



Recommendation: BUY

SHEFFIELD RESOURCES LTD (SFX AU, \$1.18. MKT CAP \$270M)

Thunderbird mining lease granted. Federal Government approval imminent. Zircon supply/demand remains tight

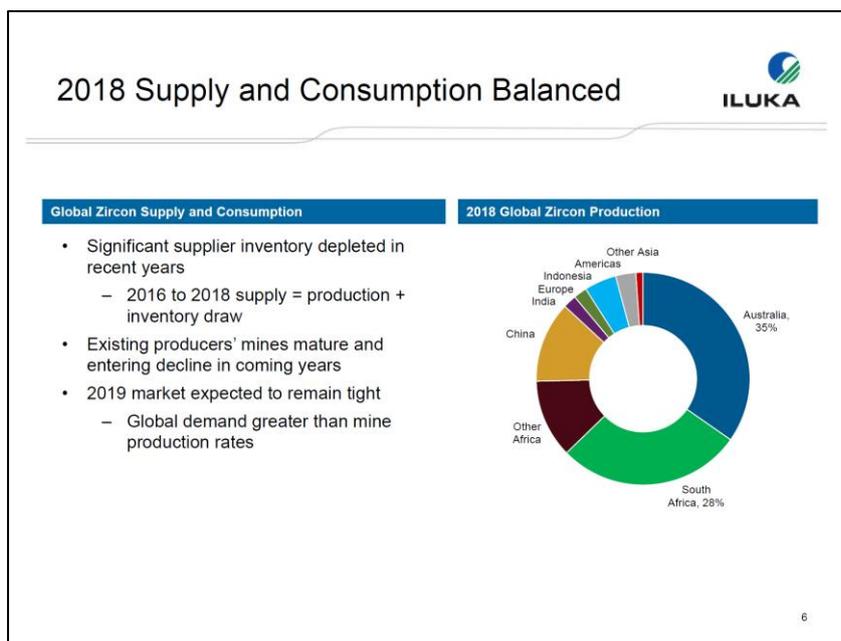
- **Sheffield has announced the long-awaited grant of a mining lease covering the world class Thunderbird mineral sands project, located in the Kimberley region of Western Australia.**
- Grant of the mining lease cannot now not be challenged by external parties.
- All that awaits final go-ahead for the project – from a permitting point of view – is environmental approval from the Federal Government. This we are told is well in hand and that approvals are expected “by the end of the month” (so within a week). The only issue Canberra is concerned about is the management plan associated with a marsupial species (the Bilby). This issue was fully addressed in the state EIS.
- The next few weeks should see a number of significant news items from Sheffield. Following Federal approvals, expect a final sign-off of the Taurus debt facility together with a number of engineering contacts, and the start of construction of the Thunderbird project. SFX has already completed early works for the project, including an access road, the construction camp and the borefield.
- As we reported in August, SFX have announced the **recommencement of exploration drilling** of several targets within the Canning Basin, along strike from the massive Thunderbird discovery. Drilling of the highly prospective Night Train discovery – now underway – we think could yield an inferred resource quite quickly.
- **The tightness in the global market for zircon has not abated.** The Tronox transaction price is currently US\$1590-US\$1650/t (CIF basis). We have heard from market participants that spot pricing for Tronox material has been trading higher than the transaction pricing and in the region of US\$1700/t.
- Iluka’s reference price has been pushed from US\$1230 to \$1410/t and now to \$1580/t (CIF), locked in for 6 months. Market traders have suggested to us that there is potential to see reference prices move to well over US\$1600 and perhaps as high as \$2000/t over the next 2 years.
- On top of the social and technical issues faced by mineral sands giant, Rio Tinto, we learned at the company’s interim results presentation that **the new Zulti South mine at RBM will not be given the go-ahead until 1H19 at the earliest.**
- In this report we include several charts from a recent presentation by zircon market leader, Iluka. Perhaps surprisingly, ILU takes a ‘mea culpa’ attitude (on behalf of the industry) to past rapid price moves (eg 2012) and is now focussed on providing its customers with ‘low cadence’ price increases going forward.
- This is providing a positive backdrop for SFX’s 100% owned Thunderbird project. We retain our view that Thunderbird is one of the very few Tier 1 mineral sand assets available for development. **Based on our conservative commodity price assumptions we generate a pre-tax IRR of 30% and an NPV of A\$1.79/share at what we consider to be conservative commodity prices (US\$1450/t long term) A 20% uplift to zircon prices delivers a 31% increase to our valuation per share.**

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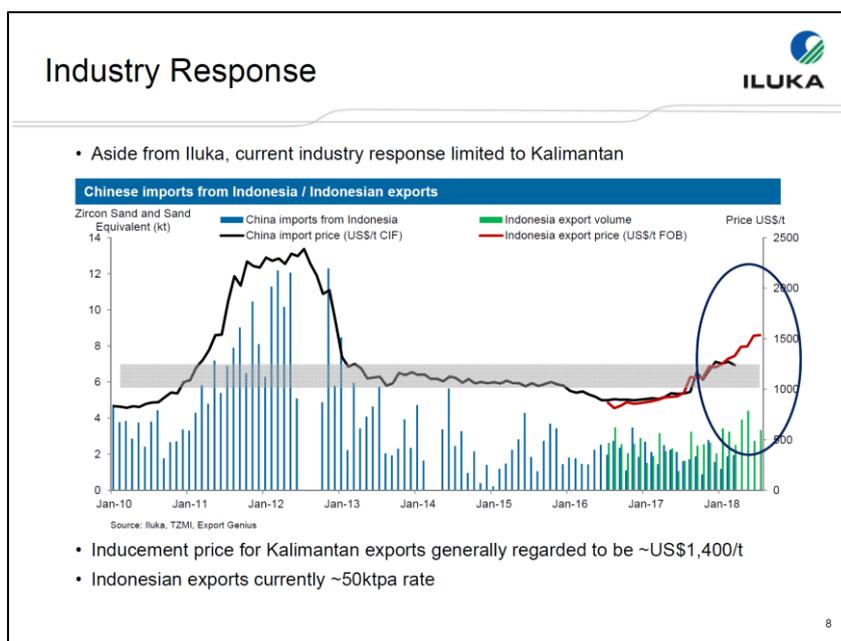
Update on the zircon price outlook, from Iluka presentation to the ZIA, 6 September 2018

Tom O’Leary (ILU’s new CEO) presented at the Zircon Industry Association recently. There is a clear message to zircon consumers going forward. The industry will not behave as it did during the 2012 price spike, which saw demand destruction of some 250kt of zircon (around 20% of total demand). We interpret this presentation as a line in the sand for their customers: prices are not going backwards, but nor should they expect dramatic spikes as was seen 6 years ago.

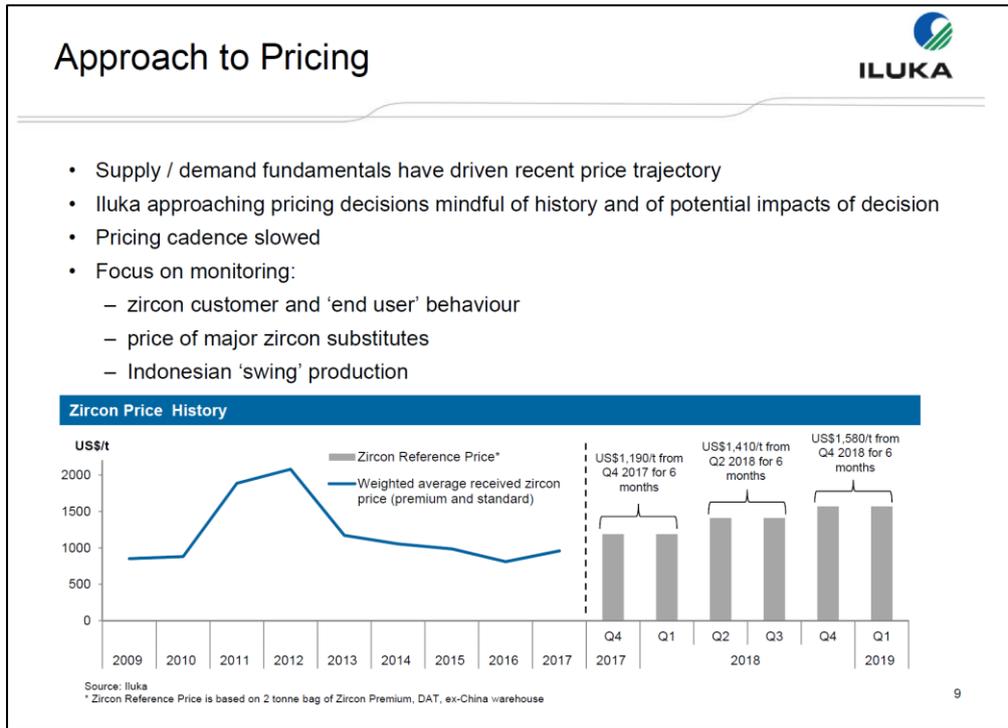
ILU claim the zircon market is now in balance.



The industry response: small scale production from Indonesia seems to be all that’s balancing the market.



Iluka appears to be intent on reducing rapid price rises by zircon.



Industry 'mea culpa'. In other words, do not destroy demand with rapid price rises, as was evident in 2012

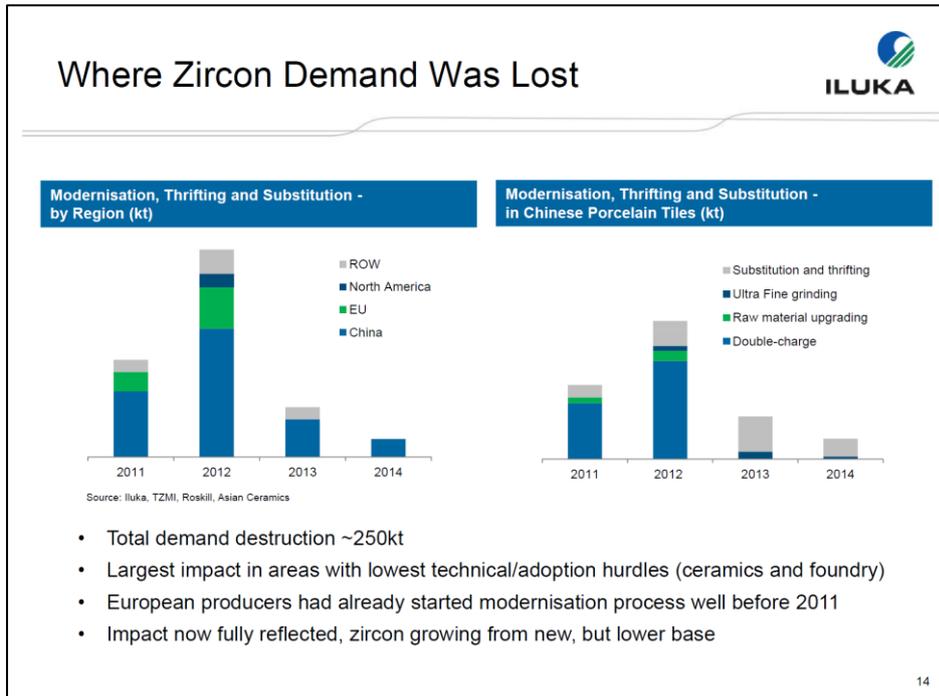
Lessons Learned



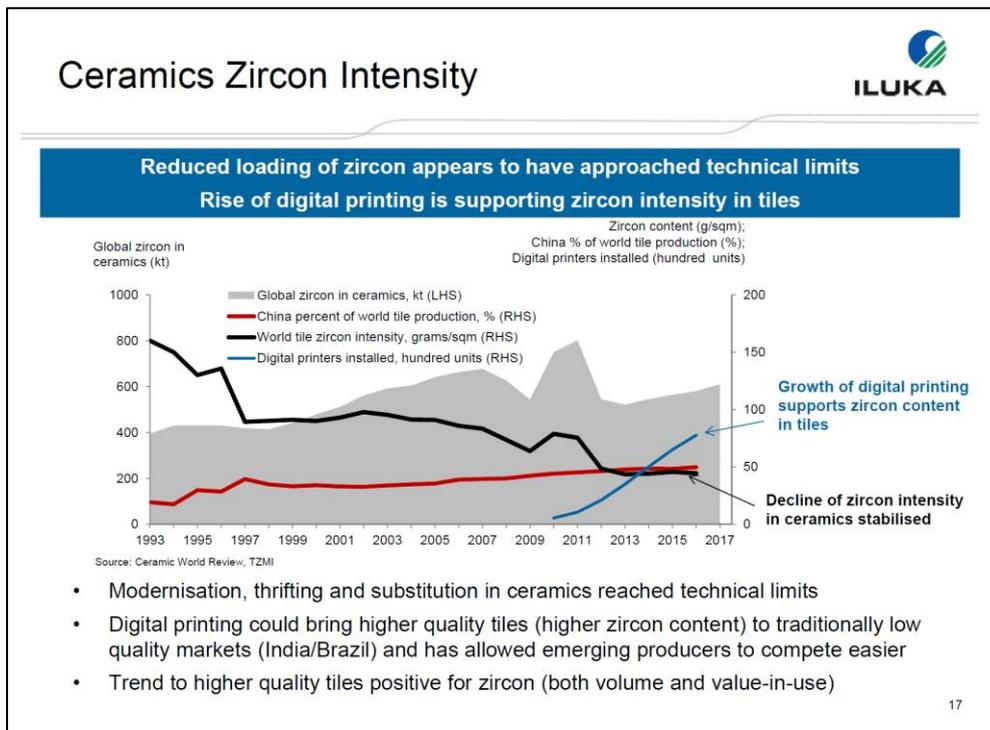
Industry myths 'debunked' after 2012 ...

Myth	2012 experience
No substitute for zircon - demand inelastic to price	Alumina, feldspar and other materials were used to reduce zircon loading. Double charging and other new manufacturing techniques reduced the loading of zircon in tiles.
Quantity of zircon per tile meant that cost is immaterial to end consumer and large cost increases can be easily absorbed	Zircon is a meaningful percentage of downstream purchasing manager's portfolio. Cadence and magnitude of price increases were too fast and too large.

Biggest impact of substitution seen in foundry and ceramics. Zircon demand is growing from a lower base.



Where is the demand coming from? Intensity of zircon in ceramic tiles appears to be increasing.





Source: Iluka presentation, June 2018.

Valuation of Thunderbird –\$1.79/share

Our valuation for SFX is A\$1.79/share. This is based on the following assumptions:

- Critical commodity price assumptions of US\$1400/t for premium zircon and US\$220/t for sulphate ilmenite.
- A\$/US\$ of 0.75.
- Stage 1 capex of A\$360m, with LOM capex of A\$555m (excluding sustaining capex).
- First production in mid 2020.
- Project level gearing of 60%. We had previously assumed 50%, but we believe that nature of the Taurus facility will allow the project to take on higher gearing levels.
- No sell-down at the project level. We have changed our base case to assume that SFX will retain 100% of the project. A sell-down remains a possibility, but it will be contingent on price achieved.
- A final equity raise of around A\$140m. Here we have assumed 100% of the equity raise will be issued at a conservative A\$0.80/share.

Sensitivities

It is possible to evaluate SFX's valuation under a variety of commodity price assumptions. However, zircon delivers around 60% of Thunderbird's revenue, and in our view offers the greatest upside potential. A 20% uplift to zircon prices delivers a 31% increase to our valuation per share.

Zircon price (premium, US\$/t CIF)	Project (pre-tax)			Corporate	
		NPV(10), A\$m	IRR (%)	Fully funded NPV (A\$)	
Base case	\$1,400	807	30	1.79	per share
+10%	\$1,540	1044	33	2.07	per share
+20%	\$1,680	1280	36	2.35	per share
-10%	\$1,260	656	27	1.51	per share
-20%	\$1,120	504	23	1.23	per share

Where to for Sheffield after project 'go-ahead?

We see a number of opportunities for ongoing value enhancement for Sheffield following the commencement of construction. These include:

- Finalisation of product offtake agreements.
- Further optimisation of the Thunderbird project including the possibility of bringing forward the Stage 2 expansion. Recall that the BFS was conducted using now very conservative commodity price assumptions (zircon at US\$1250 and ilmenite US\$183/t). The cashflow impact at higher commodity prices is dramatic and could pave the way for a financial decision to proceed with Phase 2 earlier than has been proposed.
- Incremental premium zircon tonnage from, for example, Night Train.
- Exploration initiatives in the Eucla and Perth Basins

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Disclosures

Dr Chris Baker, an authorised representative of BCP, 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 and options in SFX. He is not paid a fee by BCP for providing this report. BCP are Corporate Advisors to SFX and have received fees from SFX for services provided.