



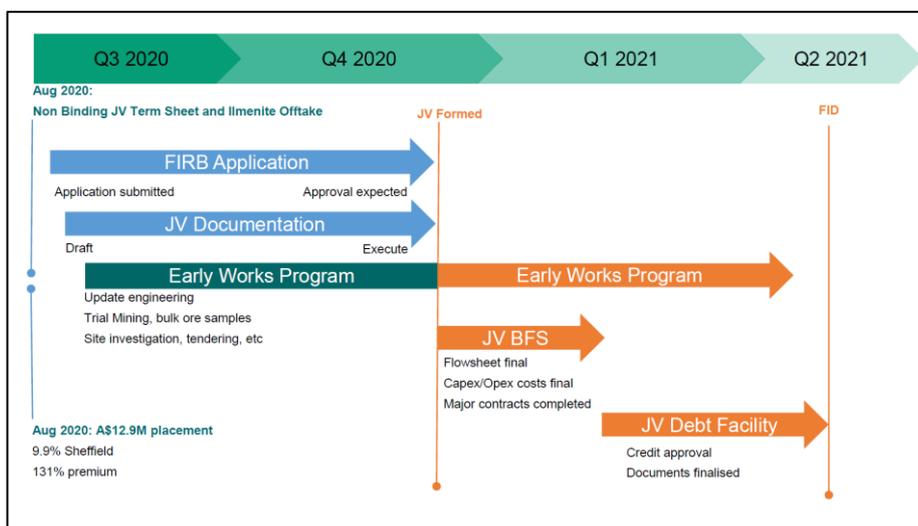
SHEFFIELD RESOURCES LTD (SFX AU, \$0.39. Market cap A\$135m)

Major positive: FIRB approval for Yansteel JV leaves Thunderbird fully funded

- Good news from SFX with an announcement that the FIRB has approved for Yansteel's acquisition of 50% of the world class Thunderbird project. Given the current tensions between Canberra and Beijing this is a very positive development.
- The counterparty for the JV is private Chinese steelmaker, Yansteel, which is proposing to develop a smelter to produce Hi-Ti slag to feed into an as-yet-to-be-built pigment plant.
- FIRB approval was really the last critical step in finalising the JV, which should be completed in the next few weeks. SFX will then set about finalising details of a revised BFS which should allow a final investment decision "during 2021".
- As far as SFX is concerned, the project is now fully funded pending reconfirmation of the NAF and Taurus debt facilities and finalisation of the JV agreement.
- The deal with Yansteel is in 3 parts:
 - A \$12.9m placement of SFX shares to take Yansteel to 9.9% of the company. This was done in August, and SFX's cash position (at 9/20) was around \$15.8m.
 - Establishment of a 50/50 JV on Thunderbird (at the project level). Yansteel will provide funding of \$130.1m (for a total deal value of \$143m) to earn its 50% interest.
 - A life of mine offtake for 100% of the ilmenite at market prices (take or pay at independent market pricing basis). If a JV cannot be negotiated this will revert to a 7 year and extendable offtake agreement.
- It is believed that the \$143m should be sufficient to fully fund the project's 'equity gap' which has been so problematic. \$143m is an important figure as it was the equity requirement quoted as being necessary to fully fund the updated, lower capital BFS announced in 2019.
- Details for the new flowsheet are light as SFX completes final design, but the following are important changes to the BFSU:
 - The new plant will produce a 'non-magnetic concentrate' rich in zircon, to be sold to Asian concentrators.
 - An ilmenite by-product will be upgraded to 'LTR ilmenite' via a low temperature roast process which had been engineered out of the BFSU. This was a surprise to us.
- Why has SFX gone back to LTR ilmenite? We understand that this largely revolves around the company's requirement that a feedstock product is able to be sold into alternative markets.
- A decision to simply produce a zircon-rich concentrate is important as well in that it will likely pull forward initial cashflows. We understand first revenues from this material could be available within 14 months from the start of construction. It is uncertain what this new plant configuration means for capex but it's possible it could continue to reduce.
- Key to Thunderbird's future is the zircon price which remains strong and in the range US\$1350-1450/t (cif). Surprisingly ilmenite feedstock (especially sulphate ilmenite) has been remarkably strong with spot prices quoted in a US\$250-300/t (cif) range.
- Our \$1.52/share valuation represents a significant premium to the current share price and we would expect progressive rerating of SFX as critical milestones are achieved. It should be stressed that this is an indicative valuation only as the project's NPV is certain to change as we obtain more details of the final feasibility study, due in 1Q21.

Timing

- In early December, SFX provided the following timetable. With FIRB approval perhaps a few weeks later than expected, there might be minor adjustments to this schedule



Source: SFX presentation, Informa Mineral Sands Conference, December 2020

Summary of funding

- This is how we saw the sources and uses of funds for the project at the time the JV was announced. Note that the assumed pre-production capex and working capital, overheads, etc, are derived from the BFSU upgrade study (BFSU) from July 2019. There now appears to be ample funding capacity for Thunderbird, even without any further capex reduction.
- The Yansteel deal together with the Taurus and NAIF facilities (assuming these are re-confirmed) allow full funding of the project.
- Should the project's capital be less (we guess 10% here), the gearing of the project (not the company) could drop from 72% to around 60%. Note that the last stated capex from the BFSU was \$392m, down from \$463m in the earlier BFSU.
- Any additional equity required (above the \$143m) will be jointly funded by both parties.

Uses of funds	
\$ 391.7	Pre-production capex, BFSU
\$ 85.7	Other funding requirements (working cap, etc)
\$ 477.4	Total funding requirement
Sources of funds	
\$ 143.0	Equity capital available
\$ 250.0	Taurus debt
\$ 95.0	NAIF debt
\$ 488.0	Total capital available
\$ 10.6	Balance, based on BFSU capex
\$ 47.7	Assume 10% capex saving
\$ 58.3	Balance assuming capex saving

Source: SFX ASX releases and BSCP estimates

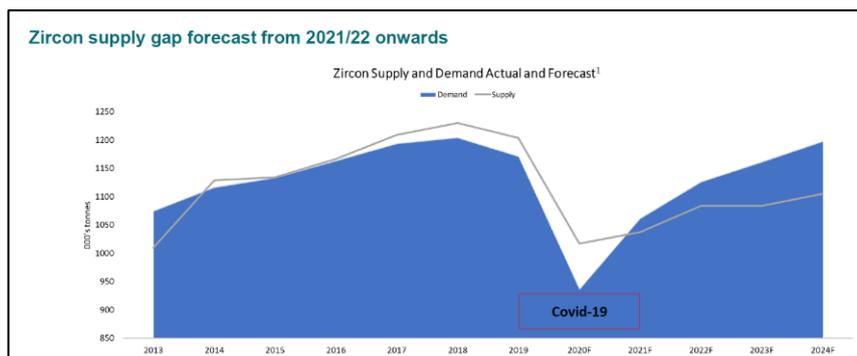
Impact on SFX's valuation

- As we discussed in our August note, our internal NPV for Thunderbird is quite out of date, and we feel uncomfortable making estimates of capex and opex given significant changes to the process design and the saleable product specification and pricing.
- SFX refers to its NPV₈ in the BFSU at A\$980m, and for this analysis we have used this number. (Details of the BFSU are included in Appendix 1). This was based on premium zircon pricing of US\$1469/t (still a reasonable estimate in our view), low grade ilmenite of under US\$100/t (possibly light. See comments below) and FX of 0.75. Changes to this NPV will likely emerge from the following issues (amongst others):
 - Lower capex, as discussed above (positive impact to NPV).
 - Lower revenues per tonne for zircon-in concentrate, but lower operating costs (uncertain impact on NPV).
 - Significantly higher revenues per tonne for LTR ilmenite (higher opex, but likely positive impact to NPV).
- The following analysis assumes that the JV will fully draw down both debt facilities and require no further equity funding. Our NAV per share for SFX is \$1.52.

Thunderbird (NPV ₈), post tax	A\$m	\$ 980.0	SFX BFSU estimate (July 2019)
Add back capex	A\$m	\$ 391.7	
Thunderbird (NPV ₈)	A\$m	\$ 1,371.7	Unfunded NPV, pre capex
Mine site exploration	A\$m	\$ 40.0	Notional
Equity NPV, 100% basis	A\$m	\$ 1,411.7	
Yanshan equity contribution		\$ 130.1	
Total equity value		\$ 1,541.8	
Project debt	A\$m	-\$ 345.0	Assumes full drawdown of debt
NPV less debt	A\$m	\$ 1,196.8	
Ownership by SFX		50%	
Implied SFX equity	A\$m	\$ 598.4	
Cash, current	A\$m	\$ 15.8	
PV of corporate costs	A\$m	-\$ 100.0	
Other exploration	A\$m	\$ 10.0	Perth Basin tenements
Corporate NAV	A\$m	\$ 524.2	
Number of shares, current	m	346.0	
NAV, from above	A\$m	\$ 524.2	
NAV/share	A\$	\$ 1.52	

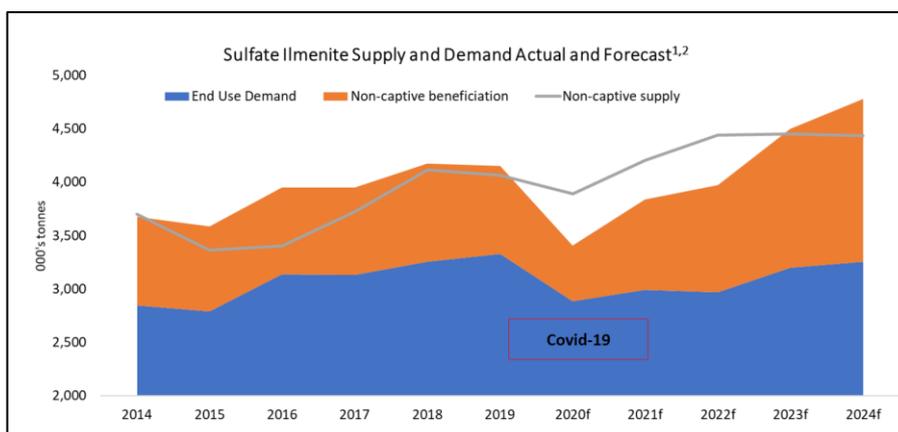
Commodity views

- Zircon demand has been hit during 2020 as a result of COVID issues, but producers have adjusted supply to keep pricing for premium product above US\$1300-1350/t (CIF).
- It seems likely a supply deficit will emerge from 2021 driven by orebody depletion at existing operations (especially Jacinth and Richards Bay).
- There have been significant delays in new supply, such as:
 - Still no decision to develop the Zulti South mine as a replacement for Richards Bay.
 - Permitting delays in Victoria, slowing the progress of Kalbar and other Murray Basin producers
 - Financing delays by Sheffield for Thunderbird.
- This emerging gap is illustrated in the following chart from experts, TZMI.



Source: SFX presentation, December 2020

- More surprising to us has been a dramatic increase in feedstock prices, especially ilmenite for the sulphate pigment producers where we have seen figures quoted in the range US\$250-300/t (cif).
- Demand in China post COVID has been very strong and from what we read in the trade press, inventories are low.
- Are these numbers sustainable? We have spoken with our industry contacts who are also surprised by this recent rally. Time will tell.
- TZMI's view remains of an emerging supply gap in feedstock within the next 2-3 years, as illustrated in the following chart. Demand is underpinned by the sulphate producers, but demand from the new chloride pigment producers in China is growing rapidly. This should be very positive for Yansteel's plan to produce Ti-rich slag from Thunderbird LTR ilmenite.



Source: SFX presentation, December 2020

BSCP view

- Yesterday's announcement represents a very positive outcome for SFX. The past 2 years has been a very difficult period, but one which finally seems to have culminated with a successful financing.
- We have long held the view that Thunderbird is a Tier 1 zircon-rich mineral sand project and one which must be developed to ensure future zircon supply is stabilised. The world is now past 'peak zircon' as existing projects mature.
- FIRB approval is now in the bag. We now await signature of the final JV agreement and payment of the A\$130.1m. The lenders, Taurus and NAIF have been patient, and we see little risk they exit from the project.
- Our \$1.52/share valuation represents a significant premium to the current share price and we would expect progressive rerating of SFX as critical milestones are achieved. It should be stressed that this is an indicative valuation only as the project's NPV is certain to change. Its entirely possible that the NPV could rise, as discussed above, but we must await details of the final BFS.

Appendix 1 Summary of the BFSU

Metric	2019 BFSU	Previous Disclosures	Change
Total Funding Requirement	A\$478m	A\$579m ¹	▼ A\$101m (17%)
Equity Requirement	A\$143m	A\$251m ¹	▼ A\$108m (43%)
Project Capital	A\$392m	A\$463m ¹	▼ A\$71m (15%)
Project Revenue	A\$15.1B	A\$13.6B ²	▲ A\$1.57B (11%)
Project operating costs	A\$7.21B	A\$7.63B ²	▼ A\$0.42B (6%)
NPV ₁₀ pre-tax	A\$1.13B	A\$0.67B ²	▲ A\$0.46B (69%)
NPV ₈ post-tax	A\$0.98B	A\$0.62B ²	▲ A\$0.36B (58%)
IRR pre-tax %	30.1%	24.9% ²	▲ 5.2% (21%)
Zircon production (average '000tpa)	202	145 ²	▲ 57 (39%)
Offtake	~100%	>75%	▲ Full
LTR & Ilmenite Process Circuit	Not Required	Included in Stage 1 ²	Removed
Process Rate (t/hr)	1,085	788 ²	▲ 297 (38%)
Mine Life	37 years	42 years ²	▼ 5 years (12%)
Long Term Average FX Rate (A\$/US\$)	0.75	0.75 ²	No change
Long Term Zircon Price - FOB (TZMI)	US\$1,469	US\$1,387 ²	▲ US\$82 (6%)

Source SFX presentation, July 2019

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

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Appendix 1

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