



**The Emerging Force in the
Premium Zircon Industry**

An aerial photograph of a zircon mine, showing a large, dark, textured area of the mine's surface, likely composed of zircon ore, with a lighter, yellowish-brown area to the right. The image is partially obscured by a grey diagonal shape.

2022 Half Year Results

September 20th, 2022

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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.

Oliver B. Hasler
Chairman and CEO



CONTENT



Highlight of H1 2022	05
Sustainability	06
Zircon Market Outlook	07
Financial Analysis of H1 2022 Results	11
Share Price Performance and Upside Potential	18

H1 2022 Highlights

World's 2nd largest producing mineral sands company based on Zircon inferred resources

Dual listed on the National Stock Exchange of Australia and Main Market of the LSE

128% increase in revenue growth to US\$10.6 million

92% increase in zircon realised prices to US\$2,749 per tonne

163% uplift in total production after starting production of titanium dioxide minerals

19% growth in premium zircon sales volumes and 23% increase in premium zircon production

Achieved positive underlying EBITDA with limited negative operating cash flow

US\$3.6 million net loss H1 2022 compared to US\$1.2 million for H1 2021 mainly resulting from share grants

Maintained debt free status and strengthened cash position to US\$7.7 million

Continued customer diversification

PYX Cares Program: PYX Commitment to Sustainability

- **United Nations Global Compact**
Accepted on 2 August 2022
- **5 Pillars**
People, Planet, Prosperity, Peace & Partnership
- **Short Term Goals**
 1. Goal 3: Good health and well-being of employees
 2. Goal 8: Decent work and economic growth
 3. Goal 9: Industry, innovation and infrastructure
 4. Goal 10: Reduced inequality
 5. Goal 12: Responsible consumption and production
 6. Goal 13: Climate action



United Nations
Global Compact

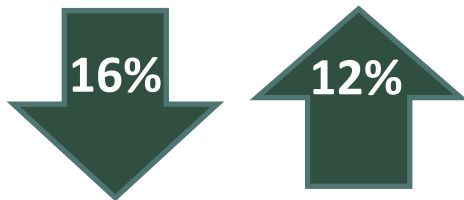
Zero Carbon Transition to Increase Zircon Demand by 56-88%

Zircon

plays a crucial role in supporting industrial re-alignment toward **Zero Carbon Transition**.

Australia has included zirconium as a critical mineral to achieve low carbon economies⁺.

PYX included a sustainability goal in its PYX Cares Program to ensure adoption of affordable, reliable, and sustainable energy sources



Lower Global Warming Potential*

Higher energy efficiency^

Source: ZIA, Praxair Technology

Note: * compared to alumina

^ solar cells with zirconium-doped electrodes and thermal barrier coating using Zircon

+ Geoscience Australia and Mineral Commodity Summaries 2021

Marrakech Partnership for Global Climate Action: Pathways to Zero Carbon



Source: TZMI

Replacing alumina with Zircon for **casting and refractory** significantly reduces energy waste

Up 10-20% Down 8-10%



Zircon

Alumina

Industry Pathway#



Source: Global Fuel Cell Market (2021-2026), Mordor Intelligence

Zirconia is widely used as the electrolyser material for **hydrogen fuel cell and solid oxide fuel cells**, a key renewable energy source

Up 15-18%



Zircon

Decarbonised Power Pathway#



Source: International Atomic Energy Agency (IAEA)

Zirconium based alloys are used for **nuclear energy** (current capacity of 350GW expected to triple by 2050)

Up 15-20%



Zircon

Down 2-5%

Fossil Fuel

Alternative Sources Pathway#



Source: Study by ZIA and Centro Ceramico for ECerS conference, June 2019

Zircon-containing ceramic roof and façade tiles increase solar reflection, reducing cooling demand and **minimising buildings' carbon footprint**

Up 6-10%



Zircon

Human Settlement Pathway#



Car and aircraft manufacturers will use zircon to increase fuel efficiency, reduce the environmental impact

Up 10-20%



Zircon

Down 1-5%

Other coating

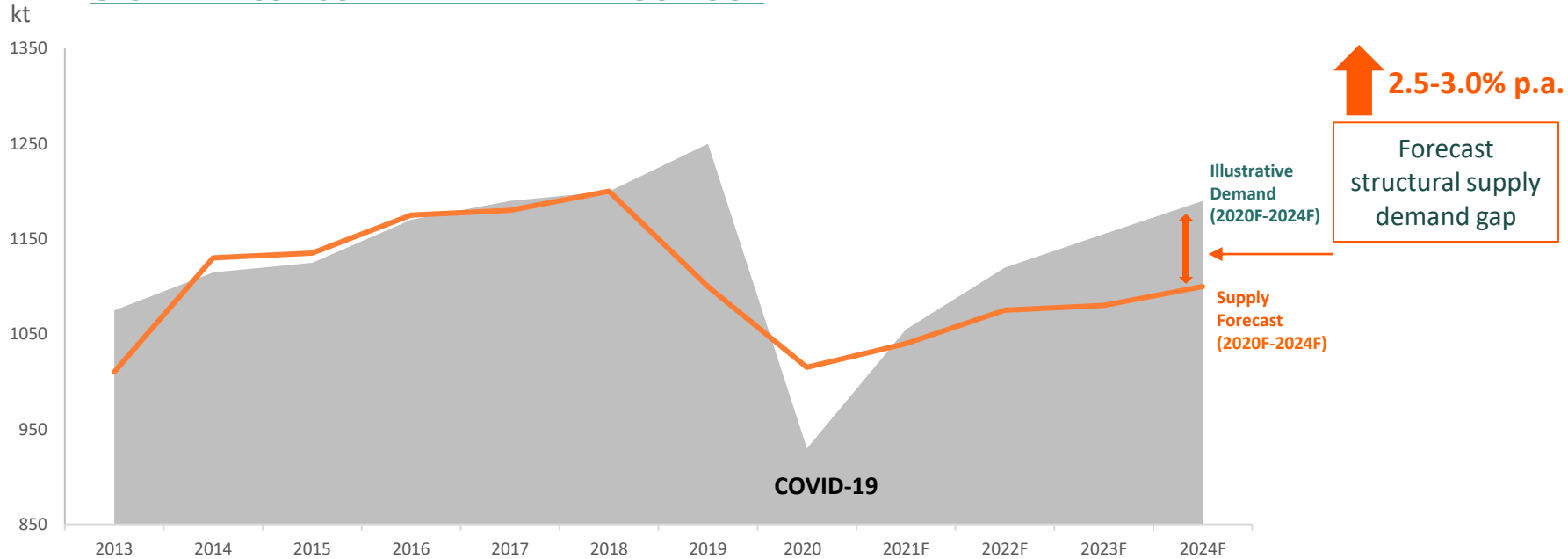
Transport Pathway#

ZIRCON MARKET OUTLOOK

Source: The Role of Thermal Barrier Coating in Maximizing Turbine Engine Efficiency and Lowering CO2 Emissions, June 2017, Praxair Technology. Note: All changes in zircon volume assume constant demand in end-use markets.

Zircon Demand Substantially Outstrips Supply

GLOBAL ZIRCON SUPPLY AND DEMAND OUTLOOK



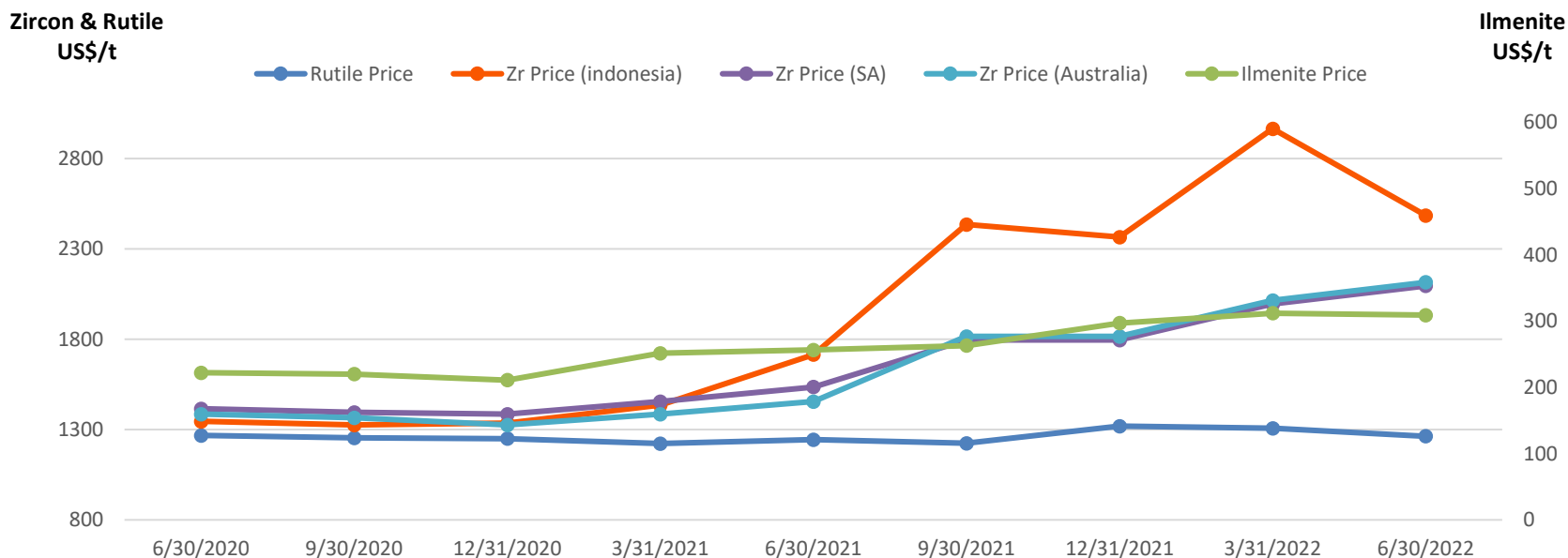
Note: Illustrative demand and supply forecast (2020-24) are indicative only. Supply data assume no new project going into production stage
Source: ILUKA, TZMI, Sheffield Resources

- Post COVID-19 pandemic, a substantial supply gap has emerged, which is likely to support a robust zircon price environment in the long term
- Zircon prices have risen strongly since beginning of 2021

Base Minerals Prices Are Experiencing Major Increases

MINERAL SANDS PRICE VARIATION

As at 30 June 2022



Source: Asian Metal, Bloomberg

- Price movements of different mineral sands performed differently in the past 24 months from Jul 2020 to Jun 2022
- Rutile experienced price retreats not long after initial spike
- Zircon prices continue to increase at a much larger incremental size
- Indonesia Zircon price performed exceptionally well in the last 18 months

Mid Term Zircon Market Dynamics Remain Very Strong

Supply

- Pyx's Mandiri deposit is the only major mineral sands discovery since 2012
- Global supply is highly concentrated with top 5 producers controlling over 70% of world production
- Lack of supply potential for the foreseeable future and the future demand may exceed supply
- Grade of existing deposits is declining and USGS estimates global zircon reserves reduced from 78 Mt to 62 Mt
- A significant proportion of global zircon supply between 2016 and 2019 are from diminishing inventory, leading to a potential shortage of supply even if demand remains at current level

Demand

- About half of global annual zircon supply is met by Chinese demand for zircon
- Global zircon milling mostly focused on meeting demand from the ceramics industry (54%), followed by foundry (14%) and refractory (11%)
- Consumption of zircon by other novel applications such as medical implants, zirconium based chemicals (for electronics, fiber optics etc), and extraction of zirconium metal for corrosion resistant alloys and nuclear reactor cores and rods represents growing importance
- Global trade tensions and COVID-19 pandemic had relatively minor impact on zircon demand and Resumed operations in China lead to substantial demand for high-grade zircon

Summary of H1 2022 Results

Financial Results

- Revenue increased to US\$ 10.6 mill an increase of 128% YoY
- Positive underlying Group EBITDA of US\$90k

Cash Flow

- Closing net cash position of US\$7.7 mill
- Net debt free

Operational Performance

- Sales volume growth of 19%
- Production volume growth of 163% (premium zircon +23%)

Zircon Market

- Zircon YoY realised price growth of 92% to US\$2,749 per tonne
- Continue with record demand and order book

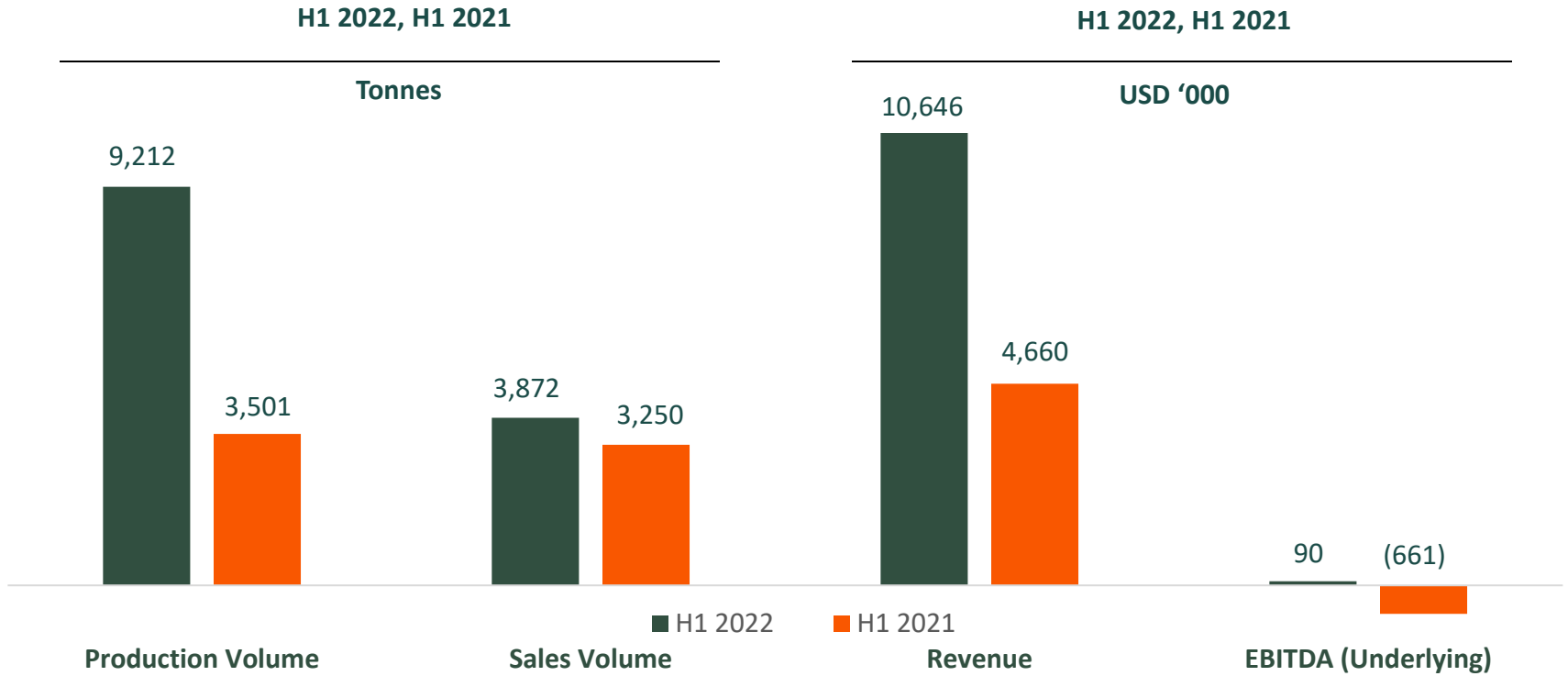
Income Statement Analysis

- 128% revenue growth
- Positive underlying EBITDA in the 3rd year after IPO

US\$	H1 2022	H1 2021	% change
Sales revenue	\$ 10,645,890	\$ 4,660,223	128%
Cash cost of production	\$ (7,333,047)	\$ (4,008,639)	-83%
EBITDA	\$ (3,486,822)	\$ (1,254,832)	-178%
EBIT	\$ (3,598,520)	\$ (1,346,969)	-167%
Net loss before tax	\$ (3,613,644)	\$ (1,352,830)	-167%
Net loss after tax (NLAT)	\$ (3,623,751)	\$ (1,194,190)	-203%
Underlying EBITDA	\$ 90,008	\$ (660,567)	114%
US\$	At 30 Jun 2022	At 31 Dec 2021	% change
Cash	\$ 7,653,070	\$ 6,624,364	15.5%
Total assets	\$ 87,873,627	\$ 84,796,550	3.6%
Total liabilities	\$ (3,951,428)	\$ (1,759,899)	-124.5%

1. Excluding depreciations and amortisations
2. non-recurring items are expenses that do not fall within the normal courses of business and/or are not costs that occur every year

Strong Improvements Resulting in Positive Underlying EBITDA



- Installed capacity increase at MSP
- Production volume increase as a result of production of by-products

- Sales volume increase resulting from increased demand from China and Europe and America

- Revenue increased by 128%, contributed from both the growth in sales volume as well as surging premium zircon prices

- Increase of sales volumes and increased pricing resulted in positive EBITDA

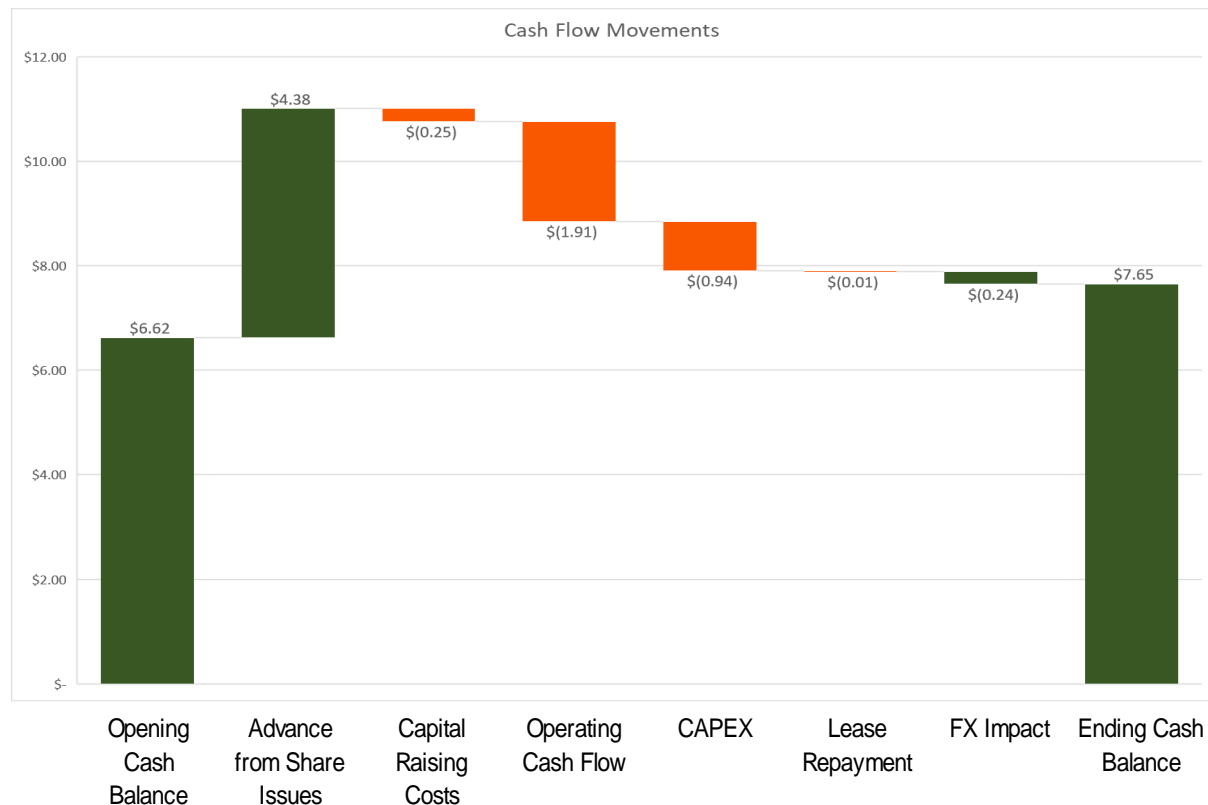
Cash Flow Analysis

PYX reported US\$7.7 million of cash flow in H1 2022 with private placement proceedings the main cash flow component

Key cash flow drivers in H1 2022

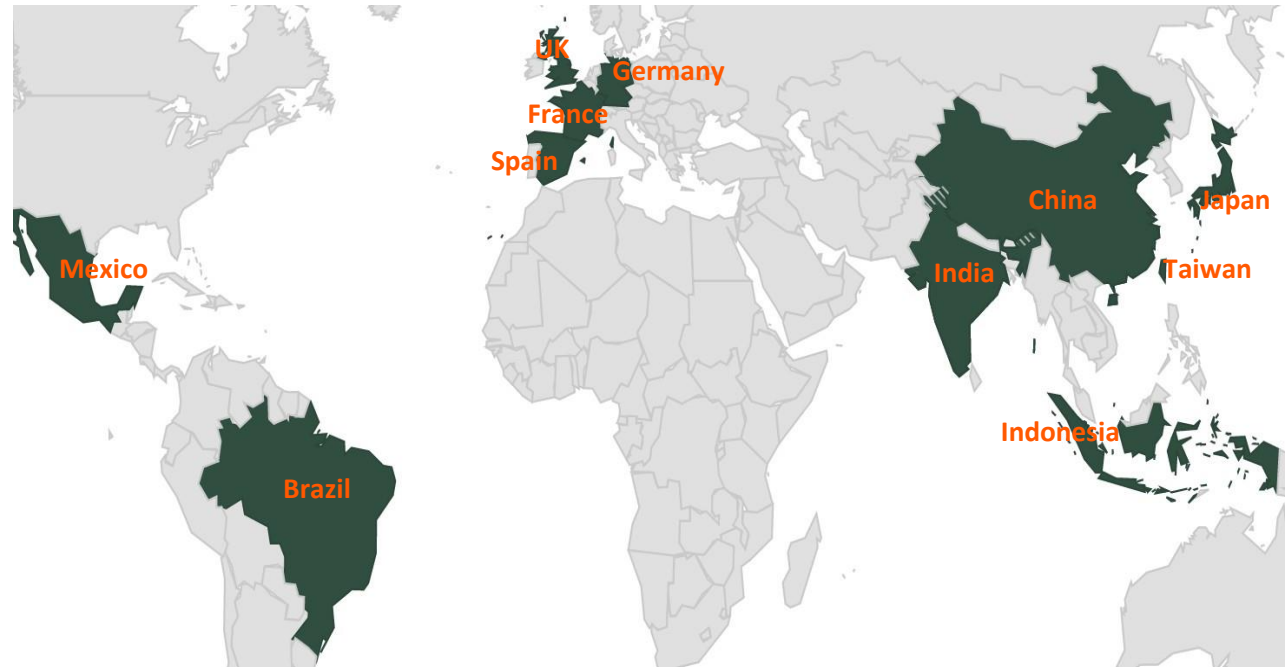
- H1 2022 close balance of US\$7.7 million
- Proceeds from March 2022 share placement of US\$4.4 million (US\$4.5 million net of fees of US\$116k)
- Operating cash flow -US\$1.9 million
- Capital expenditure US\$943k, reflecting a year of continuous capacity increase

US\$ million



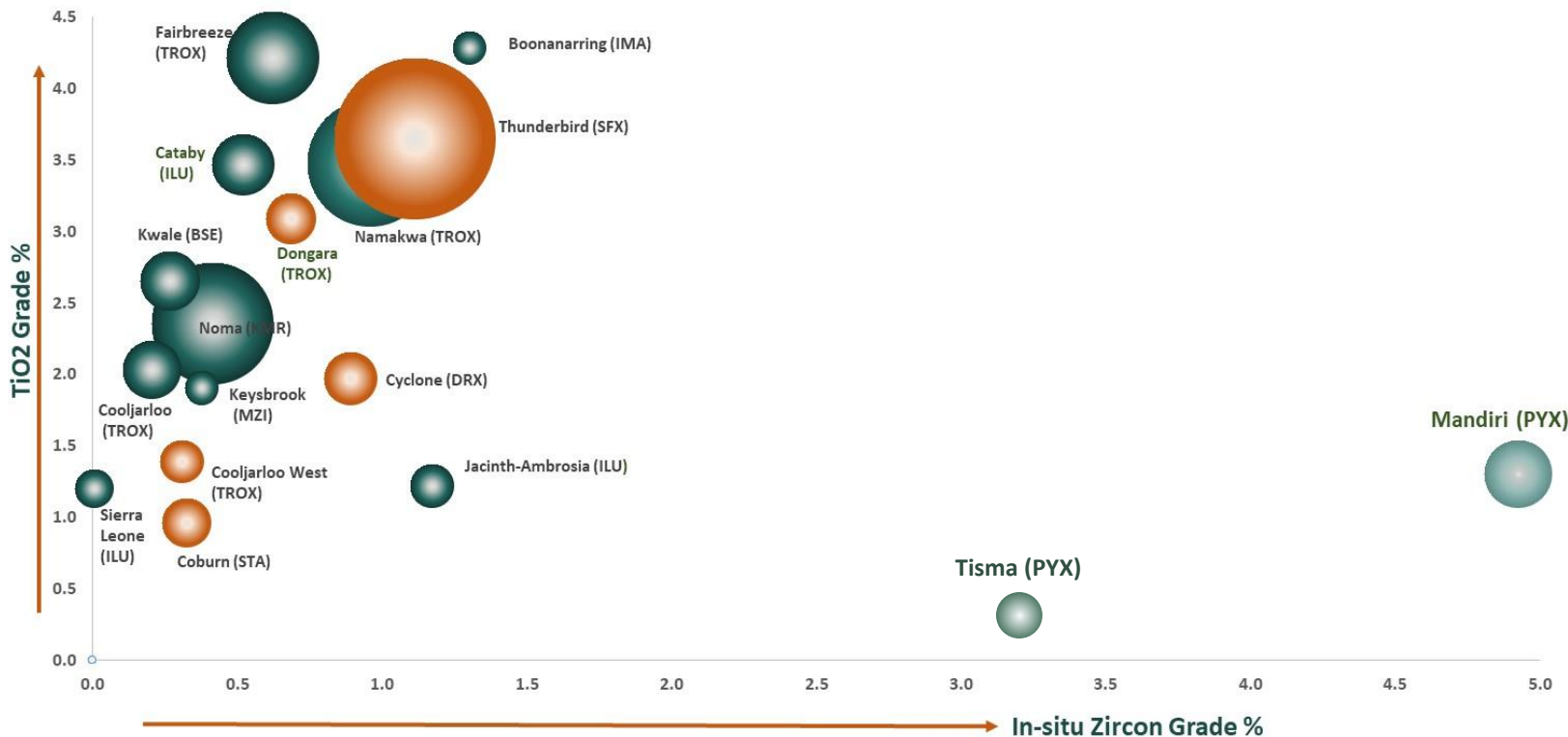
PYX Further Increased its Customer Diversification in 2021

- PYX customer base consists of a pool of well-diversified international blue-chip customers globally, providing protection to PYX against any concentration risks.
- Key customers are located across major European, American and Asian markets.
- 100% of its revenues are US\$ denominated, resulting in limited currency risk.



- **New customers in Spain, UK and USA**
- **Strong China sales complemented with increased demand from Europe and Americas**
- **Record high order book**

Mandiri and Tisma are Clear Outliers in Terms of Zircon %



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. TiO2 grade calculated as the VHM grade of Ilmenite, Leucosene, and Rutile.
5. Data compiled from public sources and PYX's research.

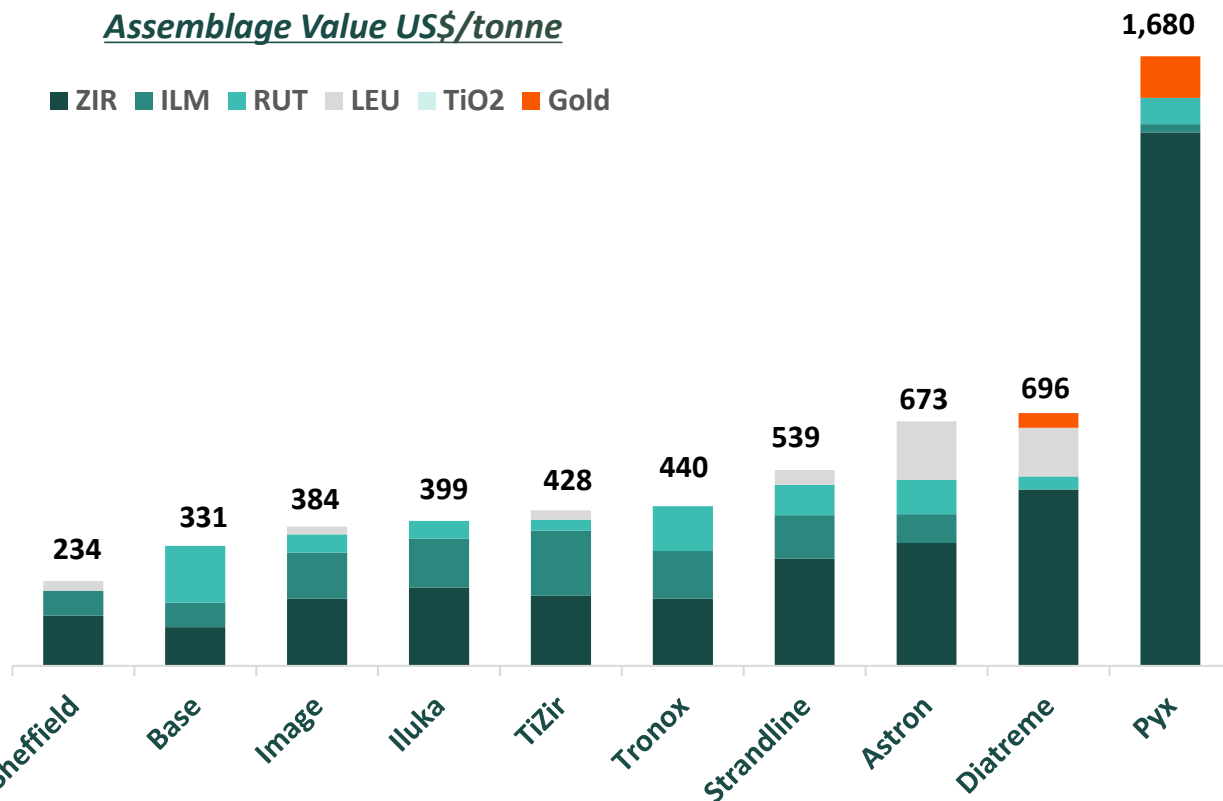
Source: Public Filings, Cedrus Research

Superior Assemblage

- P Y X’s Mandiri deposit has the highest assemblage value amongst its peer group, and it is already in production. The Tisma deposit has an even higher assemblage value
- Assemblage is the relative percentage of each different valuable minerals found within a heavy mineral sands deposit, such as Zircon (ZIR), Ilmenite (ILM), Rutile (RUT), and Leucoxene (LEU).
- Each valuable mineral has a different market price. The assemblage value is the weighted average value of all the valuable heavy minerals in the ore.

Assemblage Value US\$/tonne

■ ZIR ■ ILM ■ RUT ■ LEU ■ TiO2 ■ Gold



Zir %	8.3	5.5	10.7	6	10.2	17	17	23	19	27	70
Rut %	3	2	2.5	13	10.3	3	4	7	8	3	6
Ilm %	28	82	72	56	52.5	55	54	48	32	-	9.1

Notes: P Y X’s gold exploration target not included in JORC Resource Statement

Source: Public filings, Cedrus’ research

Valuation Benchmarks Against Listed Peers

The following table shows the valuation (in terms of Enterprise Value (EV) per tonne of JORC Compliant resources) of comparable mineral sands mining companies listed on the ASX, which is strongly correlated with the assemblage value of the Heavy Mineral (HM) resources as stated in each company's JORC-compliant statements. As at 31 July 2022

	Share Price	Market Cap	EV	Resources	Weighted Avg	EV/Resources
	LCL Currency	US\$ m	US\$ m	(in situ THM) Mt	Assemblage Value US\$	US\$/t
Iluka Sierra Rutile (2019)*	N/A	N/A	600	8.2	1,200	75.0
Iluka Sierra Rutile (2016)*	N/A	N/A	337	8.2	1,200	41.1
Pyx Resources	0.95	289	282	14.9	1,820	19.0
Diatreme Resources	0.04	93	89	4.7	750	19.0
Astron Corporation	0.63	53	64	182.4	577	0.4
Strandline Resources	0.45	390	392	29.0	572	13.5
Image Resources	0.15	112	57	3.9	526	14.5
Iluka Resources	9.91	2,861	2,682	206.7	514	13.0
Tronox Holdings	15.88	2,452	5,006	85.4	441	58.6
Tronox Holdings – mining [#]	N/A	N/A	4,600	78.1	438	58.9
Base Resources	0.31	258	224	70.9	337	3.2
TiZir Limited (2018) [^]	N/A	N/A	525	26.2	313	20.0
Kenmare Resources	463.50	531	594	185.6	341	3.2
Sheffield Resources	0.44	105	101	223.0	229	0.5
Sierra Rutile	0.30	90	90	13.3	627	6.8

Source: Public Filings, Cedrus Research

*: Iluka Sierra Rutile 2019 valuation is based on International Finance Corporation's investment of US\$ 60 million on Iluka's Sierra Rutile's 10% stake in 2019; while 2016 valuation based on Iluka's acquisition of Sierra Rutile Ltd at US\$ 337 mm in 2016; both with assemblage value of US\$ 1,200 (i.e. spot price for Rutile)

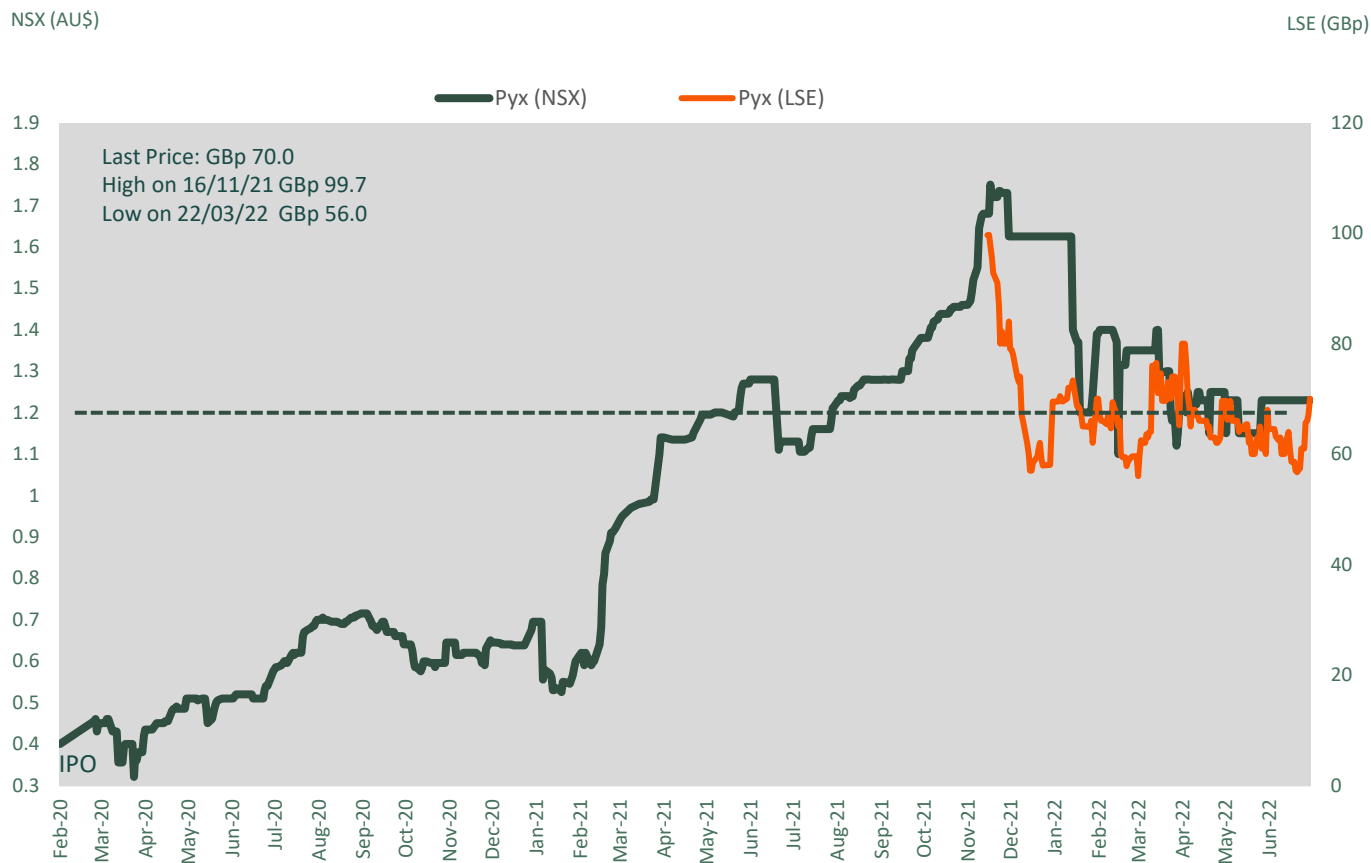
[#]: Based on Apollo's acquisition offer and Cedrus analysis

[^]: TiZir Limited is jointly owned 50/50 by Mineral Deposits Limited of Australia and Eramet Group, which is a French multinational mining company listed on Euronext Paris exchange.

Share Performance post IPO has Been Very Strong

Share Price

As at 30 June 2022

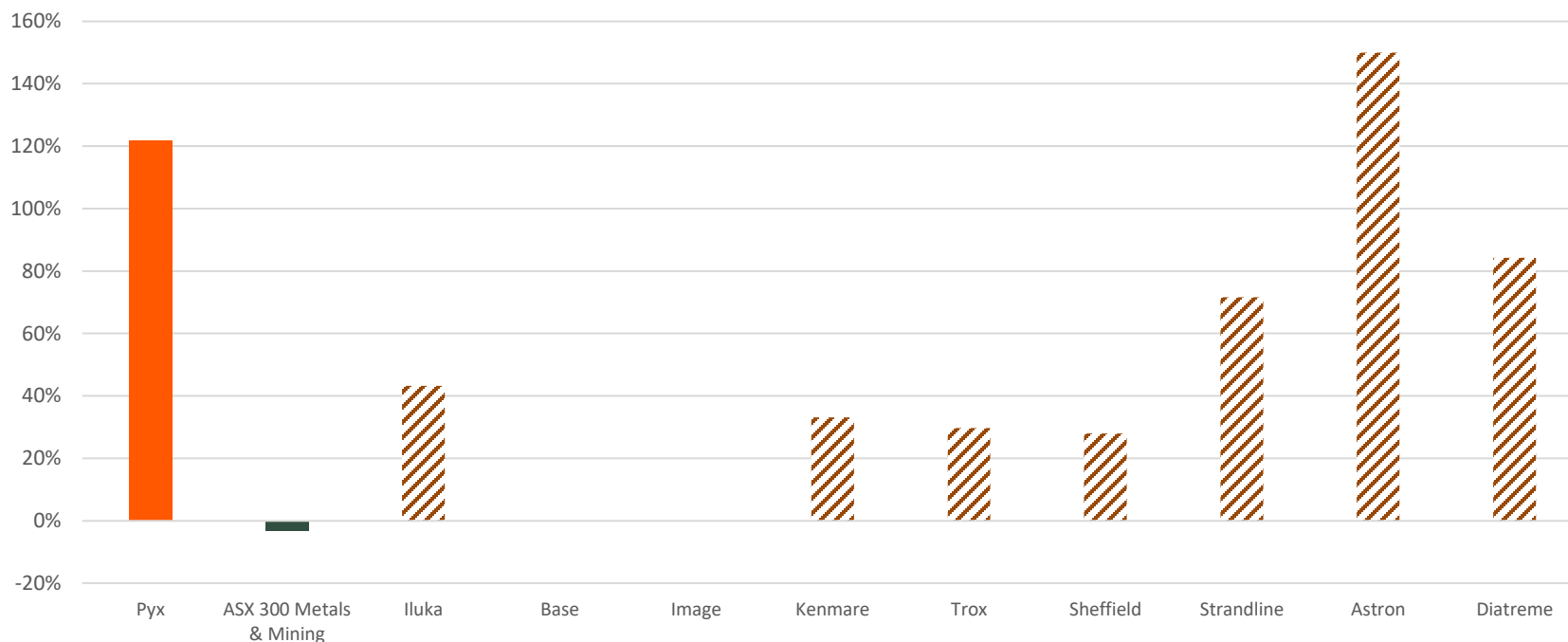


Note: PYX commenced trading on the National Stock Exchange of Australia (NSX) on 25 February 2020 and on London Stock Exchange (LSE) on 15 November 2021

PYX Shares Clearly Outperformed Listed Miners & Peers

Share Performance (2021 – H1 2022, %)

As at 30 June 2022



Source: Public Filings, Cedrus Research

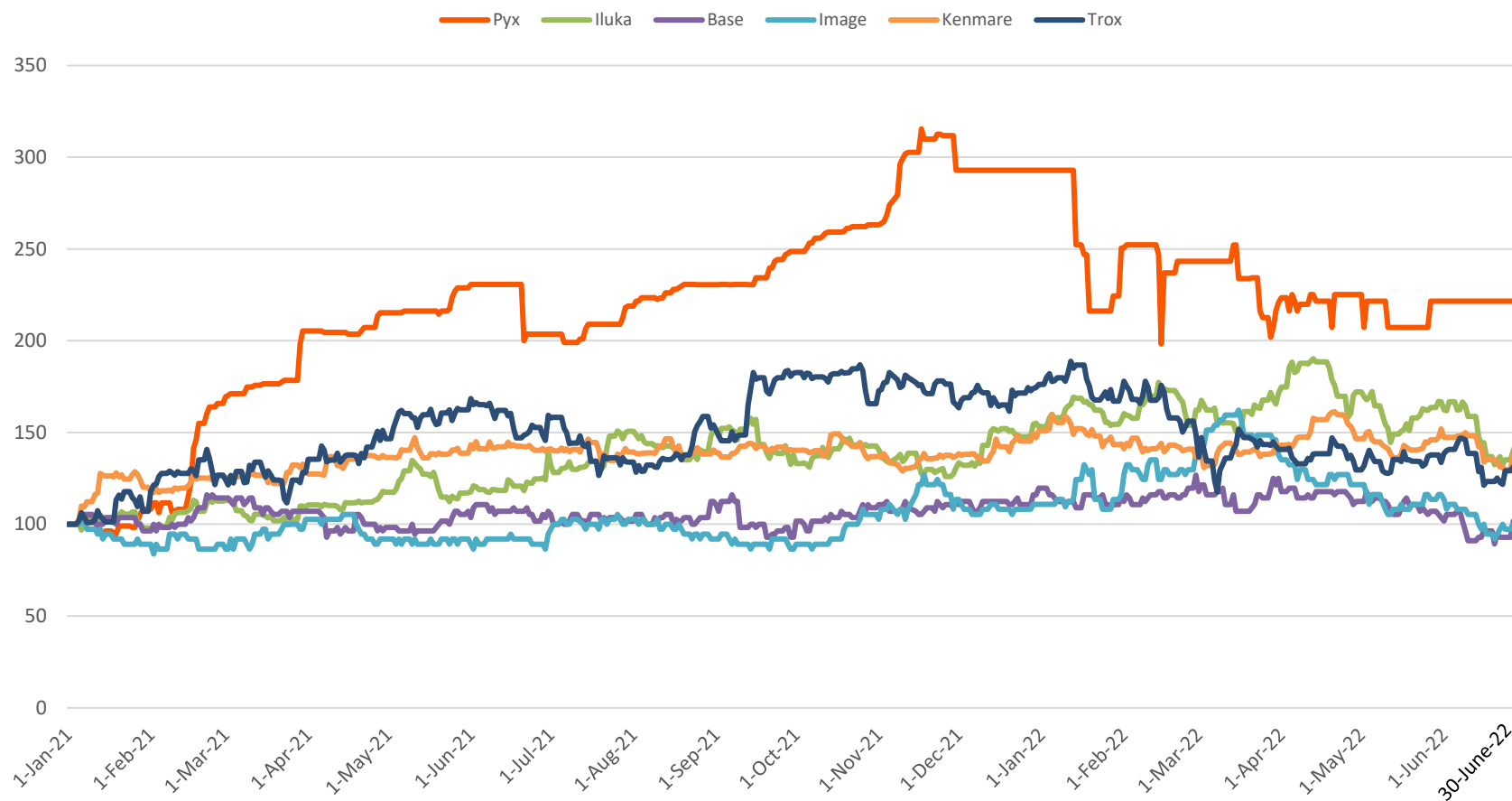
*: The S&P/ASX 300 Metals & Mining Index is based on the S&P/ASX 300. The index is comprised of ASX listed companies that are classified by the Global Industry Classification Standard (GICS®) as being in the Metals & Mining industry, which includes producers of aluminum, gold, steel, precious metals and minerals, and diversified metals and minerals (GICS Tier 3).

Note: Share performance % calculated from the first trading day of year 2021

PYX is the Top Mineral Sands Sector Performer

Share Performance (2021 – H1 2022, %)

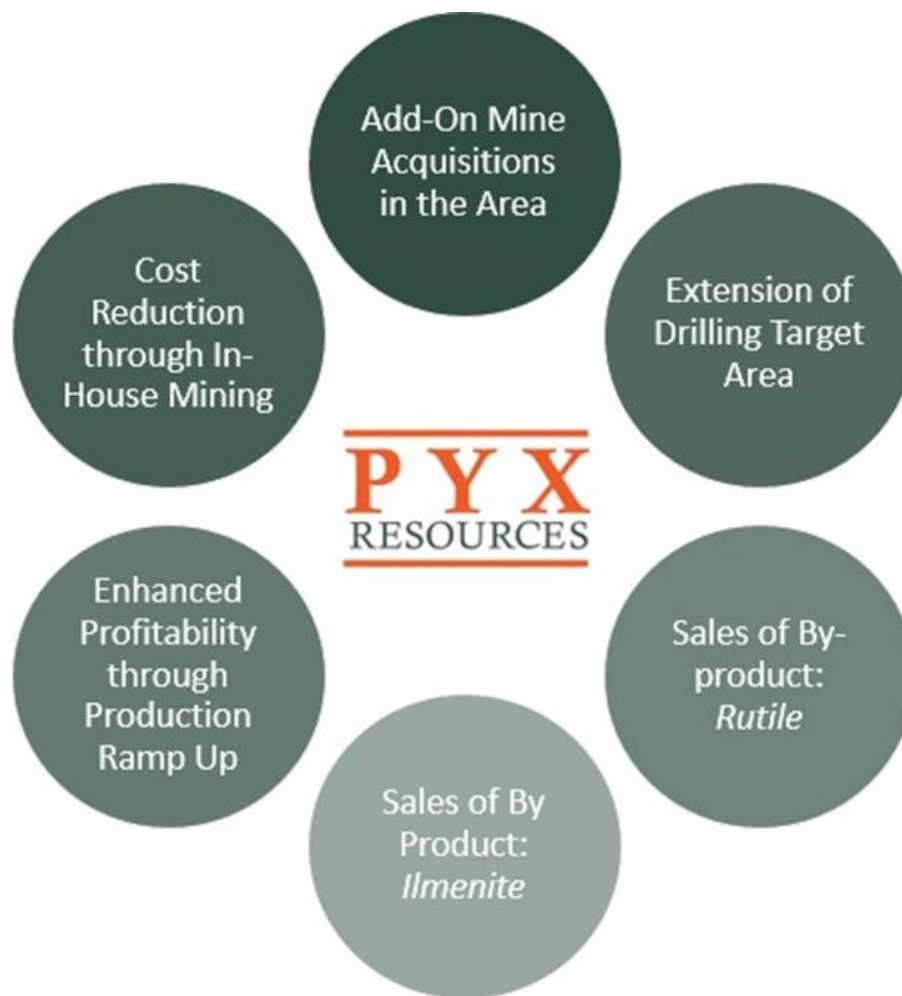
As at 30 June 2022



Note: YTD% calculated from the first trading day of year 2021, all share prices are rebased to A\$

Source: Bloomberg, Cedrus Research

Additional Upside Potential in the Mid Term



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