

Overweight
Price Target:
AU\$3.40/GBP195

PYX Resources: Raising Target Price on Another Year of Success with Multiple Operational Milestones Delivered

Introduction

PYX Resources Limited (“PYX” or the “Company”) has the world’s second-largest JORC-compliant zircon resources among producers currently in production. It is a leading and fast-growing premium zircon producer with enormous potential to grow output and enhance profitability. Its shares are dual-listed on the London Stock Exchange (LSE: PYX) and National Stock Exchange of Australia (NSX: PYX).

On 8 February 2023, PYX announced its latest Operational Update for the financial year ended 31 December 2022 (“FY 2022”).

This report highlights the Company’s operational and financial performance in FY 2022 with our assessment of its valuation. Analysis made in this report is based on the announced operational milestones achieved by PYX and our view of the market conditions going forward.

Some of PYX’s key achievements in FY 2022 are as follows:

- a) Raising its premium zircon prices in March 2022 for the fifth time since January 2021, resulting in FY 2022 average sales price of US\$2,457 per tonne, representing an increase of 36% year over year (YoY);
- b) Beginning the production and sales of titanium dioxide minerals (rutile and ilmenite) after completing the expansion of its Mineral Separation Plant’s capacity to 24,000 tonnes per annum (“tpa”), with total titanium dioxide mineral output volume of 7.5 kt (kilotonne) and sales volume of 0.3kt;
- c) Appointed an existing prestigious independent director of the Company with in-depth geological background and executive management experience as a new member to its board of directors; and
- d) Obtained investment commitments for GBP20 million and US\$13.5 million to accelerate its production volume growth at its Mandiri deposit and development of the Tisma project, both in the prolific Central Kalimantan province in Indonesia.



P Y X
RESOURCES

Share Price (as of 13 Feb 2023):

AU\$0.55/GBP17.55

12- to 18-month Target Price:

AU\$3.40/GBP195

Market Cap (as of 13 Feb 2023):

AU\$244.1M/GBP77.9M

Total Shares: 441.3M

Dividend and Yield: N/A

Recommendation Summary

- a) We continue our coverage of PYX and reiterate an **Overweight** rating with a **new 12- to 18-month price target of AU\$3.40** (up about 1.5% from the previous target of AU\$3.35), representing an upside potential of roughly 518% over its closing price of AU\$0.55 as of 13 February 2023.
- b) PYX is in possession of a total of around 264 million tonnes of JORC-compliant mineral resources, with 10.5 million tonnes of contained zircon. Its Mandiri deposit is the largest zircon discovery worldwide since 2012 with zircon resources of 6 million tonnes. The Company’s zircon resources are not only enormous but also with one of the industry’s highest weighted average heavy mineral (“HM”) assemblage value of US\$1,680 per tonne. Due to easy extraction and low mining and processing cost as well as significant exploration potential, PYX should benefit tremendously from its premium zircon assets.



- c) Based on our analysis, we see PYX shares trading at the very high end of the valuation range on a per tonne of HM resource basis among its peers in the short term;
- d) Importantly, we believe PYX is well positioned to grow further, continue to win investor support, and take advantage of the expected favorable market momentum as a result of its management team's track record of execution in **achieving operational targets and milestones**, including capacity expansion, new product production and sales, consistent sales volume growth, customer diversification and robust sales price according to plans coupled with **meeting expectations of the market and shareholders**; and
- e) **In our view, business prospects for the mineral sands industry remain resilient, while zircon demand continues to be particularly robust**, as sustainable long-term demand is fueled by persistent global economic growth, ongoing improvement in standard of living in developing countries together with widespread applications of innovative and disruptive technologies related to nano-materials and nano-structures and other areas. Moreover, the resurgent economy of China after its re-opening from COVID-related restrictions and lockdowns should bode well for pent-up demand. Furthermore, anticipated tight supply of premium zircon arising from the absence of discovery of sizable zircon deposits in recent years amid strong demand will likely lead to shortages and pushing prices even higher.

Note: Unless otherwise noted, the AU\$:US\$ exchange rate of 1:0.74 is used in all calculations in this report.



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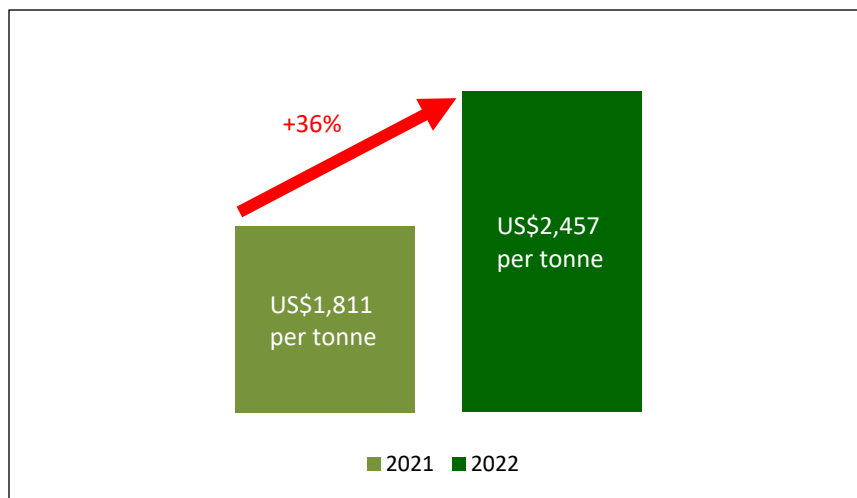
I. OPERATION UPDATES

On 8 February 2023, PYX issued its latest Operational Update for the financial year ended 31 December 2022 (FY 2022), revealing major operational milestones accomplished during the period.

1.1 Zircon Price Increase

During FY 2022, PYX managed to further increase the price of its premium zircon, the Company's core product. This marks one of the critical factors in contributing to PYX's outstanding financial performance in FY 2022. On 21 March 2022, PYX announced another 34% hike to its premium zircon price to US\$3,100 per tonne from US\$2,305 per tonne with immediate effect. It represented an aggregate increase of 135% since the start of 2021. Overall, the average zircon price rose from US\$1,811 per tonne in FY 2021 to US\$2,457 per tonne in FY 2022. This latest price increase is the fifth one in a row in just 12-months, which reflects the positive market dynamics for premium zircon and validates PYX's investment focus on advancing its ambitious expansion plans at the Mandiri deposit and bringing the Tisma deposit into production to maximize the economic potential of these assets.

Exhibit I-1: PYX's Yearly Average Premium Zircon Price



Source: PYX

The strength in zircon price throughout 2021 and into 2022 was primarily due to the dramatic growth in zircon demand, stemming from increasing adoption of several technology-based applications including renewable energy technologies. Zirconium-based alloys are swiftly becoming the more desirable materials in the global drive to realize low-carbon electricity generation, while zircon compounds are integral to the manufacturing of catalytic converters, which convert pollutant gases produced by motor vehicles into less harmful ones. Meanwhile, global supply capacity growth was lagging owing to several factors such as the continued production setback in South Africa, declining ore grades of known zircon deposits, and the absence of significant new supply entering the market. The resultant imbalance in supply and demand was the principal driving force behind the price surge.

Ongoing supply shortages are expected for the foreseeable future, as strong demand is predicted to persist, particularly from China. The world's second-largest economy has shifted its priority back to economic growth after abruptly dismantled in early December 2022 the almost three-year-old Zero-COVID policy and its 2022

GDP expansion slumped to 3%, the lowest level in nearly 50 years. To revive demand, China’s policymakers intend to materialize domestic consumption power of about 1.4 billion people besides resorting to giving support to key industries and building out infrastructure for growth. World Bank data shows that household consumption in China is almost 20 points below the global average. This data point truly justifies policymakers’ intention. In fact, some local governments have already introduced measures to spur domestic demand. Since last December, a few cities in China have offered consumption vouchers and subsidies in the amount of approximately five billion yuan in total.

1.2 Sales of By-products – Titanium Dioxide Minerals

On 7 December 2020, PYX received the approval for its Production Operation Plan and Budget 2021, which covers a lot of areas such as mining operation, processing, marketing and shipping of zircon, rutile and ilmenite, from the Energy and Resource Service Department of the Government of the Province of Central Kalimantan. This represents a milestone for PYX because prior to this approval the Company primarily focused on producing and selling premium zircon. During November 2021, PYX increased the production capacity at its Mineral Separation Plant (“MSP”) of the Mandiri project by one-third from 18,000 tpa to 24,000 tpa, allocating the newly installed capacity for the production of rutile, leucoxene and ilmenite.

Commencement of the production and sales of titanium dioxide minerals (both rutile and ilmenite) enables PYX to add to its product offering and diversify its revenue stream during FY 2022. From January 2022, PYX started production and sales activity of natural rutile from its Mandiri deposit in Central Kalimantan, Indonesia as a by-product, augmenting its primary zircon mining operations. Six months later, the Company began the production and sales of natural ilmenite.

As background information, titanium dioxide is a deep colored, dark mineral, which transforms into a white, opaque powder after being processed. It is mostly used as a pigment, which is a key component in the manufacture of paint, plastic, paper, and fiber. It can be found in many aspects of our daily lives, including house and car paints, plastic pipes and packaging, laminates, inks, clothing, sunscreen, toothpaste, and cosmetics.



Moreover, titanium dioxide is also vital in producing titanium metal, which is favored for its durability, sturdiness, chemical impermeability, high melting point, low conductivity, and the highest strength to weight ratio of all metals. Therefore, it is critical in many high-tech applications in a great variety of fields, including aerospace, military, nanomaterials, solar cells, and medical (implants and cancer treatment). In addition, high-grade titanium feedstocks is also deployed in welding.

More specifically:

- **Rutile (TiO₂)** is used in the manufacture of titanium dioxide, which is increasingly used in many industries such as construction, automotive, packaging, and electronics. It has one of the highest refractive indices at visible wavelengths of all known crystals. Combined with substantial double refraction and high dispersion, it is commonly utilized in the manufacture of certain optical elements,



especially polarization optics, for longer visible and infrared wavelengths up to about 4.5 micrometers (μm). Given its growing demand from various industries, the rutile market size is forecast to reach US\$4.1 billion by 2025 with a projected compound annual growth rate (“CAGR”) of 4.8% during 2020-2025¹. Like zircon, the rutile market is fast-growing given its increased usage in the high-tech and automotive markets.

- **Ilmenite (FeTiO_3)** is a common mineral found in nature. It is a weakly magnetic, black or steel-gray solid. From a commercial perspective, ilmenite is the most important ore of titanium. Ilmenite is used to produce synthetic rutile for feedstocks in the production of titanium dioxide pigment, which accounts for around 90% of global titanium feedstock consumption.

Average annual growth rate of this segment is estimated to be broadly in line with the pace of global GDP expansion. Within the segment, titanium metal has experienced stronger growth due to its increasing deployment in body and engine parts for aeronautics, defense applications, biomedical and sporting goods. Titanium feedstock production represents an approximately US\$4.5 billion per annum market.

The entering into the rutile and ilmenite markets is the prudent step taken by PYX. Expanding product offering should constitute an integral part of the Company’s growth strategy so as to meet the needs of its increasingly diverse and growing customer base worldwide. From a strategic point of view, it is also a right move. Australian government sees zircon, rutile and ilmenite as critical among 24 metals, nonmetals and minerals, and they are considered vital for the economic well-being of the world’s major and emerging economies, yet whose supply may be at risk².

1.3 Appointment of a New Board Member

As a result of the unforeseen passing of a previous director, PYX appointed Dr. Raden Sukhyar as a Non-Executive Director on 28 November 2022 with immediate effect. This appointment marks not only a new addition but also brings tremendous added value to PYX’s board in view of Dr. Sukhyar’s extensive past experience and diverse expertise in the mining industry.

Dr. Sukhyar is a highly-respected geologist and Indonesian executive with vast experience and abundant technical know-how as a seasoned geologist as well as knowledge of operating in Indonesia, including key government roles. His credentials include:

- Head of the Indonesia Geological Agency (2008-2013);
- Director General of Mineral and Coal, Ministry of Energy and Mineral Resources (2013-2015);
- Adviser to the Minister of Industry of the Republic of Indonesia (2016-2019);
- Commissioners of state-owned mining enterprises such as PT Timah (2002-2008), PT Aneka Tambang (2011-2015), and PT Pertamina Geothermal Energy (2006-2009);
- Independent commissioner of PT Vale Indonesia (since 2018);
- Chairman of Indonesia Smelters and Mineral Processing Association (2015-2017);
- In charge of strategic policy making in Indonesia:

¹ Industry ARC Research Rutile Market – Forecast (2022-2027) <https://bit.ly/3K3gVwL>

² Australian Government, Australian Critical Minerals Prospectus 2021 <https://bit.ly/3qfYInX>

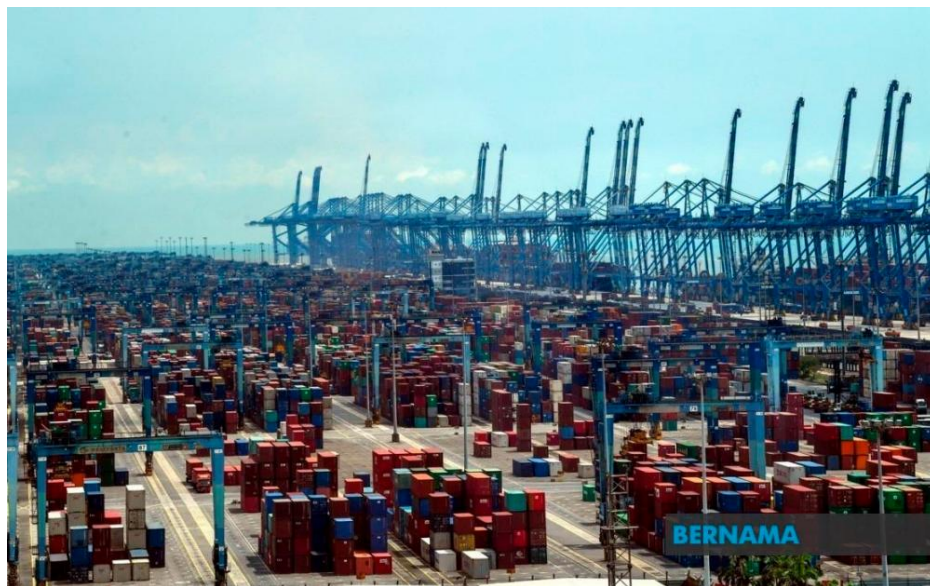
- Chairman of Geothermal Bill Drafting – became Law on Geothermal No. 27/2003; and
- Chairman of Mineral and Coal Mining Bill Drafting – became Law on Mineral and Coal Mining No. 4/2009.
- Adviser to professional associations such as:
 - The Indonesian Association of Geologists (“IAGI”);
 - The Association of Indonesian Mining Professionals (“PERHAPI”);
 - Indonesian Mining Association.
- Chairman of Steering Committee of the Cooperating Committee for Geoscience Programs in East and Southeast Asia (“CCOP”) (2010-2013); and
- He is also the medalist of:
 - Lasut Charter Award from the Indonesian Association of Geologists (1991); and
 - Merit Medal for Working Dedication (Wirakarya) by the President of The Republic of Indonesia (2009).

We believe the new addition of Dr. Sukhyar will further enhance the competence and diversity of PYX’s board and create value on a persistent basis to its stakeholders.

1.4 Commencement of the Operations at the Strategic Logistics Facility in Malaysia

At the end of November 2022, PYX also made an important change to its product logistics and inventory management strategy by using the infrastructure of Port Klang in Kuala Lumpur, Malaysia. Port Klang is situated on the west coast of the Malay Peninsular on the Malacca Strait and on one of the busiest global shipping lanes. It is also the second-biggest port in the Southeast Asia region, marginally outside of the world’s top-10, with its traffic reaching 13.7 million twenty equipment unit (“TEU”)³ in 2021.

Exhibit I-2: Port Klang

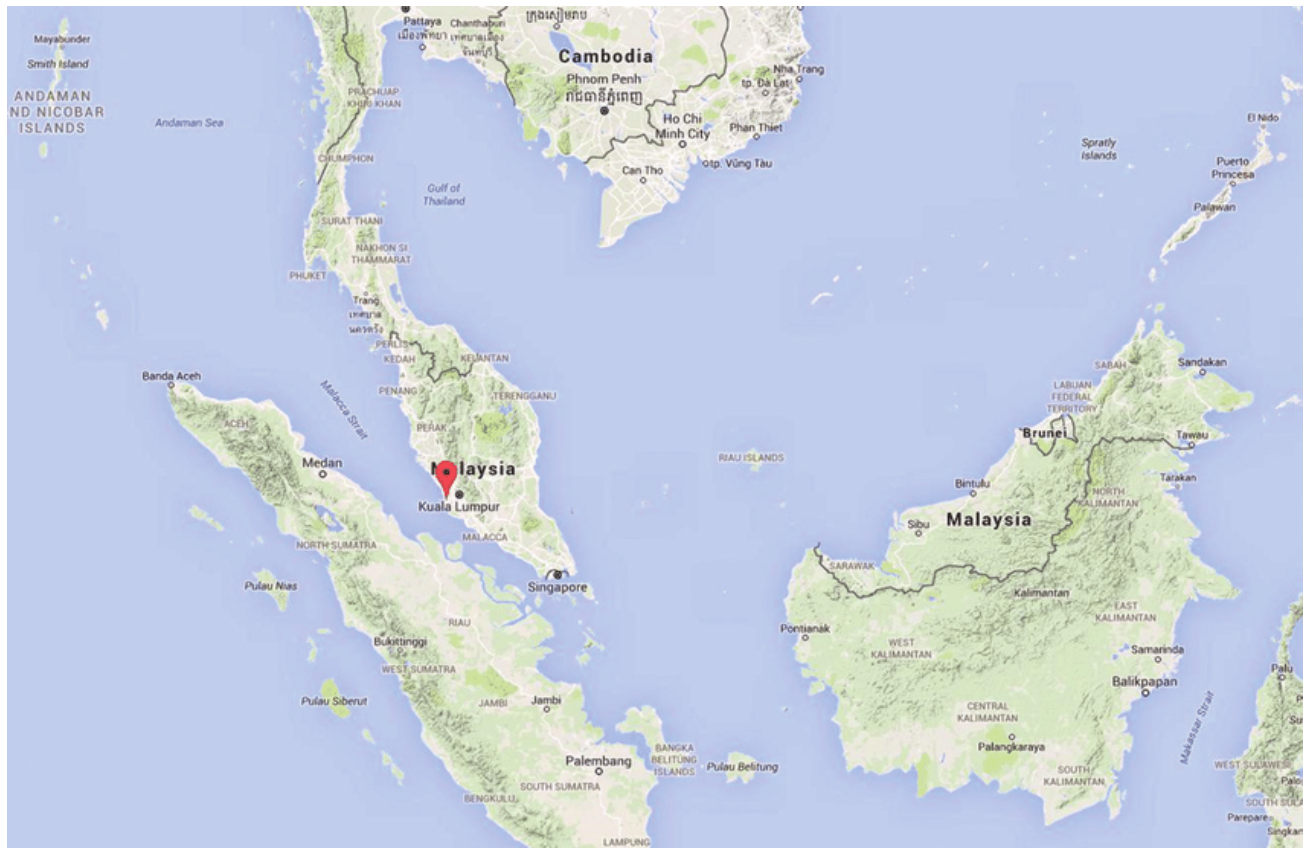


Source: Sun Daily and Bernama

³ An acronym used in logistics. It also refers to a 20-foot container

Compared to PXY’s previous logistics provider in Banjarmasin⁴ of Indonesia, Port Klang has the benefits of better connectivity, more competitive port facility, higher efficiency, lower cost factors, more advanced information systems and a green port management. PXY also obtained the Free Commercial Zone permits from Port Klang, allowing it to carry out trade and commercial activities⁵.

Exhibit I-3: Location Map of Port Klang in Kuala Lumpur, Malaysia



Source: *Marine Traffic Density Over Port Klang, Malaysia, Journal of ETA Maritime Science · January 2017*

The new logistics hub will benefit exceptionally both PXY and its international clients alike by reducing shipping time to end-use markets (by as much as several weeks relative to shipping directly from Banjarmasin), increasing predictability of shipments and onward arrival times, as well as cutting costs. Owing to its strategic location and being one of the busiest ports around the globe, it is much easier to ship products from Port Klang to many key markets such as India, Europe and Americas, with reduced shipping costs. It fits into the Company’s vision of continued expansion of its customer base geographically.

In addition, the new storage option at Port Klang associated with the new logistic solution provides a well-placed buffer stock to avoid the effects of seasonal storms and other supply chain issues, which have hampered global supply chains although the severity reduced recently.

⁴ A city located on a delta island and was the capital of South Kalimantan province

⁵ Port Klang, Malaysia <https://www.pka.gov.my/index.php/en/facilities/free-zone>

II. Company's Achievements

In addition to achieving various operational milestones as analyzed above, PYX also continued to deliver notable improvements financially, with impressive 1H 2022 results, further positive news in Q3 2022, and appealing FY 2022 operational performance.

2.1 Positive 1H 2022 Results and Encouraging Operational Performance in FY 2022

On 13 September 2022, PYX announced its half-yearly results for FY 2022, with positive underlying EBITDA for the first time and a remarkable YoY revenue growth of 128% to US\$10.6 million, contributed from both a 92% increase in realized premium zircon price and a 163% uplift in total mineral sands production after rolling out titanium dioxide mineral output. Moreover, PYX also limited negative operating cash flow, maintained the debt free status, and further strengthened its cash position to US\$7.7 million.

Importantly, PYX not only recorded tremendous sales growth in 1H 2022 but also achieved diversification of its sales in the period. PYX continue to sell its products into various countries such as the U.S. and Japan, as well as new industries for high-tech applications.

In Q3 2022, PYX continued to deliver strong financial performance, registering a 129% YoY growth in total production volume and a 66% YoY increase in total product sales volume over the corresponding period in FY 2021, as PYX announced on 8 November 2022. In the nine months ended 30 September 2022, PYX produced 12.7kt and sold 6.4kt of premium zircon, rutile, and ilmenite, resulting in a production increase of 153% YoY and an overall 34% YoY rise in sales.

In the 12 months ended 31 December 2022, PYX produced 16.6kt and sold 9.5kt of premium zircon, rutile, and ilmenite, resulting in a YoY production growth of 129% and a YoY sales volume increase of 38% YoY. More precisely, premium zircon output jumped 25% YoY to 9.1kt whereas its sales grew 33% YoY to 9.1kt as well. The sold-out status indicated strong demand for the product. The Company also expanded its finished goods inventories to 7.3kt, mainly attributable to bringing rutile and ilmenite production on stream. PYX plans to export the titanium dioxide materials upon being granted an export licence.

The latest Operational Update for FY 2022 further confirms the sustainability of PYX's strong performance on its operations, including the significant increase in zircon production and sales volume growth together with a robust average selling price for zircon as illustrated in the following exhibit.

Exhibit II-1: Performance of PYX's Operations

	FY 2022	FY 2021	YoY Change
Zircon Produced (kt)	9.1	7.2	+25%
Zircon Sales (kt)	9.1	6.9	+33%
Titanium Dioxide Minerals Produced (kt)	7.5	-	
Titanium Dioxide Minerals Sold (kt)	0.3	-	
Yearly Average Price for Zircon (US\$/tonne)	2,457	1,811	+36%
Total Produced (kt)	16.6	7.2	+129%
Total Sold (kt)	9.5	6.9	+38%

Source: PYX

PYX's outstanding operational and financial performance in FY 2022 set the foundation for its long-term growth, as the data serves as a testament to the quality of its assets alongside the capability of its system and team following the additions to its product offering and the utilization of better logistics provided by Port Klang with respect to the port's infrastructure and storage facilities.

With aggressive growth plans in place to capitalize on projected strong global demand for its products, we believe PYX is well positioned to deliver shareholder value on an ongoing basis and will continue to make progress towards its goal of becoming a leading mineral sands producer in the global market.

2.2 Secured Two Investment Commitments

During FY 2022, PYX has successfully secured the following two investment commitments, providing PYX's management with financial resources to further upgrade its mining operations and raise its production volume, fulfilling durable growth.

- A GBP20 million investment commitment from an alternative investment firm in October 2022; and
- A US\$13.5 million share placement to a US-based institutional investor in March 2022.

On 3 October 2022, PYX announced a GBP20 million investment commitment from GEM Global Yield LLC SCS ("GGY"), a US\$3.4 billion alternative investment firm with offices in Paris, New York, and the Bahamas. GGY intends to provide long-term support to PYX through this Capital Commitment Facility. The facility will scale up and upgrade the Mandiri operations along with accelerating PYX's growth plans to eventually emerge as the global leader in zircon production. On 29 November 2022, PYX made its first drawdown on the GBP20 million Capital Commitment Facility with total gross proceeds of GBP402,056 in exchange for PYX issuing 1,030,923 of its ordinary shares to GGY at a price of GBP0.39 per share.

Separately, on 11 March 2022, PYX completed a share placement to a U.S.-based institutional investor, the L1 Capital Global Opportunities Master Fund ("L1"). The share placement amounted to potentially an aggregate value of US\$13.5 million, consisting an initial investment of US\$4.5 million and up to two more tranches of investment of US\$4.5 million each, subject to mutual agreement. The price of the shares to be issued equals to 95% of the average of 3 daily volume-weighted average prices ("VWAPs") over the 15 trading days prior to a share issuance date. The placement will be completed within 24 months, and the proceeds will be used for capital expenditure and working capital, allowing PYX to speed up the execution of its production volume growth plan at the Mandiri deposit and start planning operations at the Tisma project.

On 2 December 2022, PYX and L1 reached a mutual agreement with which L1 will make another investment of US\$2.5 million in PYX. Altogether, PYX has received an initial investment of US\$4.5 million from L1 for US\$5 million worth of PYX shares plus an additional US\$2.5 million investment for US\$2.78 million worth of PYX shares. However, after deducting US\$1.05 million regarding the Subscription Notices issued by L1 on 7 July 2022 and 7 October 2022, the total subscription amount of shares to be issued to L1 was lowered to US\$6.73 million. On 5 January 2023, PYX received the third Subscription Notice from L1 for US\$850,000 worth of its shares. In return, the Company issued and allotted 2,436,438 its ordinary shares with no par value. Following the third Subscription Notice, the Subscription Amount remaining is US\$5.88 million.

We believe that the timing for this funding could not be better, with premium zircon prices generally continuing on the upward trajectory owing to insufficient supply to meet bolstered demand.

III. VALUATION ANALYSIS OF PYX

We have also analyzed and compared the valuation of PYX with its peers in light of market conditions going forward and PYX's corporate planning. Our valuation is comprised of two methodologies, namely discounted cash flow analysis and comparable company analysis.

3.1 Discounted Cash Flow (DCF) Valuation

We have performed a DCF analysis with the following key assumptions to estimate the current value of PYX based on its future cash flow generation by applying a discount rate that in our opinion is appropriate for PYX's operations.

Key Assumptions

According to the Independent Technical Assessment Report ("ITAR"), the Mandiri deposit is in possession of JORC-compliant inferred mineral resources of about 126 million tonnes, which contain 9.4 million tonnes of heavy minerals at a superb heavy mineral grade of 7.43%. Also based on the ITAR, the Tisma project has mineral resources of around 137 million tonnes, containing heavy minerals of 5.5 million tonnes with a high heavy mineral grade of 3.99%.

Our key assumptions include the following:

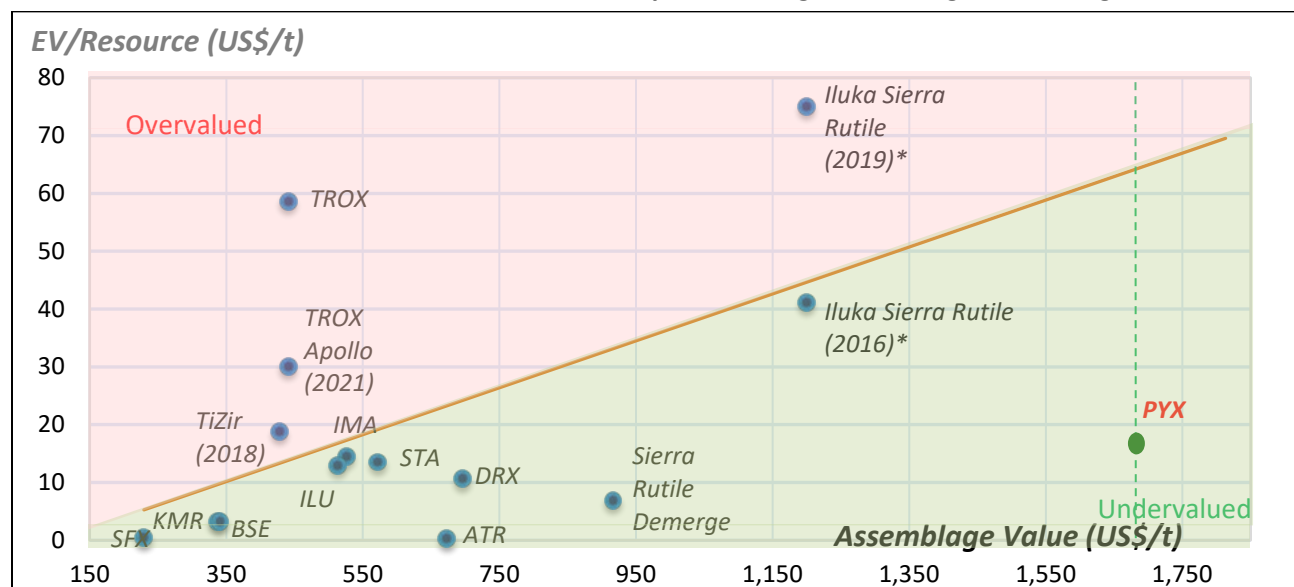
- A risk-adjusted (real) discount rate of 10% was used to reach the valuation;
- Using zircon price of US\$2,100 per tonne, ilmenite price of US\$250 per tonne, rutile price of US\$1,200 per tonne and gold price of US\$1,800 per ounce to determine the valuation;
- Only JORC 2012-compliant mineral resources were used;
- Effective tax rate assumed was 20%;
- Ignoring the likelihood of discovering and developing future new deposits;
- Assuming extra working capital of US\$125,000 is needed to run every 100 tonne per month of additional production/supply;
- All cost assumptions are based on historical or current actual cost structures with a 35% reduction owing to anticipated favorable long-term trend pertaining to the exchange rate between Indonesian rupiah and U.S. dollar from the Company's perspective;
- Export tax calculated based on a rate of 1.5% on free on board ("FOB") price;
- Depreciation of fixed assets is charged at the rate in proportion to Mandiri's production levels. More precisely, on the volume of zircon produced; and
- Artisanal mining and processing using third-party funded equipment co-exist with in-house operations in the next 2 years.

In accordance with the above assumptions, the **net present value ("NPV") of the Mandiri operations using the DCF method is US\$724 million** while the **NPV of the Tisma project is US\$427 million** after adjusting for its estimated cash balance of approximately US\$7 million as of 31 December 2022. Since PYX does not have any debt outstanding or preferred shares issued, the **Company's total equity value should be US\$1,151 million** (after rounding).

3.2 Comparable Company Analysis – EV/Resources

We have observed from our analysis that the valuation of a mineral sands asset is highly correlated with the weighted average assemblage value of its resources. Enterprise value over total mineral resources as expressed in the form of in-situ total heavy minerals is employed as the valuation metric.

Exhibit III-1: Correlation between EV/Resource Multiple and Weighted Average Assemblage Value



Source: Companies' annual reports and Cedrus' analysis

Owing to the extremely high zircon content, both PYX's Mandiri asset and the Tisma project have extraordinary assemblage value, resulting in a weighted average assemblage value for PYX being US\$1,680 per tonne as represented by the green dotted line in the above exhibit, topping most of their peers. PYX's weighted average assemblage value line intersects the valuation multiple (EV/resource) trend line between US\$60 per tonne and US\$70 per tonne of HM.

Therefore, using this comparable company analysis, we believe PYX shares should be traded at a valuation of approximately US\$60 per tonne of its defined heavy mineral resources in aggregate of 14.9 million tonnes, or **approximately US\$894 million**.

3.3 Valuation Results

We take the valuation result from the DCF method discussed above as our near-term (12- to 18-month) valuation target, corresponding to a share price of **AU\$3.40**, or approximately a 518% potential increase over PYX's closing price of AU\$0.55 with market capitalization of AU\$244.1 million as of 13 February 2023.

Exhibit III-2: Key Valuation Metrics

Valuation Metrics	
Market Capitalization (13 February 2023)	AU\$244.1 million
Total Outstanding Shares (31 December 2022)	441,349,100
Estimated Performance Shares to be Issued to PYX's Management	16,100,000
Estimated Total Outstanding Shares	457,449,100
Enterprise Value	US\$1,151 million
Implied Equity Value (US\$)	US\$ 1,158 million
Implied Equity Value (AU\$)	AU\$1,608 million
PYX Share Price (13 February 2023)	AU\$0.55
12- to 18-Month Target Price	AU\$3.40
Upside Potential	518%

Source: Company reports, Bloomberg and Cedrus' estimates

Cedrus' analysis of PYX's current and future financial positions rests on publicly-available information obtained from company reports, Bloomberg and other sources.

To arrive at our price target, we have taken into consideration the performance rights to be issued to PYX's management with details as follows:

- Potentially, PYX's management will be granted in aggregate 21,110,195 shares following the conversions of performance rights between 1 November 2019 and 31 December 2024 upon the satisfaction of certain conditions or performance criteria such as continued employment with the Company, attaining pre-defined sales volume and EBITDA targets in each assessment year and PYX's shares hitting certain pre-determined price targets;
- Assessment of the issuance of these performance rights will be made in tranches, namely on each of the following expiry dates: 31 March 2020 (performance rights already issued), 30 June 2020 (already issued), 30 June 2021 (already issued), 30 June 2022 (already issued), 31 December 2022 (already issued), 30 June 2023, 31 December 2023 and 30 June 2024.
- Based on our analysis and assumptions, PYX's management will most likely receive a total of 16,100,000 shares during the above-mentioned period. We have accounted for these shares when doing our valuation analysis and setting our target price.

The current valuation has also taken into account PYX's current operations based on its ore reserves as well as mineral resources from all deposits and mines PYX owns. Nonetheless, it has not included other upside potential arising from resources of new discoveries within its tenements. Thus, we believe our current valuation is relatively conservative.

In our view, in the long run, PYX's valuation is likely to have a lot of room to go much higher than the current level amid the possible discoveries of additional mineral resources and the emergence of more bullish economic conditions worldwide, boosting demand for zircon and titanium dioxide minerals potentially accompanied by their rising prices.

3.4 Valuation Upside Potential

Specifically, the Company's upside potential for its valuation is driven by the following among others:

- Extra mineral resources to be uncovered from deeper zones in existing resource definition areas;
- Other exploration targets become available within the tenements PYX already owned but not yet covered by current exploration and drilling campaign;
- Existence of gold is evidenced by assay from past operations, but this has not been accounted for while making the JORC-compliant resource estimation and arriving at PYX's current valuation. Recovery of gold in future operations would likely boost the valuation of PYX notably; and
- Potentially, there is room for more operating cost reductions due to synergy in operations and economies of scale.

IV. CONCLUSION

PYX has hit the ground running in FY 2022, having able to further increase the selling price of zircon alongside kicking off the production and sales of natural rutile (in January 2022) and ilmenite (in June 2022) after raising the production capacity at its Mineral Separation Plant by about one-third to 24kt per annum in November 2021.

Backed by the two investment commitments secured during FY 2022, the Company realized strong increase in premium zircon and titanium dioxide minerals (rutile and ilmenite) output in that year.

- For zircon only, production in the year rose to 9.1kt, representing a YoY increase of 25%, while the same amount of zircon was sold (indicating the robust end-market demand) during the same period or a 33% growth over FY 2021;
- For zircon and titanium dioxide minerals combined, FY 2022 output totaled 16.6kt, up 129% on a yearly basis. At the same time, combined sales volume amounted to 9.5kt, up 38% Y/Y.

Moreover, the Company grew its finished goods inventories to 7.3kt, mainly attributable to the start of production of rutile and ilmenite, which the Company plans to export after receiving the relevant license. Furthermore, average premium zircon price for FY 2022 continued the upward path, rising 36% YoY.

The timing for PYX to build up its heavy mineral production capacity came opportunistically, as demand for titanium dioxide feedstock (considered to be a critical mineral) is forecasted to exceed supply.

International institutional investors remain supportive to PYX, as the Company secured two investment commitments in the amount of GBP20 million and US\$13.5 million, offering the financial resources for PYX to implement the next phase of its aggressive expansion strategy in an effort to become a key international supplier of premium zircon and capitalize on the anticipated robust customer demand.

PYX's business prospects are auspicious, stemming from the following contributing factors:



- Persistent trend of growing demand for zircon especially from its increasing adoption by high-tech applications particularly for the transition to renewable energy along with supportive market conditions like the pick-up in economic activities in China after its reopening. According to International Monetary Fund's data published in January 2023, the 2023 GDP growth rate for China, the world's second-largest economy, is projected to expedite to 5.2% well above the estimated global growth rate of 2.9% and up from its own 3% expansion in 2022;
- PYX's continued outstanding performance in terms of increased production of its core product (zircon), on-time capacity expansion, new production and sales of by-products, and sustainable improvements in both revenue and EBITDA is evident of the Company's competency; and
- **A shortage in premium zircon in the foreseeable future is very likely** because of declining ore grades of existing mines and the absence of new discovery of zircon deposits with considerable mineral resources since 2012 except PYX's Mandiri asset.

Hence, we reiterate an **Overweight** rating on PYX with a **12- to 18-month price target raising to AU\$3.40**, representing an upside potential of about 518% over its closing price of AU\$0.55 as of 13 February 2023.

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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