

Barrambie Titanium Project

“Sunrise for the Sleeping Giant”



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The information in this document that relates to Exploration Results, the Mineral Resource Estimate and the Ore Reserve Estimate for the Barrambie VTM Project has been extracted from ASX Releases set out below, which are available at www.neometals.com.au

17/04/2018	Updated Barrambie Mineral Resource Update
11/07/2018	Barrambie Test Work Produces +90% Purity Titanium Slag at High Recoveries
22/12/2020	Barrambie Flowsheet Breakthrough
03/11/2022	Barrambie - Successful Commercial Smelting Trials for Barrambie
17/11/2022	Robust Outcomes From Barrambie Titanium Project PFS
15/05/2023	Barrambie Titanium Project PFS and Ore Reserve Update

The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that in the case of estimates of Mineral Resources or Ore Reserves, Production Targets and forecast financial information underpinning the Production Targets all material assumptions and technical parameters underpinning the estimates of Mineral Resources or Ore Reserves, Production Targets and forecast financial information underpinning the Production Targets in the market announcements continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Persons’ findings are presented have not been materially modified from the original market announcements.

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Agenda



Introduction



Titanium Market



The Project: Barrambie




The Development Approach




The Team

Barrambie Investment Proposition

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Strong Demand/Supply Fundamentals for Titanium

 - Securing access to large, high grade chloride feedstock is a strategic imperative to downstream users.
 - Completed Commercial-scale smelting trials with partner Jiuxing to prove use of Barrambie MGC in high-grade chloride slag; key feedstock for the lucrative titanium metal market.

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Large, High-Grade Resource and Reserve¹ in a Tier 1 Jurisdiction

 - One of the World's highest grade hard-rock titanium assets with future upside from vanadium rich iron by-products.
 - Over 1,000 diamond and RC holes and extensive pilot plant testing >\$40M spent over 20 years
 - West Australian location with road access from site to the port of Geraldton and options for nearby processing synergies

- 


Capital Light Development Strategy

 - Low-cost phased development via production of an initial DSO, followed by concentrate product exported to China
 - Robust PFS economics – IRR 45% assuming floor prices
 - Potential for contract crushing and screening DSO and BOOT of Mixed Gravity Concentrator

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'Mine-ready' development opportunity

 - Granted Mining Lease and Mining Proposal for 1Mtpa DSO operation
 - Granted Ministerial Approval to construct a 3.2Mtpa Concentrator, timeline extension application in progress
 - PFS Economics underpinned by offtake term sheet with floor prices and exposure to upside bench-mark pricing

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Proven Partnering Business Model

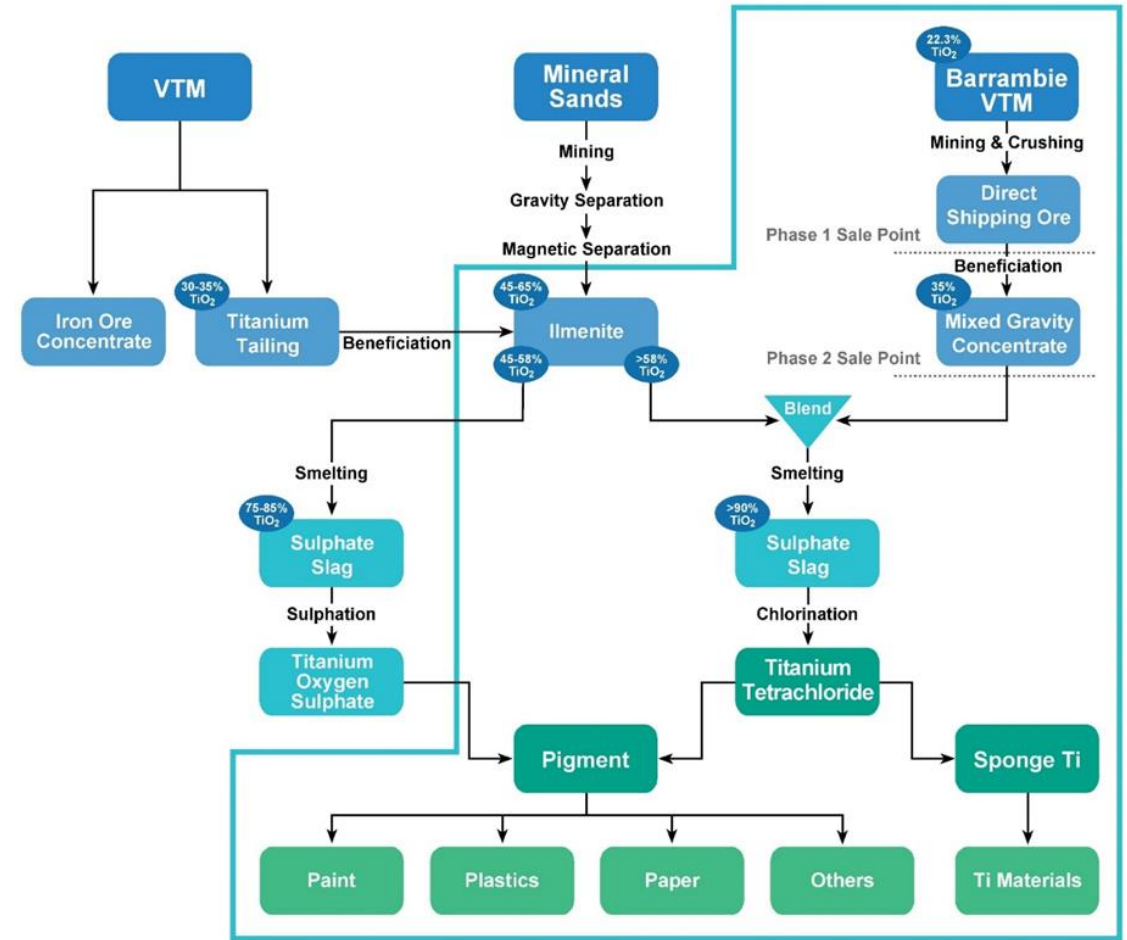
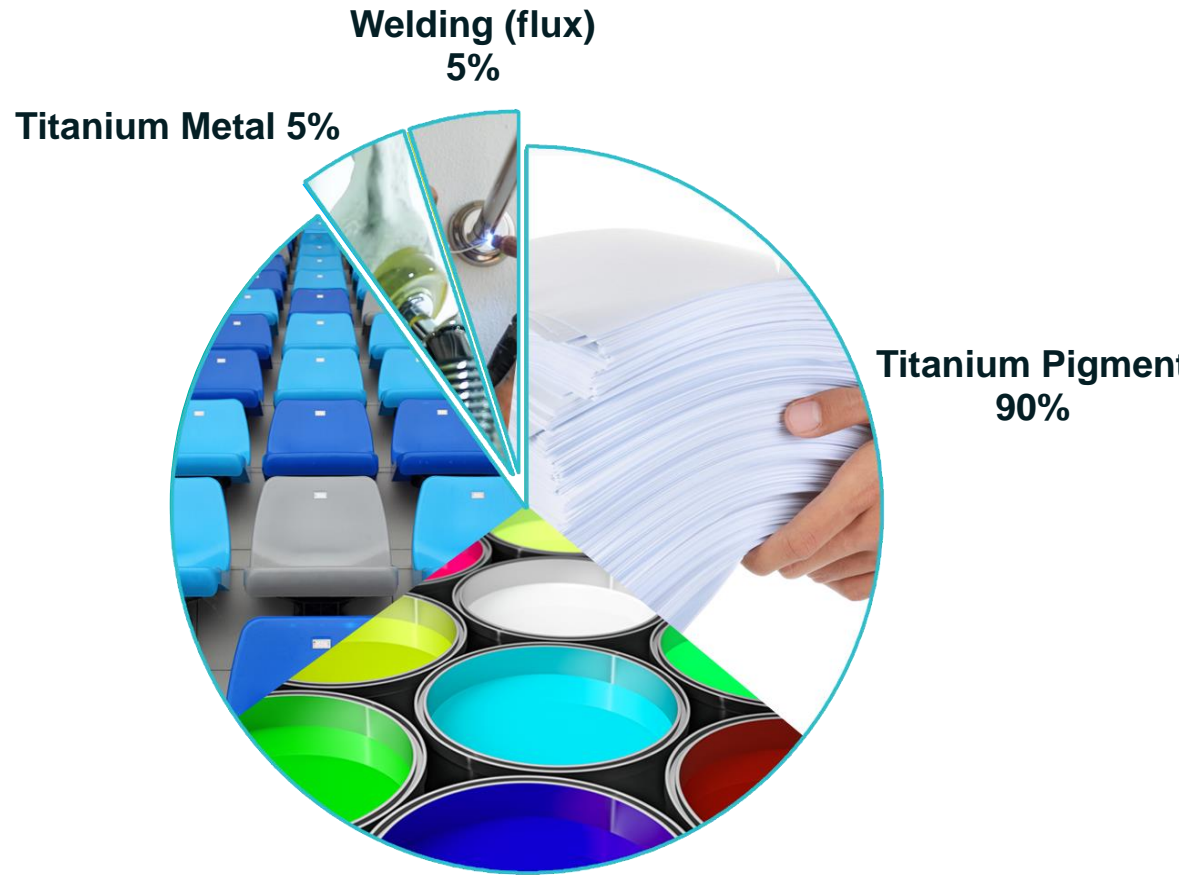
 - Track record of working with partners to de-risk and deliver project execution outcomes with strong returns to shareholders (Mt Marion & Widgie Nickel examples)

Titanium Market



Uses and Sources of Titanium

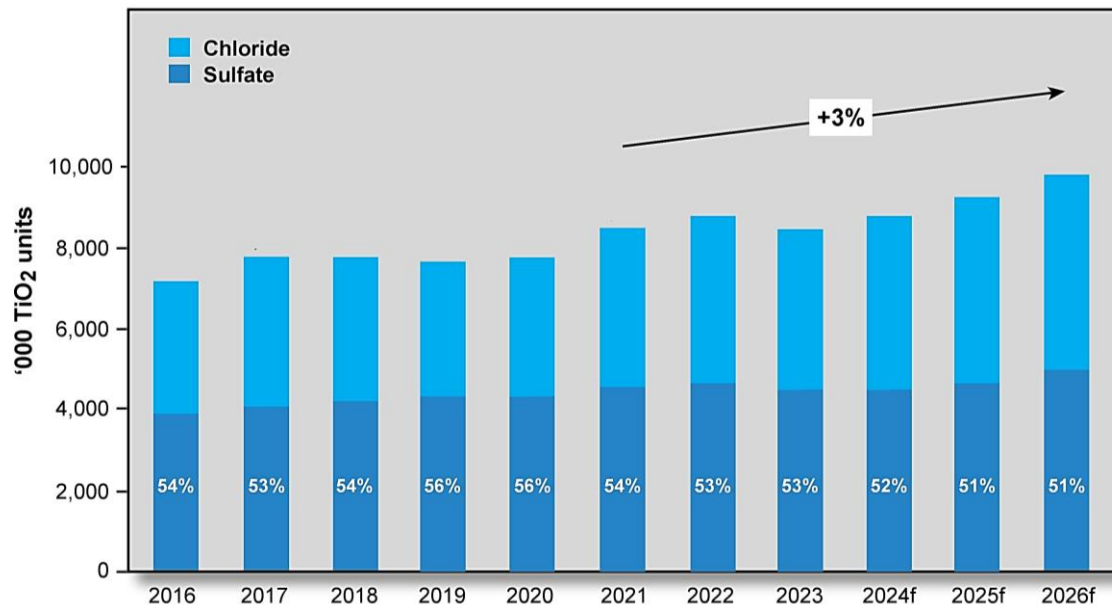
Titanium pigment (paint, paper, plastics) primary use. Ilmenite is the primary feedstock source



Demand

China's transition from sulphate to chloride pigment needs more high-quality feedstocks like titanium slag and synthetic rutile

Titanium Demand by Feedstock



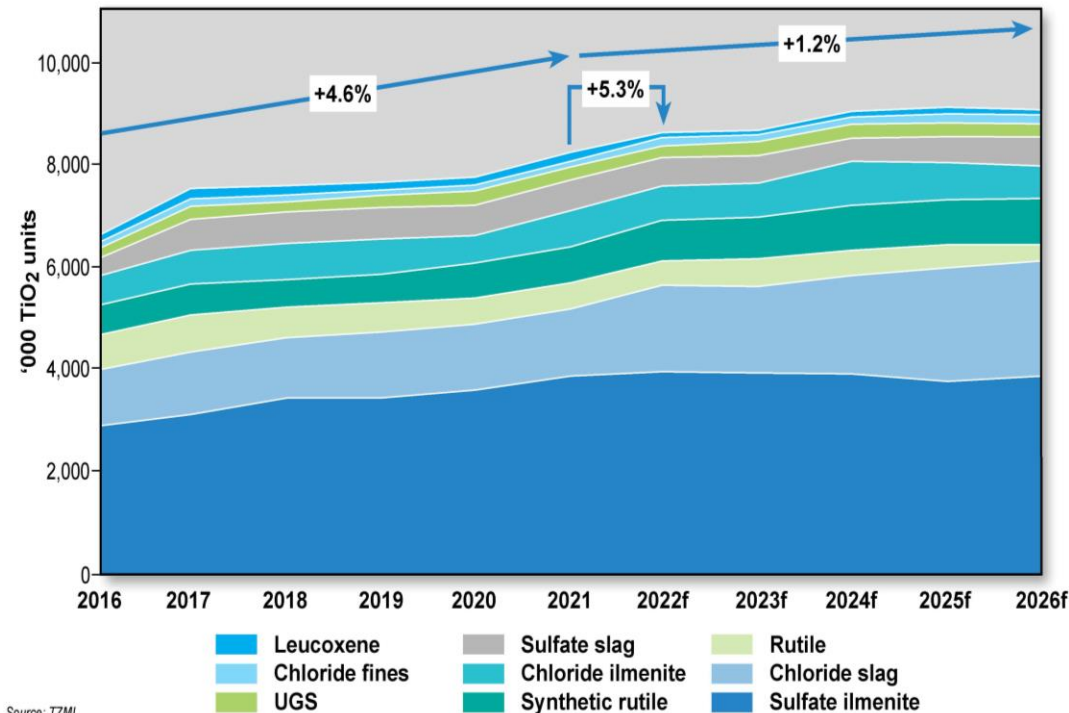
Source: TZMI

- China, which is half of world pigment production is converting it from sulphate to chloride process to reduce iron waste
- Global 2022 titanium demand was ~8.6 million TiO₂ units, of which 90% was consumed in the production of TiO₂ pigment
- Demand over the next five years is forecast to grow at a compound annual growth rate of 2.8% (expected to reach 9.82 million TiO₂ units by 2026)

Supply

World supply of high-quality mineral sands in decline – slags from smelted ilmenites set benchmark prices

Titanium Feedstock Supply by Product



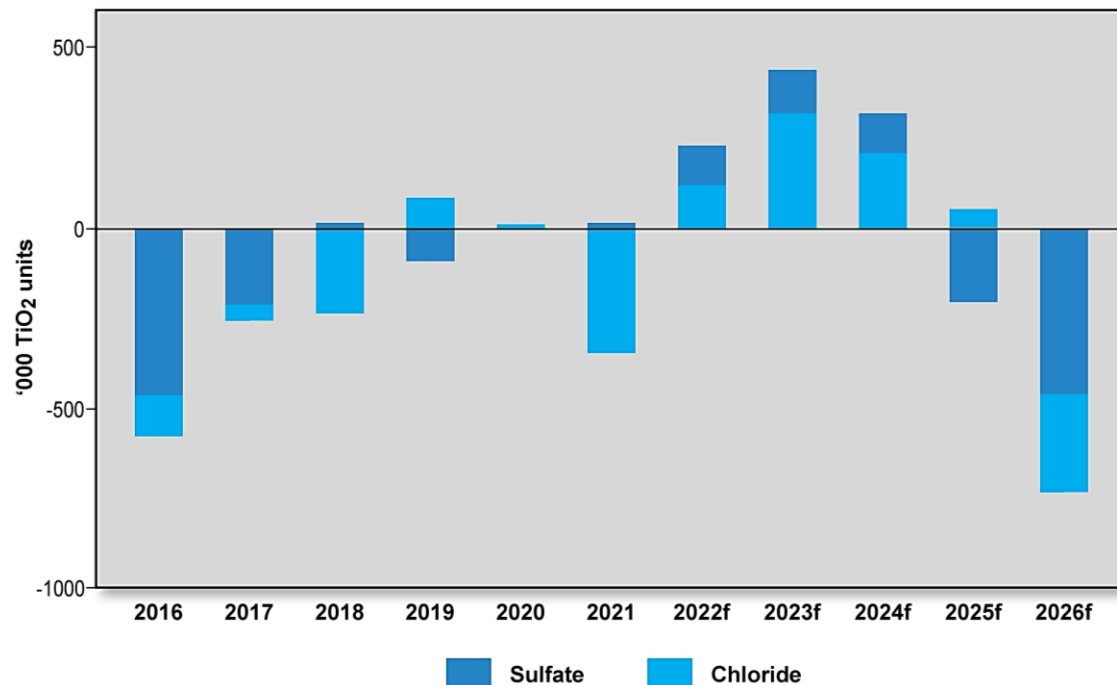
- Global 2022 titanium supply/demand balanced at ~8.6 million TiO₂ units
- Global supply expected to remain relatively flat at ~9 million TiO₂ units in coming years
- Two main TiO₂ pigment manufacturing processes, the sulphate and chloride processes. Pigment feedstocks are described as either chloride or sulphate depending on the process
- Sulphate ilmenite and chloride slag are the main titanium feedstocks accounting for roughly two thirds of global supply

Source: TZMI

Smelting ilmenites (slag) is the only solution

Emerging structural Chloride and Sulphate Deficits – Barrambie is a proven chloride-slag feedstock

Titanium Feedstock Market Balance



- Commercial scale smelting trials have proven use of Barrambie concentrate into high-grade titanium slag suitable for chloride pigment process**

Chloride grade Titanium slag quality			
	MGC Feed	TiO ₂ Slag from Sample 1	TiO ₂ Slag from Sample 2
TiO ₂	<u>35.3%</u>	<u>92.35%</u>	<u>91.2%</u>

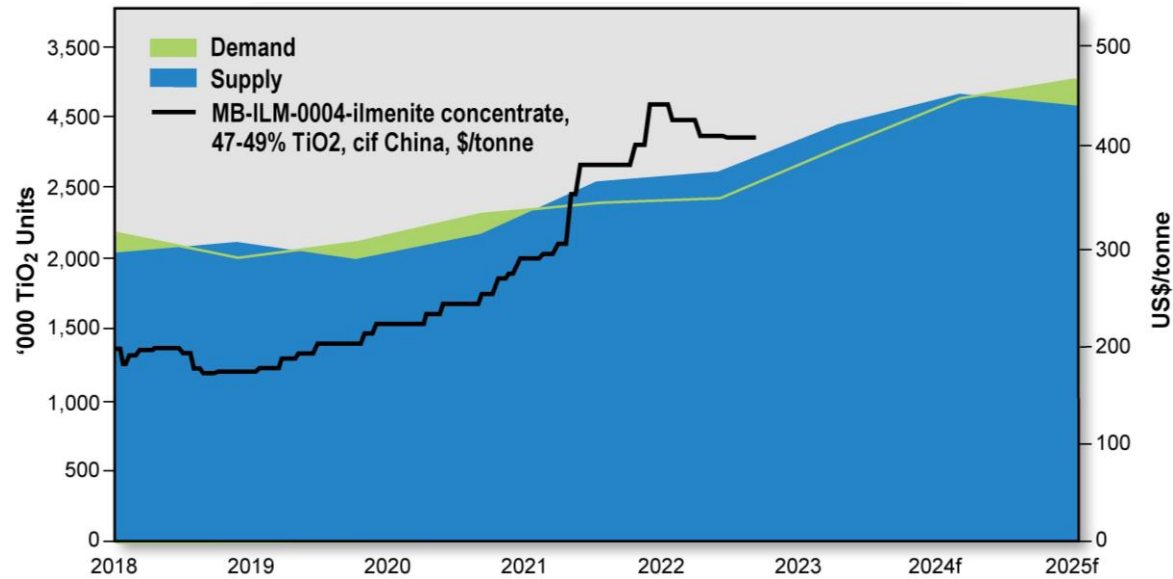
Source: TZMI

**For full details refer to ASX announcement headlined “Successful Commercial-Scale Smelting Trials for Barrambie” released on 3 November 2022

Pricing

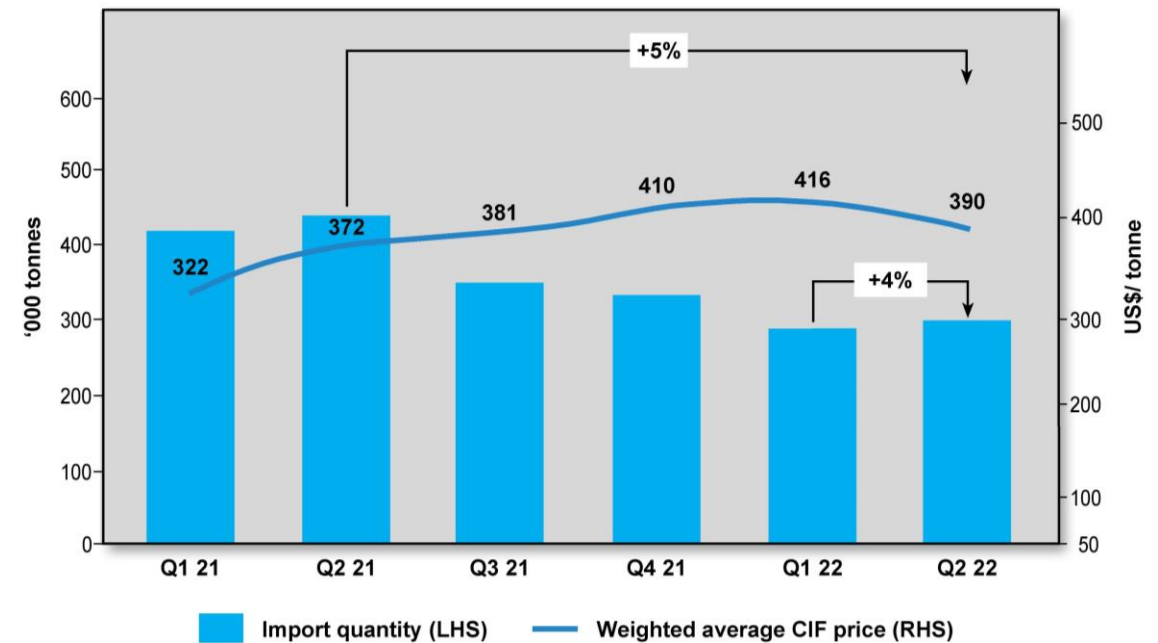
Strong LT price trend for Chloride and Sulphate Feedstocks

Chloride Feedstock Supply Demand Balance and Ilmenite Price



Source: TZMI

China Imported Sulphate Ilmenite Volume and Price



Source: TZMI

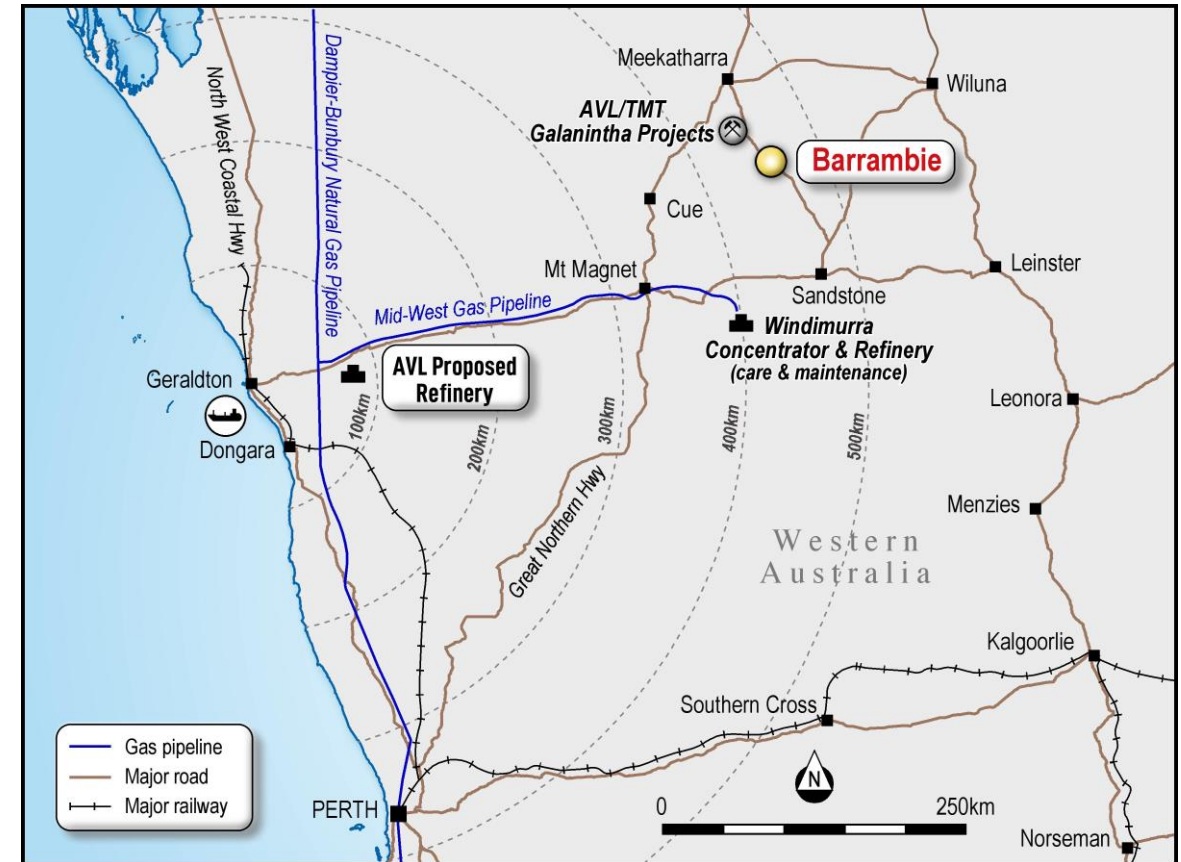
The Project - Barrambie



Barrambie Background

A truly world class development opportunity

- The world's 2nd highest-grade hard-rock titanium asset
- 100% owned by Neometals through Australian Titanium Pty Ltd located in Tier 1 Jurisdiction with excellent infrastructure
- >\$40m invested in exploration and evaluation expenditure since 2003
- Successful commercial scale smelting trials produce to demonstrating value-in-use for customer of blending Barrambie concentrates
- Granted mining lease and mining proposal
- Term sheet with China's largest chloride-grade titanium slag producer for worlds largest titanium feedstock offtake*



* For full details refer to ASX announcement headlined "Offtake Term Sheet with Jiuxing Titanium Executed" released on 20th April 2023

Mineral Resource Estimate and Ore Reserve

Long, Wide, Deep – Layered Intrusion

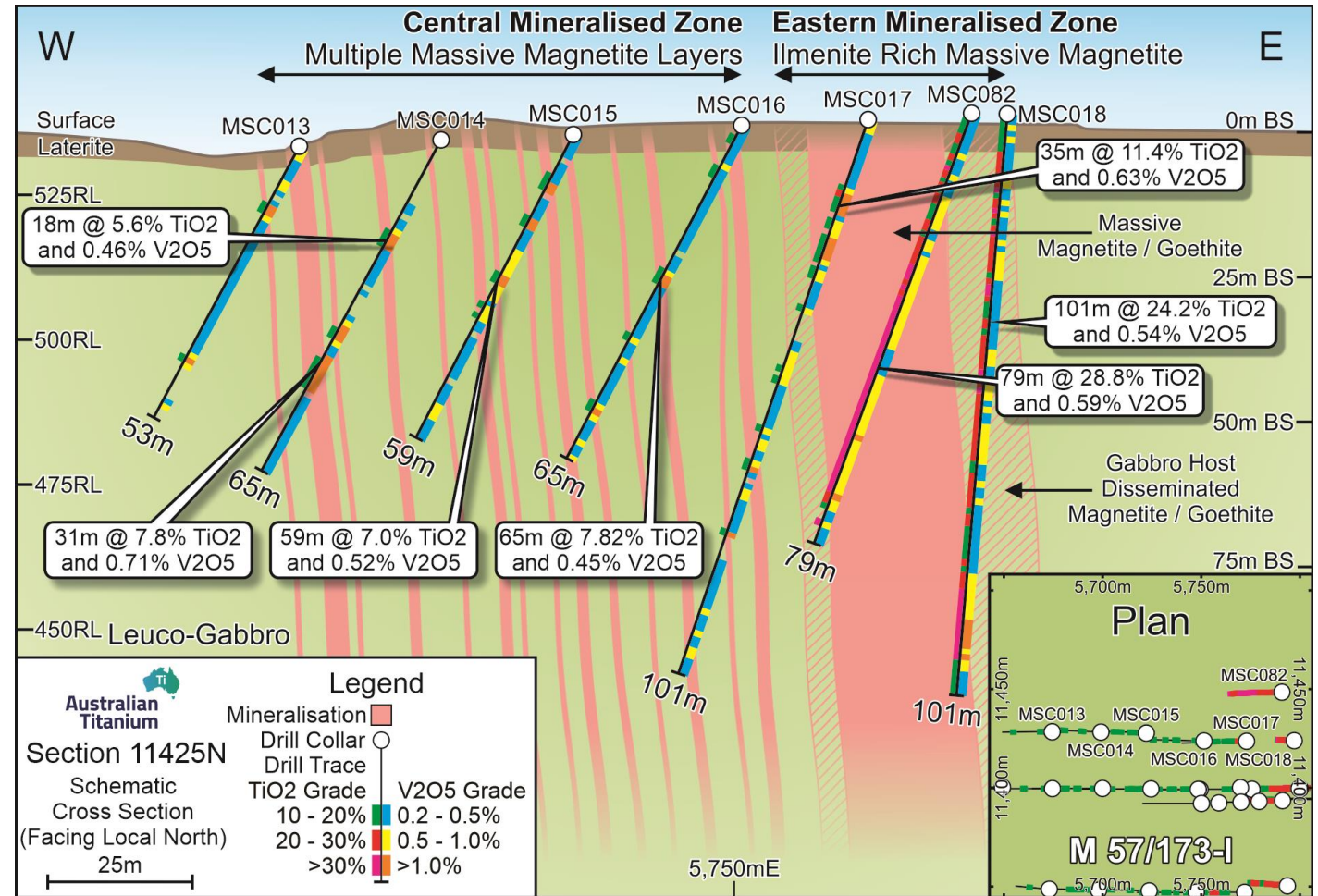
Mineral Resource Estimate

Classification	Tonnes (Mt)	TiO ₂ (%)	V ₂ O ₅ (%)
Indicated	187.1	9.61	0.46
Inferred	93.0	8.31	0.40
Total	280.1	9.18	0.44

Ore Reserve Estimate

The Ore Reserve is within the Mineral Resource estimate above.

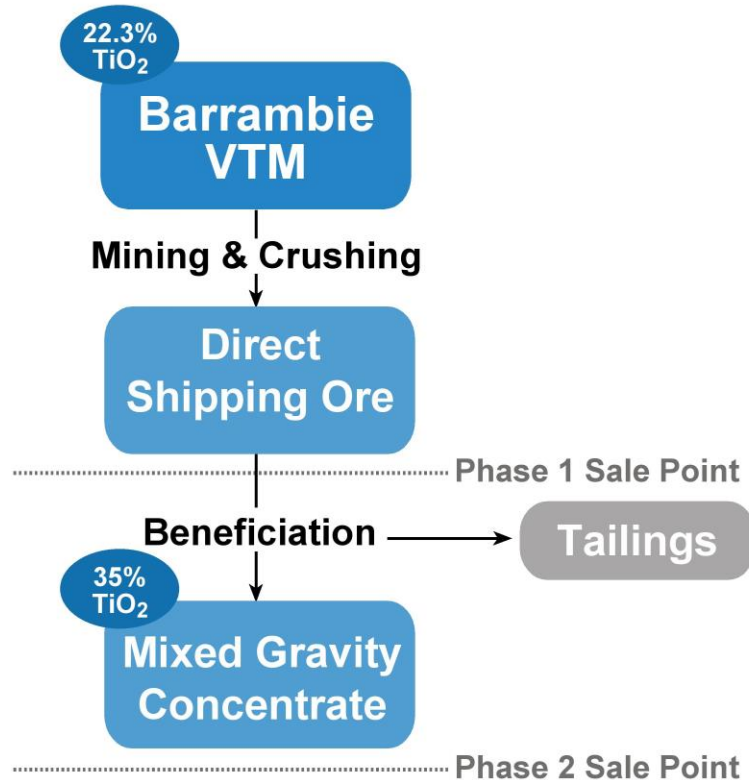
JORC Code 2012 Ore Reserve Category	Ore Tonnes (Mt)	TiO ₂ (%)	V ₂ O ₅ (%)	Fe ₂ O ₃ (%)
Probable	27.6	22.3	0.57	43.7



1. For full details, refer to Neometals ASX release dated 17 April 2018 titled "Updated Barrambie Mineral Resource Estimate" and Neometals ASX release dated 15 May 2023 titled "Barrambie – Updated PFS Results"

Products

Proven through extensive bulk mining and piloting



- The primary product to be recovered from Barrambie direct shipping ore (DSO) and mixed gravity concentrate (MGC) is ilmenite
- Barrambie ilmenite contains low levels of CaO, MgO, Cr₂O₃, U & Th and compares favourably with other ilmenites used as feedstock for the manufacture of chloride slag and sulphate pigment
- Barrambie ilmenite TiO₂ content of 52% falls within the typical range for ilmenites used in these applications

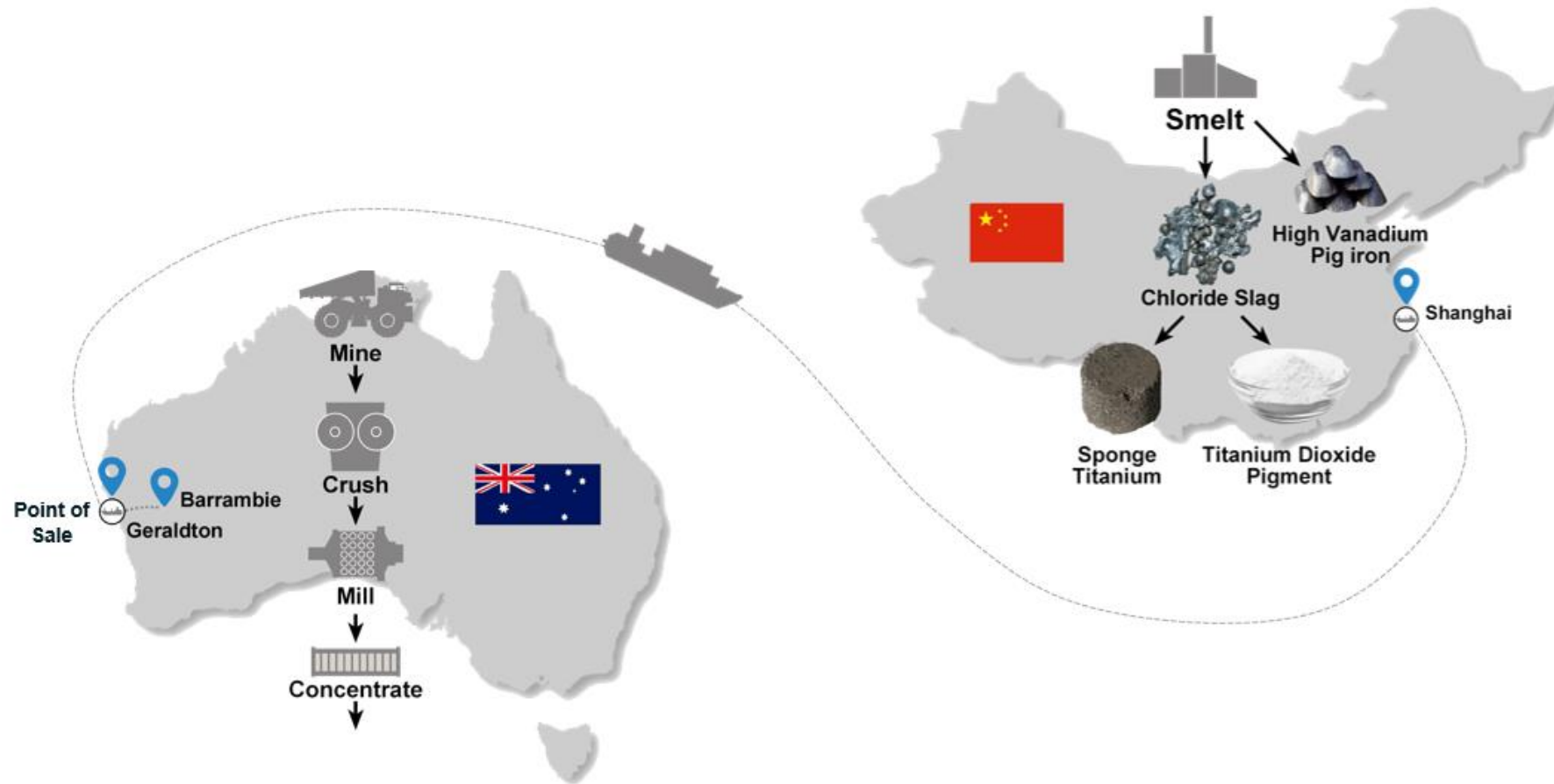
	DSO Phase 1	MGC Phase 2	Ilmenite Phase 3
Composition			
TiO ₂ (%)	26.9	36.5	52.0
V ₂ O ₅ (%)	0.64	0.76	0.40
Fe ₂ O ₃ (%)	43.4	57.4	47.0
SiO ₂ (%)	14.4	2.65	2.0
Al ₂ O ₃ (%)	9.8	1.9	1.0

Development Approach



Barrambie Development Path

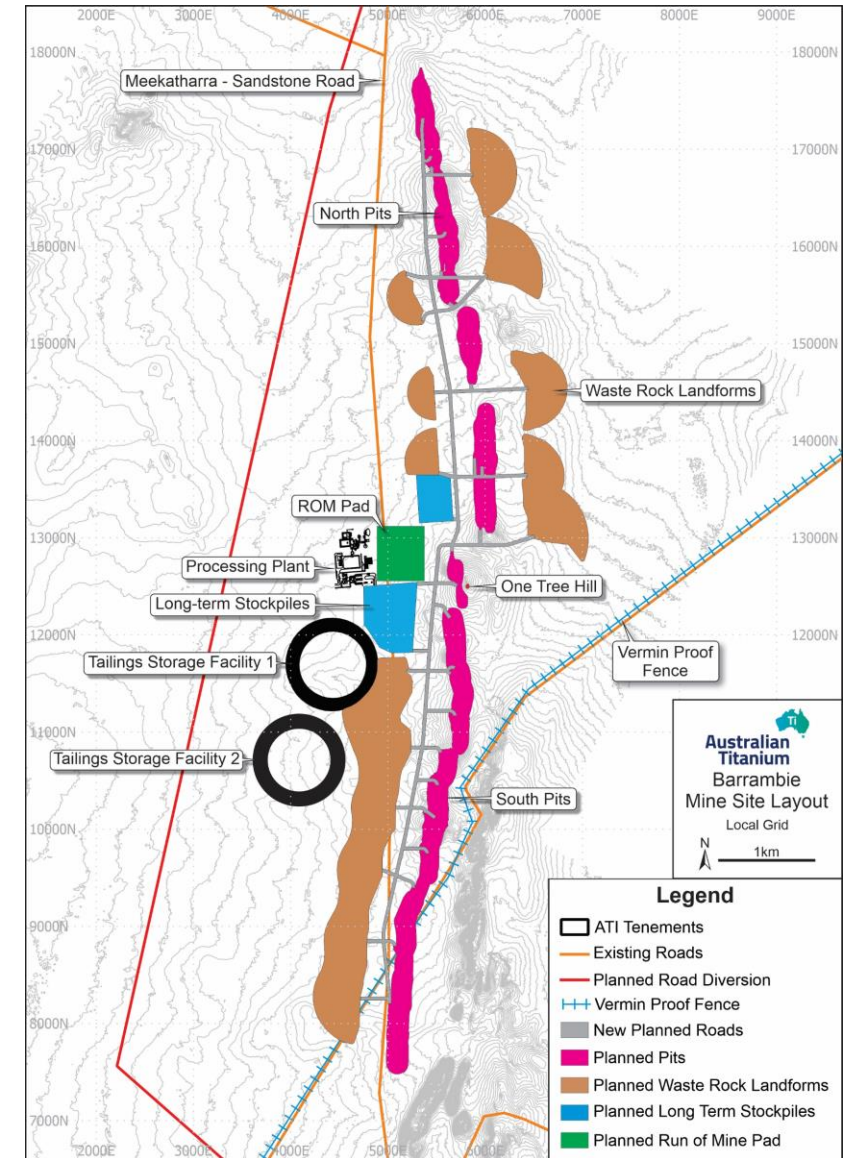
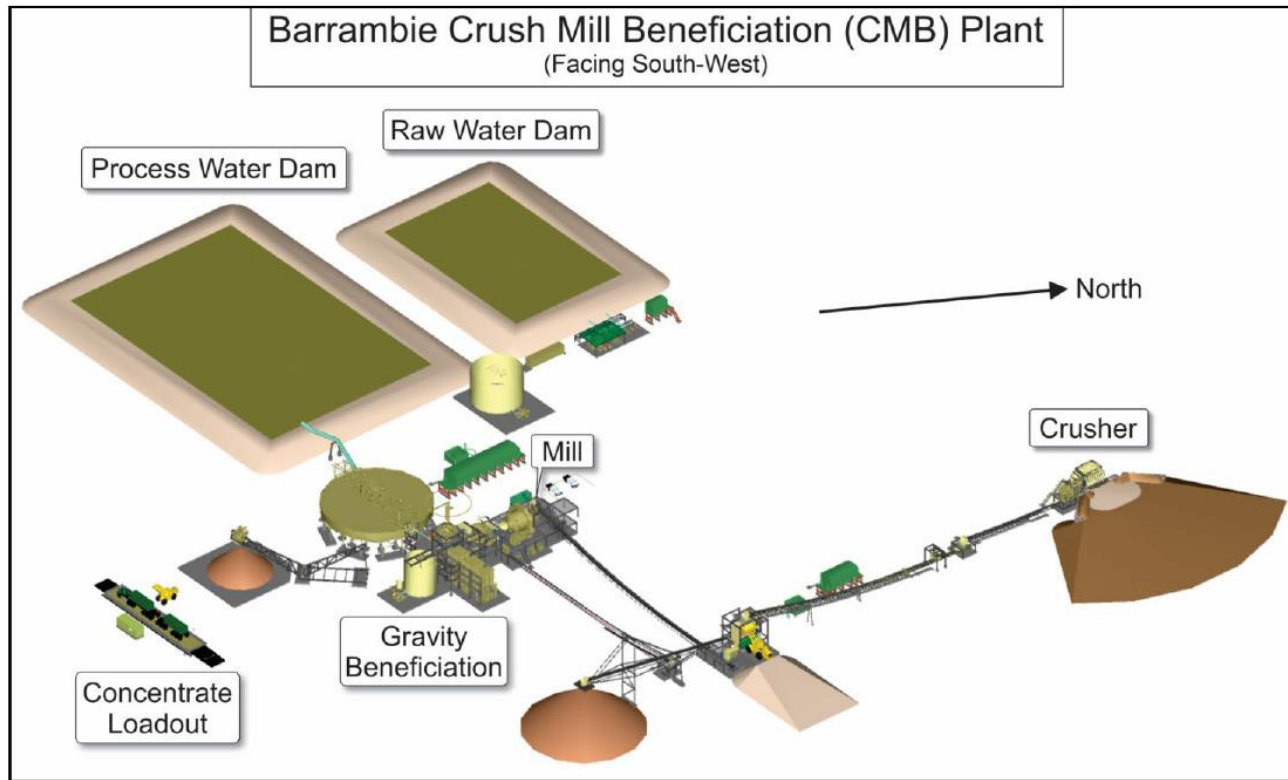
Long-life concentrate export operation supplying worlds largest titanium market



Capital-light Execution Strategy

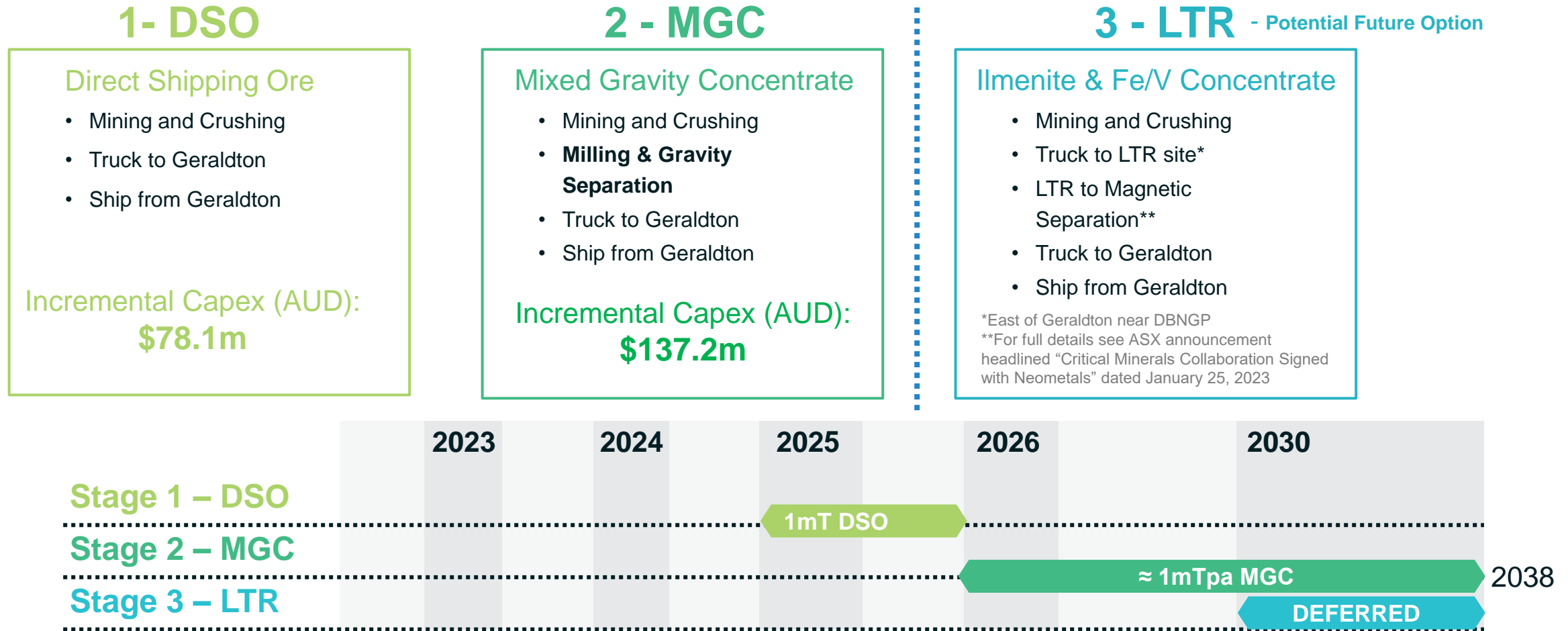
Contract open-pit mining, contract crushing and screening (DSO)

Milling and Gravity Concentration under BOOT or EPCM (MGC)



Staged Development Approach

Early contractor engagement process with NRW/Primerio for contract mine-to-port solution



Robust Economics @ Floor Prices

**MINERAL
RESOURCE***



280.1Mt

@ 9.18% TiO₂

**ORE
RESERVE****



27.6Mt

@ 22.3% TiO₂

**LIFE OF
MINE**



13 Years

PRODUCTS



Year 1: 1Mt DSO
Years 2 - 13: 1Mtpa MGC

OPEX



A\$195/t

product

PAYBACK



2.9 years

**CAPITAL
COSTS**



A\$215.3M

PRE TAX NPV₁₀



A\$374.9M

IRR 45%

**FREE CASH
FLOW*****

Total

A\$1106.1M

First 5 Years

A\$103.3M pa

* Refer to Neometals ASX release dated 17 April 2018 titled "Barrambie Mineral Resource Update"

** Probable *** Free cashflow is pre-tax and undiscounted

Note: USD\$: A\$ 0.70, Average sales price A\$275/t

For full details refer to Neometals ASX release dated 15 May 2023 titled "Barrambie PFS and Ore Reserve Update"

Offtake Term Sheet with China's leading Ti slag producer

Take-or-Pay, Market Linked Pricing, Fixed Floor Price with upwards CPI adjustment

- MoU signed with Jiuxing Titanium Materials Co. Ltd (“Jiuxing”) in 2021*
- Jiuxing Term Sheet now executed**
- Jiuxing is one of the leading chloride-grade titanium slag producers in China, and is a key supplier to BaoTi, China's largest titanium metal producer
- Offtake contemplates sale to Jiuxing of 100% of Year 1 DSO and ~80% of Year 2-5 MGC
- The balance of MGC and any potential future LTR product to third parties to be marketed by Neometals

Summary of Key Offtake Parameters		
Term	Years	5
Term (DSO)	Years	1
Volume (DSO)	Mtpa	1
Price	US\$/wmt CIF basis	Actual delivered cost plus fixed margin
Term (MGC)	Years	4
Volume (MGC)	Mtpa	0.8
Price (MGC)	US\$/wmt CIF basis	% Australian Ilmenite Price with fixed floor (upwards CPI indexed)
Payment Terms		Letter of Credit

*For full details refer to ASX announcements headlined “Barrambie – MOU for Cornerstone Concentrate Offtake” released on 16th April 2021 and “Barrambie – Pilot Plant and Offtake Update” released on 23rd December 2021

**For full details of the Term Sheet (including details of the conditions of the Term Sheet) refer to ASX announcement headlined “Offtake Term Sheet with Jiuxing Titanium Executed” released on 20th April 2023

Outstanding Smelting Trial Results by Jiuxing

Chloride Grade Titanium Slag produced with blends of Barrambie MGC

Chloride grade Titanium slag quality				
	MGC Feed	TiO ₂ Slag from Sample 1	TiO ₂ Slag from Sample 2	Indicative Chinese TiO ₂ Slag Specification
TiO ₂	<u>35.3%</u>	<u>92.35%</u>	<u>91.2%</u>	<u>90% min</u>
CaO	0.22%	0.43%	0.30%	0.35% max
MgO	0.05%	0.45%	0.54%	1.0% max
ΣFe	40.6%	1.93%	4.37%	4.0% max
SiO ₂	2.4%	2.62%	1.63%	2.5% max

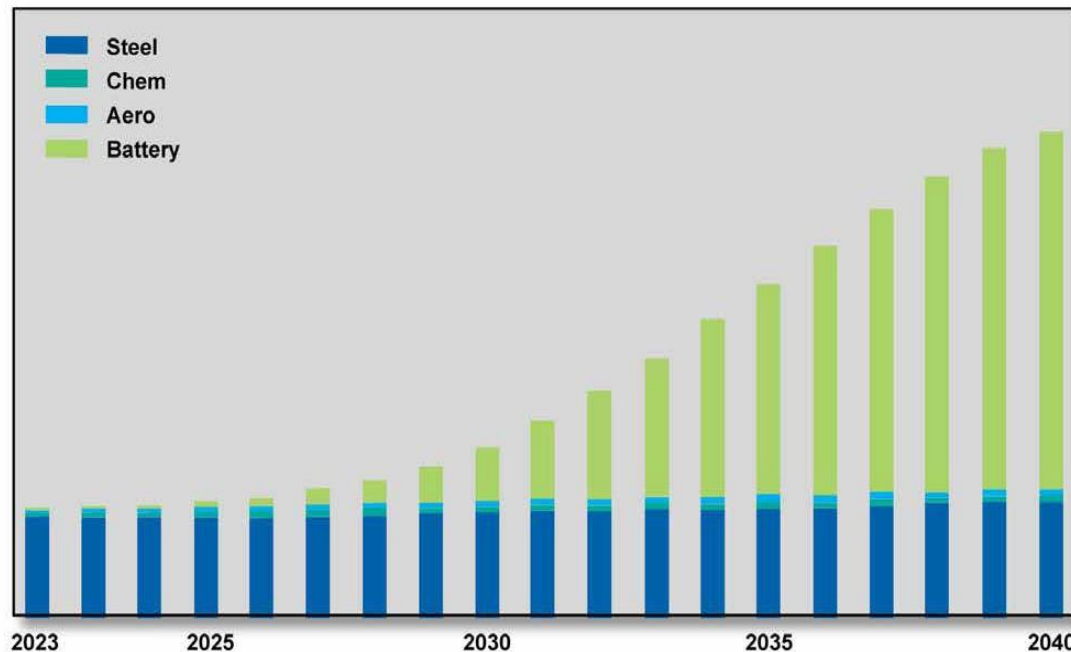
- Smelting trial run by offtake partner Jiuxing Titanium Materials at production facility in Liaoning, China
- Neometals supplied 40 tonnes of mixed gravity concentrate (MGC) produced in Western Australia, from a representative sample of Barrambie ore collected from three locations
- Sample 1 trial was a 1:1 blend of MGC with “ilmenite 1” (56% TiO₂)
- Sample 2 trial was a 1:2 blend of MGC with “ilmenite 2” (53.6% TiO₂)
- Each trial produced titanium slag and pig iron
- **Results establish the value-in-use potential of Barrambie MGC to produce chloride-grade titanium slag**

*For full details refer to Neometals ASX release dated 3rd November 2022 titled “Successful commercial-scale smelting trials for Barrambie

Mining operations will stockpile high V Central Bands

Free call option on leading battery material for stationary energy storage

Vanadium Demand by End Use, 2023-2040



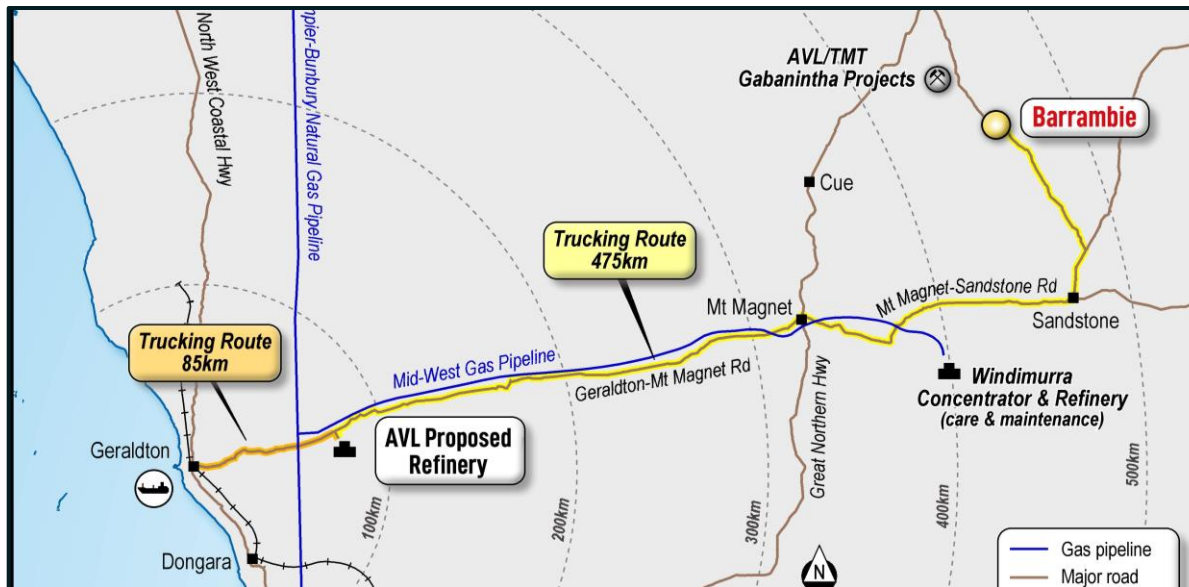
Source: CRU

- The mine plan focusses on extracting the high-titanium Eastern Band at Barrambie, significant volumes of high-vanadium Central Bands will be stockpiled
- Vanadium consumption is currently primarily anchored to steel production.
- Over the next decade, increased demand from energy storage in the form of Vanadium Redox Flow Batteries (VRFBs) will drive vanadium demand

MOU with Australian Vanadium Ltd

Evaluating infrastructure sharing and co-production of V from downstream processing Barrambie concentrates

Location of AVL Processing Plant

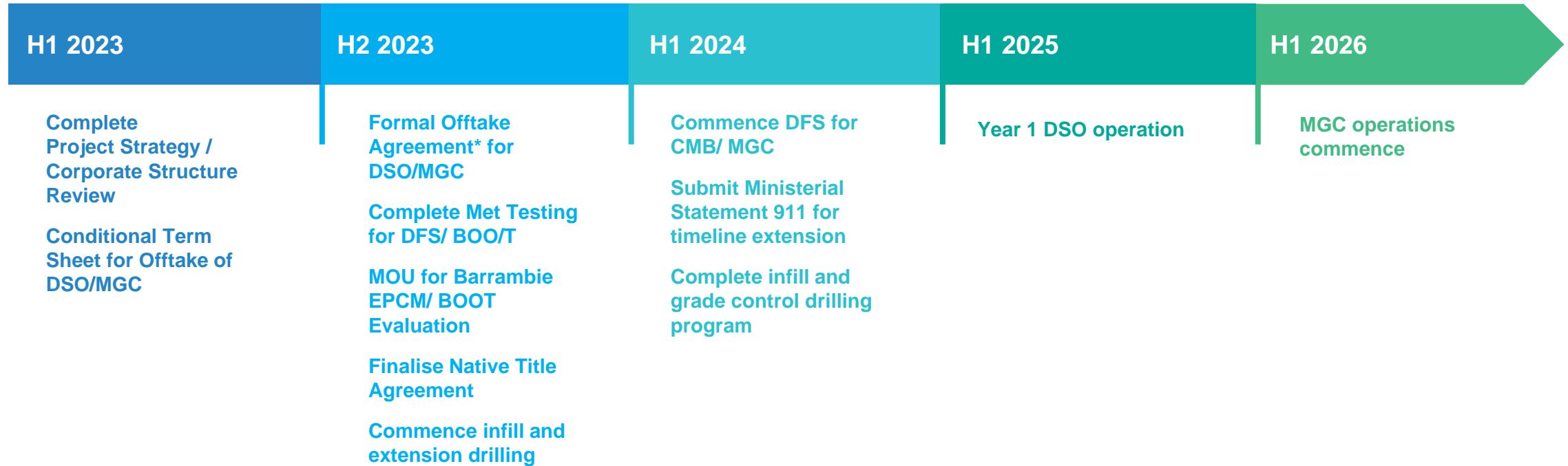


- The Barrambie project can produce an iron/vanadium concentrate co-product from LTR separation of an ilmenite concentrate.
- Neometals has signed a Term Sheet with neighbouring Australian Vanadium Ltd to investigate opportunities for sale and process of iron/vanadium concentrate generated from the Barrambie project*

*For full details see ASX announcement headlined "Critical Minerals Collaboration Signed with Neometals" dated January 25, 2023

Indicative Timeline and Newsflow

Continue to grow resource, de-risk and develop



*Subject to Board Approval

The Team



Proven mine developers and operators



Greg Evans

Corporate Finance

Greg has 25+ years experience in investment banking and mergers and acquisitions with public companies in the resources and industrial sectors.

He has developed a wealth of experience with capital raising and the buying and selling of assets of companies.

Greg is a Principal Director at KPMG, and plays an active role in the global mining M&A sector.

Most recently Greg has joined the Board of Yandal Resources Ltd as a Non-Executive Chair.



Casper Adson

Chartered Chemical Engineer

Casper is an experienced chemical engineer with 20+ years experience in executive and operational roles.

Casper is experienced in complex processing plant environments ranging from downstream oil refining, synthetic rutile production, gold processing and activated carbon production.

He has worked with leading mineral and resource companies Iluka Resources, BP, WorleyParsons and KCGM in processing and operational roles.



Darren Townsend

Mining Engineer

Darren is a Mining Engineer with 25+ years of development, mining, and corporate experience including managing ASX and TSX listed companies.

His experience includes developing and operating tantalum mines in Australia (Wodgina) and Mozambique and the resource drill out and permitting a world class niobium and rare earth project in Kenya.



Les Guthrie

Mechanical Engineer

Les brings 40+ years of experience to Neometals including senior global roles within corporate and project management and capital program development.

He was VP Projects for BHP Billiton, Head of Projects and Present LNG for BG Group, President of Aker Kvaerner Inc. and he was also the MD of Kvaerner Australia. Les is one of the founding advisors to the John Grill Centre for Project Leadership.

Join us as we develop the worlds second largest hard-rock mine with the largest, market-linked offtake term with floor prices... wait haven't we done this before?



Barrambie Investment Highlights

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Strong Demand/Supply Fundamentals for Titanium

 - Securing access to large, high grade chloride feedstock is a strategic imperative to downstream users.
 - Completed Commercial-scale smelting trials with partner Jiuxing to prove use of Barrambie MGC in high-grade chloride pathway to lucrative titanium metal market.
- 

Large, High-Grade Resource and Reserve¹ in a Tier 1 Jurisdiction

 - One of the World's highest grade hard-rock titanium assets with future upside from vanadium rich iron by-products.
 - >\$40M spent over 20 years
 - West Australian location with logistics to the port of Geraldton and options for nearby processing synergies
- 

Capital Light Development Strategy

 - Low cost phased development via production of an initial DSO, followed by concentrate product exported to China
 - Robust PFS economics
 - Potential for BOOT partnership for further capital reduction
- 

'Mine-ready' development opportunity

 - Granted Mining Lease
 - Granted Ministerial Approval to construct a 3.2Mtpa concentrator timeline extension application in progress
 - Path to offtake with Chinese partners, economics underpinned by floor price with exposure to upside bench-mark pricing
- 

Proven Partnering Business Model

 - Track record of working with partners to de-risk and deliver project execution outcomes with strong returns to shareholders (Mt Marion & Widgie Nickel examples)

Appendices



Robust Economics @ Floor Prices

Summary of Key Parameters from PFS Update Financial Model		
Life of Mine (LOM)	Years	13.2
LOM Ore Mined	Mt	27.6
LOM Waste Mined	Mt	106.0
LOM Strip Ratio	(waste: ore)	3.8
Average CMB Plant Feed Rate	Mtpa	2.18
Average Titanium Head Grade	% TiO ₂	22.3
Average Titanium Recovery (Overall)	% TiO ₂	77.7
Average MGC Production (LOM)	Ktpa	1,138
Average Realised Product Price	A\$/t product CIF China	275
FX	A\$: USD	0.70
DSO Capital Cost (including 25% contingency)	A\$M	78.1
Incremental MGC Capital Cost (including 25% contingency)	A\$M	137.2
Ave LOM All-in Cost ⁸	A\$/t product	195.2
LOM Free Cash Flow ⁹	A\$M	1,106.1
Average Free Cash Flow per annum - first 5 yrs	A\$M	103.3
NPV (10% Discount Rate, Pre-Tax)	A\$M	375
IRR (Pre-Tax)	%	45

For full details refer to Neometals ASX release dated 15 May 2023 titled ""Barrambie – Updated PFS Results"

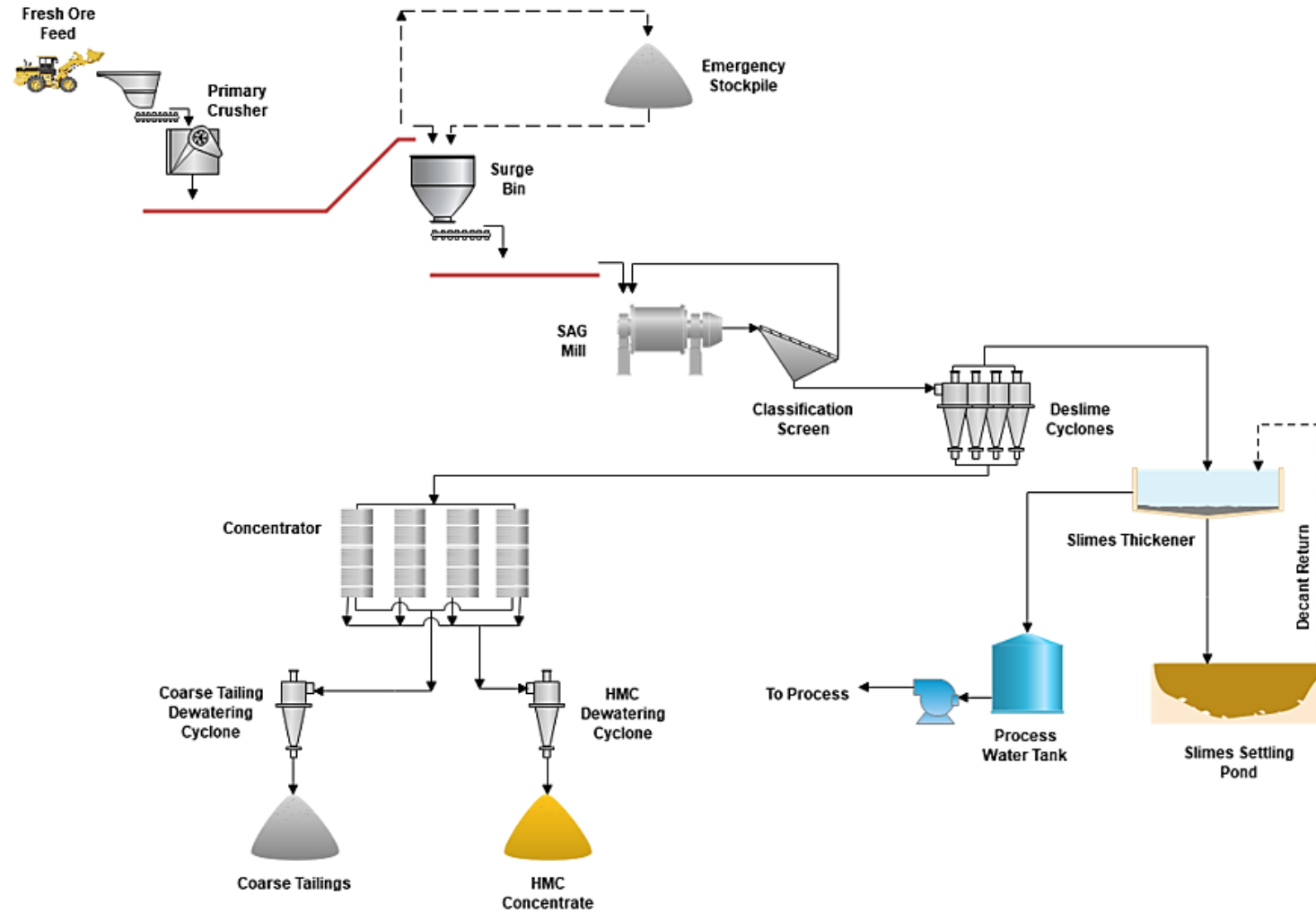
Mineral Resource Estimate

Classification	Domain	Oxidation	Tonnes (Mt)	TiO ₂ (%)	V ₂ O ₅ (%)
Indicated	Central	Strongly oxidised	112.6	6.71	0.44
		Weakly oxidised	28.1	7.21	0.47
		Fresh	6.8	6.47	0.40
Central sub-total			147.5	6.80	0.45
	Eastern	Strongly oxidised	26.4	19.68	0.50
		Weakly oxidised	10.0	21.45	0.56
		Fresh	3.2	19.14	0.47
Eastern sub-total			39.6	20.09	0.51
Indicated Total			187.1	9.61	0.46
Inferred	Central	Strongly oxidised	16.0	5.32	0.39
		Weakly oxidised	18.3	6.02	0.41
		Fresh	38.8	5.76	0.38
Central sub-total			73.1	5.73	0.39
	Eastern	Strongly oxidised	6.5	15.19	0.36
		Weakly oxidised	5.1	18.80	0.47
		Fresh	8.3	19.18	0.45
Eastern sub-total			19.9	17.78	0.42
Inferred Total			93.0	8.31	0.40
Grand Total			280.1	9.18	0.44

- Reporting criteria: $\geq 10\%$ TiO₂ or $\geq 0.2\%$ V₂O₅; small discrepancies may occur due to rounding; and
- Mineral Resources reported are inclusive of Ore Reserves

For full details, refer to Neometals ASX release dated 17 April 2018 titled "Updated Barrambie Mineral Resource Estimate"

CMB Plant Flowsheet



Capital Cost Estimate

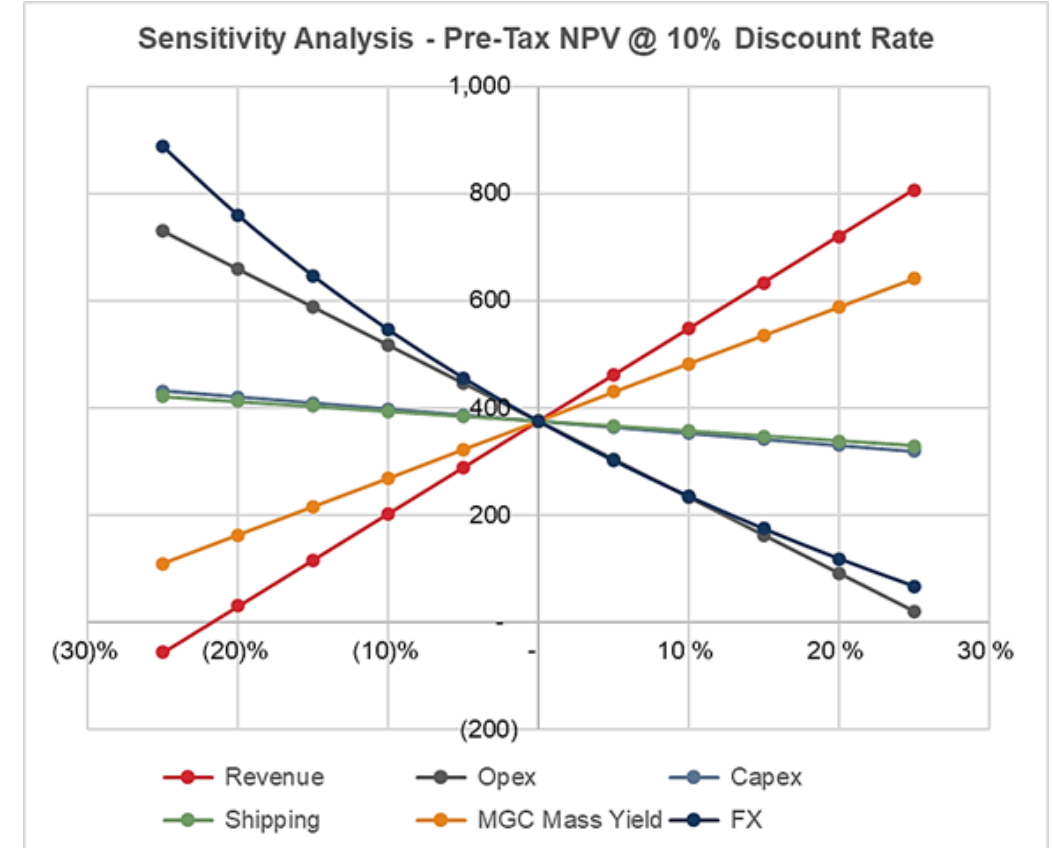
Capital	A\$M
Mining	
Mobilisation, Site establishment & Pre-Strip	4.1
DSO	
Direct Field Cost	16.4
Contractors Indirects	2.8
Offsite Infrastructure	26.8
Owner's Costs	13.3
Contingency (25%)	14.8
Subtotal DSO	74.0
CMB (incremental)	
Plant and Construction	64.6
TSF	6.5
Accommodation Village	5.0
Engineering Design	9.1
Project & Construction Management	10.8
Commissioning	0.6
Owner's Indirect Costs	13.2
Contingency (25%)	27.4
Subtotal CMB	137.2
Total	215.3
Sustaining Capex ¹⁰	75.4

Phase	Product	Incremental Capex (A\$M)
DSO	1.0 Mtpa DSO	78.1
MGC	1.23 Mtpa MGC	137.2

¹⁰ Sustaining capital to upgrade the Barrambie-Sandstone Road to enable Super Quad payloads of up to 137t, to increase TSF capacity sequentially, and 2% of deployed capital.

Operating Cost Estimate & Sensitivity Analysis

Opex	A\$M	A\$/t feed	A\$/t product
Mining			
Mining ex-pit	588.1	21.3	39.6
Incremental ore rehandle	11.3	0.4	0.8
CMB			
CMB Processing Plant	482.8	17.5	32.5
MGC transport to Geraldton Port ¹¹	934.5	33.9	63.0
Port storage, ship loading, international freight & insurance	591.7	21.5	39.9
Total	2,608.5	94.6	175.8



¹¹ Haulage prices as supplied by Rivet Group and are accurate as of November 2022.

Approvals and Permits Timeline

All key project approvals are on track

