the floor and ceiling, parties are encouraged to negotiate reasonably and with some reference to the market context
4. But ultimately the buyer will be secure in the knowledge that, come what may, the maximum price it will have to pay is the ceiling and, similarly, Iluka will know the minimum price it will receive is the floor.

A pricing approach like this allows parties to have differing opinions today about what will be appropriate prices in, say, 2027; but still give them an appropriate balance of flexibility and certainty to determine a price – closer in time to the point of delivery – which will apply to the supply at that time, thus ensuring security of supply on reasonable terms.

It's also worth bearing in mind that rare earths are not like copper, lithium, graphite or nickel. They account for only a very small proportion of the minerals that go into an EV. With ~1-2kg of permanent magnets in a traction motor, a tripling of rare earth oxide pricing might give rise to as little as an additional \$100 input cost; a modest sum in the context of what is acknowledged as a highly strategic security of supply risk.

### **SLIDE 9 – Strong demand fundamentals**

Rare earths are critical to achieving a lower carbon economy.

Legislation imposed by government on the electrification of transport and power generation provides a solid base from which to forecast demand.

Iluka's assessment, taking account of:

- the potential additional supply coming to market;
- the viability for projects at varying prices; and
- the expected demand for these materials across a range of existing and emerging markets,

is aligned with industry analysts in that we forecast deficits in rare earths; particularly for the critical heavy rare earths dysprosium and terbium, for which we are the only material source of non-Chinese supply.

#### **SLIDE 10 – Eneabba rare earths refinery**

Here is a render of Iluka's Eneabba refinery, which is scheduled for commissioning in 2026.

This will be a fully integrated facility, meaning all processing steps to produce both light and heavy separated rare earth oxides will take place at the one location.

We can also accommodate a range of feedstocks from both our own deposits, and from third party producers, be they mineral sands style ore bodies or hard rock.

Our environmental impact has been strongly considered in the design; and features a closed circuit processing system so that we can capture, reuse and recycle both the water and reagents. This provides a material benefit to operating costs and reduces our water consumption and waste considerably.

#### **SLIDE 11 – Eneabba stockpile**

The initial feed for the refinery will come from Iluka's own stockpile of monazite and xenotime.

This stockpile is the result of over thirty years of Iluka's critical minerals processing; and is produced as a co-product during the separation of our zircon and high grade titanium feedstocks.

#### **SLIDE 12 – A rare earths processing hub**

Beyond the stockpile, we have a range of further feedstock options.

You can see here our project and operations pipeline across varying stages of development.

All of these deposits contain zircon, titanium and rare earths.

We have also established a concentrate supply agreement with Northern Minerals that ensures its minerals will be refined at Eneabba whenever they are extracted.

Discussions with other potential third party concentrate suppliers are ongoing.

#### **SLIDE 13 – A rare earths processing hub**

The Eneabba refinery will produce globally significant volumes of separated light and heavy rare earth oxides.

As you can see here:

- 5,500 tonnes per annum of neodymium and praseodymium, including in separated form and as combined didymium; and
- 725 tonnes per annum of dysprosium and terbium.

The total volumes produced will depend on the assemblage of the feedstock used.

#### **SLIDE 14 – A secure supply of heavy rare earths**

This graph shows some of the assemblages of Iluka's feedstock options; and we have included the assemblages of Lynas and MP Materials by way of comparison.

Our assemblage of feed will ensure that we can provide significant volumes of the key critical magnet oxides, with a particular advantage being our endowment of dysprosium and terbium.

We have material amounts of these heavy rare earths in the Eneabba stockpile; twice as much in our Wimmera development; and, as you can see, the assemblage of Northern Minerals' Browns Range Wolverine deposit is exceptional.

#### **SLIDE 15 – A secure supply of heavy rare earths**

The key electrification markets of e-mobility and wind turbines will account for more than half of the forecast global demand.

Iluka's and industry analysts' forecasts anticipate a deficit in global magnet rare earth supply.

As I mentioned earlier, effectively 100% of supply of the magnet heavy rare earths, dysprosium and terbium, is controlled by China. Recent data from Adamas Intelligence infers China's reserves of these heavy rare earths are only sufficient for approximately 11 years of supply at 2022 demand levels. With demand growing, this period will likely be much shorter.

This explains China efforts to take ownership stakes and pursue binding offtake agreements with emerging Australian rare earth miners.

There has rightly been a focus on Chinese ownership stakes in Australian rare earth deposits in recent times, most prominently at Northern Minerals.

But binding offtake agreements have the same effect. And when pricing of those offtakes is linked to the Asian Metal Index, both factors serve to perpetuate China's monopoly.

Imported rare earth concentrates are exempt from Chinese production quotas, which is also a significant incentive to Chinese producers.

This underscores Eneabba's importance as an Australian refining customer for emerging miners, thereby catalysing an industry that is genuinely independent.

Right now, China is reliant on Myanmar's ionic clay deposits as the principal source of its heavy rare earth raw material. Myanmar is of course in the grip of an escalating civil war, with next to no

transparency around the environmental, social and governance practices of the rare earth miners there.

Just last week, we read reports of a tragic land slide at a rare earths mine in Kachin State.

Here we have another uncomfortable industry truth arising from China's monopoly. At present, EV manufacturers globally can only source essential heavy rare earths by indirectly sponsoring environmental degradation in Myanmar.

Iluka's production of heavy rare earths, by contrast, is not coming from ionic clay deposits, which are common in Myanmar, Brazil and China. Mining deposits of this type in Myanmar inevitably results in the degradation of the local environment because of poorly managed in situ leaching. Mining these types of deposits elsewhere, such as in Brazil, with conventional techniques, will leave long term legacy issues because of the inevitable production of unconsolidated tailings.

That's another reason why Iluka's production of separated dysprosium and terbium from Eneabba is so significant to a sustainable industry, with our capacity accounting for greater than half of 2030 forecast Western demand.

#### **SLIDE 16 – Partnerships and risk mitigation**

For many of the reasons I've discussed, diversifying into rare earths carries considerable risks.

Iluka has taken deliberate steps over several years to derisk our rare earths business. Strategically and financially, we've done this via our partnership with the Australian Government, without which we would not be building the Eneabba refinery. And from a technical perspective, we've partnered with Carester, the Western world's foremost source of expertise on rare earths processing.

Parallel to our refinery development, we're also undertaking a feasibility study into the next stage of the value chain, rare earths metallisation. This is evaluating the economic and technical viability of a commercial scale facility and will consider safety and efficiency improvements relative to current industry practices.

#### **SLIDE 17 – Sustainability and security of supply**

And finally, returning to where I began.

An electrified economy requires rare earths; and that in turn necessitates a sustainable rare earths industry.

Because of China's production dominance and price control, this is not the case at present.

Delivering a sustainable industry demands clarity and transparency as to the nature of the problem; and moving away from the artefacts that underpin China's monopoly, including the Asian Metal Index.

Western and likeminded governments have acted. The question now is whether Western and likeminded producers and customers are prepared to do the same.

Through our actions, Iluka has demonstrated the course we intend to take.

Thank you and I look forward to your questions.