

PROJECT UPDATE 11, AUGUST 2019

Thunderbird Bankable Feasibility Study Update

Sheffield released an updated Thunderbird study (31 July 2019) following analysis over the past months. There are many highlights in the study update, and these include:

- The cost to build the Thunderbird Project has been reduced by \$101M to \$478M.
- New sales agreements for unprocessed Primary Ilmenite means an ilmenite processing plant will not be constructed.
- Increased mining and processing rate by 38% increases zircon production and revenue.
- Sheffield has secured \$335M of bank funding and is seeking a further \$143M from shareholders or from a new strategic partner, to build Thunderbird.
- Improved Project economics increases ore reserve by 10% and maintains long mine life of 37 years.

The updated study is **transformational** for the Project economics; investors & interested parties will observe:

- Materially reduced investment required to build Thunderbird.
- Significantly improved returns on investment.
- Increased production and revenues.
- All stage 1 (yrs 1-4) products under sales contracts.
- Lower construction and operational risks due to a simpler Project.
- Long term demand for mineral sands products & forecast supply shortages, as existing mines close.
- The needs of customers have changed; there is a good market in China for unprocessed ilmenite.

A Few Fast Facts

- Construction period 21 months, down from 24.
- Local benefit; local jobs and local contracts.
- Premium Zircon trucked to Broome for export.
- Primary Ilmenite and Zircon Concentrate trucked to Derby for export.
- Removal of ilmenite processing plant from Project.
- Binding agreements for sale of all products.
- Increased taxes and royalties to be paid.

A STEP CLOSER- to the development of this large, high-grade, mineral sands deposit – Thunderbird.

“Completion of the updated study demonstrates a transformational improvement... The Company expects to determine the optimal funding solution over the coming months, clearing the way for a final investment decision and the start of construction this year,” said Bruce McFadzean Managing Director.



Thunderbird Mineral Sands Project

Sheffield Resources' world-class Thunderbird Mineral Sands Project is located midway between Derby and Broome in Western Australia's north-west. Thunderbird promises the Kimberley local employment and regional development prospects.

The Project is expected to create 280 project jobs, increasing to 400 in the fifth year of production, over a 37-year mine life. A local drive-in drive-out workforce will ensure salaries stay in the region.

Thunderbird contains the world's largest and highest-grade undeveloped reserves of zircon and ilmenite. Mineral sands products will be exported to the UK, Spain, India and China through Derby and Broome.

Thunderbird is fully permitted and construction ready with debt funding of A\$335M secured; and so, our attention is on raising the required equity and securing a project partner to enable construction to commence.

The updated Bankable Feasibility Study (BFSU), 31 July 2019, demonstrates material improvements in the Thunderbird Project economics, for all stakeholders.

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BFS UPDATE MATERIALLY IMPROVES PROJECT ECONOMICS

- **Key Variance to Previous Financial Metrics**, table below, is extracted from the ASX statement released 31 July 2019 by Sheffield Resources Limited. – download the ASX statement. <https://bit.ly/2OwF0n4>

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 (TZMI)	US\$1,469	US\$1,387 ²	▲ US\$82 (6%)

Reference:

ASX Announcement "Joint Kimberley-Pilbara Regional Forum" 11 June 2019
ASX Announcement "Thunderbird BFS Delivers Outstanding Results" 24 March 2017

Want to know more - contact Kim Pervan
kpervan@sheffieldresources.com.au

sheffieldresources.com.au