

**Overweight** 

Price Target: AU\$3.35

# **PYX Resources: Sector Outperformer Due to Double Push** from Premium Priced Indonesian Zircon and Successful **LSE Dual Listing**

#### Introduction

PYX Resources Limited ("PYX") is a leading and fast-growing premium zircon producer with significant growth potential in output and profitability. After the acquisition of Tisma mineral sands deposit ("Tisma"), PYX now oversees the world's 2<sup>nd</sup>-largest zircon resource base among producing mineral sands companies. The company recently completed its dual listing on the Main Market of the London Stock Exchange, enhancing its international profile, increasing share liquidity, potentially expanding its investor base, and gaining access to a much larger capital market. Besides, robust zircon price is expected to persist even beyond the COVID-19 pandemic period, benefitting premium zircon producers like PYX. We believe PYX has great potential as a result of expectations of its continuation of rising extraction and production of premium zircon to supply the mineral's wide array and rapidly-growing end markets for years to come.

#### **Recommendation Summary**

- We continue our coverage of and reiterate an Overweight rating on PYX (NSX: PYX, LSE: PYX) as well as increasing our 12- to 18-month price target by roughly 12% from AU\$3.00 (GBp 165) to AU\$3.35 (GBp 184), representing a potential upside of around 91% over its closing price of AU\$1.75 (GBp 96) as of 17 November 2021;
- PYX is the world's leading premium-zircon producer, and its resource base has the highest weighted average heavy mineral ("HM") assemblage value in the industry. Acquisition of Tisma boosts PYX's contained zircon resources by 75%, leading it to become the producing mineral sands company in the world with second-largest JORC-compliant zircon resources. According to our analysis, HM assemblage value is strongly correlated with market valuation of a mineral sands producer. Hence, we expect PYX's shares to trade at the high end of the valuation range on a per tonne of HM resource basis within its peer group;
- During the latest strong up-cycle of the mineral sands industry, PYX has increased its premium zircon prices for four times already thus

Revenue Growth (yoy): 20.7% far this year: increased US\$75 per tonne in March, followed by US\$70 Gross Profit Margin: 12.9% per tonne in May and another US\$210 per tonne in June for July 2021 shipments. In September, PYX announced the biggest price increase to-date of US\$555 per tonne, with total increase of US\$910 per tonne since the beginning of 2021. Currently, the effective net price of the company's premium zircon stands at US\$2,305 per tonne;

On 8 November 2021, U.K. financial regulatory body Financial Conduct Authority ("FCA") approved PYX's prospectus (the "Prospectus") in relation to the admission of the company's ordinary shares to the standard listing segment of FCA's Official List and their trading on the Main Market of the London Stock Exchange ("LSE") through dual listing. PYX's shares started trading on LSE on 15 November 2021. The LSE dual listing would bring the benefits of improving share liquidity, potentially expanding the company's



Share Price (as of 17 Nov 2021): AU\$1.75 and GBp 96 12- to 18-month Target Price: AU\$3.35 (GBp 184)

Market Cap (as of 17 Nov 2021): AU\$751.7M (GBP 413.4M) **Total Shares Outstanding:** 429.5 M

Dividend and Yield: N/A

Financial Data (1H 2021):

Revenue: US\$4.66M

investor base by allowing investors from the large capital market in Europe to participate in PYX's growth via becoming its shareholders, and enhancing the company's international profile;

• Favorable market conditions are expected to persist, serving a powerful tailwind for the strong performance of PYX's share price. With Australia taking part in the AUKUS initiative (a trilateral security pact with the U.S. and U.K. announced in September 2021), the bilateral ties between China and Australia have worsened, as the former views the alliance as a military threat to its safety and interests. The escalated tension has brought additional uncertainties to mineral sands (including zircon) being imported to China (world's largest zircon consumption market) from Australia (major zircon producing country). This is evidenced by the notable gap between price of Australian zircon and Indonesian zircon of the same grade, with the latter being premium priced.

At present, PYX has two projects located in the prolific zircon deposit region in Central Kalimantan of Indonesia, with the Mandiri project already in production, while the Tisma project is expected to commence production in 2022. Thus, PYX is well positioned to benefit from being a zircon supplier sourcing from Indonesia instead of Australia, especially with respect to demand from Chinese customers. In addition, higher prices of its premium zircon also bode well for both revenue growth and margin expansion. Specifically, 2021 and 2022 revenue for PYX is projected to grow nearly 160% YoY and almost 100% YoY respectively, while the company's net profit margin is estimated to turn positive at 9.5% this year before boosting to 48.5% next year; and

• We have increased our PYX's 12- to 18-month price target by about 12% to AU\$3.35 from AU\$3.00 because (i) de-risking measures taken in the past 12 months, including the recent success in dual listing PYX's shares on LSE, raising AU\$11.2 million (before expenses) earlier this year; (ii) enhancement of its operating results in 1H 2021 (with zircon's sales volume and output rising a respective 14% and 25% despite the lingering of the novel coronavirus) is likely to repeat because of the likelihood of generating additional revenue from rutile and ilmenite, production capacity increases, as well as starting in-house mining for production cost reduction; and (iii) upward momentum of the company's premium zircon prices would remain amid the anticipated persistence of supply and demand imbalance;

Moreover, **PYX** shares are undervalued in accordance with our valuation analysis in which the company's current JORC-compliant resources of 10.5 million tonnes of contained zircon and 14.9 million tonnes of valuable HM, boosted by about 75% and 59% respectively after the acquisition of Tisma, are used. The result is that **PYX's implied equity value ought to be US\$1,084 million (AU\$1,465 million), close to doubling its latest market capitalization of AU\$751.7 million**.

 Given the positives we have pointed out above, we believe PYX represents a good investment choice for long-term investors in view of its risk and reward profile.

Notes: Unless otherwise stated, AU\$1 = US\$0.74 and = GBp 55 throughout this report.

## I. SUCCESSFUL DUAL LISTING IN LONDON

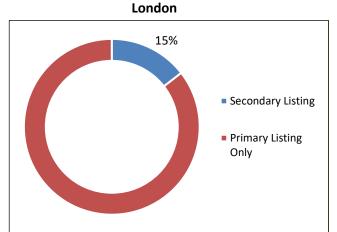
#### Successful Dual Listing on the Main Market of the London Stock Exchange

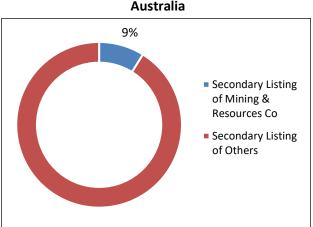
After months of exploring the potential to dual list, PYX announced on 9 November 2021 that the Financial Conduct Authority ("FCA"), financial regulator of the U.K., had approved PYX's prospectus ("Prospectus") regarding the admission of the company's ordinary shares to the standard listing segment of FCA's Official List and trading on the Main Market of the London Stock Exchange ("LSE") through dual listing. The Prospectus was published on 8 November, and PYX's shares started trading on the LSE on 15 November 2021.

Dual listing is a common practice for Australian-listed natural resources and mining companies based on our findings. Largest players in these fields such as BHP Group (ASX: BHP, LSE: BHP) and Rio Tinto (ASX: RIO, LSE: RIO) are among the best-known examples, showing LSE as a popular destination for overseas listing for such companies.

Out of a total of 7,655 listings in London, including both LSE and LSE International, 1,110 are secondary listings (about 15% of the total). This is especially the case for mining and natural resources companies listed on both Australian exchanges (Australian Securities Exchange or "ASX" and National Stock Exchange of Australia or "NSX"). In these Australian exchanges, of the total 451 companies having their shares listed on an exchange abroad as well, 40 of them or approximately 9% of the total are mining and natural resources companies.

Exhibit 1-1: Secondary Listings in London and Australia





Source: Bloomberg and Cedrus' analysis

#### **Benefit of LSE Listing**

Greenlight from the U.K. financial regulator for dual listing on LSE represents an accomplishment for PYX, as we believe it could potentially bring enormous benefits to the company and its shareholders alike.

Launch of the dual listing is in response to increased interest in PYX's shares from family offices and
institutional investors in Europe. Hence, the dual listing allows these investors to participate in the
growth of PYX;

- It can effectively help PYX to raise capital if needed to fund its investment and sustain growth;
- Some U.K. and Europe-based fund managers are mandated to invest only in stocks listed on domestic stock exchanges, so dual listing on the LSE enables them to invest in PYX, potentially expanding the company's investor base;
- It also opens up the possibility of PYX being included in an index comprising shares listed on the LSE, effectively attracting more attention from institutional investors focusing on index investing;
- The LSE dual listing would provide PYX's existing shareholders with improved share liquidity; and
- With the aim of becoming a global zircon player and the fact that it has a diversified portfolio of quality customers in Europe, the dual listing can enhance its international profile further.

Overall, we believe that the dual listing, coupled with expected further price increases of its premium zircon along with ongoing improvement to its financial results will continue alleviate investment risks pertaining to the company and support its valuation so that our new target price can be achieved in the time frame we specified.

### II. RECENT MINERAL SANDS MARKET TRENDS

## China-Australia Relations in Tension, Raising Concerns on China Imposing Ore Import Restrictions

The AUKUS alliance created by Australia, the U.S. and the U.K. in September 2021 has outraged China and further deteriorated the bilateral ties between China and Australia. It is because China is in the view that the security pact would pose a military threat to its safety and damage its interests in the Belt and Road Initiative, among others. In addition, China's likely retaliation to AUKUS could take a toll on Australia's economy, as China is the largest export market for Australia.

China has been levying hefty tariffs and imposing restrictions on a variety of Australian exports, including wine, beef, seafood and barley, together with outright ban on coal imports as discontent responses to Canberra's foreign policies. In the 12 months to July 2021 a record high of AU\$173 billion (US\$128 billion), or more than 35% of Australia's total exports for the period, headed to China, so the stake involved is huge. Those Australia's exports were primarily natural resources such as iron ore, gas and coal. Iron ore has been Australia's largest export item owing to China's robust demand for it as an input during steel production. Steel price set a new record high in May 2021, boosting not only the bottom line of Australian miners but also the country's tax revenue. In July 2021 alone, Australia's metal ore exports reached AU\$19 billion, exceeding 40% of the country's total exports.

Based on the figures mentioned above, if China stops taking delivery of iron ore from Australia, it would have a catastrophic impact on the country's economy. However, China has not taken this step because it would adversely affect its steel industry as well. Having said that, it does not preclude China from targeting other minerals like mineral sands (including zircon) with regard to imposing tariffs, quotas or other restrictions. Even though Australia can find new markets for its mineral sands exports, they are unlikely large enough to offset the losses caused by China.

Share price of Iluka Resources ("Iluka" and ASX: ILU), the Australian-listed global leading mineral sands producer, slumped around 9% on 17 September 2021 alone, following the announcement of defence alliance

one day before, as investors were afraid that China would extend retaliatory measures to include mineral sands. Weakness of Iluka's shares persisted in the following two trading days, resulting in a total loss of approximately 14% in the 3-day period.

10.5 10.3 Around 14% in total losses in 3 10.1 consecutive trading days after the 9.9 AUKUS defence pact announcement 9.7 9.5 9.3 9.1 8.9 8.7 8.5 8-Sep-21 11-Sep-21 17-Sep-21 20-Sep-21 22-Sep-21 9-Sep-21 14-Sep-21 18-Sep-21 23-Sep-21 25-Sep-21 29-Sep-21 24-Sep-21 26-Sep-21 27-Sep-21 28-Sep-21 30-Sep-21 12-Sep-21 16-Sep-21 19-Sep-21 21-Sep-21 1-0ct-21 2-0ct-21 5-0ct-21 10-Sep-21 13-Sep-21 15-Sep-21

Exhibit II-1: Share Price Movement of Iluka (7 Sep 2021 – 6 Oct 2021)

Source: Bloomberg, Cedrus' analysis

Besides Iluka, some players in Australia's mining industry suffered double-digit-percentage losses in a single day on 17 September, evidencing that investor worries are industrywide, not company specific.

#### **Alternative Sources of Supply are Gaining Momentum**

Although Australia has been a major mineral sands producing and exporting country, it does not enjoy a monopolistic status for these economically critical minerals.

In the last couple of years, apart from Australia, other major zircon producers such as South Africa, China and the U.S. have suffered from either zero or even negative production growth. Conversely, Indonesia and Mozambique, both with abundant mineral sands resources, have witnessed remarkable growth in their zircon output in recent years.

As its resources have ultra-high zircon assemblage accompanied by some 76% annual growth in zircon output<sup>1</sup>, Indonesia has replaced Australia as the favorable country for Chinese end users to secure a stable supply of quality zircon given the risks of China taking retaliatory measures against the largest country in Oceania.

<sup>&</sup>lt;sup>1</sup> Based on Mineral Commodities Summaries 2021 version published by USGS

14%
34%
9%
10%
22%

\* Australia \* South Africa \* China \* Mozambique \* USA \* Indonesia \* Rest of the World

Exhibit II-2: Global Zircon Production by Country in 2020

Source: US Geological Survey (USGS)

## **Strong Momentum in Zircon Prices**

Zircon prices have been on an upward trajectory since the beginning of 2021 amid an overall strong recovery in demand as a result of further opening up of the global economy and tightening supplies due to supply chain issues.

Specifically, Iluka reported that its weighted average zircon sand (premium and standard) price in 1H 2021 had gone up 2% from 2H 2020 to US\$1,321 per tonne. In 3Q 2021, the weighted average zircon price rose at a significantly faster pace versus the first six months of the year at almost 13% to US\$1,487 per tonne. The company also announced a further increase of US\$120-170 per tonne with effect from 1 October 2021 and its total zircon sales for 4Q are already fully committed.

Likewise, average selling price of zircon at Tronox Holdings plc (TROX US), another supplier, jumped 10% Q/Q and 13% Y/Y in 3Q 2021, following the 5% Q/Q increase in 2Q. Moreover, the company expects zircon prices to maintain the uptrend in 4Q.

PYX has raised its zircon prices for four times so far in 2021, with the September increase of US\$555 per tonne representing the largest one year to-date. In aggregate, this year's price increases amounted to US\$910 per tonne to US\$2,305 per tonne.

In our view, these prevalent price increases are a reflection of market participants' anticipation that there will be insufficient new supply of premium zircon worldwide through production capacity expansion and new discoveries to satisfy the projected very strong demand, particularly from China where economic growth should maintain a healthy pace going forward.

We believe the resilience of zircon pricing to extend to the medium and long term, driven by supply tightness together with sustainable strength in traditional end markets, including ceramics, refractory coatings as well as fibre optic components, and the widespread adoption of innovative applications such as 3D printing and

implants. In addition, amid the global megatrend of migrating to green (renewable) energy, premium zircon produced by PYX is expected to be in great demand for the production of fused zirconia and other products that help emission reduction. This will give PYX a competitive advantage against peers which can produce only standard zircon, which does not meet the stringent requirement for making fused zirconia.

End products of fused zirconia are used in a wide array of high-tech applications in growing industries such as nuclear power and aerospace. Moreover, fused zirconia can be converted into high-end zirconium metal products for cutting-edge technology applications, including electric vehicle batteries to tackle the climate change problem by minimizing greenhouse gas emissions.

Relatively, Cedrus is more bullish on the outlook of zircon prices as depicted in the exhibit below. Our optimism is based on channel checks and proprietary analysis that the latest price uptrend will persist for the next 5 to 7 years, fuelled by continued robust industry fundamentals and demand outpacing supply in general going forward. Table below shows Cedrus' latest price forecasts till 2024, which is our farthest forecast period at this point alongside an updated summary of the price forecasts by other financial institutions.

Exhibit II-3: Australian 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

Australian mineral sands (including zircon) exports to China, world's largest consumer of these minerals, is at risk, as trade conflicts between these two countries have brought greater degree of uncertainties. Therefore, alternative supply sources such as Indonesia have been preferred by customers in China. This is evidenced by the fact that prices for Indonesian zircon sands in China have consistently received a large premium over prices for Australian zircon sands for the same grade over the past months.

Exhibit II-4: China Zircon Sand Australian vs China Zircon Sand Indonesian Zr(Hf) 66% (US\$/tonne)



Source: Asian Metals, Bloomberg, and Cedrus' analysis

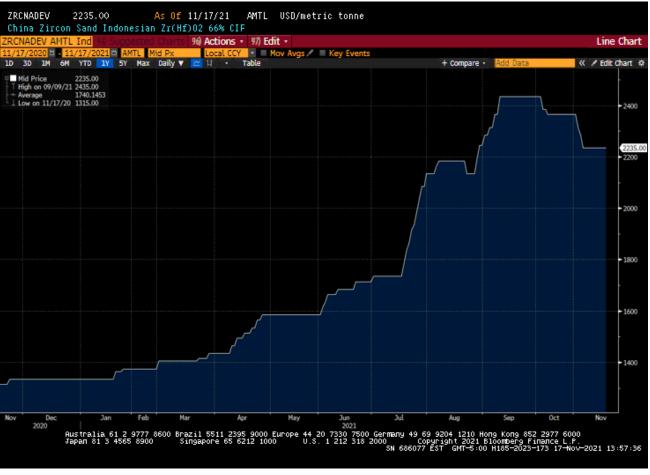
The intensifying geopolitical tensions between China and Australia have been reflected in zircon prices. In the past few months, China zircon sand price Australia has been lower relative to China zircon sand price Indonesia, with China Zircon Sand Australian Zr(Hf) 66% in ports reached historical high of US\$1,865 per tonne in late July 2021 before edging down 2.7% to US\$1,815 per tonne currently. On the other hand, China Zircon Sand Indonesian Zr(Hf) 66% CIF (cost, insurance and freight) set a historical high of US\$2,435 per tonne in early September 2021 before retreating 8.2% to US\$2,235 per tonne in early November.

Increasing demand for Indonesian zircon and subsequently its higher prices appear to have attained at the expense of Australian zircon stemming from the discord between Beijing and Canberra along with intermittent production issues in South Africa. We still believe that current market conditions are in Indonesian zircon's favour so that it has more bargaining power in terms of pricing.

Exhibit II-5: China Zircon Sand Australian Zr(Hf) 66% (US\$/tonne)

Source: Bloomberg

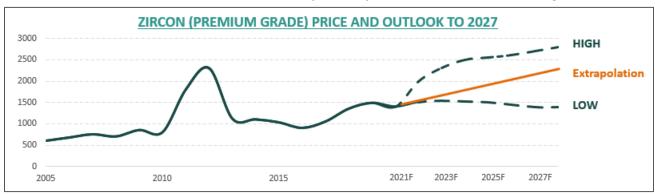
Exhibit II-6: China Zircon Sand Indonesian Zr(Hf) 66% (US\$/tonne)



Source: Bloomberg

Not only zircon producer like Iluka, third-party market research firm TZMI is also optimistic about premium zircon pricing throughout the forecast period between 2021 and 2027 as shown in the exhibit below.

Exhibit II-7. Premium Zircon Price Trend Forecast by Industry Leader and Market Consulting Firm till 2027



Source: Iluka Investor Briefing, TZ Minerals Int'l Pty. Ltd. (TZMI) and Company's analysis

# III. FINANCIALS

#### **Historical Financials and Forecasts**

**Exhibit III-1: Profitability** 

	2019 A	2020 A	1H 2021 A	2021 F	2022 F
Zircon Sold (tonne or "t")	4,936	6,737	3,250	12,000	24,000
Average Realized Price (US\$/t)	1,389	1,329	1,434	1,546	1,586
EBITDA Margin (EBITDA/Sales)	1.3%	N/A	N/A	16.1%	68.4%
Operating Margin (EBIT/Sales)	0.1%	N/A	N/A	14.1%	64.7%
Net Profit Margin (NI/Sales)	N/A	N/A	N/A	9.5%	48.5%

Source: Company reports and Cedrus' estimates

**Exhibit III-2: Income Statement** 

		2019 A	2020 A	1H 2021 A	2021 F	2022 F
Revenue	US\$'000	6,858	8,957	4,660	23,225	45,966
Revenue Growth (yoy)	%	N/A	30.6%	N/A	159.3%	97.9%
EBITDA	US\$'000	86	-1,213 <sup>2</sup>	-1,254	3,740	31,435
EBIT	US\$'000	10	-1,084	-1,347	2,942	29,752
Net Income	US\$'000	-58	-13,821	-1,194	2,198	22,306

Source: Company reports and Cedrus' estimates

**Exhibit III-3: Cash Flow Statement** 

		2019 A	2020 A	1H 2021 A	2021 F	2022 F
From Operations (CFO)	US\$'000	-110	-2,087	-1,096	2,996	21,833
Free Cash Flow (FCF)	US\$'000	-258	-2,924	-1,685	1,142	15,319

Source: Company reports and Cedrus' estimates

**Exhibit III-4: Revenue and Profitability Forecast** 

		2019 A	2020 A	2021 F	2022 F	2023 F	2024F	2025F
Zircon Revenue	US\$'000	6,858	8,957	18,552	38,052	85,860	95,304	114,480
<b>Total Revenue</b>	US\$'000	6,858	8,957	23,225	45,966	102,429	112,381	136,882
EBITDA	US\$'000	86	-1,213	3,740	31,435	72,606	79,657	98,525
EBITDA Margin	%	1.3%	N/A	16.1%	68.4%	70.9%	70.9%	72.0%
Free Cash Flow	US\$'000	-258	-2,924	1,142	15,319	36,943	56,700	61,882
Zircon Cash Cost/t	US\$	1,119	1,153	1,427	532	500	497	489

Source: Company reports and Cedrus' estimates

<sup>&</sup>lt;sup>2</sup> Underlying EBITDA excluded non-recurring items, which are expenses that do not fall within the normal course of business or are not costs that occur every year

# IV. VALUATION

We reiterate PYX's Overweight rating, as its shares are undervalued based on our fundamentals analysis. PYX offers investors access to investment opportunities regarding premium-quality mineral sands including zircon with highest weighted average HM assemblage value through its flagship Mandiri project and the Tisma deposit acquired earlier this year. Both of these assets are located in Central Kalimantan, Indonesia, which is a prolific geological location highly recognized for hosting premium-quality mineral sands, including, zircon, rutile and ilmenite, among others.

Considering the current status of PYX's operations, we have adopted **Comparable Company Analysis ("CCA")** and **Discounted Cash Flow ("DCF")** valuation methodologies to value the company.

By using the CCA method, we analyzed publicly-listed mineral sands mining companies (mostly listed on ASX) with similar business nature as PYX and calculated the median of their Enterprise Value ("EV")/Resource multiples, which are based on the amount of their resources reported in accordance with the JORC Code by these comparable companies. An appropriate EV/Resource multiple is then applied to the JORC-compliant resources reported by PYX to come up with an estimated value of the company.

During the analysis, we have found that there is a significant positive correlation between the EV/Resource valuation metric and the weighted average HM assemblage value of a mineral sands company, as illustrated in Exhibit IV-3 below.

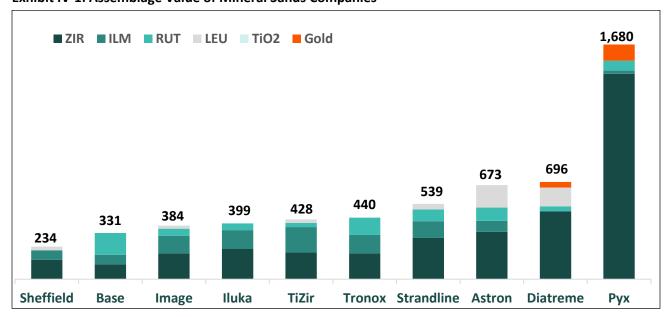


Exhibit IV-1: Assemblage Value of Mineral Sands Companies

Source: Bloomberg, annual reports and announcements of companies, and Cedrus' analysis

Exhibit IV-2: PYX's Valuation Benchmarks against other Listed Mineral Sands Companies/Transactions

Company/ Transaction	Share Price (Local Currency)	Market Cap. (US\$ in MIn)	EV (US\$ in Mln)	Resources (in-situ THM) in Mt	W.A. HM Assemblage Value (US\$)	EV/Resource Multiple (US\$/tonne)
Iluka Sierra Rutile (2019)*	N/A	N/A	600.0	8.2	1,200	75.0
Iluka Sierra Rutile (2016)*	N/A	N/A	336.8	8.2	1,200	41.1
PYX Resources	1.75	556	525.6	14.9	1,680	35.2
Diatreme Resources	0.021	48	47.3	4.7	696	10.1
Astron Corporation	0.4	37	44.9	128.4	673	0.2
Strandline Resources	0.2	169	88.5	29.0	539	3.1
Image Resources	0.195	149	120.7	3.5	399	34.1
Iluka Resources	9.4	3,000	2,848.8	167.8	345	17.0
Tronox Holdings	23.45	3,608	6,091.2	78.1	440	78.0
Tronox Holdings – mining#	N/A	N/A	4,600.0	78.1	440	30.0
Base Resources	0.305	271	196.2	70.9	331	2.8
TiZir Limited (2018)^	N/A	N/A	525.0	26.2	313	20.0
Kenmare Resources	425	643	718.0	185.6	350	3.9
Sheffield Resources	0.33	86	81.4	223.0	234	0.4

Notes: THM = Total heavy minerals; Mt = Million tonnes

Source: Bloomberg, annual reports and announcements of companies, and Cedrus' analysis

<sup>\*:</sup> Iluka Sierra Rutile (2019) valuation is based on International Finance Corporation's investment of US\$60 million on the 10% stake of Iluka's Sierra Rutile in 2019; while Iluka Sierra Rutile (2016) valuation is based on Iluka's acquisition of Sierra Rutile Ltd. for US\$337 million in 2016. Both with assemblage value of US\$1,200 per tonne, which is the spot price for rutile

<sup>#:</sup> Based on unconfirmed Apollo Global Management's bid and Cedrus' analysis

<sup>^:</sup> 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 the Euronext Paris Exchange.

EV/Resource (US\$/t) 90 Overvalued TROX 80 Iuka Sierra Rutile (2019)\*70 60 **Upside** 50 **Potential** Iuka Sierra Rutile 40 (2016)\*ILU TROX Apollo 30 (2021)Pyx 20 TiZir IMA Undervalued (2018)DRX 10 **BSE** STA KMR SFX ATR Weighted Average HM Assemblage Value (US\$/t) 0 750 950 150 350 550 1,150 1,350 1,550 1,750

Exhibit IV-3: Correlation of EV/Resource Multiple and Assemblage Value of Mineral Sands Companies

Source: Bloomberg, Reports and Announcements of companies, and Cedrus' analysis

Therefore, based on PYX's assemblage value of US\$1,680 per tonne, which is calculated in accordance with the assumed zircon price of US\$2,100 per tonne, a conservative figure, as the prevailing zircon price of Indonesian zircon is around US\$2,300 per tonne. Our analysis suggested that PYX should be traded at approximately US\$65-70 per tonne of defined HM resources. Thus, the valuation of PYX, based on its 14.9 million tonnes of JORC-compliant resources, should be approximately US\$1,005 million (AU\$1,360 million), or about 80% higher than its current market capitalization of AU\$751.7 million, representing a notable upside that should be particularly appealing to long-term investors.

Our **DCF model** is constructed based on the scenario that all the JORC-compliant mineral resources as defined in the resources report can be extracted and produced at the long-term production capacity levels. A risk-adjusted (real) discount rate of 12% is applied to derive the valuation. Accordingly, the **net present value** ("NPV") **of PYX** (including the Mandiri operation and Tisma deposit) using the DCF valuation methodology **is US\$1,075 million**.

We combined the results of the two valuation methods as mentioned above, adjusted for cash balance, minority interest, and management's performance shares and arrived at **PYX's implied equity value of US\$1,084 million (AU\$1,465 million)**. This is our near-term (12- to 18-month) valuation target, corresponding to a share price of AU\$3.35 and representing an approximately 91% potential increase of the company's shares over its closing price of AU\$1.75 on 17 November 2021.

Given the nature of PYX's business, the current status of its operations, strong shareholder support, access to premier capital markets, and highly favorable zircon market conditions, we believe the above valuation is reasonable and our upwardly revised target price can be reached within the next 12 to 18 months.

**Exhibit IV-4: Key Valuation Metrics** 

Valuation Metrics	
Market Capitalization (as of 17 November 2021)	AU\$751.7 million
Total Outstanding Shares	429.5 million
Estimated Performance Shares to be Issued to PYX's Management	7.4 million
Estimated Total Outstanding Shares	436.9 million
Enterprise Value	US\$1,075 million
Implied Equity Value (US\$)	US\$1,084 million
Implied Equity Value (AU\$)	AU\$1,465 million
PYX Share Price (as of 17 November 2021)	AU\$1.75
12- to 18-month Target Price	AU\$3.35
Upside Potential	+91%

Source: Company reports, Bloomberg and Cedrus' estimates

#### V. CONCLUSION AND RECOMMENDATION

- PYX has raised the price of its premium zircon for four times so far this year for a total of US\$910 per tonne to US\$2,305 per tonne. The main catalyst driving such a magnitude of increase is a general tightness in premium zircon supply globally amid strengthening demand, as the negative impact from the COVID-19 pandemic is diminishing. The unique quality of PYX's zircon product such as low aluminum oxide, uranium and thorium content, which boasts whiteness and low radioactivity, is another important factor.
- The company has achieved the milestone of dual listing its shares on the Main Market of the LSE with trading commencing on 15 November 2021. The LSE listing benefits not only existing shareholders in terms of enjoying enhanced liquidity of PYX's shares and potentially the increases of the share prices but also prospective investors who can participate in the growth of the company's business. From PYX's perspective, the dual listing also facilitates access to a larger capital market and a broader shareholder base.
- Going forward, PYX will also be buoyed by the following positive development:
  - Start of in-house mining that will lower costs of production and boost margins. The Mining Field
    Unit acquired for the Mandiri project is currently undergoing trials to determine exact extraction
    and technical specifications;
  - The company plans to upgrade its annual heavy mineral concentrate output capacity to 40,000 tonnes after the completion of the trials of the Mining Field Unit, while lifting the annual

processing capacity of the mineral separation plant of the Mandiri project by one-third to 24,000 tonnes from 18,000 tonnes currently;

- Upon receiving the IUP license extension to include rutile and ilmenite from the central government of Indonesia, PYX can add them to its sales mix, generating two more revenue streams; and
- The Tisma project could begin initial production as early as 2022, empowering PYX to secure a stronger market position.
- To conclude, in our view, with all the above-mentioned tailwinds, PYX should be able to deliver further improvement to its financial performance and win investors' confidence such that it is very likely for the company's shares to reach our new price target of AU\$3.35 in the next 12 to 18 months. Therefore, we recommend investors to either take a new position or add to their existing positions to take advantage of the opportunity of achieving a return of about 91% based on PYX's closing price of AU\$1.75 on 17 November 2021.



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#### STOCK OWNERSHIP AND CONFLICT OF INTEREST DISCLOSURE

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Dr. Thomas Kenny and Charlie Yang hereby certifies that the views expressed in this research report accurately reflect his personal views about the subject companies and their securities. He also certifies that he has not been, and will not be, receiving direct or indirect compensation in exchange for expressing the specific recommendations in this report.

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