



PYX RESOURCES LIMITED

# AN EMERGING FORCE IN MINERAL SANDS

Investor Meet Company

August 2023

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## Compliance Statement

The Mandiri mineral sands deposit hosts a 6 Mt Inferred JORC Resource of zircon. The Company originally announced this resource in its Prospectus released on 20 February 2020 and confirms that it is not aware of any new information or data that materially affects the information included in the Prospectus. All material assumptions and technical parameters disclosed in the Prospectus that underpin the estimates continue to apply and have not materially changed. The Tisma mineral sands deposit hosts a 4.5 Mt Inferred JORC Resource of zircon. The Company originally announced this resource in its Announcement “PYX Resources Limited Agrees to Acquire Tisma Development (HK) Limited, a World-Class, Fully Licensed Mineral Sands Deposit” on NSX on 13 January 2021 and confirms that it is not aware of any new information or data that materially affects the information included in the Announcement. All material assumptions and technical parameters disclosed in the Announcement that underpin the estimates continue to apply and have not materially changed. Together the Mandiri and Tisma mineral sand deposits total 10.5 Mt of contained zircon within a total of 263.5 Mt of heavy mineral sands.



# OVERVIEW

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- The third largest publicly traded producing mineral sands company by zircon resources globally with 263.5Mt of inferred resources (JORC)
- Dual listed on the National Stock Exchange of Australia & on the Main Market of the London Stock Exchange (NSX: PYX | LSE: PYX)
- Two high-grade, large-scale, near-surface, open pit deposits located in the alluvium-rich region of Central Kalimantan, Indonesia: Mandiri & Tisma
- Defined ESG strategy focused on mining responsibly & investing in the wider communities where it operates
- Vision to consolidate the mineral sands resources in Kalimantan & explore/acquire mineral sands assets in Asia & beyond
- Premium Zircon production increased by 33% and sales by 34%
- Successful renewal of a 10-year exploration and mining license (maximum term) for the Tisma Mineral Sands project
- Award for Prevention and Management of COVID-19 in the Workplace in 2023 and Zero Accident Award 2023, both from the Government authorities in Kalimantan



## 01

Acquire & develop undervalued, world-class mineral assets strategically located in countries participating in China's Belt & Road initiative, that possess significant resources, long mine life & high assemblage.

Initial focus on the Mandiri & Tisma deposits in Indonesia that together have a total 10.5 Mt of contained zircon within a total of 263.5 Mt of heavy mineral sands.

## 02

Drive shareholder value by increasing the Mandiri & Tisma deposits' valuation & production of premium zircon, comprehensively exploring them to define & mine valuable Heavy Mineral resources including zircon, rutile, & ilmenite.

Expand customer base to serve all geographies & industry sectors & mitigate disruptions in specific locations & markets.

## 03

Develop portfolio with complementary acquisitions and build the Group into one of the most prominent mineral sands producers globally to take advantage of the strong mineral sands market dynamics, which increasingly supports high-tech applications that assist in the green transition.

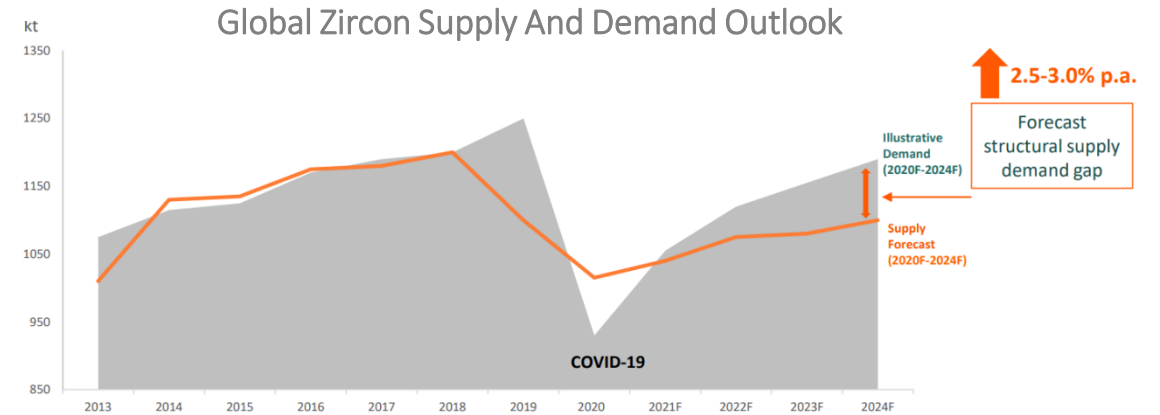
# PRODUCTS - ZIRCON

& its derivatives Zirconia & Zirconium

**Unique Properties:** Opacity/whiteness, hardness, low thermal expansion, high melting point, low thermal conductivity, chemical inert, & low neutron absorption

**Critical Minerals:** The Australian Government classes zircon, rutile, & ilmenite, as crucial minerals vital for the economic wellbeing of the world's major & emerging economies

**Demand Supply Gap:** Existing reserves are being depleted & few large deposits have entered the market in 20 years



Source: ILUKA, TZMI, Sheffield Resources, Strandline Resources

## TRADITIONAL

Ceramics manufacturing, high tolerance casting/foundry, refractory, & zirconium chemicals – c.50% of the market



## HIGH-TECH

Additive manufacturing, semiconductors, implants, solar cells, fuel cells & batteries – growing circa 10X faster than traditional uses



## INTERMEDIATE USE

Fused zirconia & other zirconium chemicals for applications including electronics, nuclear fuel rods, paper, brake pads & catalysts



# BY-PRODUCTS - TITANIUM MINERALS

Rutile & Ilmenite

## RUTILE

With one of the highest refractive indices at visible wavelengths of all known crystals









Often manufactured for certain optical elements

Used in the manufacture of titanium dioxide, known for its durability, strength & exceptional chemical resistance abilities

## ILMENITE

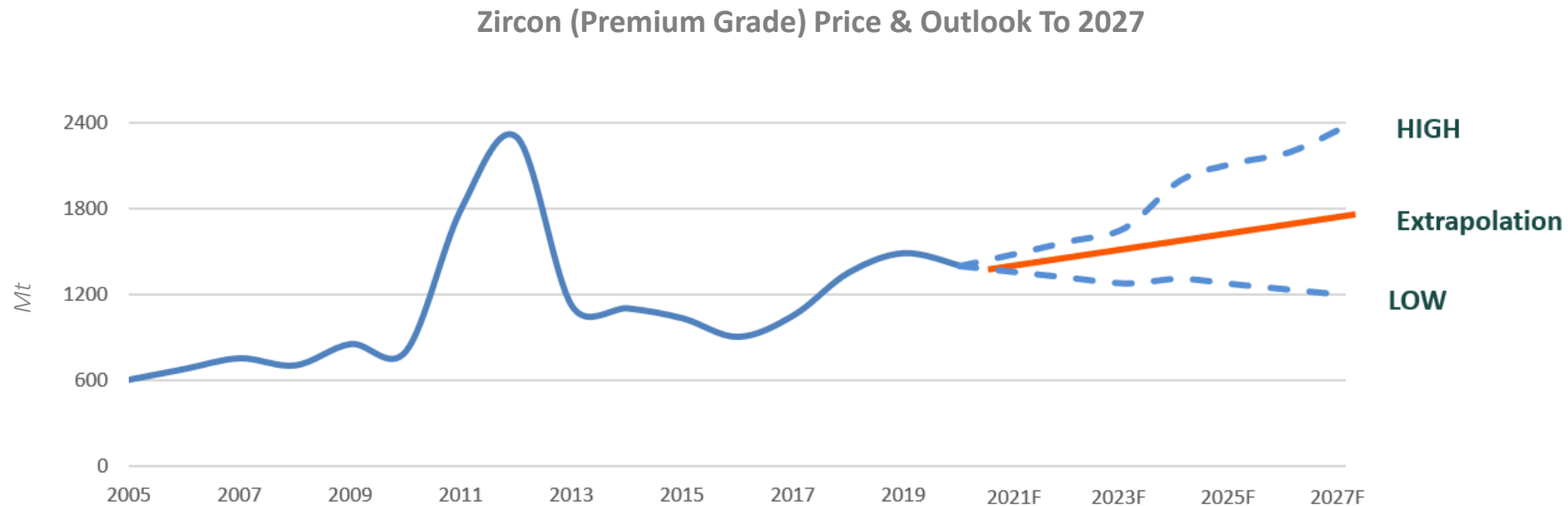
Heavy, metallic oxide mineral composed of iron & titanium oxide (FeTiO<sub>3</sub>)

The most important ore of titanium & the main source of titanium dioxide

House & car paints		Plastic pipes & packaging		Laminates	
Inks		Clothing		Sunscreen	
Toothpaste		Make-up		Titanium Metal	
				Used in defence, aeronautics, medical implants, sporting goods, offshore mining & petrochemicals industries	

# ZIRCON PRICES

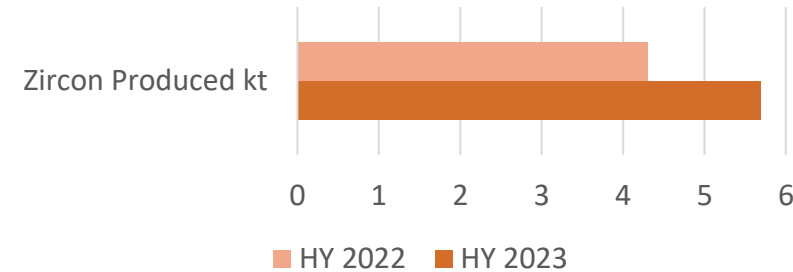
- Pricing for high-grade zircon driven by increased usage & rising scarcity
- Global Zirconium Market to Reach 1.1M metric tons by 2026 growing at a 3.3% CAGR (ResearchAndMarkets.com)
- June 2022 saw industrial metals markets experience the most significant price decline since 2008, however, international premium zircon prices increased, illustrating that zircon prices are more driven by physical trade
- After robust pricing throughout 2022, prices are projected to be very bullish in the long run amid the imbalance between supply and demand
- Particular interest in PYX's zircon due to its whiteness, low aluminium oxide & low uranium/thorium content, making it ideal for fused zirconia used in high tech applications



# 2023 Operations - SUMMARY

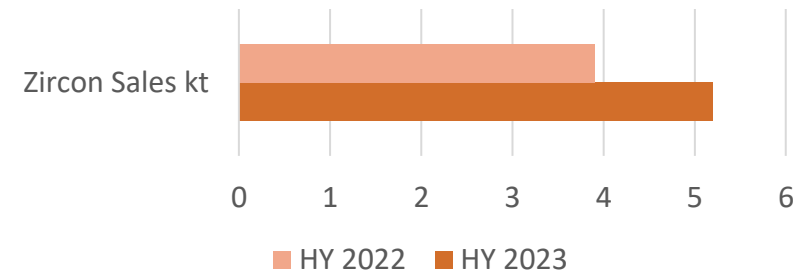
- Premium Zircon production increased by 33% to 5.7kt
- Premium Zircon sales also experienced growth, with a 34% increase to 5.2kt
- Successful renewal of a 10-year exploration and mining license (maximum term) for the Tisma Mineral Sands project
- PYX Resources Set to Export Ilmenite and Rutile Following the Change of Law in Indonesia
- PYX Receives Licence to Export Ilmenite 8.2kt of Ilmenite has been stockpiled and is ready to ship
- Award for Prevention and Management of COVID-19 in the Workplace in 2023 and Zero Accident Award 2023, both from the Government authorities in Kalimantan

Premium Zircon Production Increased 33% to 5.7kt



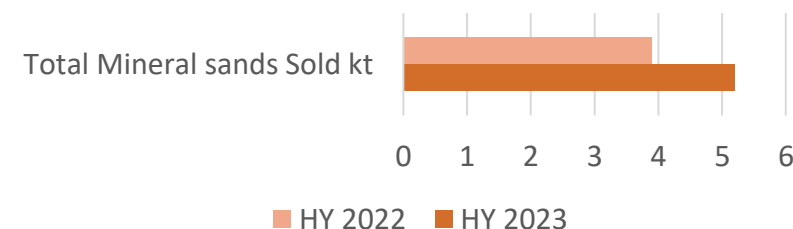
+33%

Premium Zircon Sales Increased 34% to 5.2kt



+34%

Total Mineral Sands Sold



+34%



# THE DEPOSITS

Two large-scale, near-surface open pit deposits-Mandiri and Tisma



Economic minerals in the region were derived from the uplift and deep erosion of the Paleozoic to Cretaceous basement rocks, which contains low-grade disseminated and vein gold mineralisation. Zircon was derived from Cretaceous granites of the Schwaner Mountains.



# MANDIRI

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- A licensed concession over 2,032 hectares near Kuala Kurun City in the Gunung Mas Regency of Central Kalimantan, Indonesia
- Excellent infrastructure including paved road to the town of Palangka Raya, connection to the local electricity grid and both the mine and the factory are located alongside the Cahayan river, while the factory is located in proximity to Benjamasin port and the airport in Gunung Mas
- Inferred Mineral Resources of 126 Mt - heavy minerals exceed 9.4 Mt inclusive of 6.0 Mt of zircon inferred resources (March 2019)
- Substantial exploration potential as 46% of the concession area remains to be explored while PYX can still define additional resources below the water table within the area where existing resources have been defined



# MANDIRI OPERATIONS

- Production commenced in August 2015
- Current installed production capacity of 2,000 tpm (24,000 tpa) of Mineral Sands
- Advancing plans to expand capacity to 4,000 tpm by 2026
- Simple processing - Mineral Separation Unit (MSP) consists of a conventional wet concentration process followed by the batch dry mineral separation processing - electrostatic rolls, electrostatic plates, and magnetic rolls.
- Primary product is >65.5 grade zircon (premium grade for export)
- By-products include rutile and ilmenite
- Best-in-class heavy minerals assemblage value compared to all its peers



# TISMA

- A licensed concession covering an area of 1,500 hectares in Central Kalimantan, Indonesia approximately 50 km northwest from the regional capital Palangkaraya
- Devoted to the exploration of mineral sands products and the production and export of premium 65.5 grade zircon
- Inferred Mineral Resources (Nov 2020) of 137 Mt (with 3.99% heavy minerals)
- Heavy minerals inferred resources exceed 5.5 Mt, inclusive of 4.5 Mt of zircon inferred resources
- Zircon content of 82%, Tisma's heavy mineral have a unique assemblage value compared to all its peers
- Potential for significant synergies and economies of scale

## Mineral Resources

ABOVE 2% HM LOWER BLOCK CUT-OFF GRADE (UNROUNDED)

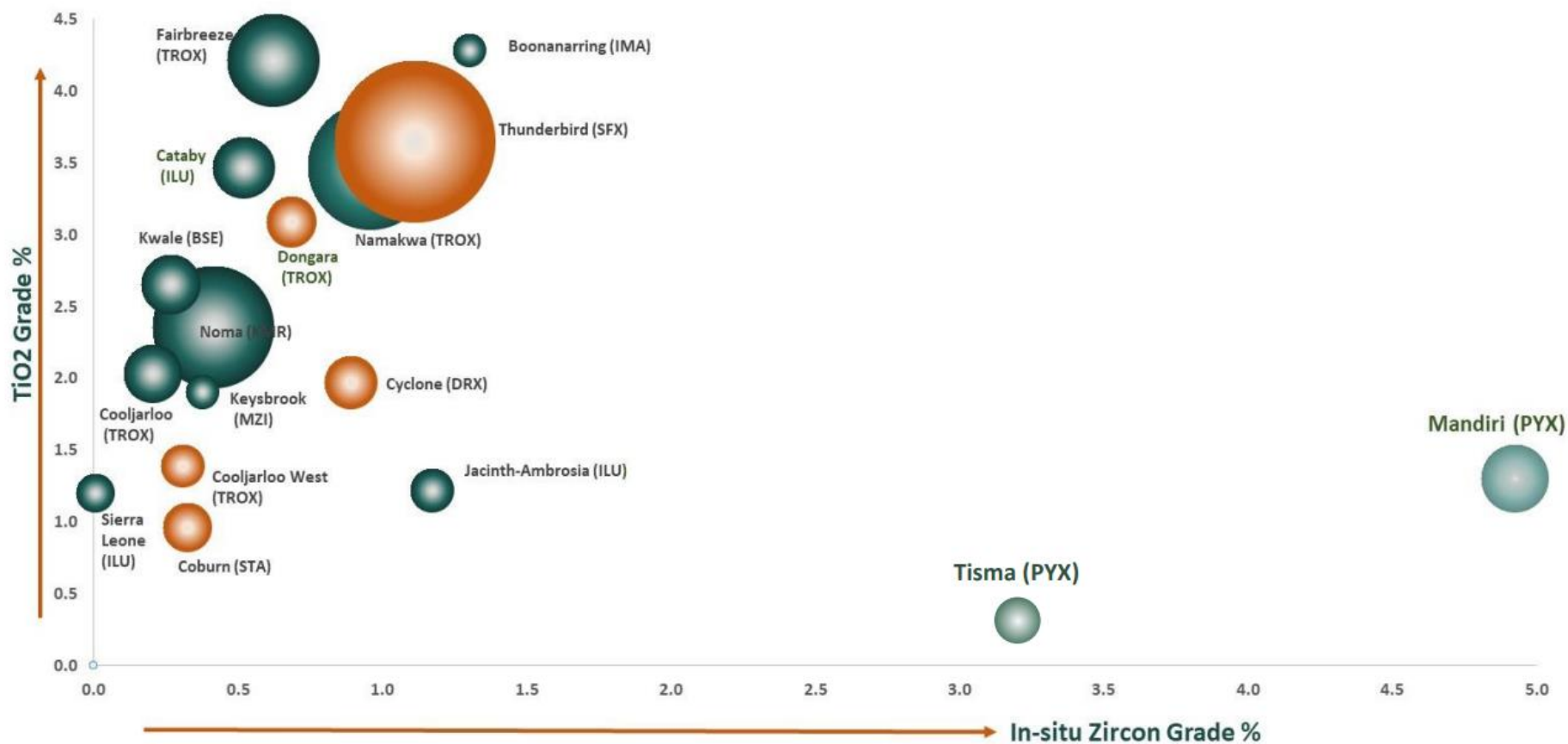
	Category	Tonnage (Mt)	HM (%)	Slimes (%)	Oversize (%)
Tisma	Inferred	137	4	14	25

Mineral assemblage & contained tonnes of the components November 2020

Component	Zircon	Ilmenite	Rutile	Total
Relative %	82%	8.50%	2%	100%
Contained mineral	4.5 Mt	0.5 Mt	0.1 Mt	5.5 Mt

# ASSEMBLAGE VALUE

The weighted average value of all the valuable heavy minerals in the ore



Source: Public Filings, Cedrus Research

Notes:

1. Mandiri Zircon grade ranked the highest among current major mineral sands operations and projects under investigation globally.
2. Bubble size proportional to tonnes of Valuable Heavy Mineral (VHM) resources.
3. Blue bubbles projects in production phase, orange bubbles projects in exploration/development phase.
4.  $TiO_2$  grade calculated as the VHM grade of Ilmenite, Leucoxene, and Rutile.
5. Data compiled from public sources and PYX's research.



# CUSTOMERS

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- International blue-chip customers located across major European, American, & Asian markets
- Flexible commercial model allows PYX to shift supply as demand migrates from one geography to another
- Strong sales within Chinese during first half of 2022, moving towards India, Europe, & the Americas in the second half
- 2023 market indications expect an increase of demand in China after the Chinese Lunar New Year and a weakening of the Indian & European market as a result of the sharp increases of production costs
- Increasingly diversified customers with top three clients accounting for 44% sales v 52% in 2021
- 100% of revenues are US\$ denominated, resulting in limited currency risk

New operations at Kuala Lumpur's Port Klang provide significant benefits:

- Reduced shipping time to end-use markets
- Increased predictability of shipments
- Reduced shipping costs to many key markets
- Provides a well-placed buffer stock to negate the effects of seasonal storms & other supply chain issues



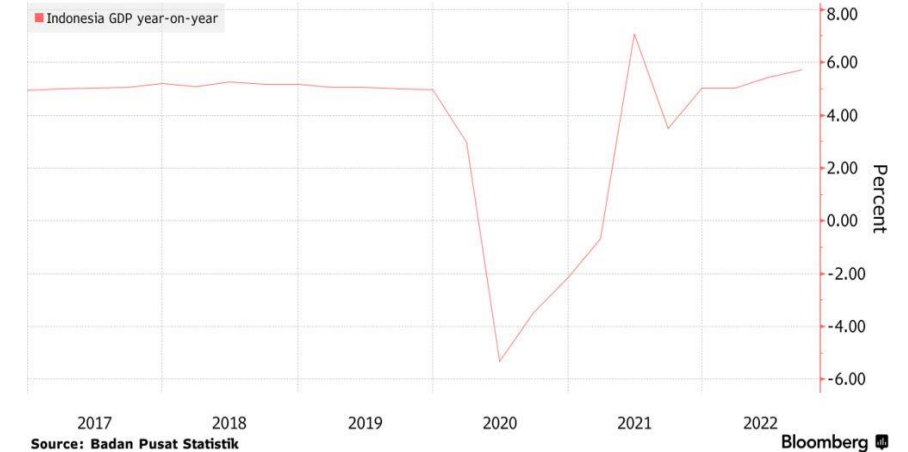
# INDONESIA

Indonesia's economy has performed well within the international political turmoil

- A strong currency compared to the US dollar
- Projected growth of 6% and inflation of 4.6%
- Growth due to:
  - Commodity export increase
  - Solid structural reforms
  - Improvement of the regulatory environment
- President Joko Widodo focused on efforts to attract increasing foreign direct investment into downstream heavy industries before his final term ends in mid-2024

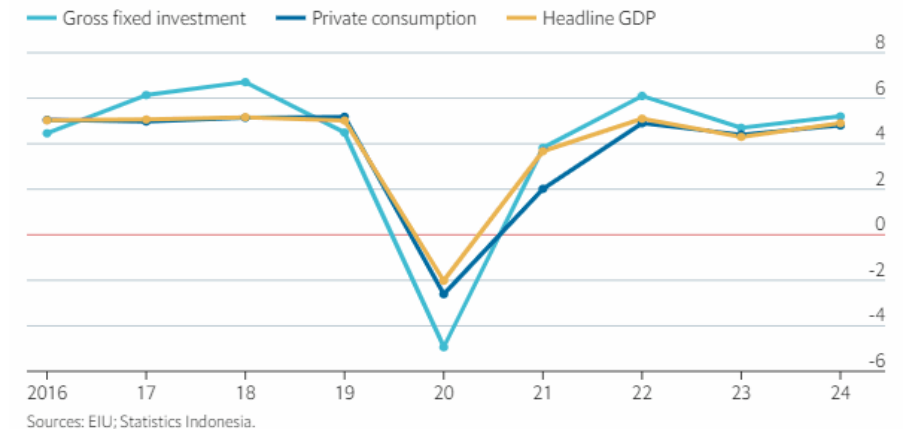
## Holding Up

Indonesia's economy has gained momentum amid global uncertainty



## Strong growth in commodities-based industries will mask the impact of tougher economic conditions in 2023-24

(real % change)



# A HOLISTIC APPROACH TO SUSTAINABILITY





## ENVIRONMENTAL

Adheres to stringent environmental standards & practices & strives to go beyond local & international regulations

Monitors & mitigates its deposits' environmental impact while also ensuring that employees receive formal training in environmental monitoring, reporting & compliance

Implemented several environmental projects including a collaboration with an off-site Orangutan Sanctuary in Indonesia & a reforestation programme, which will see the Company plant 10,000 trees on its tenement area

## SOCIAL

Dedicated to working with local communities in Kalimantan to ensure a lasting legacy to the region & its people

Focuses on school & education, as well as training programmes for local residents

Strives to nurture a safety-first culture across all operations as well as local communities

Vaccinated 100% of its employees against Covid-19 & oversaw blood donation efforts in Kalimantan

## GOVERNANCE

Committed to fostering a corporate culture imbued with strong ethics & dedicated to follow stringent standards & compliance requirements

Committed to adopting a holistic vision of governance to ensure going beyond statutory requirements in meeting shareholder expectations, employees, & the communities in which it operates

# INVESTMENT CASE

## In Demand

High-quality, low-impurity zircon product ideal for in usage for high-tech applications



## Clear Path

Focus on increasing scalable production, reducing costs & boosting operational margins



## Upside

Further exploration resources are possible with in-fill drilling & via acquisition



## Sustainable

Low environmental impact deposits with no waste/trace & progressive ESG Policy



## Global Network

Increasingly diverse client base with international blue-chips customers



## Strong Support

Fully capitalising on LSE dual listing to diversify investor base with high profile US investors



## Robust Market

Strong zircon price outlook due to demand/supply gap



## Recognised Team

Proven expertise to acquire, develop & operate mining opportunities





# FOCUS FOR FY 2023

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- Production guidance remains unchanged
- On-going operational improvements
- Sale of rutile and ilmenite
- Continued diversification of investors
- Growth of customer pipeline with a focus on increasing customers geographical diversity



# Q&A

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# APPENDIX - BOARD

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## **Oliver B. Hasler, Chairman & CEO**

Oliver is an accomplished Chief Executive, president and board member successfully leading world-class businesses and brands spanning multiple industries and markets, including natural resources, agroindustry, innovative manufacturing and various industrial sectors. He was named Top 50 CEOs in Spain by Forbes magazine. Oliver has +20 years' experience of doing business in Asia, where he has built and operated factories, as well as setting up distribution networks throughout the region while managing significant export and import operations. Oliver is a Swiss citizen with a degree in Materials Engineering and a master's degree in Metallurgy from the Federal Institute of Technology in Zurich, Switzerland and an MBA with Honors from the Universidad Iberoamericana in Mexico City.



## **Bakhos Georges, Non-Executive Director**

Bakhos has +40 years of experience in management and operation in the wholesale, retail and pharmaceutical sectors with significant direct involvement in internationally focused import and export operations. Bakhos has received the Order of Australia Medal (OAM) in 2019 for service to the community. He currently serves as Director of Saint Charbel's Aged Care Centre and is a Justice of the Peace (JP) in and for the State of New South Wales. Bakhos received a B.Ph.Chem from University of Santa Maria in Caracas, Venezuela in 1982.



## **Alvin Tan, Non-Executive Director**

Alvin has +25 years' corporate experience, including mergers, acquisitions, capital raisings and listings on the Australian Stock Exchange (ASX), the AIM market of the London Stock Exchange, Kuala Lumpur Stock Exchange (KLSE) and the German Stock Exchange. Alvin studied at the University of Western Australia, gaining a Bachelor of Commerce with honours, and subsequently was employed by KPMG in Kuala Lumpur from 1993-1995 as a financial consultant. During the past three years Alvin has held directorships in other ASX listed companies.



## **Dr. Raden Sukhyar, Non-Executive Director**

Dr. Sukhyar is a highly regarded geologist and Indonesian executive with vast experience of operating in Indonesia. He has held key government roles including Head of the Indonesia Geological Agency, and Director General of Mineral and Coal, Ministry of Energy and Mineral Resources. He was also adviser to the Minister of Industry of the Republic of Indonesia and served as commissioner of state-owned mining enterprises, PT Timah, PT Aneka Tambang and PT Pertamina Geothermal Energy and has been an independent commissioner of PT Vale Indonesia since 2018. Other roles include Chairman of Indonesia Smelters and Mineral Processing Association, and adviser to several professional associations. Furthermore, he has received several awards including the Lasut Charter Award from the Indonesia Geologists Association and the Merit Medal for Working Dedication (Wirakarya) by the President of The Republic of Indonesia.

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