



SHEFFIELD RESOURCES LTD (SFX AU, \$0.34. Market cap A\$118m)

KMS secures offtake for ca. 75% of zircon concentrate cementing requirements for project finance.

- The SFX/Yansteel JV Kimberley Mineral Sands (KMS) has moved one step closer to bankability of the Thunderbird project, securing offtake for 170ktpa of zircon concentrate. The counterparties are major zircon concentrate processors based in China.
- To quote from the announcement: *“The amended contracts represent ~75% of the total zircon concentrate volume from Stage 1. Combined with the Life of Mine LTR ilmenite offtake agreement agreed with Yansteel, KMS has secured offtake contracts for approximately 80% of the revenue from Stage 1 and expects this to fulfill the offtake requirements for the Thunderbird project financing facilities.”*
- We view this as a very positive outcome for the project. A sign-off by the banks (likely NAIF and Taurus) will leave the project largely fully funded.
- See Appendix 1 for key terms associated with the offtake agreements.
- SFX quote a TZMI long term price achievement of US\$706/t (CIF basis). In our recent report (May 2021) we had assumed a long term pricing outcome of US\$746/t (CIF), based on several assumptions we applied. This includes a US\$1550/t price for premium zircon which we believe is ahead of TZMI’s usually fairly conservative estimates.
- As shown in the accompanying table, using TZMI’s long term pricing drops the NPV₈ of Thunderbird by 11% and an imputed valuation of SFX by 10%. (Note that our project valuation is based on what we have been able to glean from the public domain. We need to await full details of the new BFS, due in 3Q21. See our May 2021 report for more details.

| | | TZMI | BSCP | Difference |
|-----------------------------------|------|----------|----------|------------|
| Thunderbird (NPV8), post tax | A\$m | \$ 978 | \$ 1,101 | -11% |
| Ownership by SFX | % | 50% | 50% | |
| Thunderbird (NPV8) | A\$m | \$ 489 | \$ 551 | -11% |
| Dampier project exploration (50%) | A\$m | \$ 20 | \$ 20 | |
| Perth Basin exploration (100%) | A\$m | \$ 20 | \$ 20 | |
| PV of overheads for SFX | A\$m | -\$ 18 | -\$ 18 | |
| Cash (at March 2021) | A\$m | \$ 11 | \$ 11 | |
| SFX valuation | A\$m | \$ 522 | \$ 584 | -11% |
| Number of shares, current | m | 346 | 346 | |
| New equity required | A\$m | \$ 15 | \$ 15 | |
| Number of new shares | m | 42.9 | 42.9 | |
| Total number of shares | m | 388.9 | 388.9 | 0% |
| NAV adding new cash | A\$m | \$ 537.0 | \$ 598.7 | -10% |
| NAV/share | A\$ | \$ 1.38 | \$ 1.54 | -10% |

- Whichever commodity price you chose (our assumptions remain unchanged at this stage) - and we all have a lot to learn about the pricing of zircon-bearing concentrate - SFX remains at a deep discount to its underlying value. It is seldom investors have the opportunity to gain access to a Tier 1, high margin, world scale project at a significant discount to its underlying valuation in a commodity sector where sources of supply are mature, and arguably in decline.

Next steps for SFX

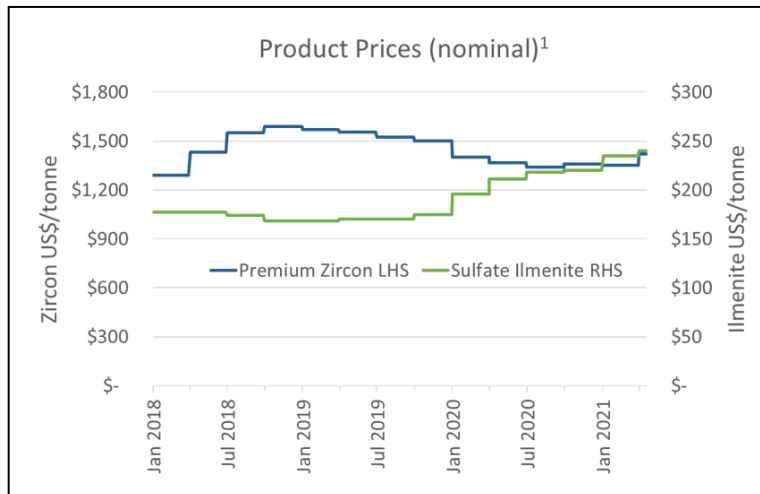
We see a number of steps which will see SFX rerate toward our valuation. These include:

- Finalisation of the BFS (3-4Q21).
- Renegotiation and completion of ca. \$330-340m in debt with NAIF and Taurus. Thunderbird will then be largely fully funded. 50% partner Yansteel in the new company, Kimberley Mineral sands, has already provided the bulk of the equity required. (3-4Q21)
- Start of initial construction works (3-4Q21).
- Final investment decision (4Q21).
- Start of construction (1-2Q22).

Commodity overview and pricing of zircon concentrate

The mineral sand commodities were early movers in the current cycle, largely responding to supply shortages. Over the past 5 years we have seen progressive production declines from key global mining operations, including the giant Richards Bay dredge/dry mining operation, and from two of Iluka's key operations, Jacinth-Ambrosia and Eneabba. Iluka (ILU:ASX) has been doing a creditable job managing zircon supply with swing production from reprocessed tails from the Eneabba tailings dams.

Zircon prices showed a small impact from the COVID-driven global economic slowdown, but prices for premium zircon really never fell much below US\$1350/t. Since then ILU's supply constraint has allowed the company to obtain a \$70/t price increase last quarter.



Source: SFX presentation, May 2021

For us the most surprising move has been TiO₂ feedstock prices. Since our last report, prices for ilmenite have settled above US\$250/t. This in part reflects a solid demand base from sulphate pigment producers. New Chinese chloride slag smelters appear to be driving chloride ilmenite demand. In an interesting recent development, Iluka have flagged the closure (for 6 months at least) of their Sierra Rutile project in West Africa. This will take some over 100,000 TiO₂ units out of a ca. 7 million tonne market. This is likely to be supportive for feedstock prices in general.

Consultants TZMI have said that there is likely to be a non-captive supply deficit emerging from 2023 unless new projects are developed. We would not rule out further price increases for TiO₂ feedstock prices. The market is tight.

The following table shows our calculation for the approximate pricing of Thunderbird's zircon concentrate. This is based on the zircon and a mixed feedstock content and assumes a payability of around 75%. This translates to a concentrate price of US\$746/t (CIF basis). Note that these are BSCP estimates, and assume a \$1550/t long term premium zircon price.

| | |
|---------------------------------------|------|
| ZrO2 content | 39% |
| Gross up to zircon content | 59% |
| Zircon price assumed (US\$/t)* | 1400 |
| Value of zircon in concentrate | 819 |
| TiO2 in concentrate | 25% |
| Value of feedstock mix (US\$/t) | 500 |
| Value of TiO2 in concentrate (US\$/t) | 125 |
| Monazite (approx) | 50 |
| Total contained value (US\$/t) | 994 |
| Payability (approximate) | 75% |
| Net value of concentrate (US\$/t) | 746 |
| *Premium + standard zircon | |

As we note above, TZMI's input to the project finance equation (likely to be fairly conservative in our view) is a concentrate price of US\$706/t (also CIF). It is based on TZMI's long term zircon pricing. We are not privy to that number, but suspect it is around US\$1450-1500/t.

In our view the largest unknown is 'payability' or how much of the revenue the concentrators keep to themselves.

SFX in its recent release has provided excellent detail regarding the pricing of zircon concentrates. As we are learning 'oils aint oils'. Concentrates are now the largest source of zircon for Chinese markets, with the total volume of around 800,000 tonnes. This is clearly a well developed market for zircon. Each of the three main concentrate products; HMC, ZIC and Zircon (Non-Mag) concentrate has different mineral contents and expected recoveries and as a result they are valued differently by processors.

| Product | Contained Minerals | Value |
|---------------------------------|--|----------|
| Heavy Mineral Concentrate (HMC) | Contains 90% Heavy Mineral including Trash Heavy Mineral. Lower value magnetic TiO ₂ (ilmenite) has not have been removed | Low |
| Zircon In Concentrate (ZIC) | Contains harder to recover and lower quality final products and some trash material | Moderate |
| Zircon (or Non-Mag) Concentrate | Contains zircon, rutile, HiTi and/or monazite and is typically low in trash material and magnetic TiO ₂ | High |

Source: SFX ASX release, June 2021

Much of the 'zircon concentrate' currently sold to the Asian concentrators is of low to moderate grade, often with low levels of premium zircon. One example we are aware of is the zircon concentrate produced by Iluka from the Eneabba tailing ponds, from which much of the premium zircon has been extracted. Thunderbird will be producing a high-value zircon concentrate.

As discussed by SFX, The price a processor will pay for a zircon concentrate depends on the saleable products that can be recovered, the market price of those products adjusted for quality, the cost of processing and the processor margin. The price is calculated as a \$/% mineral with different values for zircon, magnetitic TiO₂(ilmenite), non-magnetic TiO₂(rutile and HiTi) and other saleable products.

Appendix 1 Key terms of zircon concentrate offtake arrangements.

Key terms of the three amended agreements include:

- A minimum contract volume of 170,000 tonnes of zircon concentrate annually for an initial five-year period, with annual contract extensions thereafter;
- Take or pay provisions for the minimum contracted volume;
- Pricing linked to the ZrO₂, TiO₂ and other saleable product content of the concentrate;
- Conditions precedent include a positive final investment decision;
- Agreed product specifications within defined parameters;
- Shipment schedule and delivery obligations agreed between the parties;
- CIF Incoterms;
- Customary payment and product logistics terms included; and
- Force Majeure and other customary commercial arrangements.

Source: SFX ASX release, June 2021

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Dr Chris Baker, an authorised representative of BSCP, certifies that the advice in this report reflects his honest view of the company. He has 29 years investment experience in wholesale capital markets. He worked as a mining analyst for brokers BZW and UBS for 11 years and has a further 16 years' experience as a mining analyst and portfolio manager with Colonial First State and Caledonia Investments. He now provides independent financial advice on a part time basis. He may own securities in companies he recommends but will declare this when providing advice. He currently owns shares in SFX. He is remunerated by BSCP but is not paid a specific fee for providing this report. BSCP, its directors and consultants may own shares and options in SFX and may, from time to time, buy and sell the securities of SFX.

BSCP earned fees from a capital raising undertaken by SFX in 2019.

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Appendix 1

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