



Overweight

Price Target:
AU\$3.35/GBp185

PYX Resources: Reiterate Target Price on Achieving Multiple Milestones amid Strong Zircon Price

Introduction

PYX Resources Limited (“PYX” or “Company”; NSX: PYX, LSE: PYX) has the world’s second-largest JORC-complaint zircon resources among all producing mineral sands miners. It is also a leading and fast-growing premium zircon producer with enormous potential to grow output and enhance profitability.

This report provides an update on PYX’s recent developments and a review of its financial and operational performance for 2021 ended on 31 December 2021.

On 16 March 2022, PYX announced its 2021 results with robust demand for zircon, resulting in increased sales volumes and rising prices. We maintain our positive outlook for the company’s growth and its future valuation based on new developments reported by the Company and our analysis of the industry trend.

Recommendation Summary

- a) We continue our coverage of PYX and **reiterate an Overweight rating with a 12- to 18-month price target of AU\$3.35**, representing an upside potential of about 158% over its closing price of AU\$1.30 as of 22 March 2022.
- b) Significant improvement in financials, successful fundraising and dual listing on the London Stock Exchange have better positioned PYX to capture further growth amid expected production capacity expansion on an ongoing basis, including the contribution from the Tisma tenement, the beginning of revenue generation from the output of ilmenite and rutile and continued enhancement in the Company’s financial health in terms of revenue and EBITDA. **We are forecasting PYX to grow its revenue at a compound annual growth rate (CAGR) of 67%** during the forecast period between 2022 and 2026 and reverse the negative US\$4,329,943 EBITDA in 2021 to a positive US\$3,406,000 in 2022 with a **EBITDA CAGR of about 102%** during the same forecast period.
- c) Even with the unabating COVID-19 pandemic and extreme weather conditions like flash floods interrupting operations, **PYX was able to deliver production growth of 10%** year on year in 2021. At the same time, the Company **grew its sales by an eye-catching 39%** over 2020 despite many competitors experienced slower growth.
- d) **Prospects for the mineral sands industry in general and zircon in particular remain resilient**, as long-term demand is sustained by persistent global economic growth, increasing urbanization especially in populous China and India, and innovative applications stemming from technological advancements in areas such as nano-materials and nano-structures together with nonexistent or notable discovery of zircon deposits in recent years that could lead to supply shortages. Although the lingering of COVID-19 pandemic worldwide has weighed on short term demand for zircon to some extent, in our view, a **full recovery is expected within the next 12 months**, as global vaccination rates are on the rise, approaching 60% at present, along with loosening restrictive measures following the flare ups of coronavirus infections to minimize the adverse impact on economy.



Share Price (as of 22 Mar 2022):

AU\$1.30 and GBp73.00

12- to 18-month Target Price:

AU\$3.35 and GBp185

Market Cap (as of 22 Mar 2022):

AU\$567.7M and GBP318.8M

Total Shares: 434 M

Dividend and Yield: N/A

- e) PYX announced a 34% price surge of its premium zircon to US\$3,100 per tonne with immediate effect on 21 March 2022. It is the fifth price hike since January 2021 with a cumulative increase of 135%. The spiraling of premium zircon price has been fueled by supply constraints in South Africa, compounded by low inventory level in China, the world's largest zircon consuming country, and higher demand from technology-based applications for producing renewable energy, zirconium-based alloys for low-emission electricity generation, as well as zircon compounds acting as an integral part of catalytic converters to cut pollutants.
- f) Our valuation is based on an extremely conservative zircon price of US\$2,100 per tonne, compared to the prevailing zircon price received by PYX and our zircon price projections. This makes our target price not only achievable but also likely subject to upward adjustments.

Based on its series of achievements and low valuation alongside the bright outlook for the zircon market mainly caused by demand outstripping supply, we recommend investors to invest in PYX to capitalize on the upside potential presented by the Company.

Note: Unless otherwise noted, US\$:AU\$ exchange rate throughout this report is 0.75.

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I. MULTIPLE MILESTONES COMPLETED DURING 2021

1.1 Successful Completion of Acquisition of Tisma

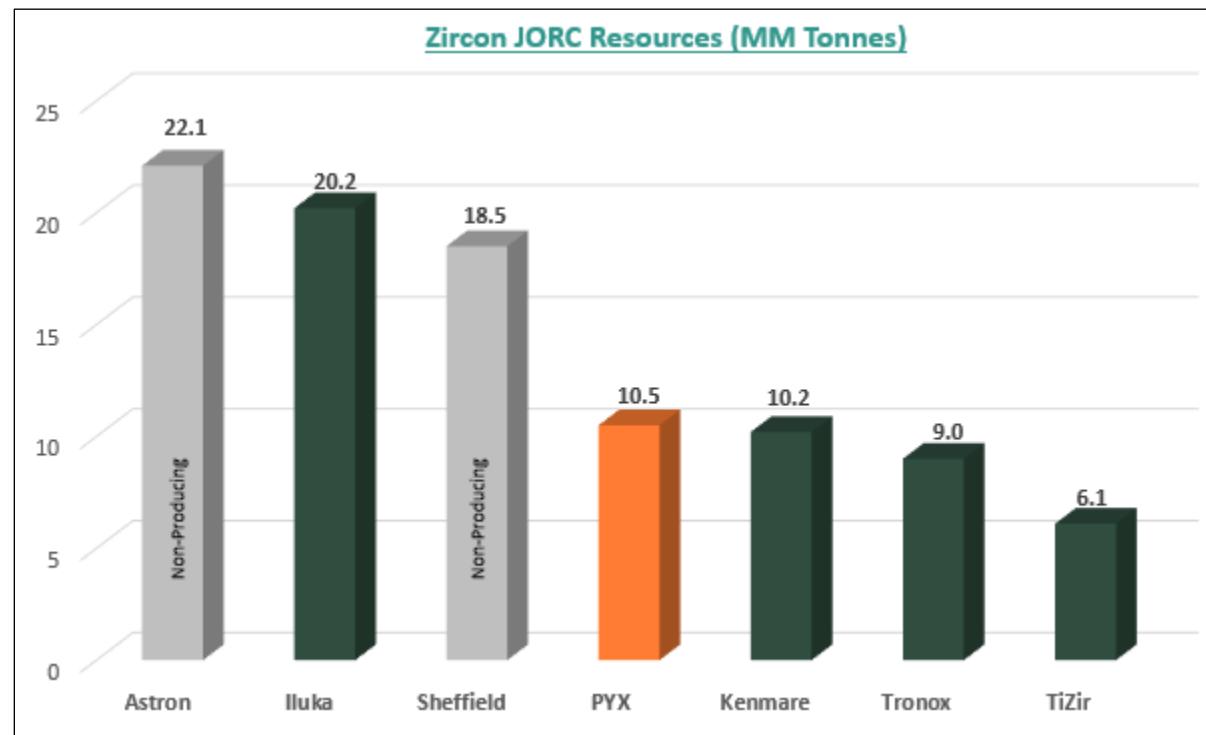
On 15 February 2021, the Company completed the acquisition of Tisma Development (HK) Limited (“Tisma”). PYX acquired the entire share capital of Tisma via the issuance of 147,277,370 of its ordinary shares. The acquisition serves as a boost to the Company’s scale of mineral resources, an excellent strategic addition to its resource base and a milestone in consolidating Indonesia’s mineral sands sector.

Tisma controls a world-class mineral sands tenement, which covers a concession area of 1,500 hectares in Central Kalimantan province, Indonesia. Moreover, Tisma is fully licensed by the government with an IUP-OP permit, allowing the mining, production and export of zircon.

In addition, Tisma added about 5.5 million tonnes of heavy mineral inferred resources (containing 4.5 million tonnes of zircon) to PYX’s portfolio, representing a 60% surge compared to the pre-acquisition level, and a material improvement of PYX’s overall assemblage value of 70%, as Tisma has an ultra-high zircon assemblage value of 82%.

Furthermore, this accretive acquisition has not only created notable synergy to the Company but also acted as a critical part of PYX’s transformation into the zircon-producing company in possession of the world’s second-largest JORC-compliant zircon resources. PYX now controls 263.5 million tonnes of heavy mineral sands, with 10.5 million tonnes of contained zircon.

Exhibit I-1: JORC-compliant Zircon Resources among Zircon-Producing Companies (Million Tonnes)



Source: Companies public filings

1.2 Fully-Subscribed Share Placement Raised AU\$11.2 million

On 21 June 2021, PYX also completed a share placement to professional and sophisticated investors with the issuance of approximately 10.9 million new, fully-paid ordinary shares at AU\$1.03 apiece. This placement successfully raised AU\$11.2 million or US\$8.4 million, before administrative, legal and placement fees.

The proceeds from the above-mentioned placement will be principally used to accelerate the development of the zircon-rich Tisma deposit. Specifically, the use of funds includes investment in its in-house mining at the Tisma deposit, installation of a mineral separation plant and logistics required to meet growing demand in particular high-tech applications.

The successful capital raising shows not only strong shareholder support to PYX but also provides sufficient funding for capital expenditure programs and working capital at Tisma to ramp-up its production of 65.5 grade premium zircon. Providing sufficient zircon to satisfy growing customer demand is crucial in ensuring that PYX remains competitive and its growth is sustainable and without the concerns of supply disruption in many years to come.

1.3 Successful Dual Listing on the Main Market of London Stock Exchange

PYX's shares started trading on the Main Market of the London Stock Exchange ("LSE") as a secondary listing on 15 November 2021 by introduction. The move was prompted by increased interest in the Company from European investors in addition to being principally listed on the National Stock Exchange of Australia ("NSX").



The dual listing in LSE has a number of benefits, including 1) making it easier for European investors to participate in the growth of the Company, leading to a diversification of investor base; 2) increasing PYX's global visibility; and 3) enhancing the Company's share liquidity because LSE has the deepest pool of capital in Europe.

1.4 Additional Fundraising from U.S. Institutional Investor Completed

On 11 March 2022, PYX announced that it had entered into a share placement arrangement with the US-based L1 Capital Global Opportunities Master Fund ("L1").

Under the placement arrangement, L1 will make a total equity investment of US\$13.5 million in PYX with details as follows:

- 1) L1 will prepay a lump sum of US\$4.5 million for PYX's shares worth US\$5.0 million; and
- 2) Up to an additional US\$9 million investment upon mutual consent.

PYX will initially issue 3 million ordinary shares to L1 at the time of the funding of the US\$4.5 million prepayment. Admission to trading of the 3 million PYX shares is expected to be on or around 25 March 2022. After the admission, PYX will have 434,703,116 ordinary shares in issue, each with one voting right.

In addition, on each funding date, PYX will grant L1 a number of options equal to 40% of the US\$4.5 million prepayment amount divided by the average of the 5 daily volume weighted average prices ("VWAPs") preceding the applicable funding date. Strike price of each option will equal to 130% of the average of the 5 daily VWAPs prior to the applicable funding date with expiration date 3 years following the applicable funding date.

The receipt of these funds will be used as capital expenditure and working capital, enabling PYX to speed up its planned production volume increases at the Mandiri deposit and commencement of operations of the Tisma asset.

II. CONTINUE TO DELIVER STRONG FINANCIAL PERFORMANCE

2.1 2021 Financial Performance Review

Despite the prolonged COVID-19 pandemic, PYX sold 6,855 tonnes of premium zircon in 2021, up around 2% year-on-year, with finished goods inventory continuing to be tight. Driven by a total price increase of US\$910 per tonne in four occasions, the Company's 2021 total revenue jumped 39% over 2020 to US\$12,417,086.

PYX's underlying EBITDA was reduced by around 35% to only negative US\$793,628 from negative 1,213,402 in 2020, a significant achievement considering the increase of general and administrative expenses for miscellaneous tasks like expansion of the corporate structure to deal with the dual listing on LSE, extreme environmental factors, and the COVID-19 pandemic. Meanwhile, the Company reported a negative EBITDA of US\$4,329,943 in 2021 against a negative EBITDA of US\$13,933,329 a year ago.

In 2021, PYX recorded a net loss after tax of US\$4,321,230 versus a loss of US\$13,820,603 over the immediately preceding year owing to the absence of acquisition cost and higher revenue in 2021, partially offset by expenses incurred in the acquisition of Tisma and listing its shares in London.

The Company remained debt free in the latest reported period, with cash and cash equivalent at the end of 2021 totaling approximately US\$6,624,364, up around US\$3.1 million from year-end 2020, mainly attributable to funds raised through the private share placement of US\$8.4million.

During 2021, PYX's financial results were negatively impacted by non-recurring items such as the costs associated with the LSE dual listing and fundraising.

Exhibit II-1: Summary of Key Financials

| | Full Year Ended 31 December 2021 | Full Year Ended 31 December 2020 | Y/Y Change | Y/Y Change |
|----------------------------------|-------------------------------------|-------------------------------------|------------|------------|
| | Tonne | Tonne | Tonne | % |
| | US\$ | US\$ | US\$ | % |
| Zircon sold (tonne) | 6,855 | 6,737 | 118 | 1.8 |
| Zircon produced (tonne) | 7,233 | 6,555 | 678 | 10.3 |
| Revenue | 12,417,086 | 8,956,694 | 3,460,392 | 38.6 |
| Cash Cost of Production | 10,406,727 | 7,557,600 | 2,849,127 | 37.7 |
| EBITDA | -4,329,943 | -13,933,329 | 9,603,386 | -68.9 |
| EBIT | -4,517,820 | -14,062,503 | 9,544,683 | -67.9 |
| Net loss before tax | -4,529,754 | -14,083,464 | 9,553,710 | -67.8 |
| Net loss after tax (NLAT) | -4,321,230 | -13,820,603 | 9,499,373 | -68.7 |
| Total comprehensive loss | -4,339,864 | -13,860,649 | 9,520,785 | -68.7 |
| Underlying EBITDA | -793,628 | -1,213,402 | 419,774 | -34.6 |
| Cash and cash equivalent | 6,624,364 | 3,509,395 | 3,114,969 | 88.8 |
| Total Assets | 84,796,550 | 6,166,204 | 78,630,346 | 1,275.2 |
| Total Liabilities | 1,759,899 | 1,645,355 | 114,544 | 7.0 |
| Short or Long-Term Debts | 0 | 16,773 | -16,773 | -100 |

Notes: Excluding depreciations and amortizations. Non-recurring items are expenses that do not fall within the definition of normal courses of business and do not occur every year

Source: PYX

2.2 2021 Operation Review

2021 ended on a very positive note for PYX. Importantly, December 2021 monthly premium zircon production shot up 1,219 tonnes, registering a 124% increase on a yearly basis. This amazing achievement was caused by higher feed of heavy mineral concentrate in combination with additional processing capacity put in place during the reported period.

In addition, PYX has continued to focus on its productivity enhancement programs regarding the Mineral Separation Plant (“MSP”), which successfully navigated through operation hurdles it faced in 2021. MSP capacity at its Mandiri deposit was raised by approximately 33% from 18,000 tonnes to 24,000 tonnes per annum, enabling the output of various by products – rutile, leucoxene and ilmenite.

Even in a year plagued by extreme weather conditions like flash floods and a reinvigorated pandemic hindering PYX’s Q2 and Q3 production volumes, PYX delivered strong growth in Q1 and Q4 of the reported period. Specifically, in Q4 2021, PYX produced 2,192 tonnes and sold 2,105 tonnes of premium zircon, resulting in a year-on-year increase of 33% and 13% respectively. Premium zircon sales for the 12-month period to 31 December 2021 advanced 2% to 6,855 tonnes, while production volumes climbed 10.3% to 7,233 tonnes. The Company also experienced record demand and order book with tight finished goods inventory.

Going forward, PYX will continue executing its production growth plans to meet anticipated strong zircon demand by enlarging Mandiri’s production capacity and starting new production at Tisma.

Exhibit II-2: Operational Forecasts of PYX

| | | 2019A | 2020A | 2021A | 2022F | 2023F | 2024F | 2025F | 2026F |
|-------------------------------|-----------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|----------------|
| Sales | | | | | | | | | |
| - Zircon | tonne | 4,936 | 6,737 | 6,855 | 14,000* | 18,000 | 24,000 | 36,000 | 72,000 |
| - Ilmenite | tonne | 0 | 0 | 0 | 1,820 | 2,340 | 3,120 | 4,680 | 9,360 |
| - Rutile | tonne | 0 | 0 | 0 | 1,200 | 1,543 | 2,057 | 3,086 | 6,171 |
| | | | | | | | | | |
| Revenue | | | | | | | | | |
| - Zircon | US\$ '000 | 6,858 | 8,957 | 12,417 | 29,400 | 37,800 | 50,400 | 75,600 | 151,200 |
| - Ilmenite | US\$ '000 | 0 | 0 | 0 | 455 | 585 | 780 | 1,170 | 2,340 |
| - Rutile | US\$ '000 | 0 | 0 | 0 | 1,440 | 1,851 | 2,469 | 3,703 | 7,406 |
| Total | US\$ '000 | 6,858 | 8,957 | 12,417 | 31,295 | 40,236 | 53,649 | 80,473 | 160,946 |
| | | | | | | | | | |
| EBITDA | US\$ '000 | 86 | -13,933 | -4,330 | 3,406 | 28,528 | 38,037 | 57,940 | 115,881 |
| EBITDA Margin | % | 1.6% | N/A | N/A | 10.9% | 70.9% | 70.9% | 72.0% | 72.0% |
| | | | | | | | | | |
| Free Cash Flow | US\$ '000 | -258 | -12,924 | -3,842 | 2,703 | 14,264 | 26,626 | 38,627 | 77,254 |
| Zircon Cash Cost/tonne | US\$ | 1,119 | 1,153 | 1,427 | 1,856 | 515 | 515 | 491 | 491 |

Note: *2022 zircon sales forecast is based roughly on annualization of the monthly sales of 1,219 tonnes in December 2021

Source: Cedrus' analysis

III. FAVORABLE MARKET CONDITIONS POST COVID-19 PANDEMIC

3.1 Zircon Price Trend Analysis

Amid strong demand and supply constraints stemming from primarily the COVID-19 pandemic and other factors, zircon price got a boost in 2021. This is reflected in the 23% increase of the weighted average zircon (premium and standard) price in Q4 2021 to US\$1,590 per tonne over the corresponding period a year ago published by the leading mineral sands producer Iluka Resources Limited (ASX: ILU). In addition, Iluka Resources raised the price further by about US\$200 per tonne free on board¹ beginning 1 January 2022 and reported that its Q1 2022 zircon sales have already fully contracted, indicating ongoing tightness of supply.

Likewise, PYX witnessed the uptrend. During 1H 2021, PYX raised its premium zircon price three times in March, May, and June, leading to a total increase of US\$355 to US\$1,750 per tonne. In September 2021, PYX hiked the price by another US\$555 per tonne to US\$2,305 per tonne on news about the suspension of Rio Tinto's (ASX: RIO) Richards Bay Minerals operation in South Africa due to security concerns along with

¹ A shipping term that means the buyer is at risk once the seller ships the product. The buyer pays the shipping cost from the factory and is responsible if the goods are damaged while in transit

increasing demand out of China and the rest of the world. Upward momentum of premium zircon price persists such that PYX increased its price again on 21 March 2022 by 34% to US\$3,100 per tonne. In our view, this series of price increases mainly reflect the expected continuation of supply tightness globally and expectations of burgeoning demand, particularly from China.

In the medium and long term, the zircon pricing environment is expected to remain resilient, as supply and demand gap likely widens on the backdrop that limited new production capacity would be available on the market. Amid the global megatrend of migrating to green energy to fight climate change, premium zircon offered by PYX will be particularly in great demand because it is the ingredient for creating fused zirconia and other products, where standard zircon does not meet the requirements. Fused zirconia is deployed in the manufacturing of nuclear fuel rods, while high-end zirconium metal products converted from fused zirconia are used in a variety of green energy applications such as electric vehicle batteries.

The table below summarizes the projections of zircon price by some financial institutions.

Exhibit III-1: Zircon Price Forecasts (US\$/tonne)

| | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 |
|----------------------------|--------------|--------------|--------------|------------|------------|------------|
| VSA Capital (as at 2021) | 2,300 | 2,500 | 2,250 | 1,800 | 1,600 | 1,500 |
| Credit Suisse (as at 2021) | 1,540 | 1,523 | 1,250 | N/A | N/A | N/A |
| JP Morgan (as at 2021) | 1,658 | 1,679 | 1,683 | 1,500 | N/A | N/A |
| CEDRUS (as at 2021) | 2,300 | 2,400 | 2,500 | N/A | N/A | N/A |

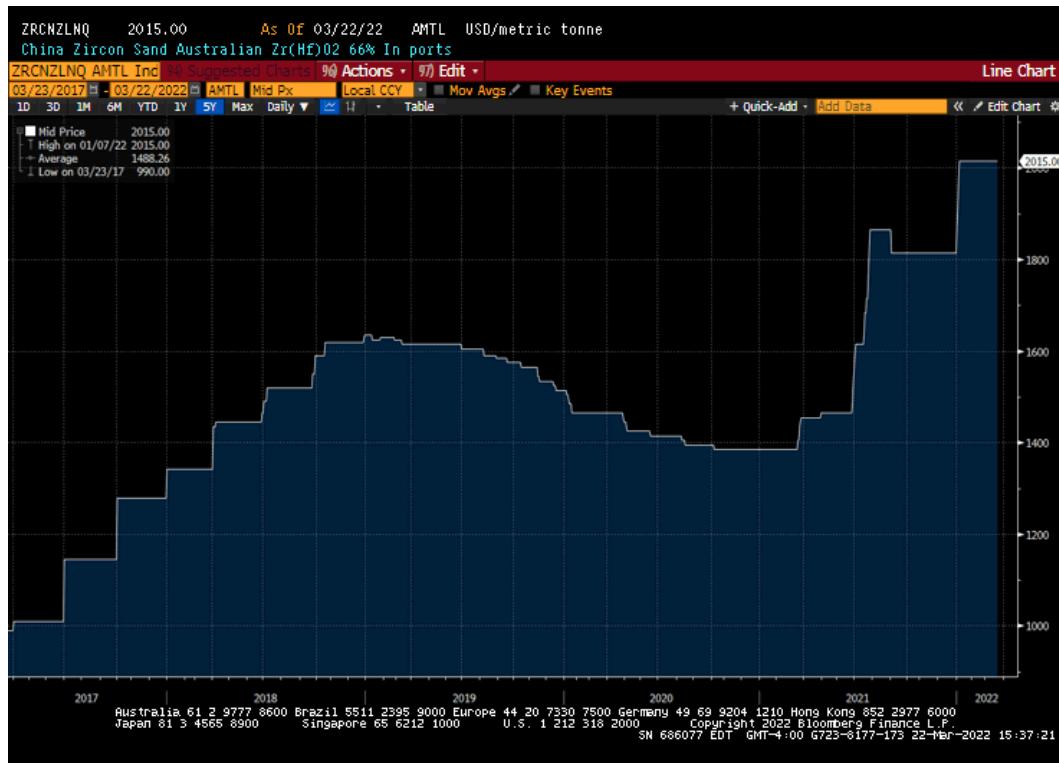
Source: Bloomberg and Cedrus' analysis

Overall, lingering of the COVID-19 pandemic together with recent geopolitical turbulence have somewhat dampened zircon demand in some parts of the globe. However, demand from China, which is the largest zircon consuming country worldwide, remains optimistic because of its relatively better economic performance and the Chinese government is poised to roll out fiscal and monetary measures to spur growth. This is evidenced by the China Zircon Sand Australian Zr(Hf) 66% in ports price, which reached a multi-year high of US\$2,015 per tonne in early January 2022 and remains in that level to-date.

In addition, China Zircon Sand Indonesian Zr(Hf) 66% CIF just hit a record high of US\$2,965 per tonne on 22 March 2022 due to the trade conflicts between Australia and China, the production disruptions in South Africa, and recent geopolitical uncertainties, making Indonesia zircon more popular and having higher bargaining power.

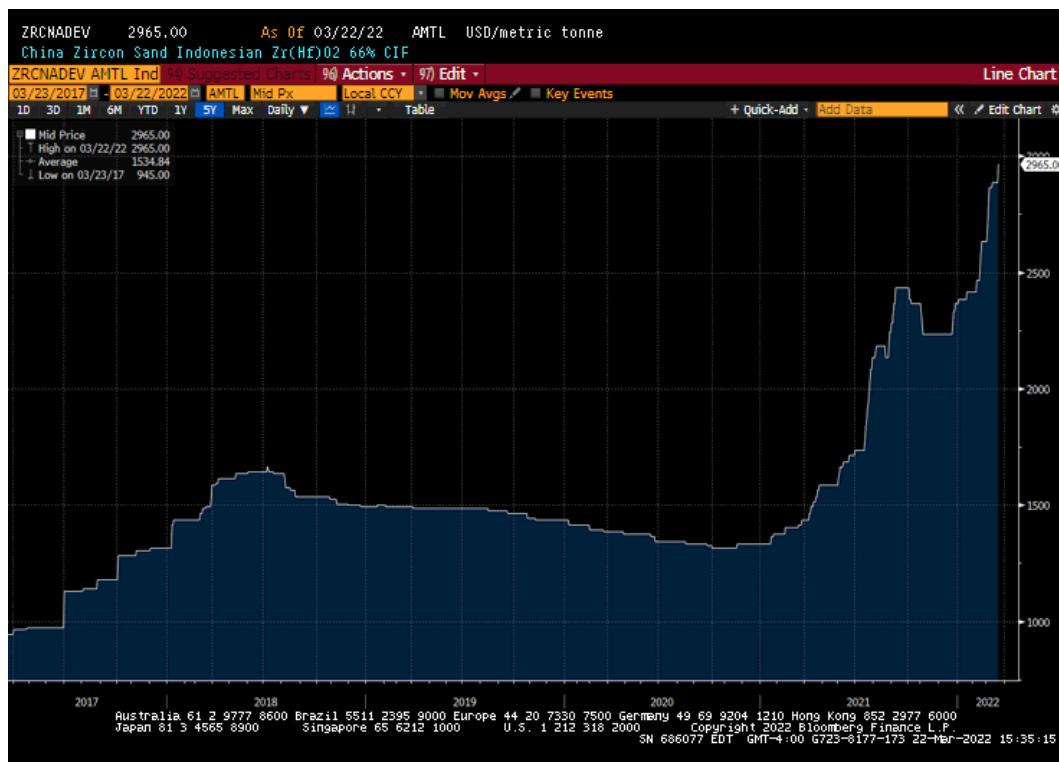
We believe zircon price will continue its upward trajectory throughout our forecast period till 2027 for reasons we have mentioned above.

Exhibit III-2: 5-Year China Zircon Sand Australian Zr(Hf) 66% Price (In Ports) in US\$/tonne



Source: Bloomberg

Exhibit III-3: 5-Year China Zircon Sand Indonesian Zr(Hf) 66% Price (CIF) in US\$/tonne

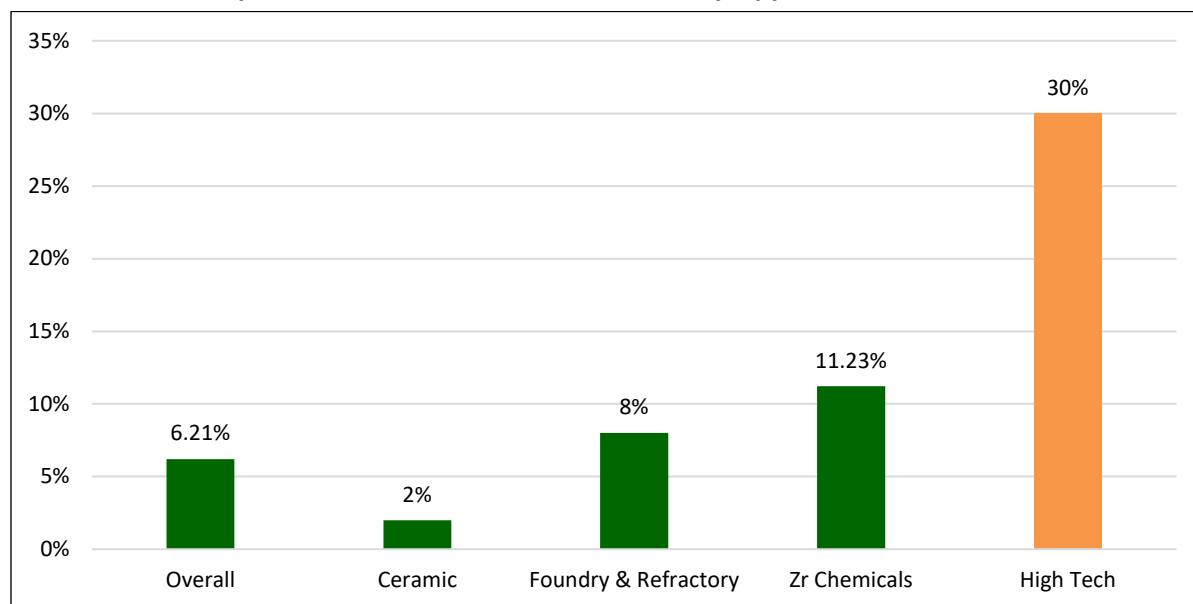


Source: Bloomberg

3.2 Zircon Supply and Demand Dynamics

High-tech applications are believed to maintain their rapid growth going forward. Though ceramic remained the segment dominating the use of zircon in the past decade, its market share with respect to zircon demand has reduced to below 50% currently because of its meager CAGR of 2%. In contrast, zircon chemicals and in particular high-tech applications have grown at double-digit-percentage rates and gained market share at the expense of ceramic.

Exhibit III-4: Comparison of CAGR of zircon demand by Applications



Source: ResearchAndMarkets, 360MarketUpdates, Cedrus' analysis

There is a consistent imbalance of demand and supply for zircon globally. Zircon demand remains robust in general with a projected CAGR of 2.7% during the 2019-2023 forecast period², led by rising demand in China. On the other hand, zircon supply continued under pressure in 2021 attributable to continued disruptions of production worldwide in wake of the COVID-19 pandemic and other factors.

According to an estimate by Iluka Resources, the public health crisis caused by the novel coronavirus has reduced global zircon supply by approximately 10%. Besides that, owing to limited spare production capacity at existing producers, anticipation of no new supply of material quantity at least in the short and medium terms, while resources of existing mines continue to be depleted or undergoing degradation, global supply is forecast to fall by 3.6%. Furthermore, because of the many distinctive characteristics of zircon like high refractive index, high melting point and sturdiness among others, there is no perfect substitution for zircon although certain materials possessing some properties of zircon can be used as substitutes in a restricted number of applications.

² TZ Minerals International ("TZMI")

IV. CONCLUSION

During 2021, PYX created substantial value for its existing and prospective shareholders alike. For illustration, some examples are listed below.

- The Tisma acquisition added JORC-compliant mineral resources and contained zircon by 109% and 75% respectively to PYX, making it the zircon-producing company with the world's second-largest zircon resources;
- Excellent execution by the highly-accomplished management team allowed the Company to deliver a 10% production growth on a yearly basis despite the COVID-19 crisis and flash floods;
- Increased zircon price for four times by US\$910 a tonne in aggregate to US\$2,305 per tonne at year-end 2021 and strong yearly sales growth of 39%, backed by especially strong demand for its premium zircon;
- Successfully marketed its premium zircon product in the form of fused zirconia to a Chinese company for manufacturing high-tech products, which are expected to register highest growth ahead among all applications; and
- Successfully dual-listed its shares on LSE, giving the Company the possibilities for diversifying its investor base and access to the largest capital pool in Europe.

PYX continues to announce good news in 2022. Following a successful share placement in June 2021 for a fundraising of US\$8.4 million before expenses, the Company disclosed the share placement to the US-based L1 Capital Global Opportunities Master Fund potentially for a total of US\$13.5 million. Moreover, PYX raised its premium zircon price on 21 March 2022 by 34% to US\$3,100 per tonne, which represents a surge of 135% since the start of 2021.

In view of its string of accomplishments and the bullish outlook for the zircon market, we reiterate an Overweight rating on PYX with a 12- to 18-month price target of AU\$3.35, representing an upside potential of about 158% over its shares closing price of AU\$1.30 as of 22 March 2022. Our valuation is based on a very conservative zircon price of US\$2,100 per tonne relative to the prevailing price and our price projections. Hence, we recommend investors to either take a new position or add to an existing position to capitalize on this opportunity.

IMPORTANT DISCLOSURES

STOCK OWNERSHIP AND CONFLICT OF INTEREST DISCLOSURE

- Neither Dr. Thomas Kenny, Charlie Yang nor any member of the research team or their households is an owner of PYX Resources Limited common shares.

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