



Sands players at the starting gate

The next cabs off the rank in the West Australian minerals sands production line will spend the rest of this quarter scouring the globe for strategic development partners for their respective projects.

Sheffield Resources Ltd (Thunderbird, Kimberley region) and Diatreme Resources Ltd (Cyclone, Eucla Basin) are aiming to join relative newcomer Image Resources Ltd (Boonanarring, Perth Basin) as fully-fledged mineral sands producers within the next two years.

Both companies are heavily leveraged to zircon and ilmenite – two mineral sands products with strong pricing forecasts in the short-to-medium term.

Sheffield enjoyed a stellar finish to 2018 after what managing director Bruce McFadzean described as a “hard slog” for the first nine months of the year. In the space of just three months, the company was granted a mining licence, secured both its state and federal environmental approvals, finalised a Native Title agreement with the Traditional Owners, executed an EPC contract with GR Engineering Services Ltd and signed off on a \$US175 million debt financing package from Taurus Mining Finance Fund.

On top of that, the Northern Australia Infrastructure Fund has also committed to providing a \$95 million long-term debt facility for relevant infrastructure in the

Kimberley region where Thunderbird, about 70km west of Derby, is set to become the community’s largest employer.

“I’d been saying to the board for what seemed like forever that ‘you know what guys, this has been a battle, but everything will happen at once’, and sure enough that’s what happened,” McFadzean told **Paydirt**.

“It’s been a really exciting year. It was a hard slog for the first nine months, but then ‘bang’, everything just hit. We’ve got to the point now where we’ve hit the wet



Neil McIntyre

season, but there has been renewed interest since we’ve completed everything, so we’re going to have a pretty exciting start to the year.”

For Diatreme, 2018 also ended on a high with the release of a DFS which indicated Cyclone could produce 1.94mt of heavy mineral concentrate, including 936,000t of zircon, over its initial 13.2-year mine life.

Key financials from that study included a NPV of \$113 million, IRR of 27% and payback within 2.7 years of first production. Construction capex was slashed from the \$160 million previously estimated in 2016 to \$135 million.

Diatreme chief executive Neil McIntyre said the strong finish to 2018 had set the company up for a bumper 12 months ahead.

“I think our first half this year is going to be extremely busy,” he told **Paydirt**. “The DFS that China ENFI [Engineering Corp] undertook for us at the tail end of last year really sets us up to develop the project and we hope during this first quarter to define some of the major parties who may be coming into the project, and then document and conclude that process during the second quarter this year.”

Both companies have indicated they are on the lookout for a strategic development partner to reduce the funding burden on their respective shareholders.



Late last year Sheffield rattled the tin for \$16 million, with eligible shareholders also chipping in a further \$3 million via a SPP. Funds will be used primarily to engage with potential strategic partners, with the rest to be directed towards engineering and design works, as well as early construction activities at Thunderbird.

Sheffield has also appointed leading global investment bank UBS to act as a corporate advisor "in considering third party strategic partner interest" for project financing and development.

"Our objective is to find a partner that will lessen if not remove the whole funding burden for our shareholders," McFadzean said.

"The current schedule shows us starting construction in the second quarter and that's what we're still focused on. If there is any equity required by our shareholders, we'll do that, but our objective is hopefully none. We're all shareholders, so we don't want to put any more money in either."

McFadzean added that a strategic partner would likely come in at the project level and could see Sheffield dilute its interest in Thunderbird down to about 75%.

Diatreme has long flagged the likelihood of partnering with a Chinese group to develop Cyclone. And with ENFI – whose parent company is prolific mining group China Minmetals Corp – proving to be somewhat of a "gatekeeper", according to McIntyre, for the company's entry to production, it seems a logical fit.

However, the company is keeping its options open, particularly on the back of strong pricing forecasts for minerals sands products.

"We've been engaging with quite a number of not just ENFI-related groups but other Chinese state-owned enterprises, and we're also running what I'd call a Plan B option as well," McIntyre said.

"I don't think it's any secret that we've viewed for some time a Chinese development option as the most likely pathway for development of the project but in a market where we're seeing sustained good prices for zircon and titanium products, the groups that are interested are wider than just the Chinese groups.

"We've given ourselves this first quarter to define the entry of a number of those parties into the project and, I suppose for want of a better term, we're running a bit of a beauty parade at the moment, trying to determine who might be the best party or parties to come in."

McIntyre said most interested parties were looking at either a pure offtake or

JV agreement, although Diatreme is also willing to look at a potential sale of Cyclone if it would generate the best return for shareholders.

According to mineral consultants TZMI, zircon demand is tipped to grow at 2.8% per annum out to 2026, against a forecast annual supply decline of 4.3%, creating a substantial supply gap which is supporting the current robust price outlook for zircon.

"The fall-off in supply is absolutely dramatic and if you look at what the TZMI analysis is saying, you need three or more Thunderbirds to fill the hole – and that's on the basis that everything in South Africa delivers what it's meant to deliver," McFadzean said.

"We're not overly confident – and I know our customers are not overly confident – on a smooth South Africa either. TZMI are assuming [Rio Tinto Ltd's] Zulti South comes online, but that project is maybe 2-3 years behind in the decision-making process now, so whether it will now I don't know."

McIntyre said Diatreme was buoyed by the positive pricing forecasts in the mineral sands sector.

"We're seeing a lot of the older mines maturing, it's getting more expensive for them to produce and we're seeing a lack of entry of major new players who can come on and meet that anticipated supply shortfall," he said.

"Mining traditionally has some pretty radical ups and downs, but within any cycle you look to see what's underpinning the better market. And when we see that the fundamentals are sound; it's not a bubble, it's not driven by speculation... on the back of that we can plan project development very carefully and know that we're in a very stable market.

"I suppose the most exciting part is we're not in a bubble, we're in a period of the market where the window is open. As one analyst recently said to me, 'your window is open, get your project development together and take advantage of those market fundamentals'."

While production at Thunderbird and Cyclone is still the main game for Sheffield and Diatreme respectively, both have plenty to be excited about elsewhere in their portfolios.

Sheffield now has up to seven regional prospects around Thunderbird which are piquing interest, including Night Train, where a maiden resource estimate is due to be calculated this month.

"We've got a 40-year-plus mine at Thunderbird and then we've got all of these other prospects that just look fantastic," McFadzean said. "Then during the dry season we'll work more on



Bruce McFadzean

these other prospects because this really is a new mineral sands jurisdiction in our view. And I think most people would agree with that."

Diatreme was awaiting drilling results from a recent programme at its Galalar silica project at Cape Bedford, Queensland, at the time of print, having last month announced positive findings from bulk sampling which highlighted the future production of premium-grade products suitable for the photovoltaic panel and ultra-clear glass industries.

McIntyre said there were natural synergies between the company's work at Cyclone and what it was proposing to do at Galalar.

"The fundamentals that underpin the demand for silica are growing," he said. "We're seeing huge demand for solar panels, for example, and we're seeing architecturally, if you look at most modern developments, particularly large-scale commercial developments, the use of smart glass in exteriors is rapidly growing. This product that we're talking about producing meets that specification.

"It's quite a high quality sand they're after and within the characteristics it has to be a very low iron content. That's not that easy to find, so we've been fortunate enough to find a tenement area that has, by nature, very low iron content, and through standard processing we can get that even lower, as proven by recent tests."

– Michael Washbourne