Thunderbird

The Emerging Force in Mineral Sands

Mines and Money – Hong Kong

April 2017

ASX : SFX

sheffieldresources.com.au

COMPLIANCE AND DISCLAIMER

PREVIOUSLY REPORTED INFORMATION

This presentation includes information that relates to Exploration Results, Mineral Resources and Ore Reserves prepared and first disclosed under the JORC Code (2012) and a Bankable Feasibility Study. The information was extracted from Sheffield Resources Limited's ACN 125 811 083 ("the Company" or "Sheffield") previous ASX announcements which are available on Sheffield's web site www.sheffieldresources.com.au as follows:

"THUNDERBIRD BFS DELIVERS OUTSTANDING RESULTS" 24 March, 2017
"THUNDERBIRD ORE RESERVE UPDATE" 16 March 2017
"THUNDERBIRD ILMENITE EXCEEDS PREMIUM SPECIFICATION" 13 March 2017
"OUTSTANDING IMPROVEMENTS IN RECOVERIES AND PRODUCT SPECIFICATIONS FROM THUNDERBIRD BFS" 12 October 2016
"SHEFFIELD DOUBLES MEASURED MINERAL RESOURCE AT THUNDERBIRD" 5 July, 2016
"PREMIUM ZIRCON AT NIGHT TRAIN", 14 April 2016
"PRE-FEASIBILITY STUDY UPDATE CONFIRMS THUNDERBIRD AS THE WORLD'S BEST UNDEVELOPED MINERAL SANDS PROJECT", 14 October 2015
"NEW MINERAL SANDS DISCOVERY AT NIGHT TRAIN", 22 September 2015
"THREE NEW MINERAL SANDS DISCOVERIES IN CANNING BASIN", 25 February 2015

These announcements are available to view on Sheffield Resources Ltd's website: www.sheffieldresources.com.au

The Company confirms that it is not aware of any new information or data that materially affects the information included in the relevant market announcements and, in the case of estimates of Mineral Resources, Ore Reserves and Bankable Feasibility Study results, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcements.

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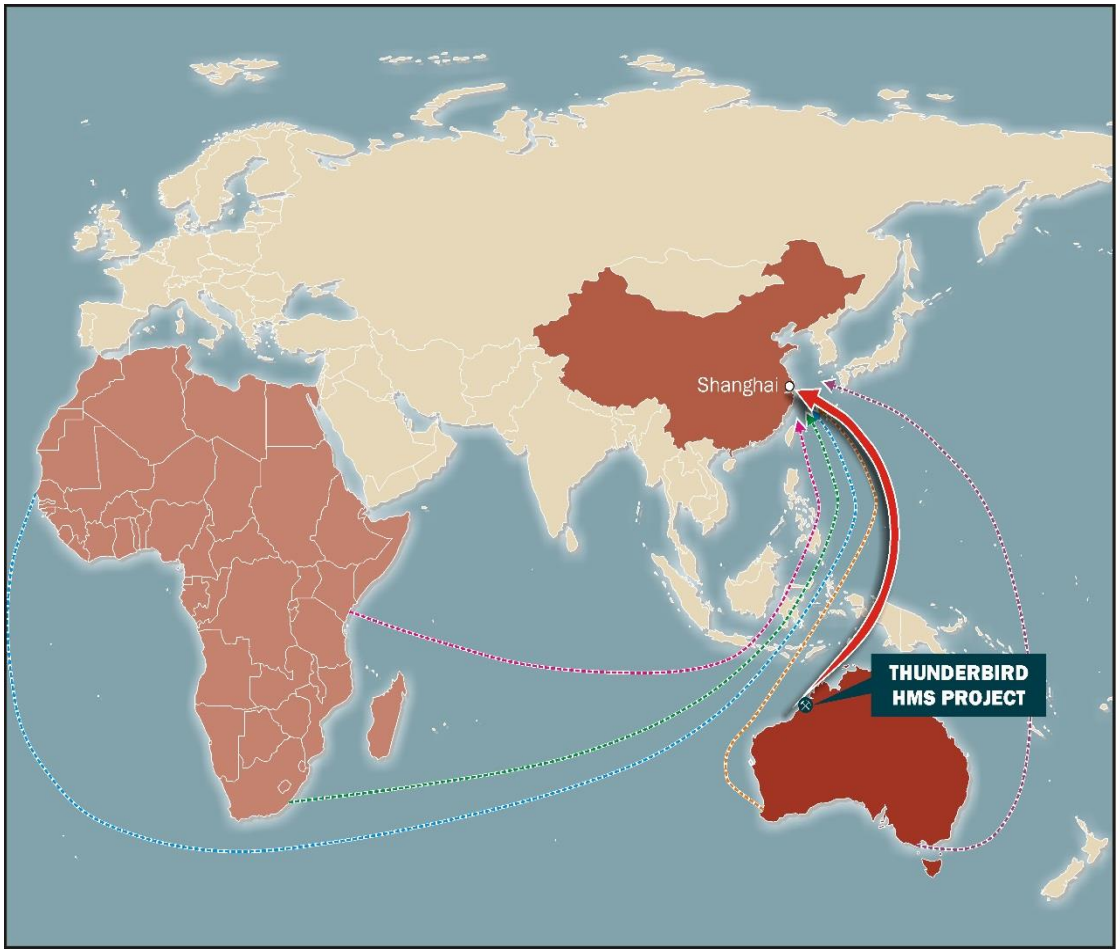
WORLD CLASS PROJECT



- BFS demonstrates Thunderbird to be a world class project
- Large high grade Ore Reserve[1]
- 42 year mine life[2] (estimated)
- Low risk mining jurisdiction
- Close to Asian markets
- Simple project logistics
- Potential to be a globally significant supplier of zircon and ilmenite, MOUs initiated
- Improved sulfate ilmenite market
- Stabilised zircon market
- Consensus forecasts are for undersupply of zircon and sulfate ilmenite by 2020

1. Thunderbird Ore Reserve as published on the ASX on 16 March 2017
2. Subject to permitting, offtake and financing

MINERAL SANDS – EVERYONE, EVERYDAY

2 Distinct Product Streams

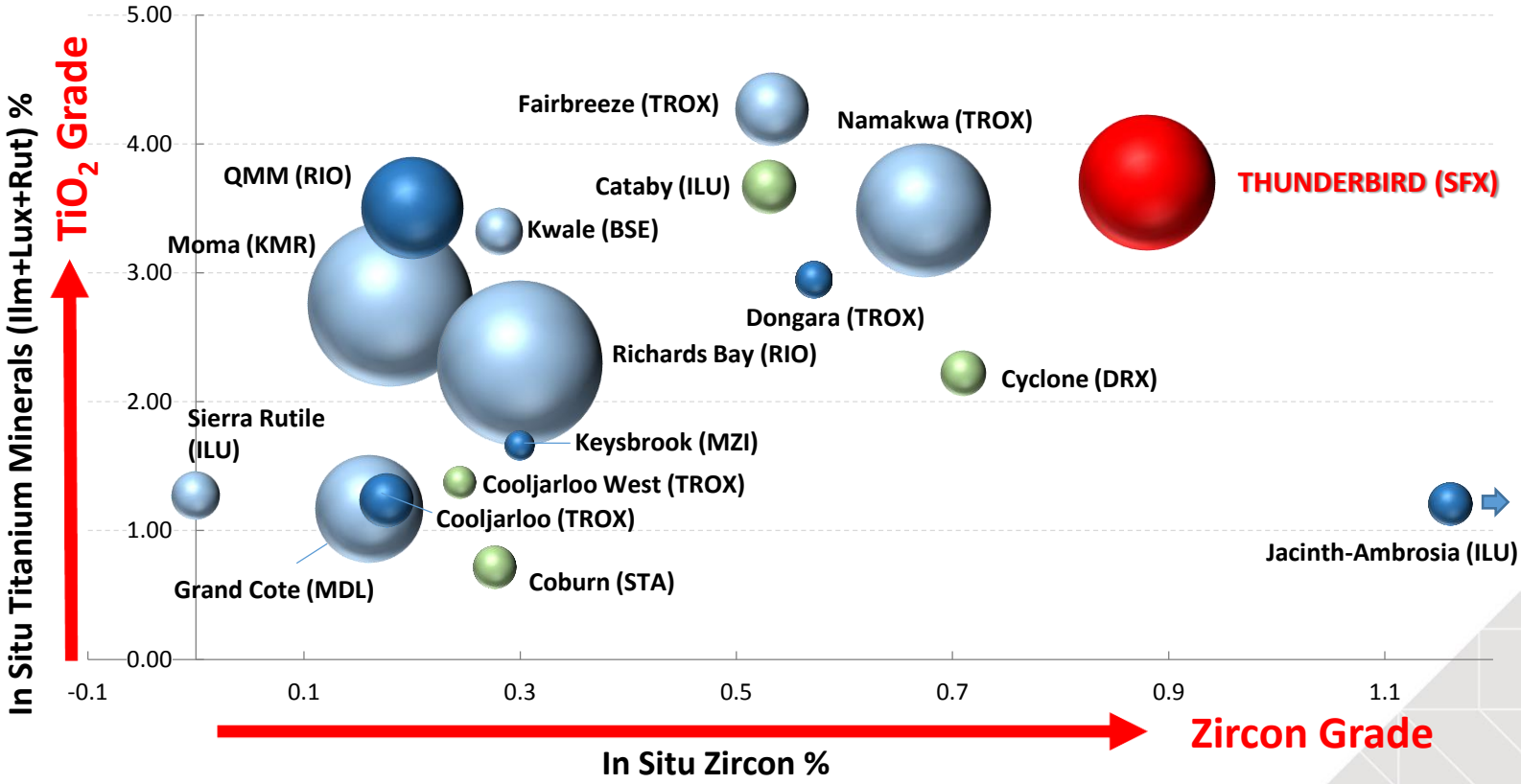
ZIRCON

- 1.1 million tonne p.a. global market
- Over 50% is used in the ceramics industry (tiles, crockery, etc.)
- Demand has been flat from 2012-2016 largely due to industry thrifting in response to the 2011-2012 pricing spike
- 5 year growth in demand now forecast at around 3% per annum in line with global GDP
- Shift in global demand: China now represents 45%, Europe around 20%
- Supply is concentrated in Australia (around 50%) and Southern Africa (35-40%)
- Mature industry: in the absence of new projects, global production is likely to decline from 2018
- Industry consultants TZMI forecast a supply deficit from 2019

TITANIUM DIOXIDE FEEDSTOCKS

- 6.5-7.0 million tonne p.a. global market (TiO_2 units)
- Feedstocks include: ilmenite (52-58% TiO_2), rutile (95-97% TiO_2) and slag (85-95% TiO_2)
- Around 90% of titanium feedstocks are used in the manufacture of TiO_2 pigment
- TiO_2 pigment imparts whiteness, brightness and opacity to paper, plastics, sunscreen, etc.
- TiO_2 pigment is manufactured by either the sulfate or chloride processing route, each with specific feedstock requirements
- Demand is forecast to grow at around 3% p.a. in line with global GDP
- Sulfatable ilmenite is believed to be in deficit as strong demand emerged from China in 2016

WORLD CLASS ORE RESERVE



- Amongst the world's largest and highest grade zircon and ilmenite rich Ore Reserves
- Western Australia, one of the best mining jurisdictions in the world[1]
- Most of the world's largest minerals sands Ore Reserves are in high risk jurisdictions

Thunderbird Ore Reserve as published on the ASX on 16 March 2017
Thunderbird Ore Reserves ranked against Ore Reserves of current mineral sands operations and projects under investigation globally
Blue bubbles are operating mines, green bubbles are Ore Reserves reported but project is not operating. Light blue bubbles represent operating African mines' Ore Reserves
Bubble size proportional to tonnes of contained VHM. Only Ore Reserves > 1Mt contained VHM shown.
Data compiled by Sheffield from public sources
This analysis does not illustrate the variance in product value between rutile, leucoxene and ilmenite products
1. Fraser Institute survey of mining companies 2016

OUR TEAM – EXPERIENCED & SKILLED

BOARD

Will Burbury
Non-Executive Chairman

Bruce McFadzean
Managing Director

David Archer
Technical Director

Bruce McQuitty
Non-Executive Director

MANAGEMENT

Bruce McFadzean – Managing Director
Mining engineer with over 35 years experience leading the financing, development and operation of mines in Australia and overseas, including roles with BHP Billiton and Rio Tinto. Previously Managing Director of Catalpa Resources Limited prior to its merger with Evolution Mining and Mawson West.

David Archer – Technical Director
Geologist with over 27 years experience Australian resources sector. Has held senior positions with major Australian mining companies, including RGC Ltd, and as consultant to Atlas Iron Limited and Warwick Resources Limited, was responsible for significant iron ore discoveries.

Stuart Pether – Chief Operating Officer
Qualified mining engineer with over 25 years' experience in the resources industry, both in Australia and overseas. Stuart has extensive experience in project development, technical studies, mine operations and corporate management; including executive engagements as CEO of Kula Gold Limited, VP Project Development - Evolution Mining and COO at Catalpa Resources.

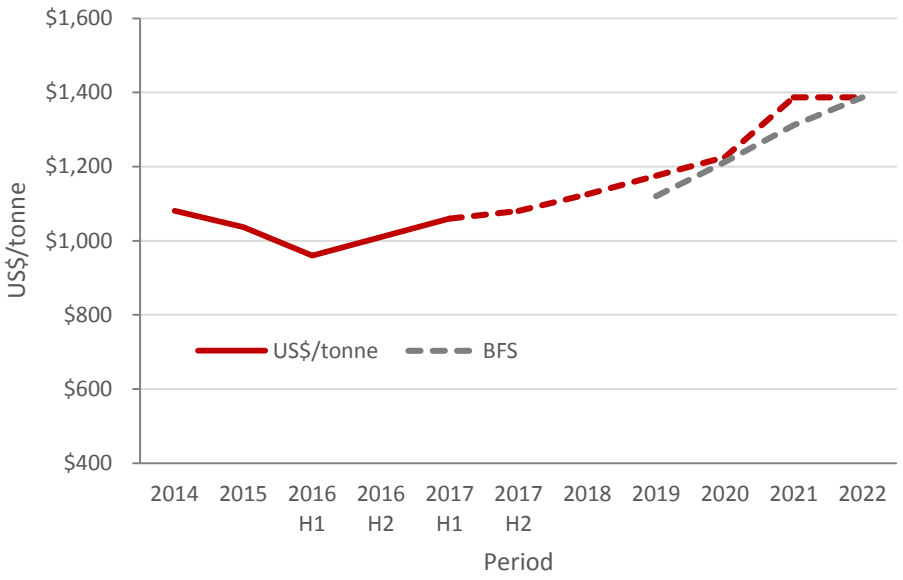
Mark Di Silvio – CFO/Company Secretary
CPA with over 25 years experience in the resources sector working across Africa and Australia. Has led financing and restructuring initiatives, holding senior finance and executive positions with RGC/Goldfields, Woodside Energy, Centamin and Mawson West.

Jim Netterfield – Project Manager
Mechanical engineer with a proven track record in successfully managing mineral development projects through to production. Professional career includes roles with BHP Billiton and Rio Tinto, and most recently four years as acting CEO and Operations Director at Oakajee Port & Rail.

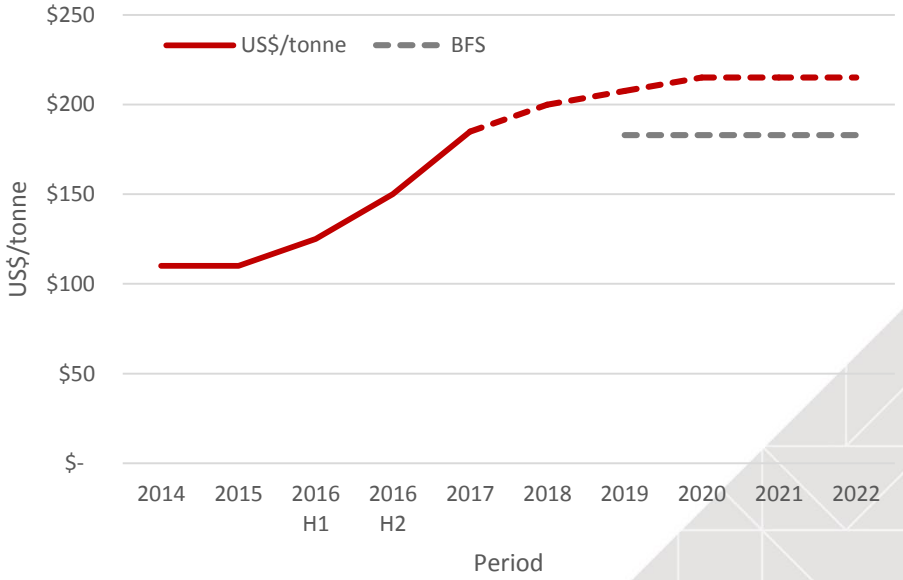
Neil Patten-Williams – Marketing Manager
Experienced marketing and operations manager with over 18 years experience in the mineral sands industry, having held a number of management roles with Doral. Solid background in marketing and logistics of both zircon and titanium mineral products.

MARKET CONDITIONS HAVE TURNED[1]

Zircon Price: Actual, Consensus and BFS Assumption



Ilmenite Price – Actual, Consensus and BFS Assumption

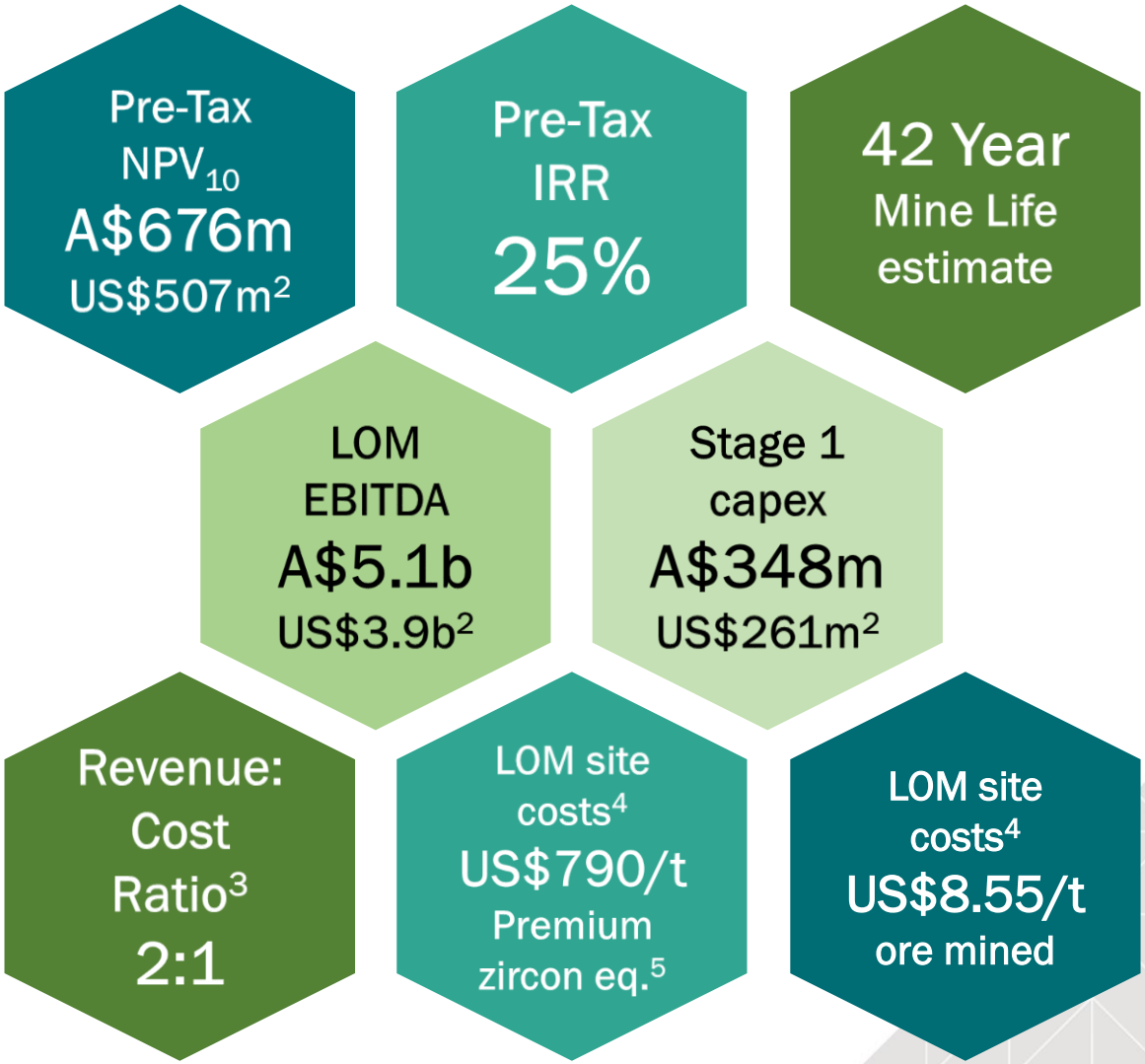


- Zircon prices have stabilised and are showing price recovery, increasing 10% over the past 6 months
- Longer term supply constraints emerge from 2020

- Sulfate ilmenite prices continued to rise in early 2017, and have now risen ~100% over the past 12 months
- Current spot pricing is higher than the BFS pricing assumption
- Long-term consensus forecasts under-supply from 2020

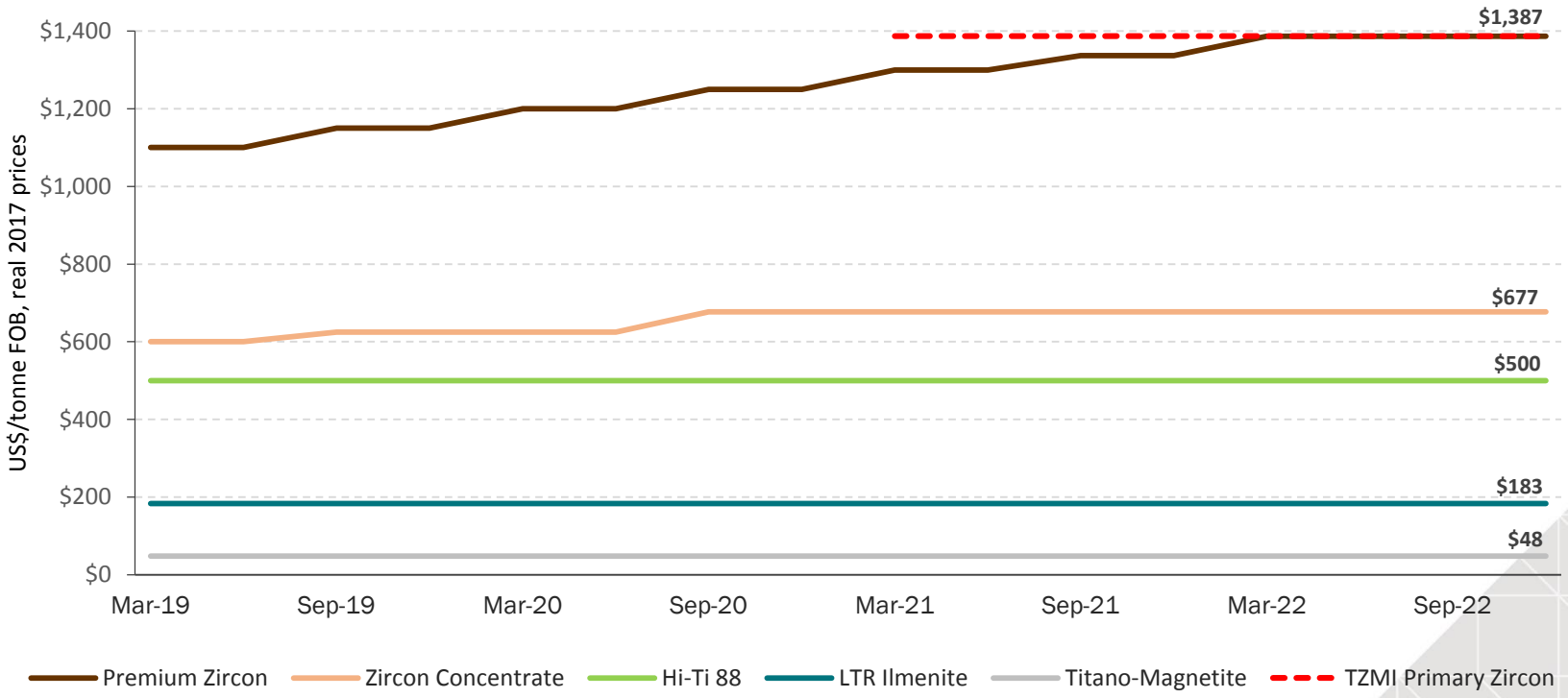
[1] Sourced from TZMI, Ruidow, Ferro Alloynet and Sheffield

BFS KEY HIGHLIGHTS[1]



1. Actual results may differ from these estimates. Please refer to the assumptions, sensitivities, risk factors and cautionary statements disclosed respectively on pages 7, 9, 10 and 56 of the Company's announcement "THUNDERBIRD BFS DELIVERS OUTSTANDING RESULTS" of 24 March, 2017, which may adversely impact upon the information and forecasts in this presentation.
2. USD:AUD 75c
3. 4 year production period following Stage 1 ramp-up (i.e. Year 3 to Year 7 of operation)
4. Site costs include sustaining capex, excludes corporate overheads and royalties
5. Premium zircon equivalent tonnes calculated as total revenues across all products divided by premium zircon price

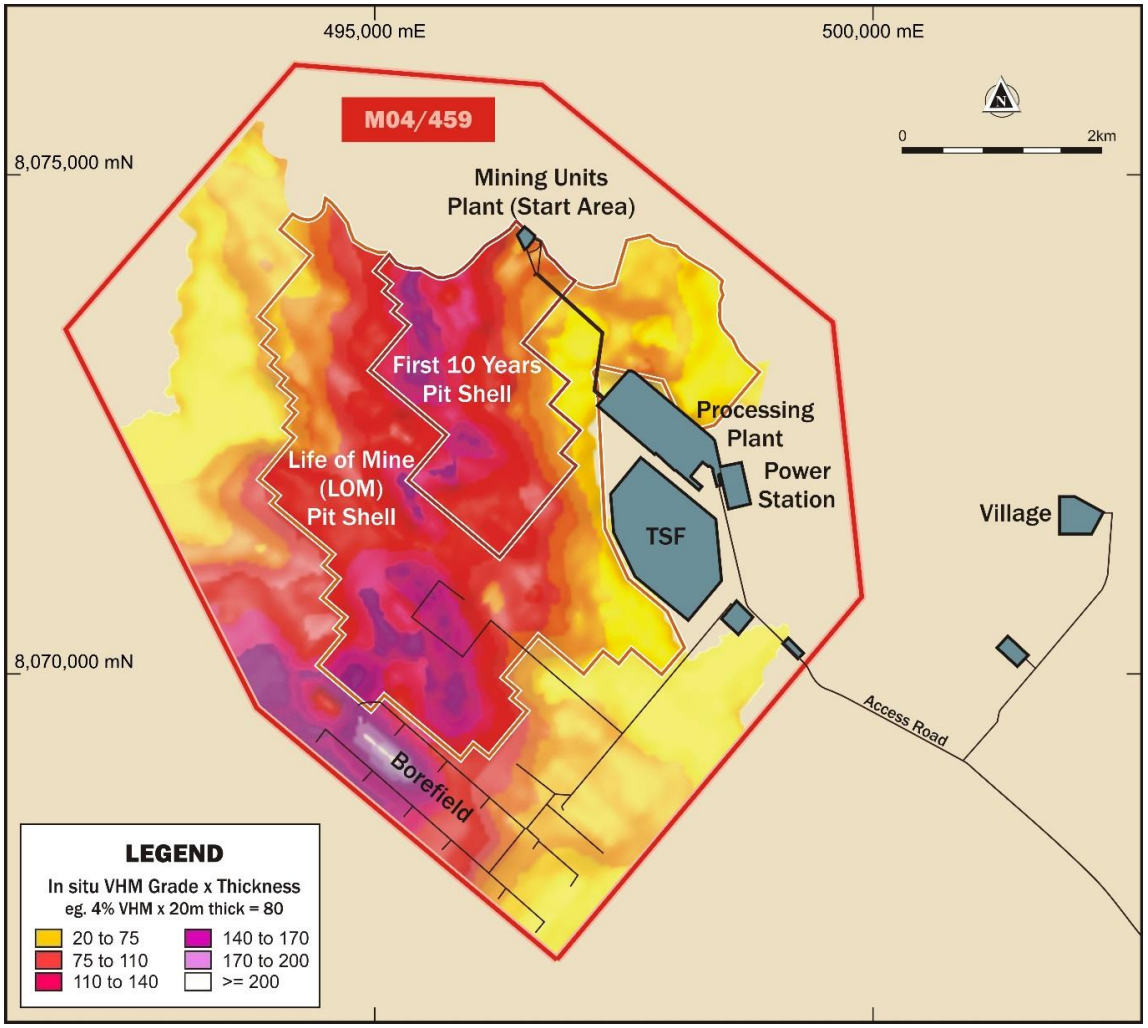
PRODUCT PRICE ASSUMPTIONS[1]



- Sheffield has conservatively applied independent industry experts TZMI and Ruidow long-term US$ pricing recommendations for the life of mine
  - From first production for Ilmenite, Hi-Ti88 and Titano-magnetite,
  - From 2020 and 2022 for Zircon Concentrate and Premium Zircon respectively

1. Real 2017 prices and FOB.

VHM GRADE & DEPOSIT THICKNESS = VALUE

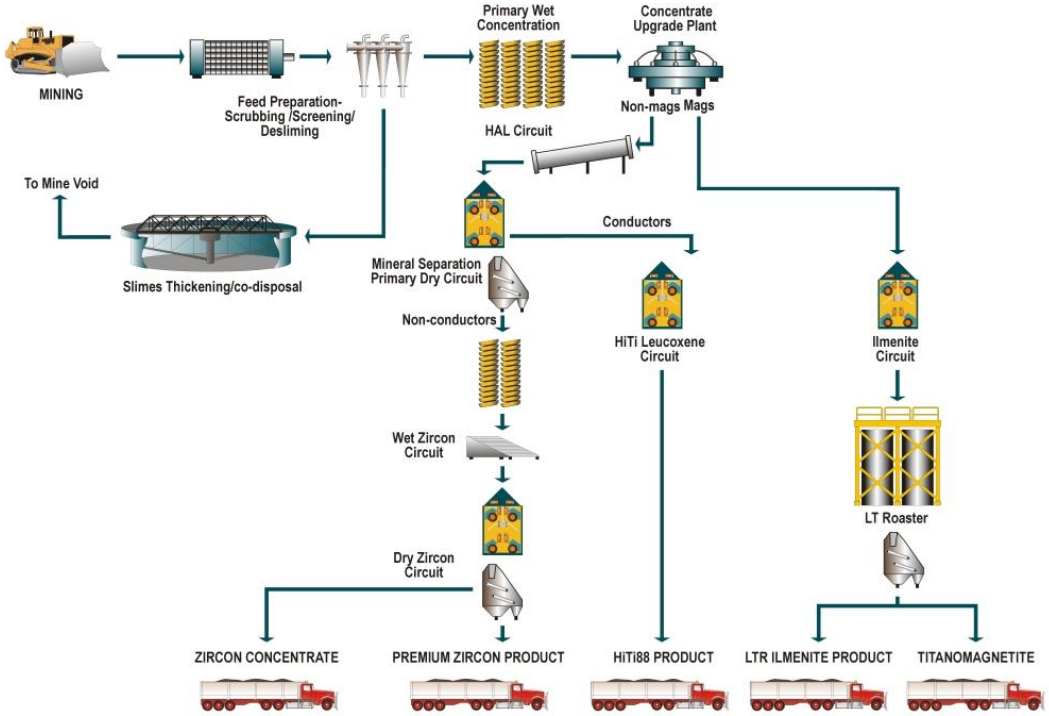


- Thunderbird has a continuous High Grade Zone of up to 46m thickness: the “GT Zone”
- Project economics are based on GT Zone’s strong continuity and very high Valuable HM grades
- Near-surface, high value areas targeted in early years of production
- GT Zone remains open: ongoing expansion potential
- Process plant proposed to be located adjacent to the deposit

1. VHM = Ilmenite, zircon, rutile and Leucoxene
2. Mine schedule derived from Ore Reserve ASX release 16 March 2017

CONVENTIONAL PROCESSING

Delivers 5 quality products



- Conventional heavy mineral sands processing circuit[1]
- Includes an ilmenite upgrade step using a low temperature roast ("LTR")
- LTR upgrades the primary ilmenite to 56.1% TiO_2 sulphate ilmenite with ability to control to higher grades
- LTR ilmenite is low in chrome and alkalis with market-leading acid solubility
- BFS illustrates premium zircon product and a secondary zircon concentrate

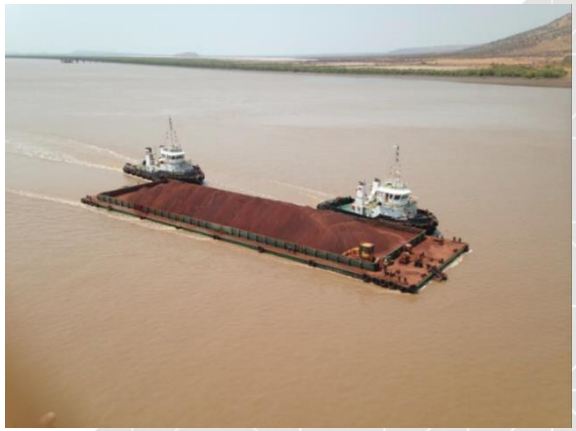
Recoveries[3]	BFS Test work
LTR Ilmenite	71.0%
Zircon Premium	56.1%
Zircon Concentrate	33.0%
HiTi Leucoxene	35.3%

Total recovery to products from BFS metallurgical test work.[3]

[1] Process design by Hatch and Robbins Engineering, based on metallurgical testwork carried out on a 40t bulk sample using full scale & scalable equipment
[2] Estimated from preliminary modelling to be finalised at BFS completion in early 2017
[3] Refer ASX announcement 12 October 2016

LOGISTICS – SIMPLE & CLOSE TO MARKET

- Products proposed to be trucked 140km from mine to ports at Derby and Broome, including 110km on major National Highway
- Road haulage fleet and marine barging based in Derby
- Access agreement in place for port storage, wharf and bulk handling facility at Derby
- Option for packaged products through Port of Broome
- Barging & transhipment of bulk products demonstrated success over 5-7 years
- Existing shiploader and conveyor requires minimal commissioning costs
- Close proximity to potential markets

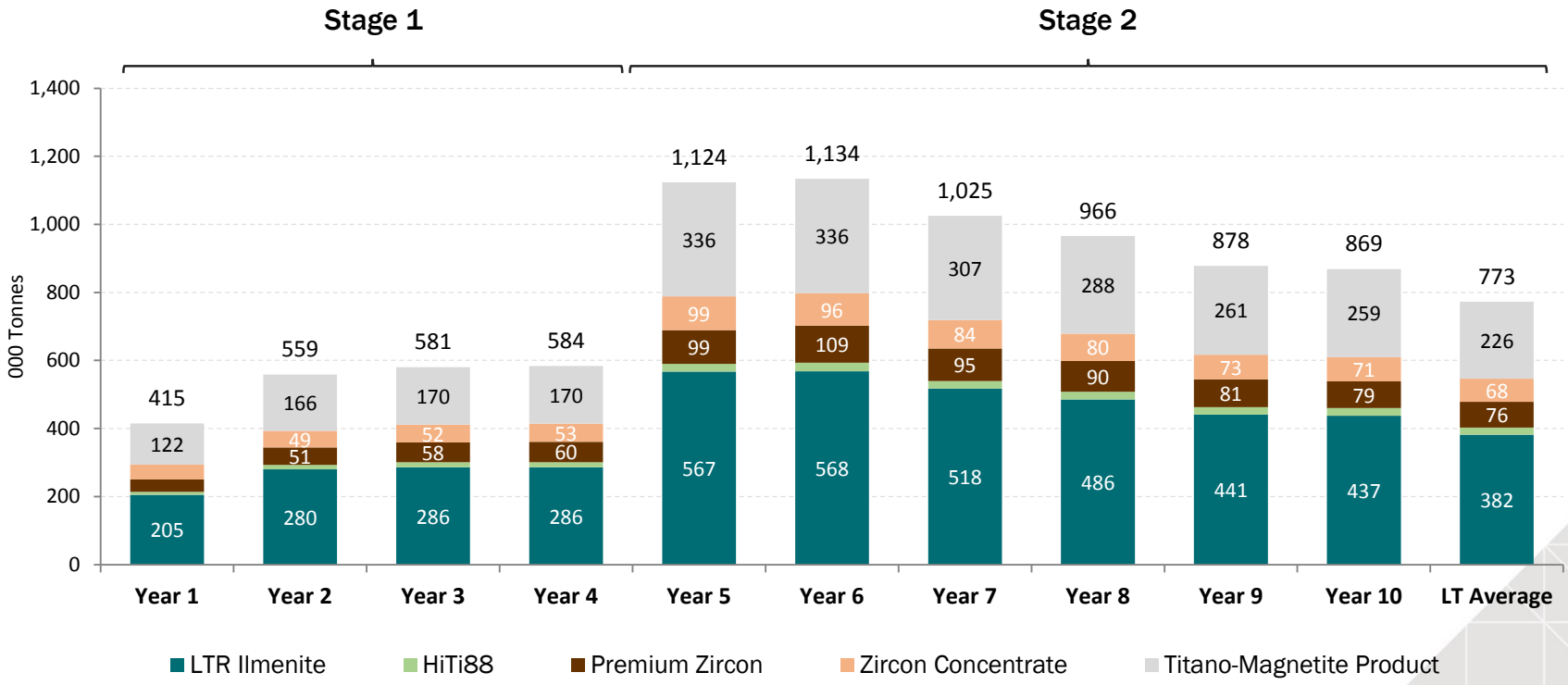


SUMMARY BFS OUTPUTS

A$m, Real 2017 Prices	Financial Year 2019 – 2023[5] (4 years)	Financial Year 2024 – 2033[6] (10 years)	LOM[7] (42 years)
Ore Mined (Mt)	32.8	173.8	680.6
Strip Ratio (W:O)	**0.52**	**0.58**	**0.77**
VHM Grade (%)	6.41	5.10	4.49
Revenue	**854**	**3,875**	**13,560**
Royalties	(50)	(223)	(781)
Net Revenue	**803**	**3,652**	**12,779**
Opex: Mining	(104)	(421)	(1,828)
Opex: Processing	(228)	(1,024)	(4,093)
Opex: Logistics	(73)	(288)	(1,005)
Opex: Site G&A	(59)	(172)	(707)
Total Opex[1]	**(464)**	**(1,905)**	**(7,633)**
EBITDA	**339**	**1,746**	**5,146**
A$ site costs[2] / tonne ore mined	14.65	11.11	11.40
A$ revenue / tonne ore mined	25.99	22.29	19.92
US$ site costs[2] / tonne Premium Zircon eq.[3,4]	721	692	790
US$ revenue / tonne Premium Zircon eq.[3,4]	1,278	1,387	1,381

1. Excludes corporate overheads.
2. Includes sustaining capex, excludes corporate overheads and royalties.
3. Premium zircon equivalent tonnes calculated as total revenues across all products/premium zircon price
4. AUD:USD = 0.75:1.00
5. Stage 1 time period depicted as Q4 FY2019 to Q3 FY2023 inclusive
6. Stage 2 first 10 years depicted as Q4 FY2023 to Q3 FY2033 inclusive
7. LOM (Life of Mine) describes the period 2018 to 2061.

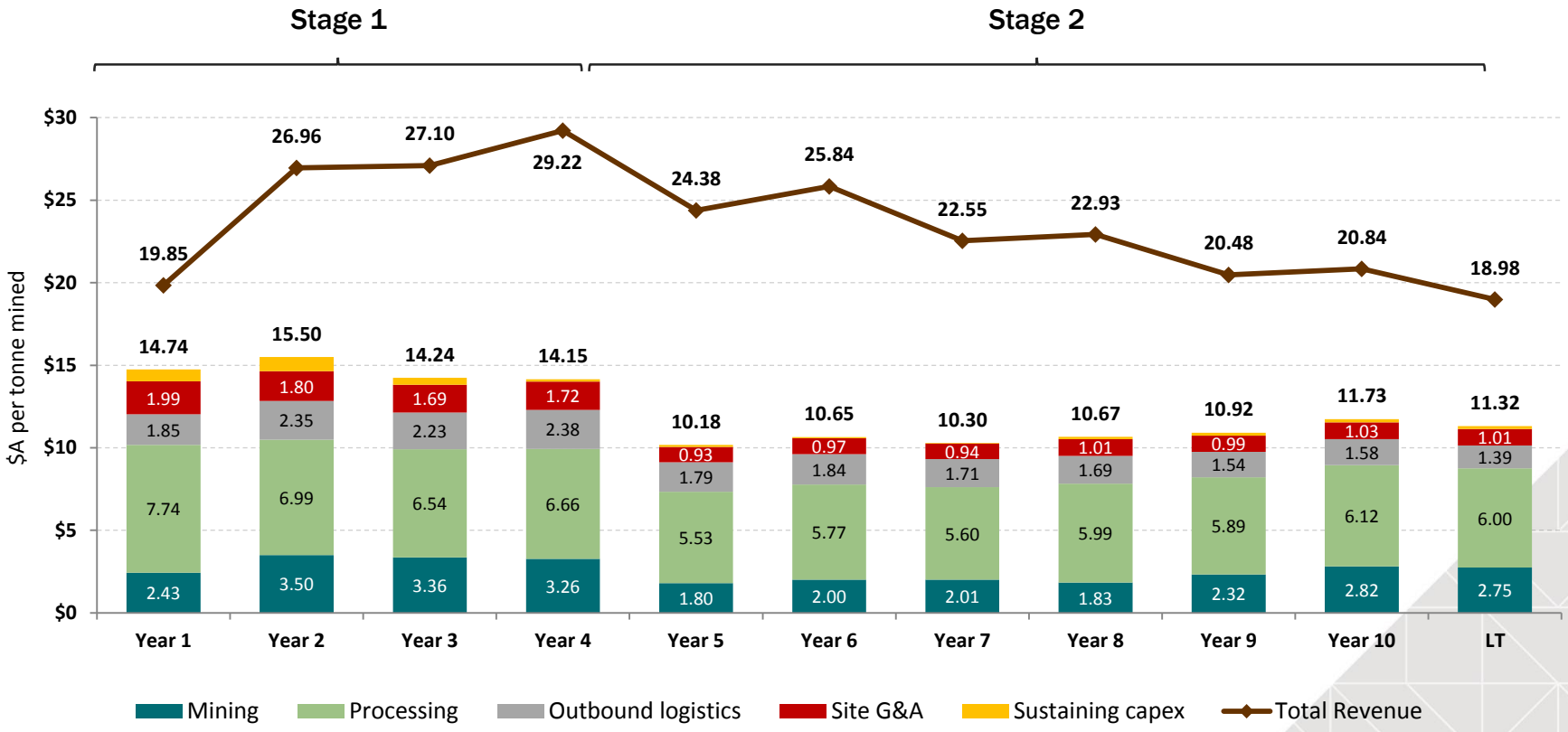
PRODUCT VOLUMES



- Stage 1 produces moderate product volumes to manage market entry at a time when consensus indicates supply shortfalls
- Stage 2 expected to deliver Thunderbird as a globally significant mineral sand producer

Source: BFS model

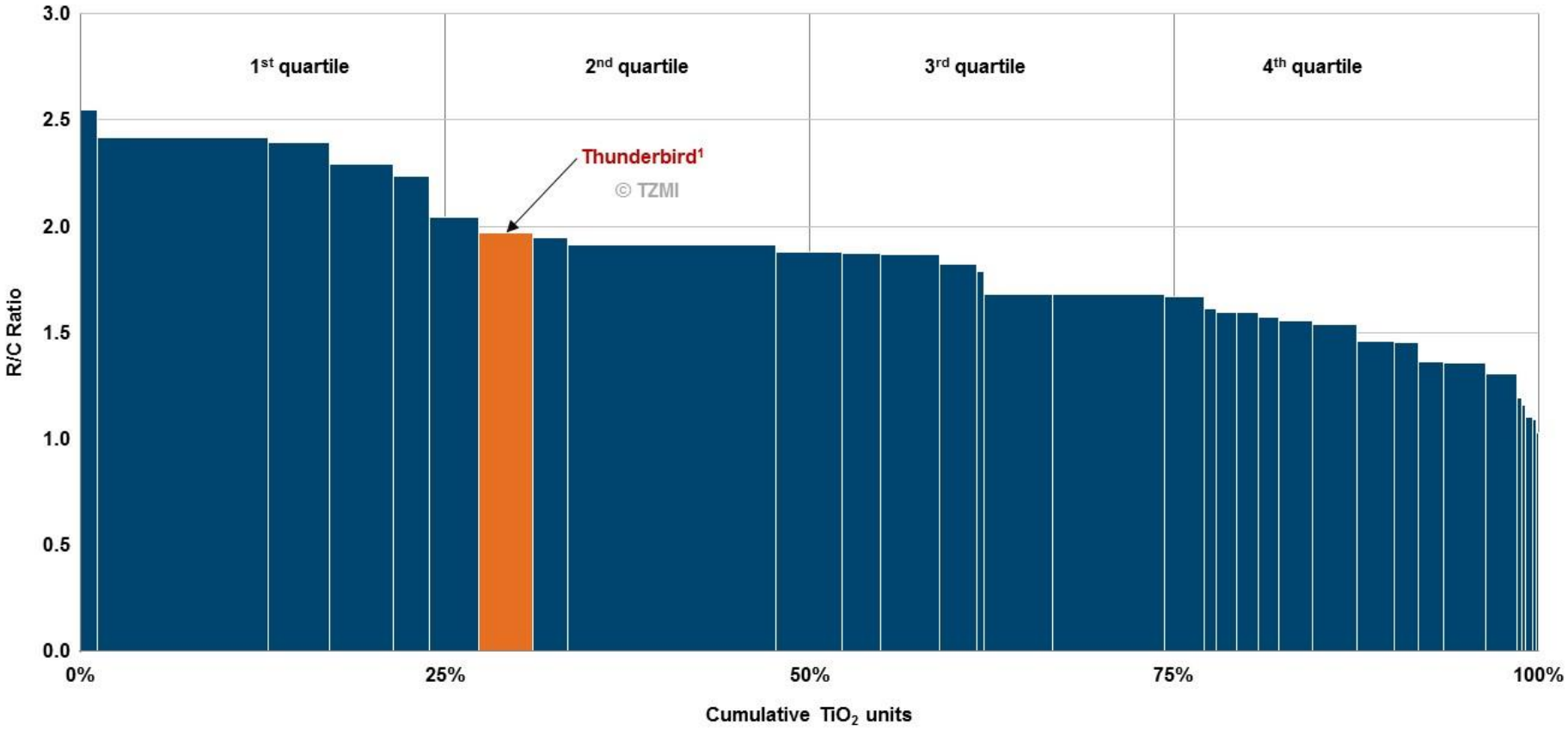
A STRONG CASH MARGIN OPERATION



- Very strong cash margin anticipated with revenue exceeding cost 2:1 over the first 10 years
- Strongly leveraged to zircon production (62% of BFS revenues) and AUD:USD
- Stage 2 expected to deliver significantly reduced unit costs

Source: BFS model

SOLID REVENUE TO COST RATIO



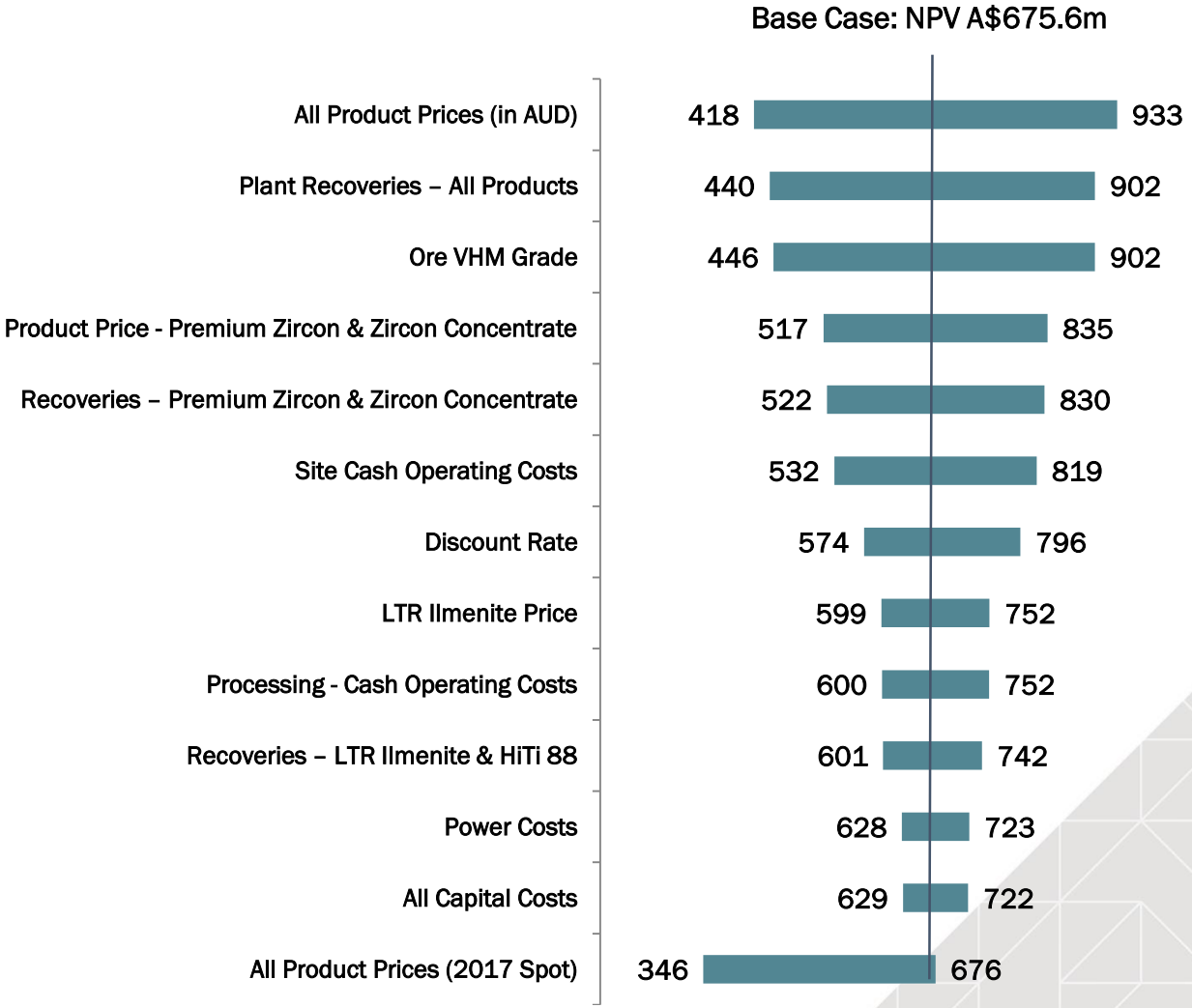
- Anticipated high margin producer
- Thunderbird represented adjacent to first quartile producers, several of whom are vertically integrated with beneficiation plants

1. 4 Year production period following Stage 1 ramp-up (Year 3 to Year 7 of operation)
2. 2020 Cost Curve as presented by TZMI
3. Note that several of the competitors presented here are integrated producers of downstream feedstock and associated by products

Source: TZMI

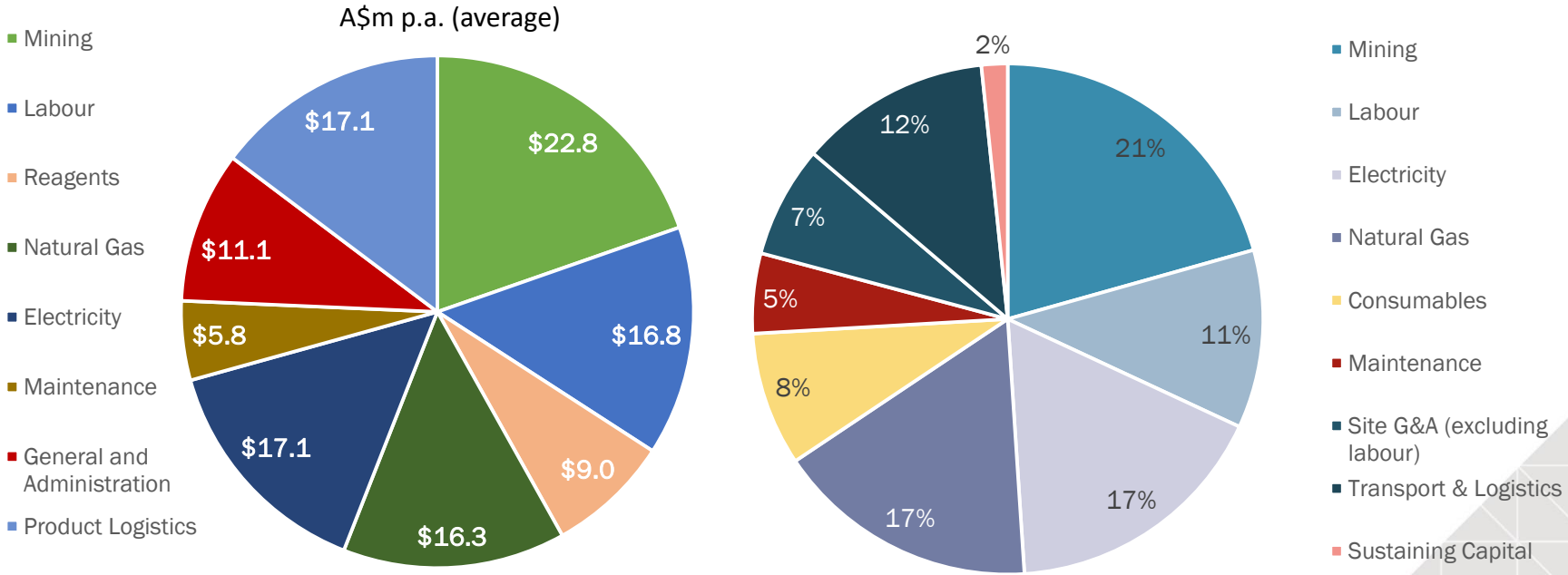
PROJECT NPV SENSITIVITIES A$ (+/-10%)

Product prices, recoveries and ore grade are key sensitivity drivers



Source: BFS model

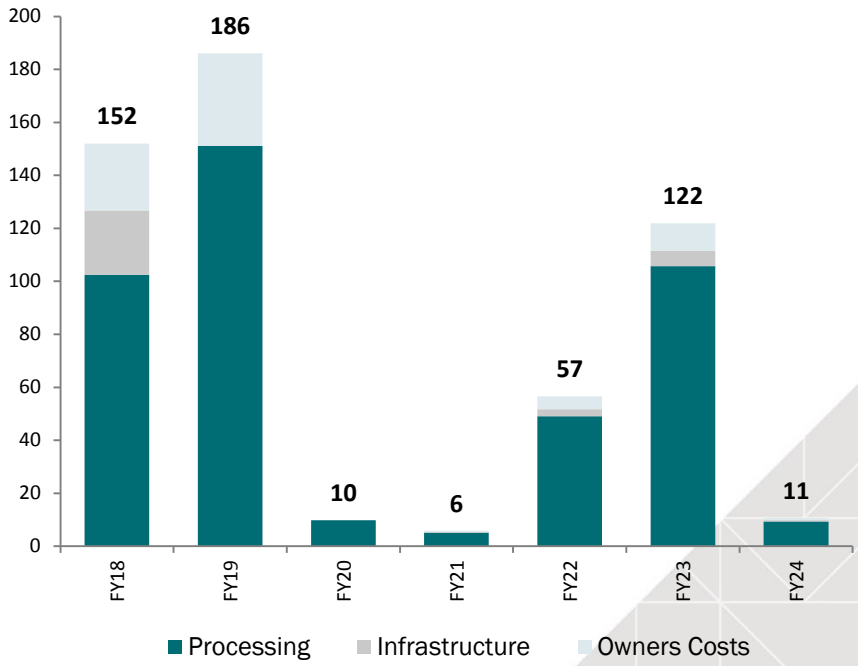
STAGE 1 ANNUAL OPERATING EXPENDITURE



- Costs dominated by mining, labour, power and gas (66%)
- Mining, power, logistics and gas costs consistent over estimated 42 year mine life
- Moderate sustaining capital costs as WCP remains stationary for mine life
- Operating cost reduction opportunities exist with BOO contract balloon payments

CAPITAL EXPENDITURE

Description	US$M	A$M
Processing		
Plant Area Civils & Process Water Systems	19.0	25.3
Wet Concentrator Plant	43.5	58.0
Concentrate Upgrade Plant	25.7	34.3
Zircon Processing Plant	59.2	78.9
Ilmenite Processing Plant	22.7	30.2
Low Temperature Roast	32.6	43.4
Sub-Total	**202.6**	**270.1**
Infrastructure / Owners		
Site Preparation, Roads & Access	5.0	6.7
Dams, Bore field & HV Infrastructure	12.0	16.0
Derby Port	5.0	6.6
Labour & Operational Readiness	6.7	8.9
Mining Services & Infrastructure	4.6	6.1
Accommodation Village	3.9	5.2
Administration & Services	3.2	4.2
Sub-Total	**40.3**	**53.7**
Contingency	**18.0**	**24.2**
Total Stage 1 Capital Cost	**260.9**	**347.9**



- EPC-based process plant capital for Stage 1
- Stage 1 contingency 7.5%
- Stage 2 capital A$195m (US$146m) excluding contingency
- Our expectation is that the majority of Stage 2 capital will be funded from cashflow

1. EPC capital cost derived from tendered costs to be finalised in present negotiations
2. Stage 2 capital timing to be finalised during production ramp-up

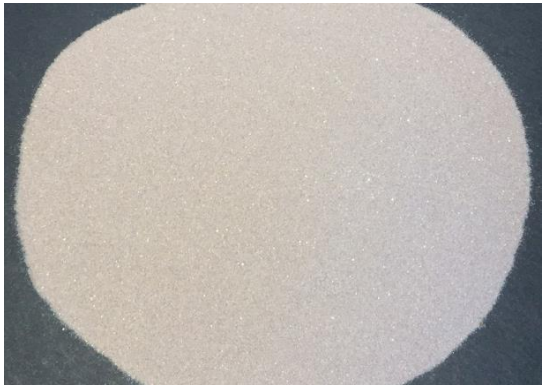
Source: BFS model, refer ASX announcement 24 March 2017

A PROJECT FOR THE COMMUNITY

- **Lead Agency** status promotes State and regional project support
- Approximately 140 direct full time jobs from the local community with all employees living locally
- Significant business opportunities with a key focus on Aboriginal participation
- Sheffield commitment to transparent Traditional Owner and other Aboriginal employment, training and business opportunities
- Extensive stakeholder engagement has been undertaken generating overwhelming community support
- Intergenerational job and training opportunities from a mine with a very long life
- Public Environmental Review (PER) environmental approvals targeted Q3 2017
- Native Title approvals targeted mid 2017

OFFTAKE AND MARKET STATUS

- The Thunderbird project is one of the few large mineral sands projects globally located in a low risk jurisdiction
- Thunderbird designed to deliver high quality zircon and ilmenite products, with the ability to displace lower quality products in the market
- In particular, the LTR ilmenite product has premium qualities that may attract premium pricing in Asia
- Two non-binding MOUs signed with European and Asian consumers with further offtake being negotiated.
- Discussions with other potential customers point to a strong appetite for the high quality products from Thunderbird from 2019



Premium Zircon

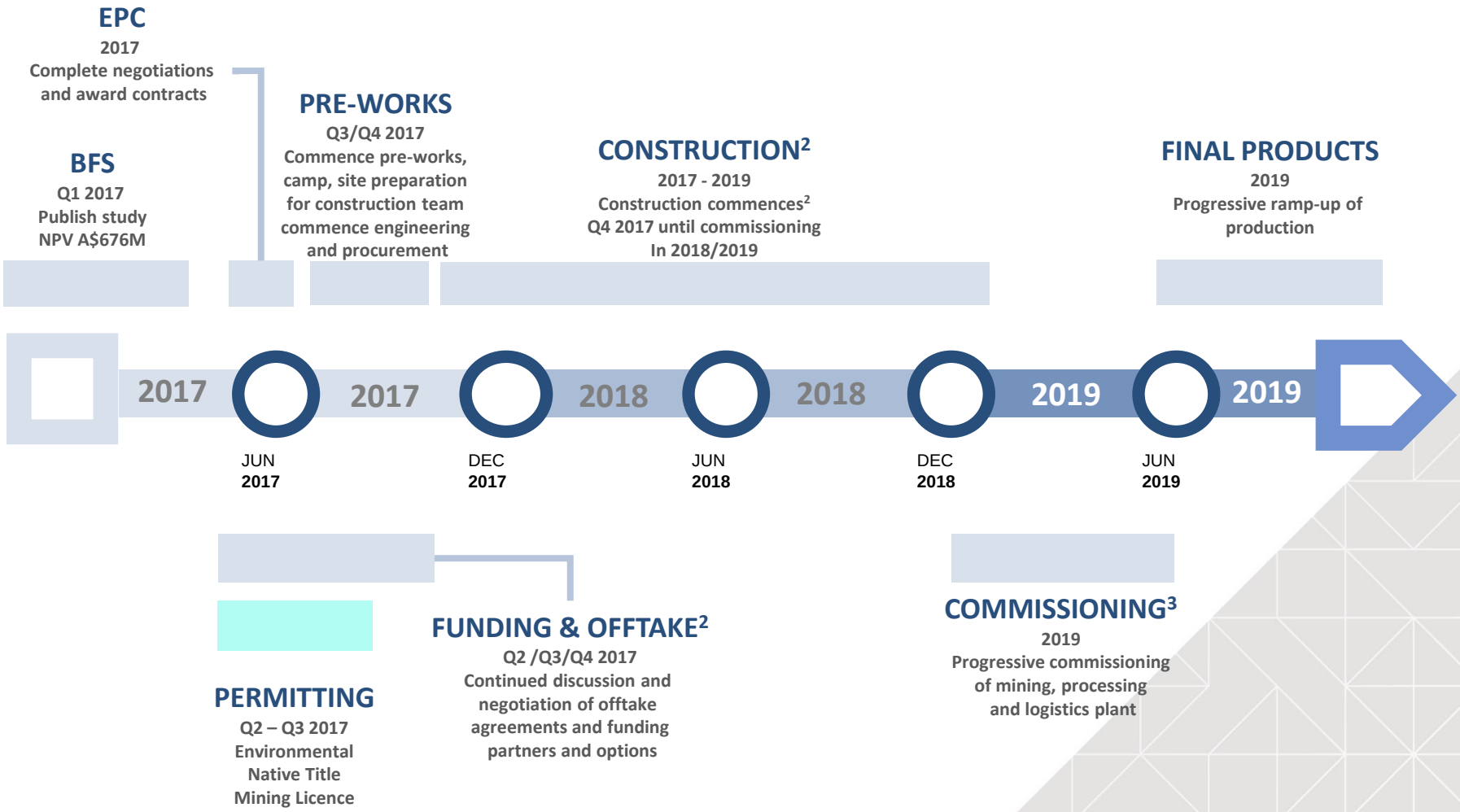
LTR Ilmenite

FINANCING

- To achieve the forecast outcomes in the BFS, Sheffield will require a funding solution that delivers at least A$355 million[1] in new capital via debt, equity and/or JV options
- Since the PFS, the Company has received interest from international financial and strategic investors, offtakers and lenders regarding participation in the funding of Thunderbird
  - This interest has related to a range of structures and instruments, and discussions are ongoing
- Sheffield may also consider other value realisation strategies (e.g. a partial sale and JV) that reduce Sheffield's ownership and lessen the funding burden for existing shareholders
- Sheffield is confident that a funding solution will be achievable, based on:
  - Thunderbird's expected strong margins, multi-decade mine life and high quality products, and its Lead Agency status which will facilitate development
  - Two non-binding offtake MOUs signed, others being negotiated
  - The track record of Sheffield's Board and Management in raising development capital for a number of mining projects
  - Strong support from existing Sheffield shareholders over an extended period
  - The improved market for financing Australian resources projects
- Sheffield has appointed leading Australian advisory firm, Azure Capital, to co-ordinate and lead funding discussions for the Thunderbird project

1 Modelled peak cash draw, excluding corporate overheads and financing costs.

TIMELINE – KEY TARGETS TO PRODUCTION[1]



1 There is no guarantee that these targets and steps will be achieved
2 Subject to permitting, offtake and funding
3 Commissioning is anticipated to commence in 2019

A WORLD CLASS MINERAL SANDS PROJECT

- BFS confirms Thunderbird as a world class mineral sands project
- Long mine life estimate of 42 years, offering leverage to multiple pricing cycles
- 100% owned and located in one of the world's best mining jurisdictions
- Pre-tax NPV_{10} of A$676 million, IRR of 25%
- Stage 1 capex of A$324m plus A$24m contingency (A$348m, US$261m)
- EBITDA of A$5.1 billion over LOM, averaging A$123 million per annum
- First 10 years of production consist of 97% Proved Ore Reserves
- Globally significant annual production of zircon and ilmenite
- Premium zircon is ceramic grade, LTR ilmenite has market leading quality
- Offtake negotiations are advanced
- Azure Capital leading discussions with project financiers and strategic investors
- Targeting initial production in 2019

APPENDICES

SUMMARY BFS METRICS

Thunderbird Project Assumed Product Prices

Average Product Prices (US$)[2]	Financial Year 2019 – 2023[3]	Financial Year 2024 – 2033[4]	LOM[5]
Premium Zircon	1,282	1,387	1,381
Zircon Concentrate	659	677	676
LTR Ilmenite	183	183	183
Hi-Ti88	500	500	500
Titano-magnetite	48	48	48

Thunderbird Project Estimated Production Outputs

Average Production per annum	Financial Year 2019 – 2023[3]	Financial Year 2024 – 2033[4]	LOM[5]
Premium Zircon	51,500	88,700	76,100
Zircon Concentrate	49,100	80,100	68,500
LTR Ilmenite	264,500	481,600	387,800
Hi-Ti88	12,800	23,000	20,300
Titano-magnetite	156,600	285,300	229,800

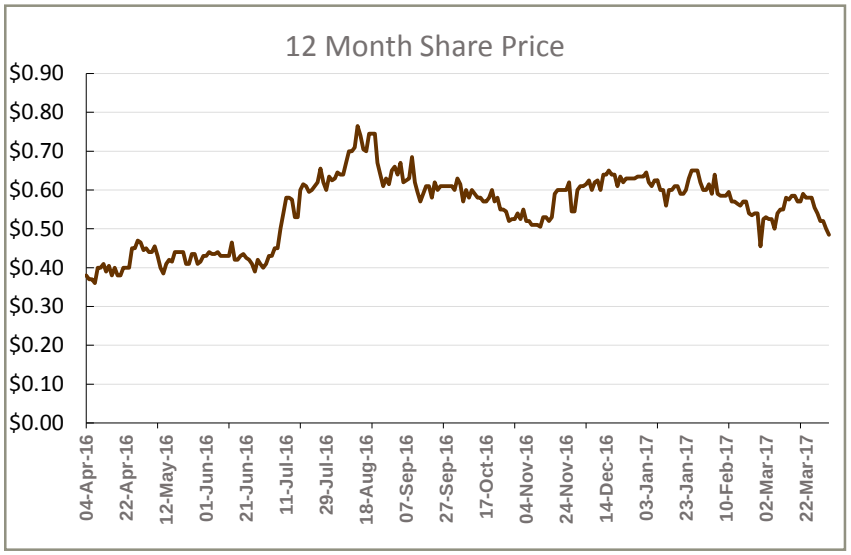
Thunderbird Project Estimated Capital Expenditure and Financial Metrics

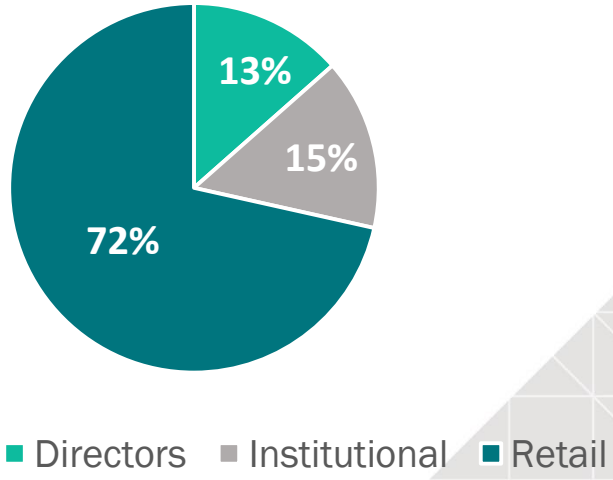
	A$m
Capex – Stage 1	348
Capex – Stage 2	195
Total Capex	**543[6]**
Pre-Tax Project NPV (10% WACC)[1]	**676**
Pre-Tax IRR %	**24.9%**
Post-Tax Project NPV (8% WACC)[1]	620
Post-Tax IRR %	20.6%

1. Excludes corporate overheads.
2. USD commodity prices are quoted as FOB terms.
3. Stage 1 time period depicted as Q4 FY2019 to Q3 FY2023 inclusive
4. Stage 2 first 10 years depicted as Q4 FY2023 to Q3 FY2033 inclusive
5. LOM (Life of Mine) describes the period 2018 to 2061.
6. Excludes sustaining capital

CORPORATE SNAPSHOT

ASX CODE	ISSUED SHARES	SHARE OPTIONS	SHARE PRICE (1 Apr 2017)	MARKET CAP	CASH (UNAUDITED)[1]	ENTERPRISE VALUE	TOP TWENTY SHAREHOLDERS[2]
SFX	181.0M	14.9M[2]	A$0.485	A$88M	A$11.7M	A$76M	~49%





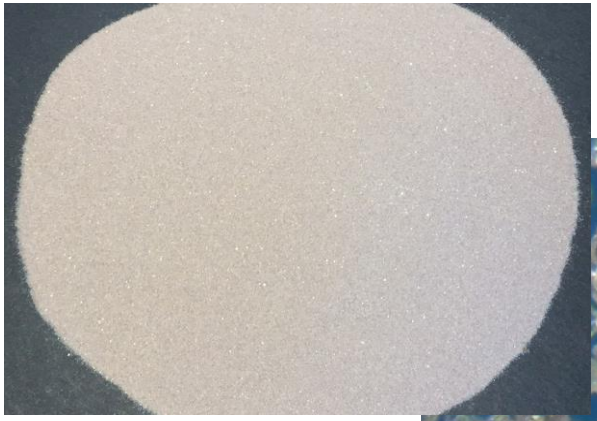
Major Shareholders

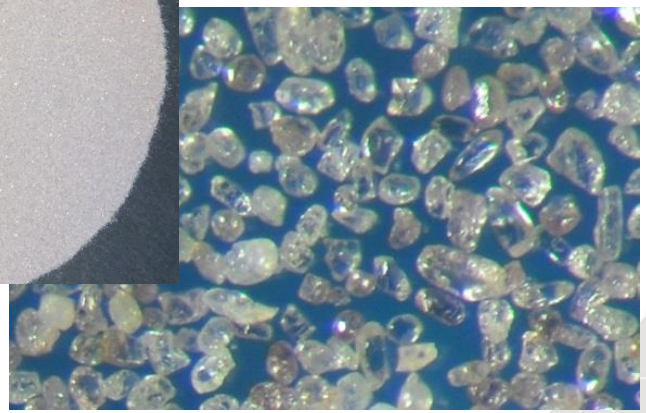
BlackRock	9%
Walter Yovich	6%
Sprott	2%
Other Institutions	4%

[1]unaudited as at 28 February 2017
[2]average exercise price A$0.42c

ZIRCON - PREMIUM PRODUCT

- Ceramic Grade Zircon
- > 66% ZrO_2
- Low Fe_2O_3
- Low TiO_2
- Very Low Al_2O_3
- Moderate U+Th
- Good Opacity
- Off-take Discussions in Progress



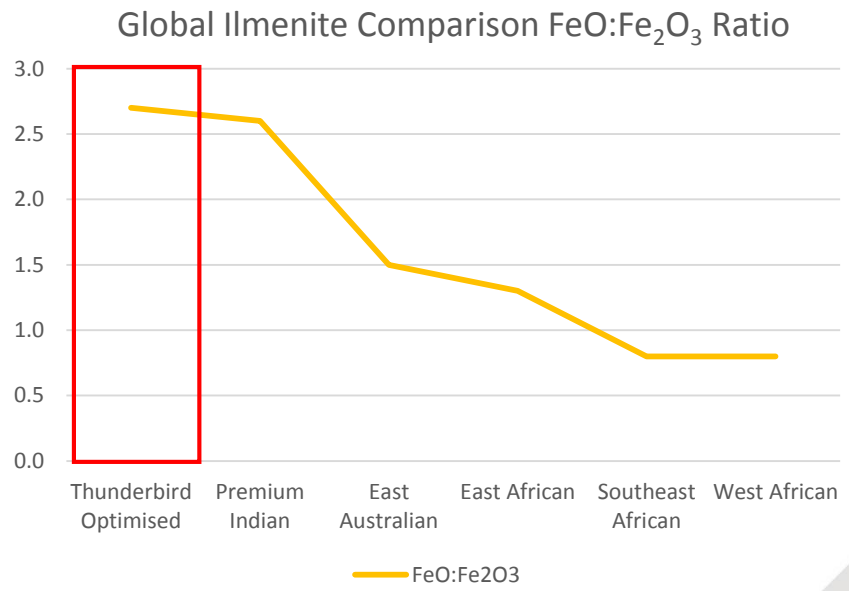


Composition (%)		Premium Zircon	Typical[1]
ZrO_2+HfO_2	%	66.2 – 66.6	66.30
TiO_2	%	0.09 – 0.18	0.14
Fe_2O_3	%	0.06 – 0.08	0.08
SiO_2	%	32.5 – 33.5	32.5
Al_2O_3	%	0.10 - 0.15	0.15

[1] Refer ASX announcement 12 October 2016

LTR ILMENITE - PREMIUM PRODUCT

- Exceptional Grade
- 56 – 58% TiO_2
- Outstanding $FeO:Fe_2O_3$
- Low Fe_2O_3 (<13%)
- Low Levels of Cr_2O_3
- High Acid Solubility
- Good reactivity rate
- Market Leading quality



Composition (%)	Thunderbird Optimise 3 ilmenite	Premium Indian ilmenite	East Australian ilmenite	East African ilmenite	Southeast African ilmenite	West African ilmenite
TiO_2	57.9	51.5	50.7	48.2	52.4	53.2
FeO	28.1	33.5	25-29	25.5	21.4	18.9
Fe_2O_3	10.3	13.0	16-19	20.0	27.9	23.3
$FeO:Fe_2O_3$	2.7	2.6	1.5	1.3	0.8	0.8
Cr_2O_3	0.05	0.04	0.30	0.09	0.09	0.16

[1] Refer ASX announcement 13 March 2017

ORE RESERVES

THUNDERBIRD DEPOSIT ORE RESERVES[1,4]

Valuable Heavy Mineral (VHM) in-situ grade

Ore Reserve Category	Ore Tonnes (millions)	In-situ HM Tonnes (millions)	HM Grade (%)	Valuable HM Grade (In-situ)[2]				Slimes (%)	Osize (%)
				Zircon %	HiTi Leuc %	Leuc %	Ilmenite %		
Proved	235.8	31.4	13.3	1.00	0.29	0.26	3.55	16.5	13.7
Probable	444.8	45.4	10.2	0.80	0.26	0.26	2.85	15.2	11.0
Total	**680.5**	76.8	**11.3**	**0.87**	**0.27**	**0.26**	**3.10**	**15.7**	**12.0**

Mineral assemblage as percentage of HM grade

Ore Reserve Category	Ore Tonnes (millions)	In-situ HM Tonnes (millions)	HM Grade (%)	Mineral Assemblage[3]				Slimes (%)	Osize (%)
				Zircon (%)	HiTi Leuc (%)	Leuc (%)	Ilmenite (%)		
Proved	235.8	31.4	13.3	7.5	2.2	1.9	26.7	16.5	13.7
Probable	444.8	45.4	10.2	7.8	2.5	2.6	28.0	15.2	11.0
Total	**680.5**	76.8	**11.3**	**7.7**	**2.4**	**2.3**	**27.4**	**15.7**	**12.0**

1) Ore Reserves are presented both in terms of in-situ VHM grade, and HM assemblage. Tonnes and grades have been rounded to reflect the relative accuracy and confidence level of the estimate, thus the sum of columns may not equal. Ore Reserve is reported to a design overburden surface with appropriate consideration of modifying factors, costs, mineral assemblage, process recoveries and product pricing.

2) The in-situ grade is determined by multiplying the HM Grade by the percentage of each valuable heavy mineral within the heavy mineral assemblage.

3) Mineral Assemblage is reported as a percentage of HM Grade, it is derived by dividing the in-situ grade by the HM grade.

4) Ore Reserves reported for the Dampier Project were prepared and first disclosed under the JORC Code (2012), refer to Sheffield's ASX announcement dated 16 March 2017 for further detail.

MINERAL RESOURCES

THUNDERBIRD DEPOSIT MINERAL RESOURCE[1,2,7]

Cut-off (HM%)	Mineral Resource Category	Material Tonnes (millions)	In-situ HM Tonnes (millions)	HM Grade[3] (%)	Valuable HM Grade (In-situ)[4]				Slimes (%)	Osize (%)
					Zircon (%)	HiTi Leuc (%)	Leuc (%)	Ilmenite (%)		
> 3% HM	Measured	510	45	8.9	0.71	0.20	0.19	2.4	18	12
	Indicated	2,120	140	6.6	0.55	0.18	0.20	1.8	16	9
	Inferred	600	38	6.3	0.53	0.17	0.20	1.7	15	8
	Total	**3,230**	**223**	**6.9**	**0.57**	**0.18**	**0.20**	**1.9**	**16**	**9**
>7.5% HM	Measured	220	32	14.5	1.07	0.31	0.27	3.9	16	15
	Indicated	640	76	11.8	0.90	0.28	0.25	3.3	14	11
	Inferred	180	20	10.8	0.87	0.27	0.26	3.0	13	9
	Total	**1,050**	**127**	**12.2**	**0.93**	**0.28**	**0.26**	**3.3**	**15**	**11**

Cut-off (HM%)	Mineral Resource Category	Material Tonnes (millions)	In-situ HM Tonnes (millions)	HM Grade (%)	Mineral Assemblage[5]				Slimes (%)	Osize (%)
					Zircon (%)	HiTi Leuc (%)	Leuc (%)	Ilmenite (%)		
> 3% HM	Measured	510	45	8.9	8.0	2.3	2.2	27	18	12
	Indicated	2,120	140	6.6	8.4	2.7	3.1	28	16	9
	Inferred	600	38	6.3	8.4	2.6	3.2	28	15	8
	Total	**3,230**	**223**	**6.9**	**8.3**	**2.6**	**2.9**	**28**	**16**	**9**
>7.5% HM	Measured	220	32	14.5	7.4	2.1	1.9	27	16	15
	Indicated	640	76	11.8	7.6	2.4	2.1	28	14	11
	Inferred	180	20	10.8	8.0	2.5	2.4	28	13	9
	Total	**1,050**	**127**	**12.2**	**7.6**	**2.3**	**2.1**	**27**	**15**	**11**

THUNDERBIRD DEPOSIT CONTAINED VALUABLE HM (VHM) IN MINERAL RESOURCES[1,2,6]

Cut-off (HM%)	Mineral Resource Category	Zircon Tonnes (thousands)	HiTi Leucoxene Tonnes (thousands)	Leucoxene Tonnes (thousands)	Ilmenite Tonnes (thousands)	**Total VHM Tonnes (thousands)**
>3% HM	Measured	3,600	1,000	1,000	12,000	17,700
	Indicated	11,800	3,800	4,300	39,100	59,000
	Inferred	3,200	1,000	1,200	10,500	15,900
	Total	**18,600**	**5,900**	**6,500**	**61,700**	**92,600**
>7.5% HM	Measured	2,300	700	600	8,400	12,000
	Indicated	5,800	1,800	1,600	21,000	30,200
	Inferred	1,600	500	500	5,600	8,200
	Total	**9,700**	**3,000**	**2,700**	**35,000**	**50,400**

1) The Thunderbird Mineral Resources are reported inclusive of (not additional to) Ore Reserves. The Mineral Resource reported above 3% HM cut-off is inclusive of (not additional to) the Mineral Resource reported above 7.5% HM cut-off. 2) All tonnages and grades have been rounded to reflect the relative accuracy and confidence level of the estimate and to maintain consistency throughout the table, therefore the sum of columns may not equal. 3) Total heavy minerals (HM) is within the 38µm to 1mm size fraction and has been reported as a percentage of the total material quantity. 4) The Valuable HM in-situ grade is reported as a percentage of the total material quantity and is determined by multiplying the percentage of total HM by the percentage of each valuable heavy mineral within the HM assemblage at the resource block model scale. 5) The Mineral Assemblage is represented as the percentage of HM grade. Estimates of mineral assemblage are determined by screening and magnetic separation. Magnetic fractions were analysed by QEMSCAN for mineral determination as follows: >90% liberation and; Ilmenite 40-70% TiO_2; Leucoxene 70-94% TiO_2; High Titanium Leucoxene (HiTi Leucoxene) >94% TiO_2 and Zircon 66.7% ZrO_2+HfO_2. The non-magnetic fraction was analysed by XRF and minerals determined as follows: Zircon ZrO_2+HfO_2/0.667 and HiTi Leucoxene TiO_2/0.94. 6) The VHM inventory is derived from information in the Mineral Resource tables. 7) The Mineral Resource estimate was prepared and first disclosed under the JORC Code (2012), refer to Sheffield's ASX announcement dated 5 July 2016 for further detail.