

# UNLOCKING A MAJOR SOURCE OF CRITICAL MINERALS

**121** MINING INVESTMENT | By   
6-7 FEBRUARY 2023 CAPE TOWN



**SOVEREIGN**  
METALS LIMITED

FEBRUARY 2023 | AIM: SVML | ASX: SVM | ABN: 71 120 833 427

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The information in this presentation that relates to Production Targets, Processing, Infrastructure and Capital and Operating Costs, is extracted from the announcement dated 16 June 2022 which is available to view on [www.sovereignmetals.com.au](http://www.sovereignmetals.com.au). SVM confirms that: a) it is not aware of any new information or data that materially affects the information included in the announcement; b) all material assumptions and technical parameters underpinning the Production Target, and related forecast financial information derived from the Production Target included in the Announcement continue to apply and have not materially changed; and c) the form and context in which the relevant Competent Persons' findings are presented in this presentation have not been materially modified from the Announcement.

The information in this presentation that relates to the Mineral Resource Estimate is extracted from the announcement dated 5 April 2022 which is available to view on [www.sovereignmetals.com.au](http://www.sovereignmetals.com.au). SVM confirms that a) it is not aware of any new information or data that materially affects the information included in the announcement; b) all material assumptions included in the announcement continue to apply and have not materially changed; and c) the form and context in which the relevant Competent Persons' findings are presented in this report have not been materially changed from the announcement.

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The information in this presentation that relates to the Exploration Results is extracted from the announcement dated 8 September 2022, 26 October 2022 and 30 January 2023. The announcements are available to view on [www.sovereignmetals.com.au](http://www.sovereignmetals.com.au). Sovereign confirms that a) it is not aware of any new information or data that materially affects the information included in the announcements; b) all material assumptions included in the announcements continue to apply and have not materially changed; and c) the form and context in which the relevant Competent Persons' findings are presented in this report have not been materially changed from the announcements

# Globally significant deposit of two critical minerals

Kasiya - the world's largest rutile resource and one of the largest graphite resources

Two minerals critical to the world's development and decarbonisation targets



# Decarbonisation is a central theme for governments and corporations



*Europe has also the great opportunity to become the continent of climate innovation. For this, the European Commission will mobilise massive investments in new and transforming industries over the next decade.*  
- Ursula von der Leyen, President of the European Commission



*Decarbonising the global economy is the greatest opportunity for innovation the world has ever seen.*  
- Bill Gates, Founder of Breakthrough Energy

## Titanium industry is following...



**RioTinto**

Rio Tinto partners with Voltalia for renewable solar power at Richards Bay Minerals (October 2022)

Rio Tinto partners with Government of Canada to decarbonise RTFT and boost critical minerals processing (October 2022)



**TRONOX**

Tronox announces significant renewable energy project in South Africa

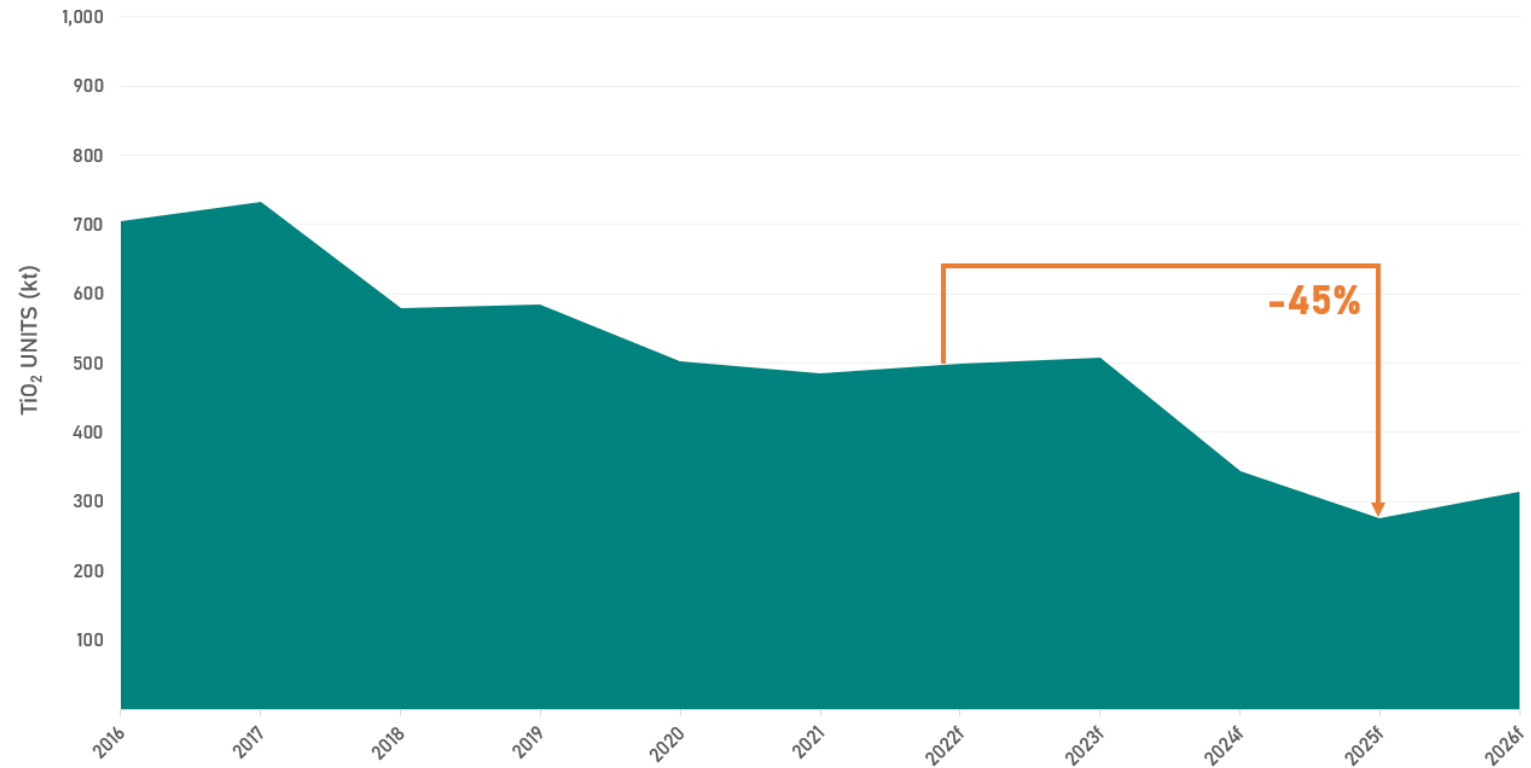


## Natural rutile (TiO<sub>2</sub>) is a genuinely scarce commodity

The natural rutile market is completely constrained by available supply. Key uses include feedstocks for titanium dioxide pigment, welding flux and titanium metal

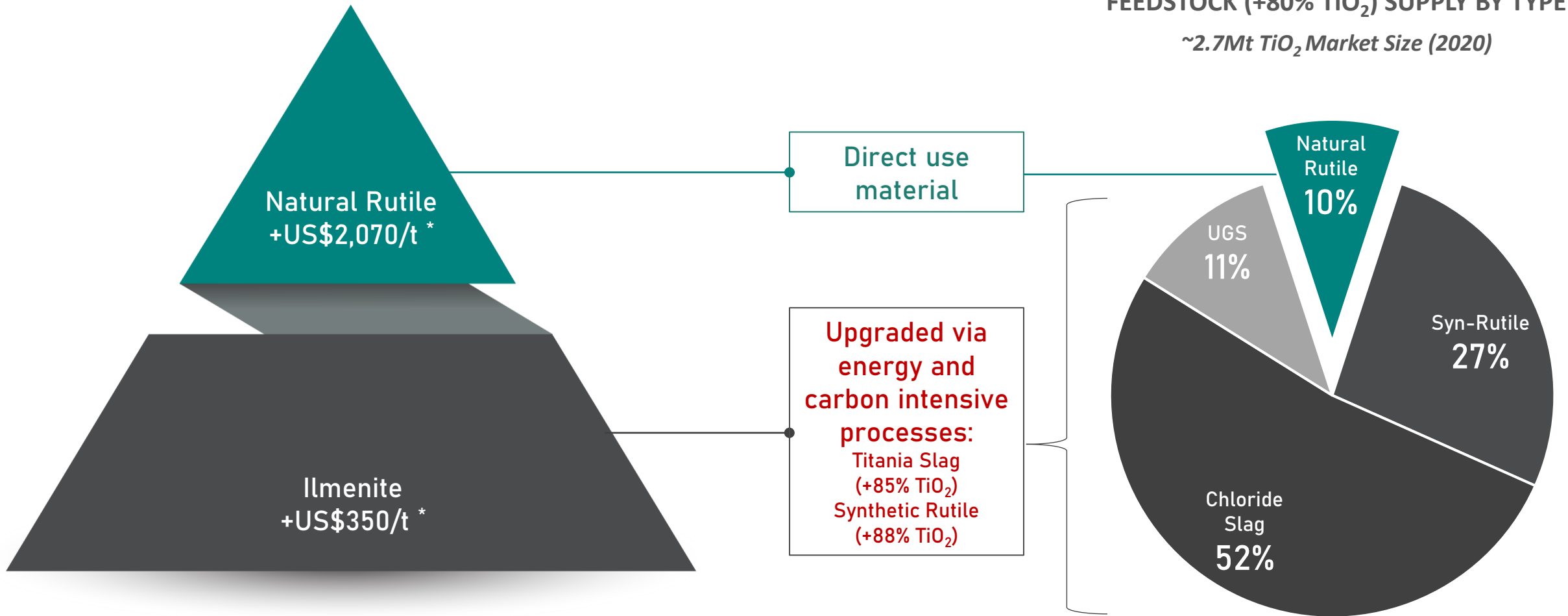
One of the most significant supply crises in the world of natural resources has emerged and is accelerating in the natural rutile space

- No major discoveries in over 50 years
- Two major western mines likely coming offline in the near term
- Limited new supply – no pipeline of significant projects
- Titanium industries forced to shift to 'dirtier' feedstocks ie ilmenite, titanium slag and syn-rutile





# Natural Rutile – the purest natural form of titanium

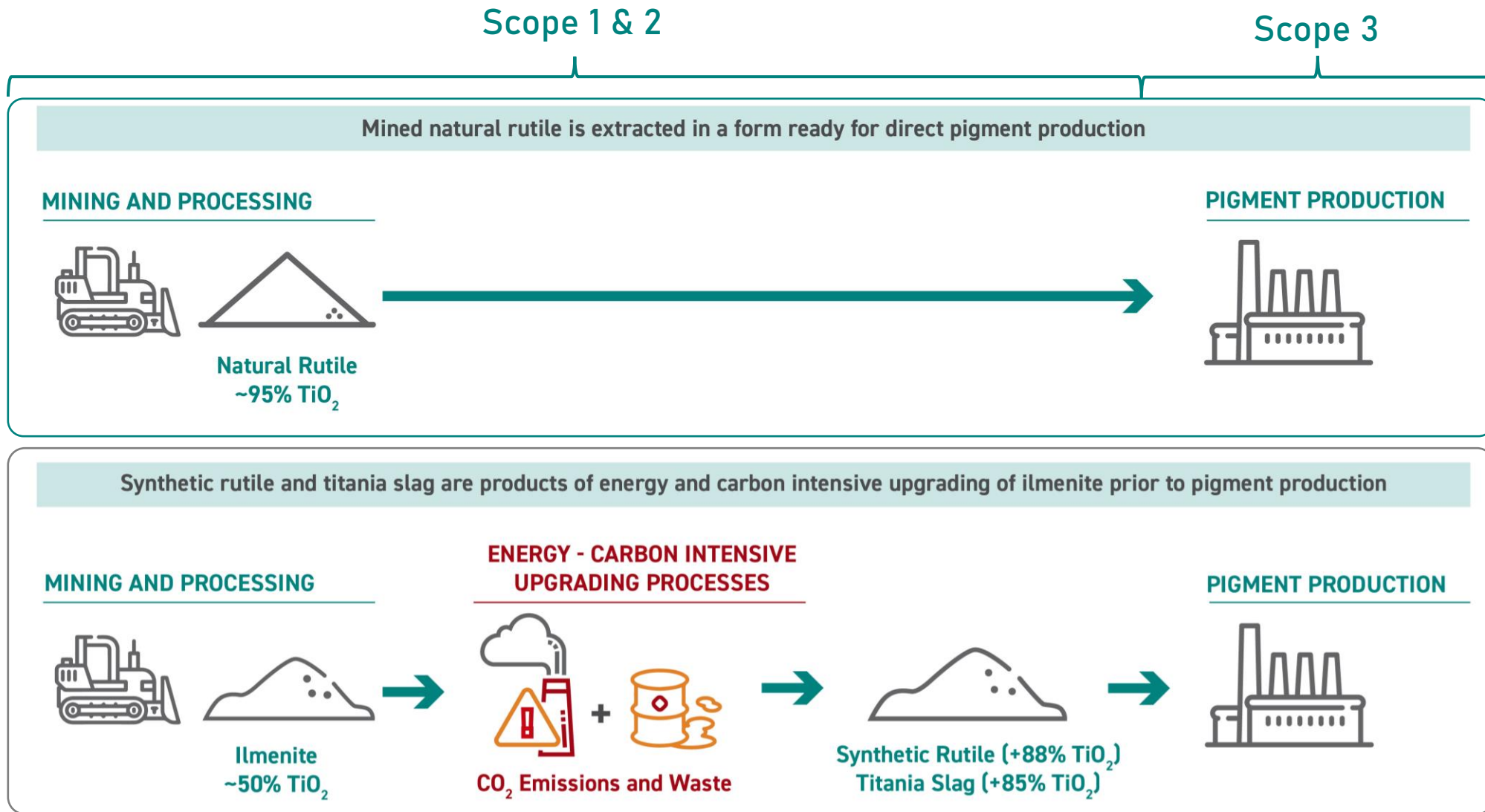


# Natural Rutile – orders of magnitude lower carbon footprint than other titanium feedstocks

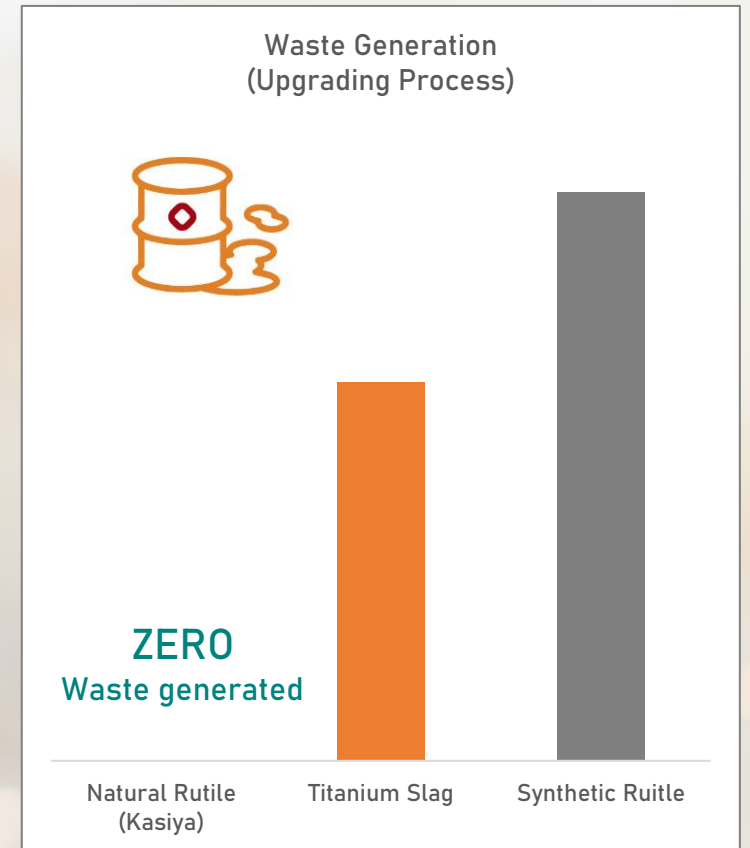
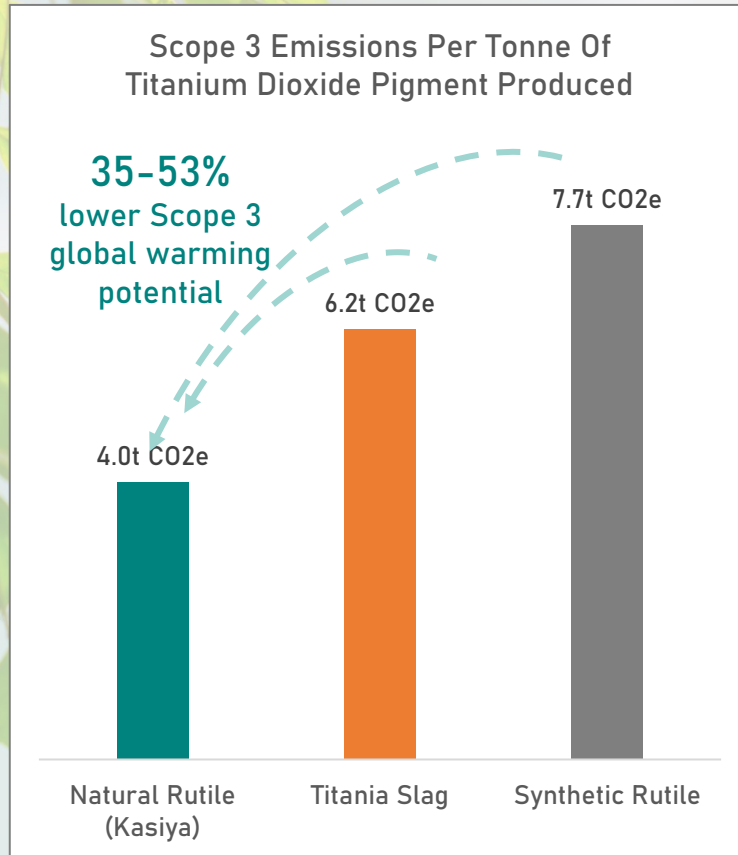
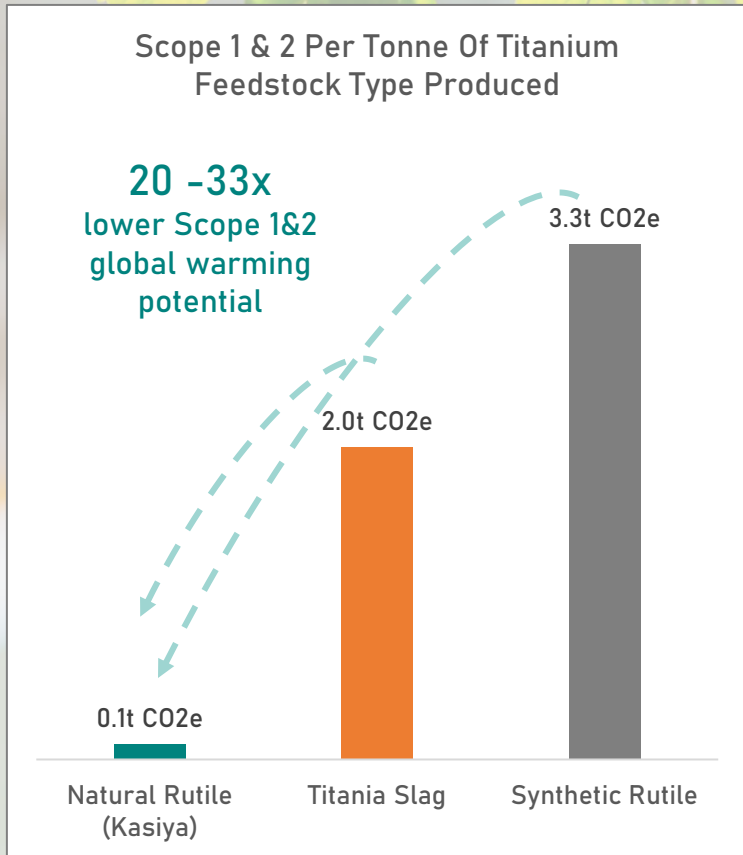


**Natural Rutile**  
**0.1**  
tonnes CO<sub>2</sub>e  
per tonne of titanium  
feedstock

**Ilmenite**  
upgraded alternatives  
**Up to 3.3**  
tonnes CO<sub>2</sub>e  
per tonne of titanium  
feedstock



# Life Cycle Assessment shows Carbon Emissions Reduction Potential





# KASIYA

A transformational discovery for the TiO<sub>2</sub> industry

#1

Largest rutile deposit ever discovered

>2x

More than double the rutile resource of nearest peer

50 years

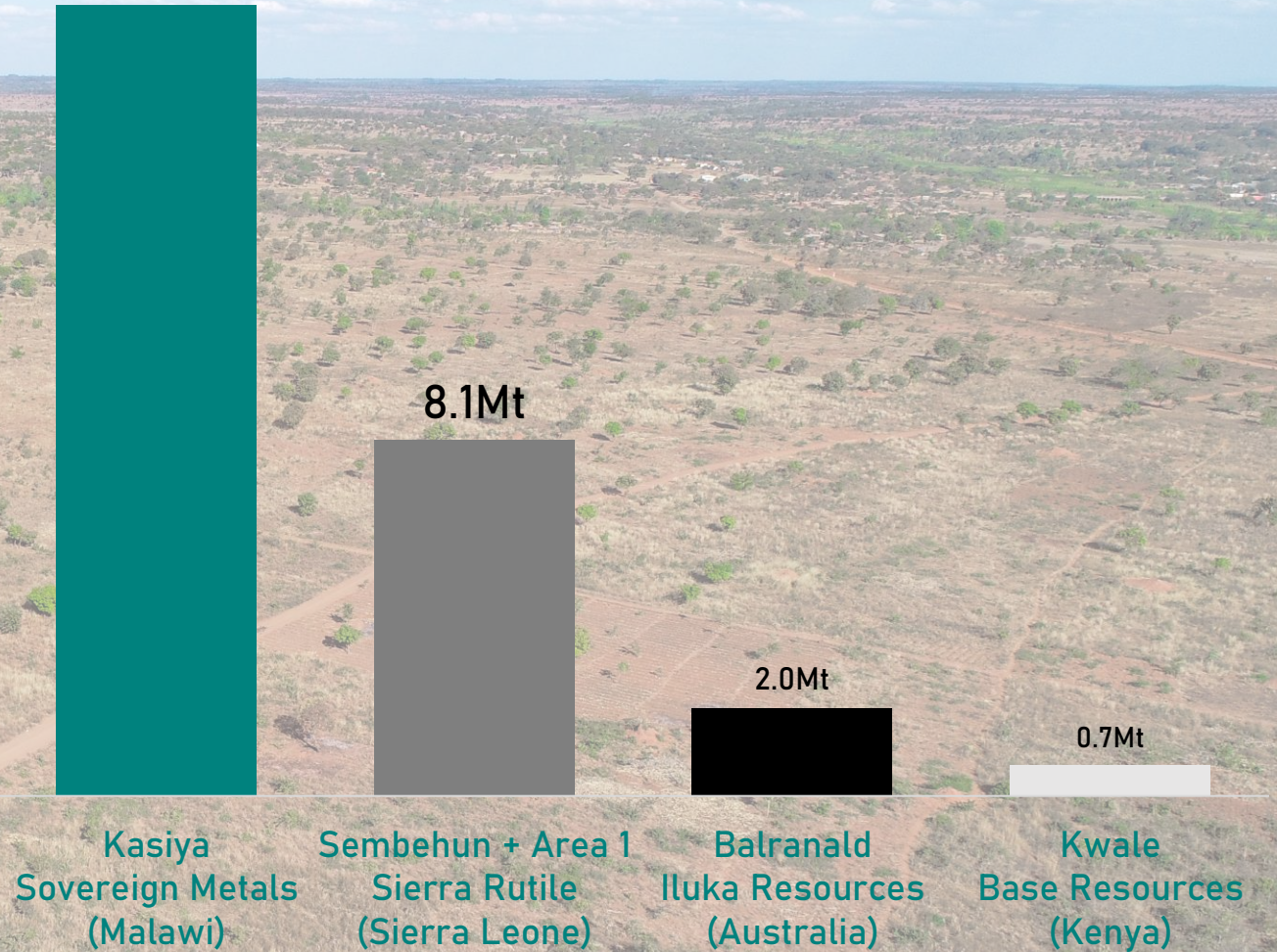
1st significant rutile-dominant discovery in half a century

18 Mt

Contained rutile resource starting from surface

Major Global Rutile Dominant Resources<sup>1</sup>  
Contained Rutile(Mt)

18.0Mt



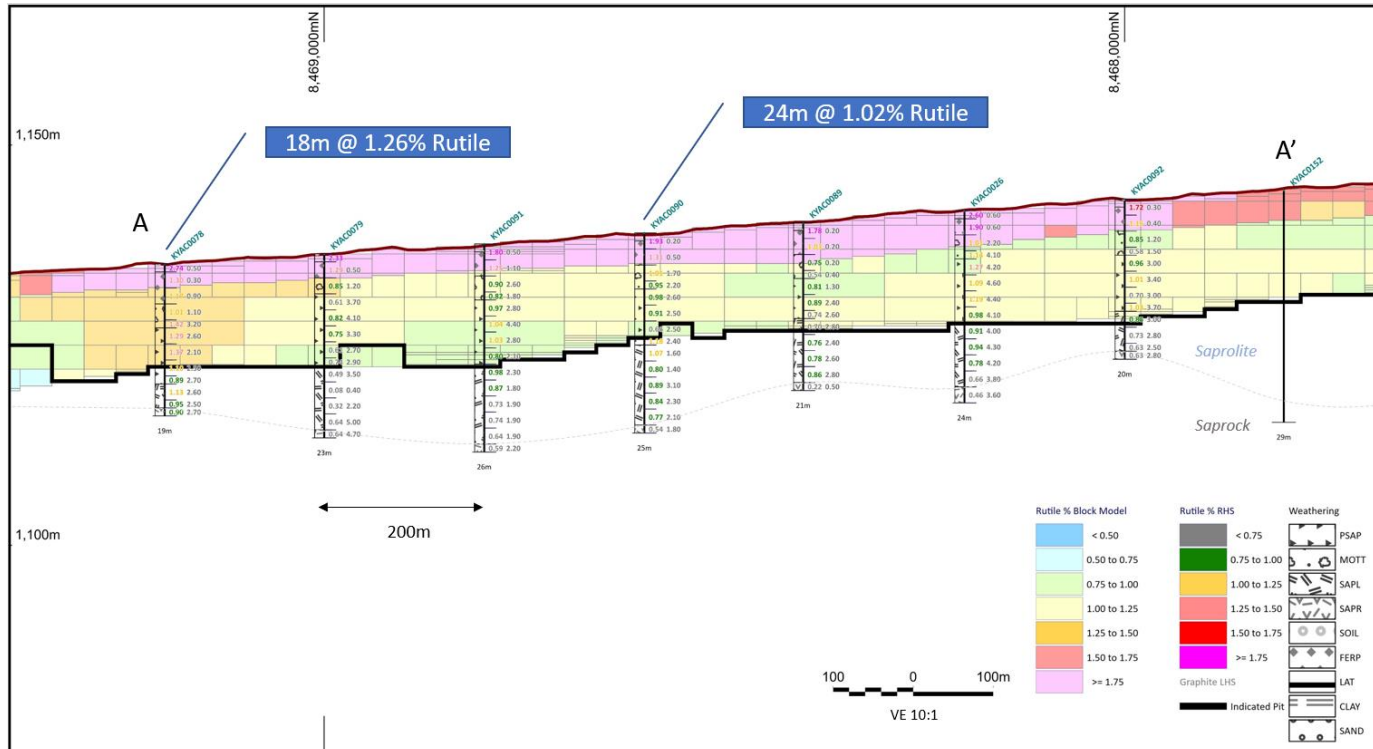
Source: See Peer Sources (Slides 38-40)

1. Resources shown are JORC Measured, Indicated and Inferred Resources of contained rutile



# Kasiya - Huge and Robust Deposit

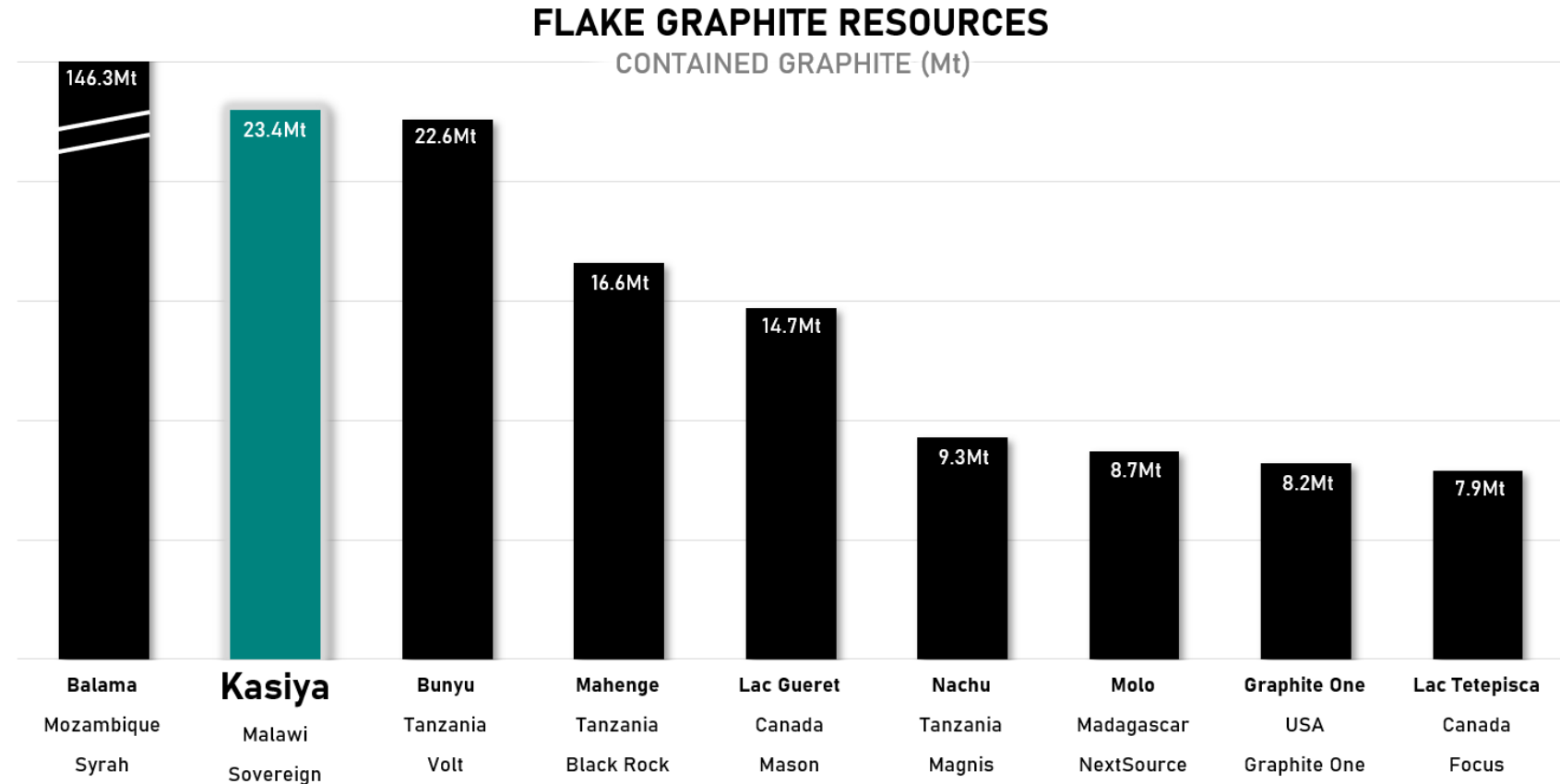
- Mineralisation lies in laterally extensive, near surface, flat “blanket” style
- Widespread, high-grade mineralisation from surface to up to 25m





# Kasiya: One of the Largest Flake Graphite Resources in the World

- Graphite occurs in broad association with rutile
- Kasiya graphite is highly crystalline and of high purity – important features required for use in lithium-ion battery anodes





# Potential future major producer of both natural rutile and graphite

Large-scale, high-grade operation with a conventional flow sheet and low-cost profile supported by excellent existing infrastructure



# Kasiya presents exceptional economics

## Key Economic Results – 2022 Expanded Scoping Study

**US\$1,537M**

After Tax NPV<sub>8</sub>

**36%**

After Tax IRR

**US\$12,038M**

LOM Revenue

**US\$323M**

Ave. Annual  
EBITDA

**US\$320/t**

Operating Cost  
per tonne of product

**US\$372M**

Capex to 1<sup>st</sup>  
Production

### Two stage approach

- Stage 1: 12Mtpa ore processed in years 1-5
- Stage 2: Increase to 24Mtpa ore processed in years 5-25 (funded from project cashflows)

Life of Mine

25 years

Throughput (LOM)

21.6Mtpa

Annual Production – Rutile

242ktpa\*

Annual Production – Graphite

155ktpa\*

Head grade – Rutile

1.14%

Head grade – Graphite

1.52%

# Kasiya is placed as one of the best undeveloped projects

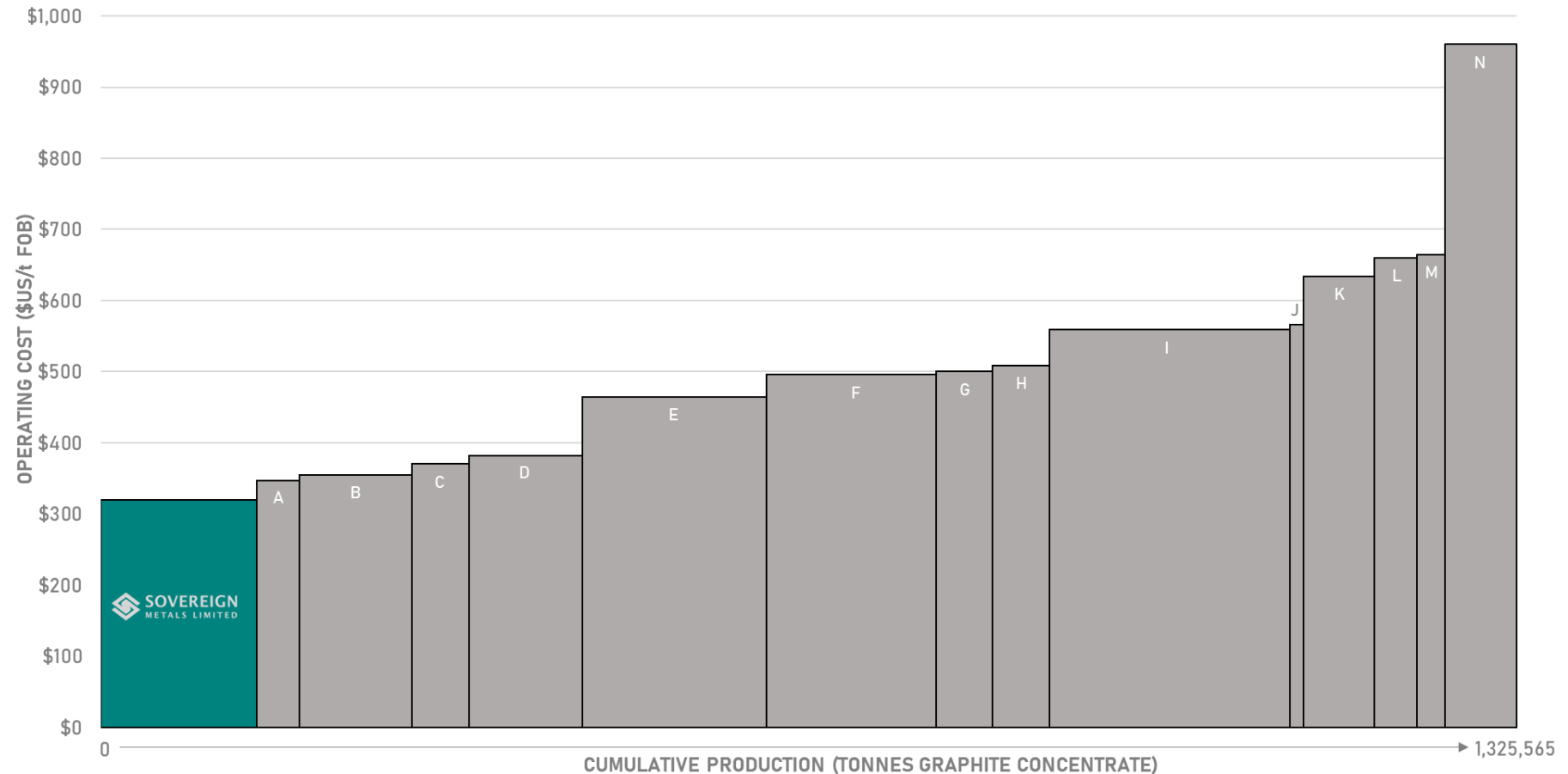


Project	Kasiya Malawi	Mallina Western Australia	Goulamina Mali	Kathleen Valley Western Australia
Phase	Scoping	PFS	DFS	DFS
Commodity	Rutile-Graphite	Gold	Lithium	Lithium
NPV <sub>8</sub> post-tax	A\$2,220 (US\$1,537)	A\$2,226m (US\$1,603m)	A\$4,150m (US\$2,946)	A\$4,200m (US\$3,024)
Capex	US\$372m	US\$709m	US\$255m	US\$341m
NPV : Capex	4.1	2.3	11.4	8.9
Average Revenue	US\$482m (268ktoz)	US\$970m (540ktoz)	US\$726m (403ktoz)	US\$832m (462ktoz)
Annual EBITDA	US\$323m	US\$522m	US\$448m	US\$398m
Mine Life	25 years +	13.6 years	21 years	23 years
Market Capitalisation	A\$245m	A\$1,409m	A\$602m	A\$3,448m



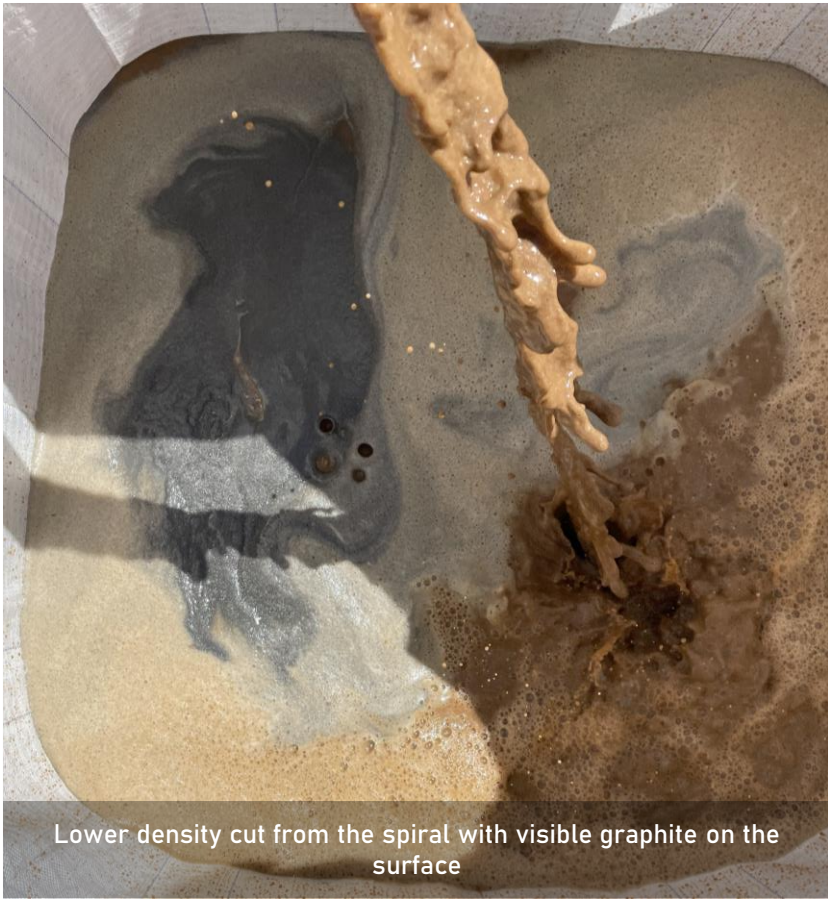
# Potentially the Lowest Cost Flake Graphite Project in the World

- Average life-of-mine FOB (Nacala) operating cost of US\$320/t of product (rutile + graphite)\*
- Incremental FOB operating cost of US\$140/t reflecting graphite production as a co-product\*



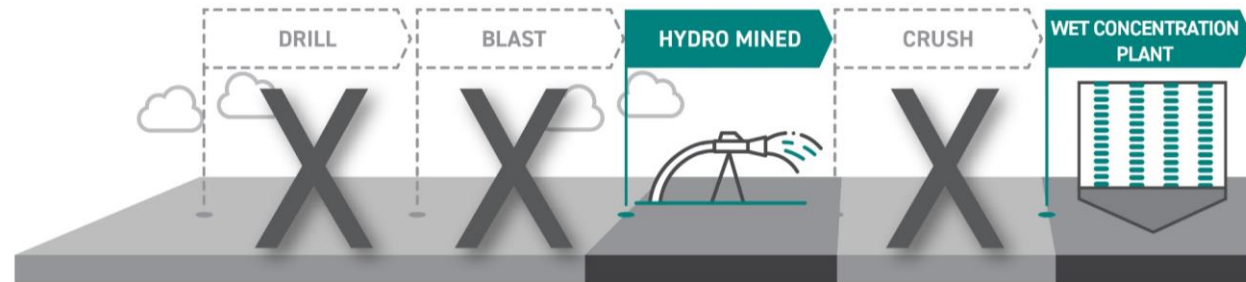


# Graphite Co-Product – Significant Cost and Environment Benefits

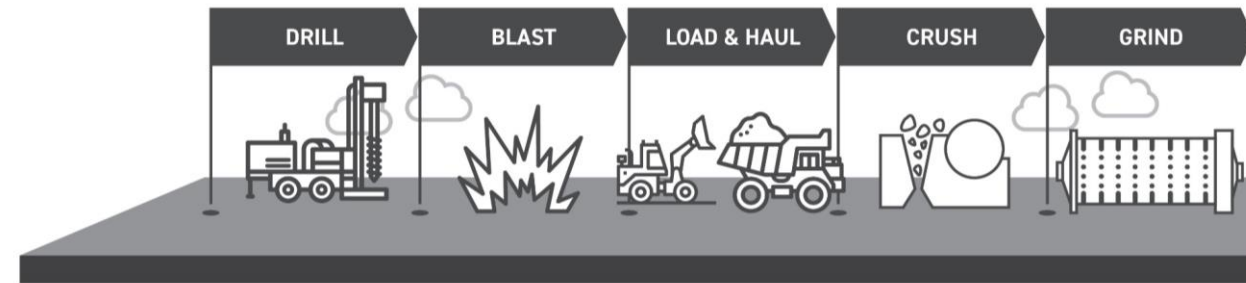


Lower density cut from the spiral with visible graphite on the surface

## KASIYA: MINING AND PROCESSING FRONT END



## HARD-ROCK PEERS: MINING AND PROCESSING FRONT END

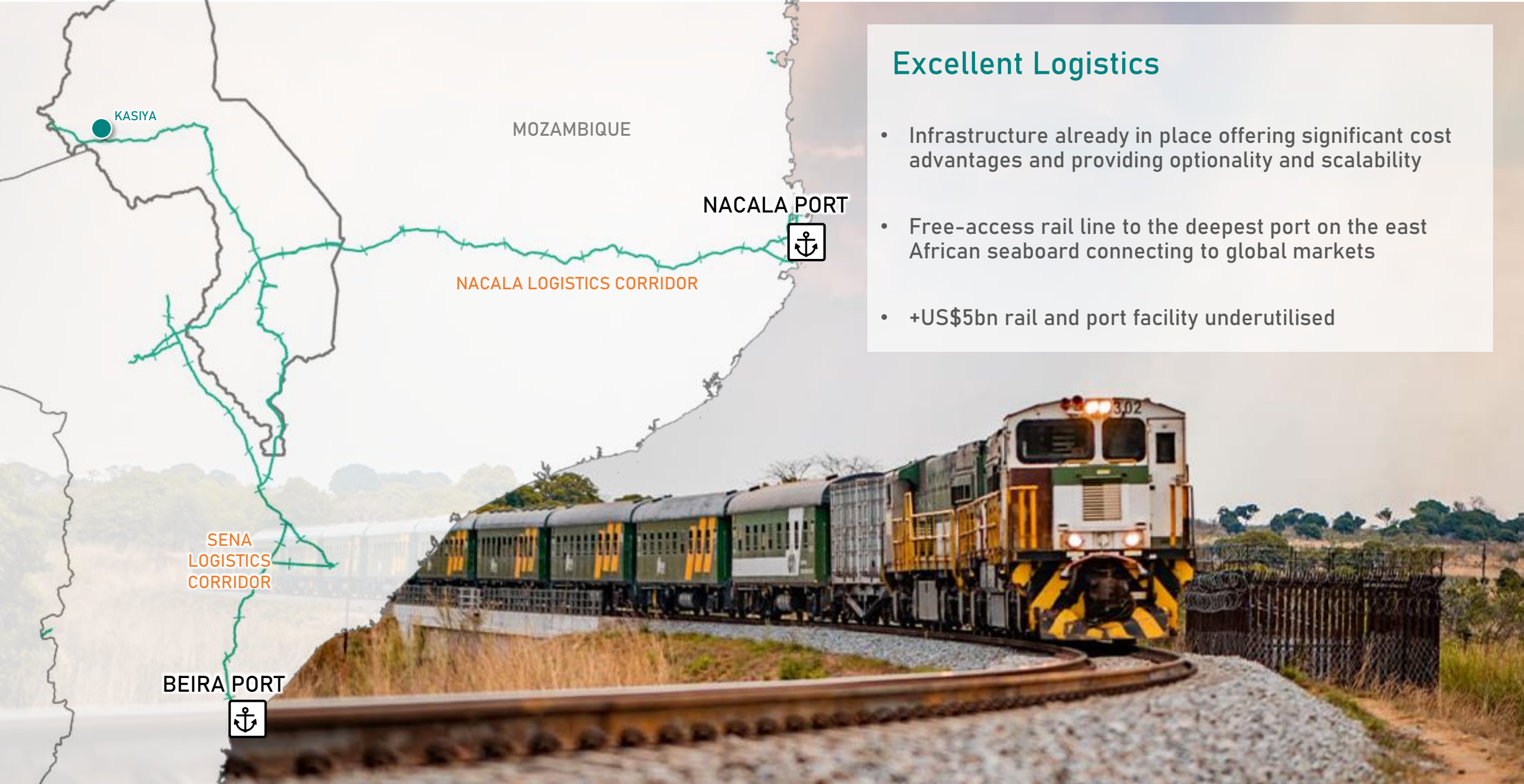


- Graphite rich concentrate is collected from the gravity spirals and processed in a separate graphite flotation plant, producing a high purity and high value coarse-flake graphite product.
- The production as a co-product offers significant cost and environmental advantages



## Excellent Logistics

- Infrastructure already in place offering significant cost advantages and providing optionality and scalability
- Free-access rail line to the deepest port on the east African seaboard connecting to global markets
- +US\$5bn rail and port facility underutilised



# Malawi

Stable, Transparent Jurisdiction Looking to Benefit From Mining



Member country of the Commonwealth



Attracting significant investment with strong aspiration for mining



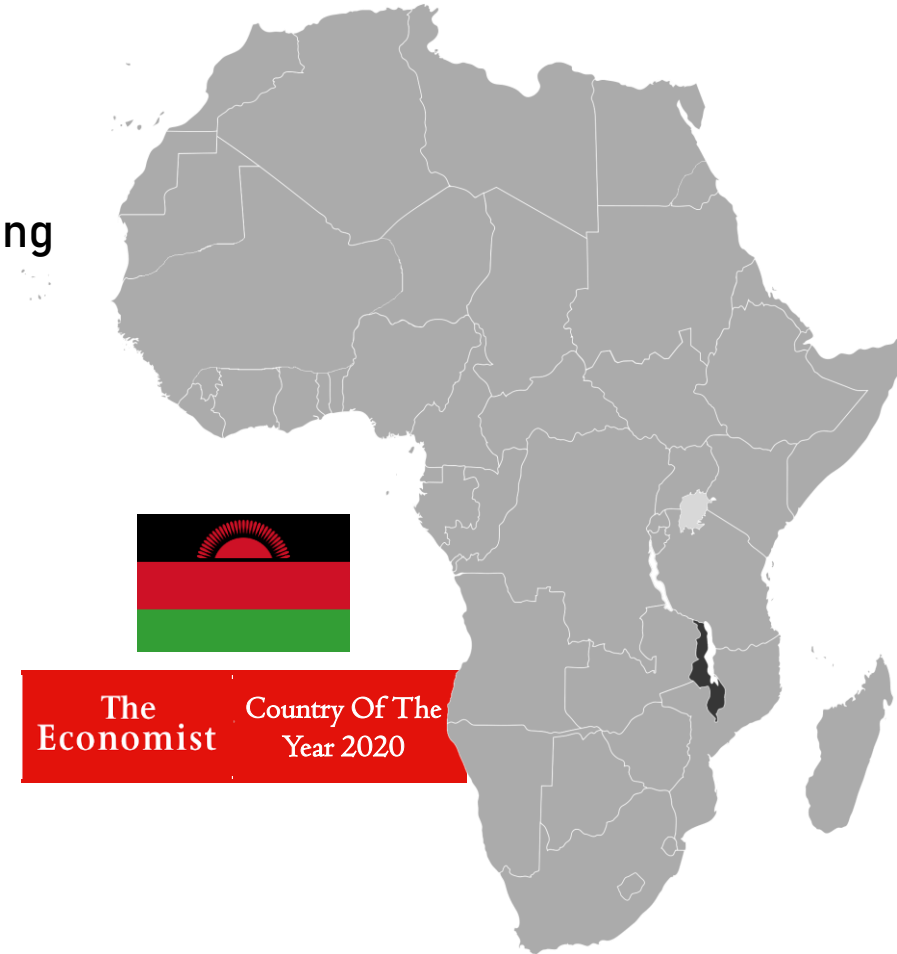
Strong Government support for the development



Excellent nearby operating infrastructure



Kasiya project – significant contributions to the Malawi economy with est. +US\$2.7b (taxes & royalties)\*



# Developing mining sector



Mining sector recognised as an industry of significant and near future economic importance to Malawi

Several listed companies active



Kayelekera	Kanyika	Songwe Hill	Kangankunde
Uranium	Niobium	REE	REE
Re-start (DFS)	DFS	DFS	Exploration



President of Malawi made a special mention of the Kasiya discovery in his recent address to the United Nations assembly

# Strong market partners established



MoU signed with Mitsui & Co for offtake and marketing rights for 30,000 tonnes per annum of natural rutile from Kasiya

MoU covers Marketing alliance will focus on Asia, a key and established growth market for high-grade titanium feedstocks

Mitsui & Co., Ltd (8031: JP) is a global trading and investment company with a diversified business portfolio that spans approximately 64 countries in Asia, Europe, North, Central & South America, The Middle East, Africa and Oceania.

Mitsui has over 5,600 employees and deploys talent around the globe to identify, develop, and grow businesses in collaboration with a global network of trusted partners. Mitsui has built a strong and diverse core business portfolio covering the Mineral and Metal Resources, Energy, Machinery and Infrastructure, and Chemicals industries.



MOU signed for supply of 20,000 tonnes of natural rutile per annum from Kasiya to US-based Chemours, one of the world's largest producers of high-quality titanium dioxide pigments

Chemours is a leading provider of performance chemicals that are key inputs in end-products and processes across a variety of industries. Chemours operates 29 manufacturing sites serving approximately 3,200 customers in approximately 120 countries.

Its Titanium Technologies segment is one of the world's largest producers of high-quality titanium dioxide (TiO<sub>2</sub>) pigment and aspires to be the most sustainable TiO<sub>2</sub> enterprise in the world. Using its proprietary chloride technology—pioneered in 1931 and improving ever since—Chemours provides innovative TiO<sub>2</sub> solutions for coatings, plastics, and laminates.

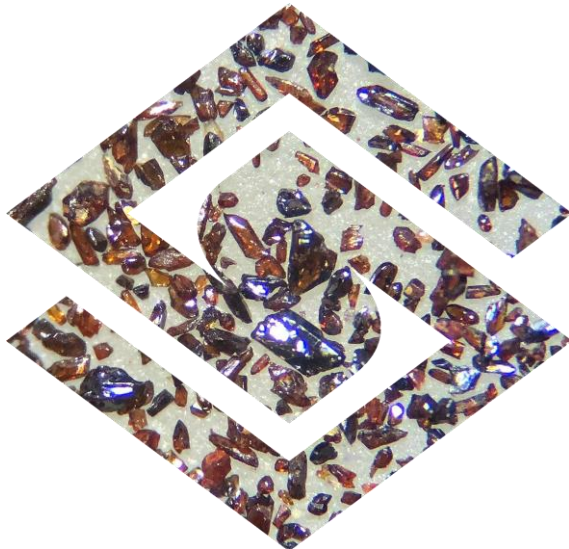
It operates four TiO<sub>2</sub> pigment production facilities: two in the United States, one in Mexico, and one in Taiwan totalling TiO<sub>2</sub> pigment nameplate capacity of 1.25 million tonnes per year. In the year ended 31 December 2021, Chemours' Titanium Technologies segment reported net sales of US\$3.4 Billion.



MoU signed for supply of 25,000 tonnes of natural rutile per annum to Hascor, a market leading global processor and distributor of rutile products for the welding industry

Hascor International Group™ is a key producer of nitrogen bearing ferro alloys, metal powders, and specialty minerals, who brings several decades of experience as a processor and global distributor of natural rutile products including rutile flour, calcined rutile and rutile sand for the welding industry. Established in 1993, the group has earned an excellent reputation for performance and consistent quality with production and distribution centres across five continents. Key locations include Houston, Hong Kong, Bangkok, Santiago, Altamira, Rotterdam, and Koper.

# Critical minerals from the warm heart of Africa



1 World's largest natural rutile and one of the largest graphite resources

2 Multi-generational, tier 1 critical minerals deposit

3 Low-cost, large-scale operation with simple and conventional process flowsheet

4 Positioned to become a dominant producer of rutile and graphite - 265kt<sup>2</sup> rutile and 170kt<sup>2</sup> graphite p.a

5 Exceptional economics - NPV<sub>8</sub> post-tax of US\$1.5 billion, annual EBITDA of US\$323 million and IRR of 36%

6 Low carbon and sustainable operation, targeting 100% by renewable power with progressive rehabilitation

7 Low carbon in use products

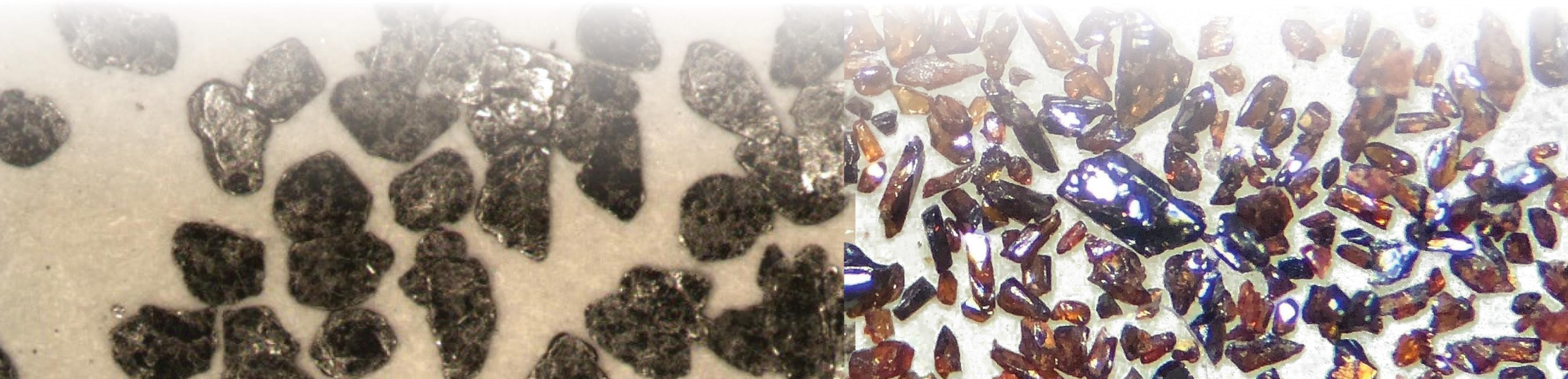
8 Best-in-class product specifications attracting significant end user interest

Source: Sovereign Metals; ASX; London Stock Exchange

1. All currencies USD unless otherwise noted
2. Steady state



Targeting a **net zero carbon project** using dominantly renewable power sources with low carbon in use critical mineral products – natural rutile and graphite



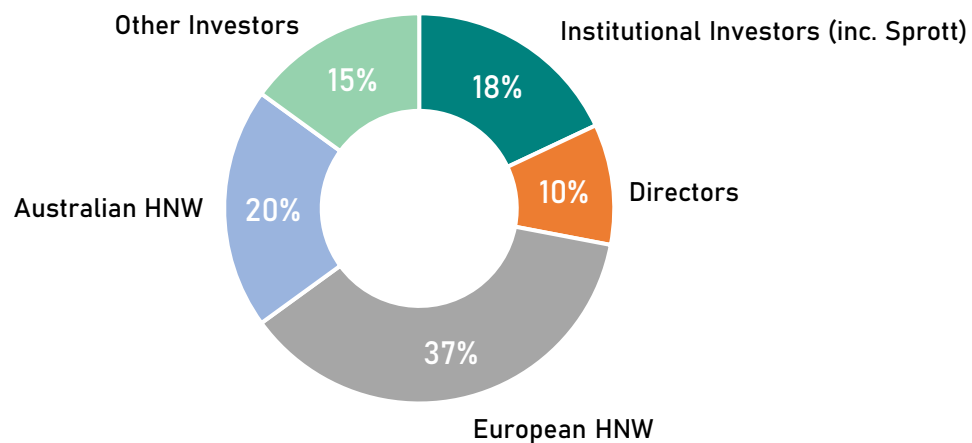


# APPENDICES

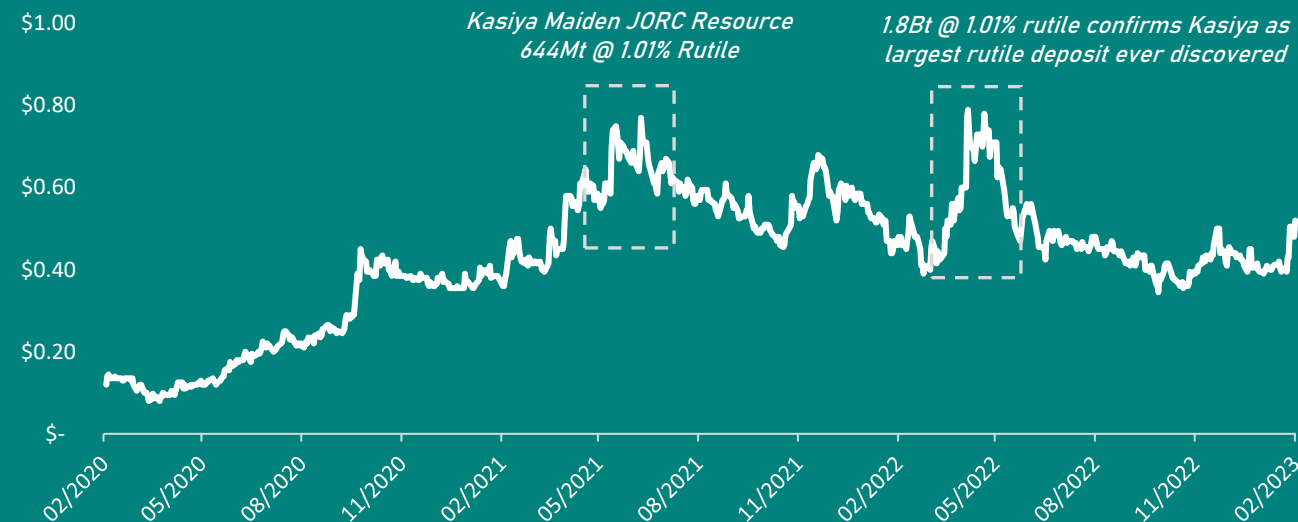
# Corporate Snapshot

Capital Structure <small>(as at 1 Feb 23)</small>	
ASX / AIM Ticker	SVM / SVML
Share Price <small>(A\$ / P)</small>	A\$0.51 / 28p
Shares on Issue	470.9m
Undiluted Market Capitalisation <small>(A\$ / £)</small>	A\$240m / £131m
Performance Rights	14.4m
Options	11.1m
Cash <small>(31 Dec 22)</small>	A\$11.1m
Debt <small>(31 Dec 22)</small>	Nil
Undiluted Enterprise Value	A\$228.9m

## Share Register Breakdown



## Share Price Performance (Since Feb 2020)



## Broker Coverage



## Top Shareholders

Spratt Asset Management	11.7%
Ian Middlemas	3.4%
Julian Stephens	3.3%
Mark Savage	3.1%



# Well-established and having a positive contribution in Malawi already



## Employment and Training of a Diverse Workforce

Sovereign currently has over 45 full-time Malawian employees and more than 50% of the professional are female.

Structured training and skills programs are in place developing a strong skill base to be able transition to the operation.

Establishment of world-class laboratory facilities



## Promoting Education

Sovereign understands the importance of education and has completed and planned programs to improve the learning environment including:

- Scholarship program
- Internship program



## Advancing Community Infrastructure

Sovereign has been active in developing local infrastructure with:

- Construction of community centre
- Community water bores



## Community and Stakeholder Engagement

Continued engagement with key stakeholders.

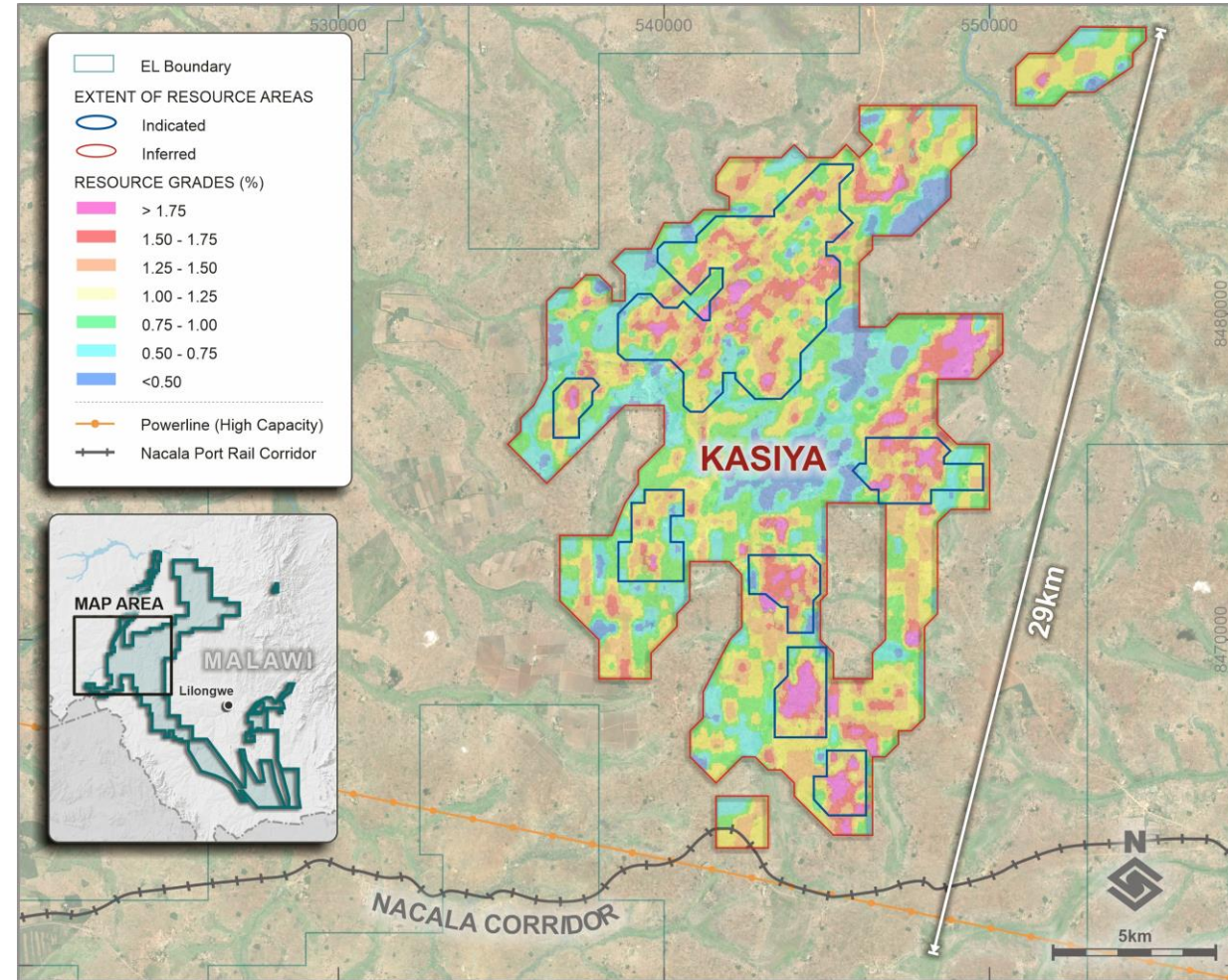
Strong community and Government support.

# Simple Geology



Kasiya Mineral Resource Estimate at 0.7% Rutile Cut-off						
Mineral Resource Category	Material Tonnes (millions)	Rutile Grade (%)	Rutile Tonnes (millions)	Total Contained Graphite (TGC) (%)	TGC Tonnes (millions)	RutEq. Grade <sup>1</sup>
Indicated	662	1.05%	6.9	1.43%	9.5	1.76%
Inferred	1,113	0.99%	11.0	1.26%	14.0	1.61%
<b>Total</b>	<b>1,775</b>	<b>1.01%</b>	<b>18.0</b>	<b>1.32%</b>	<b>23.4</b>	<b>1.67%</b>

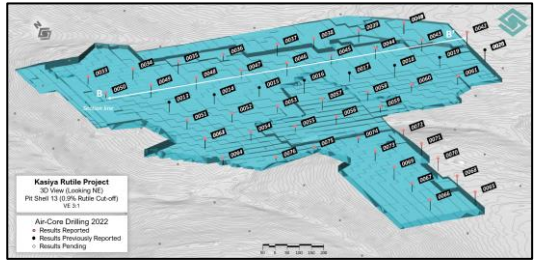
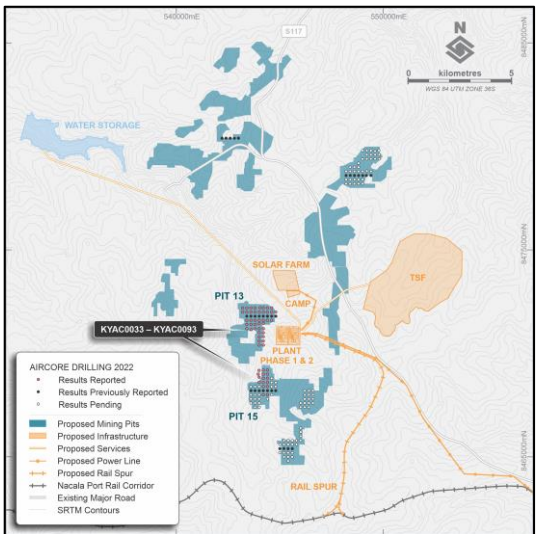
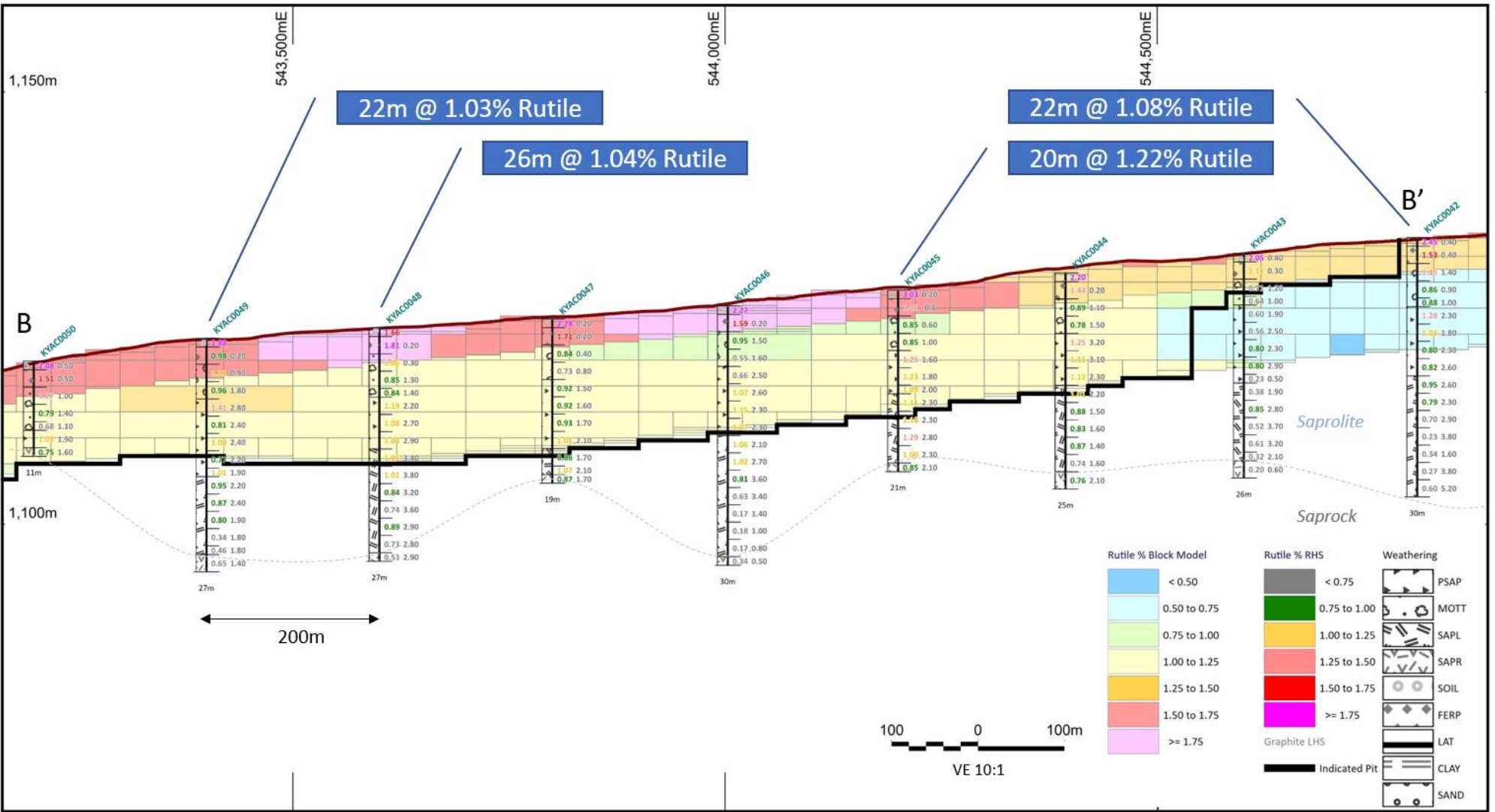
- Simple Geology. High grade mineralisation at shallow depth generally with grades of 1.2% to 2.0% rutile in the top 3-5m from surface
- Moderate grade mineralisation generally 0.5% to 1.2% rutile commonly extends to deeper depths averaging about 20m



Source: Sovereign Metals

1. Rutile Grade x Recovery (98%) x Rutile Price (US\$1,308/t) + Graphite Grade x Recovery (62%) x Graphite Price (US\$1,085/t) / Rutile Price (US\$1,308/t)  
 All assumptions taken from the Company's Expanded Scoping Study released 16 June 2022

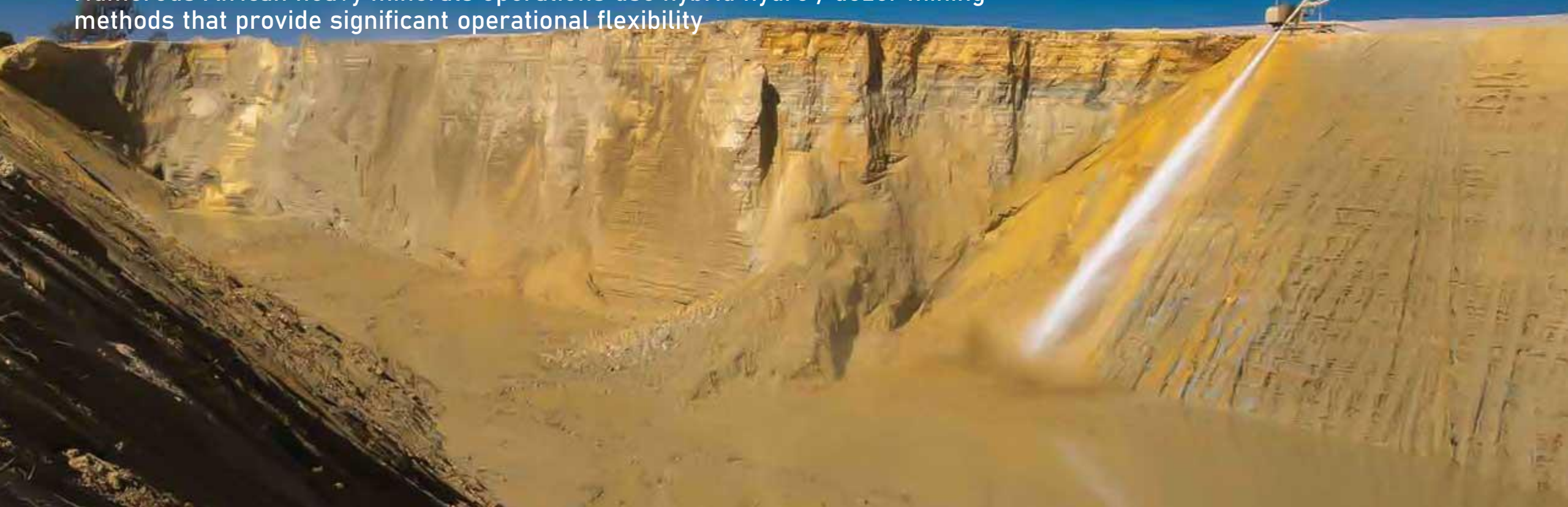
# Further Mineralisation at Depth



# Simple Mining

## Hydro-mining a proven mining technique

- Kasiya's mineralisation largely homogenous and relatively consistent with material conducive to hydro-mining
- Long history of successful hydro-mining of heavy mineral deposits across southern Africa
- Numerous African heavy minerals operations use hybrid hydro / dozer mining methods that provide significant operational flexibility





# Simple Processing

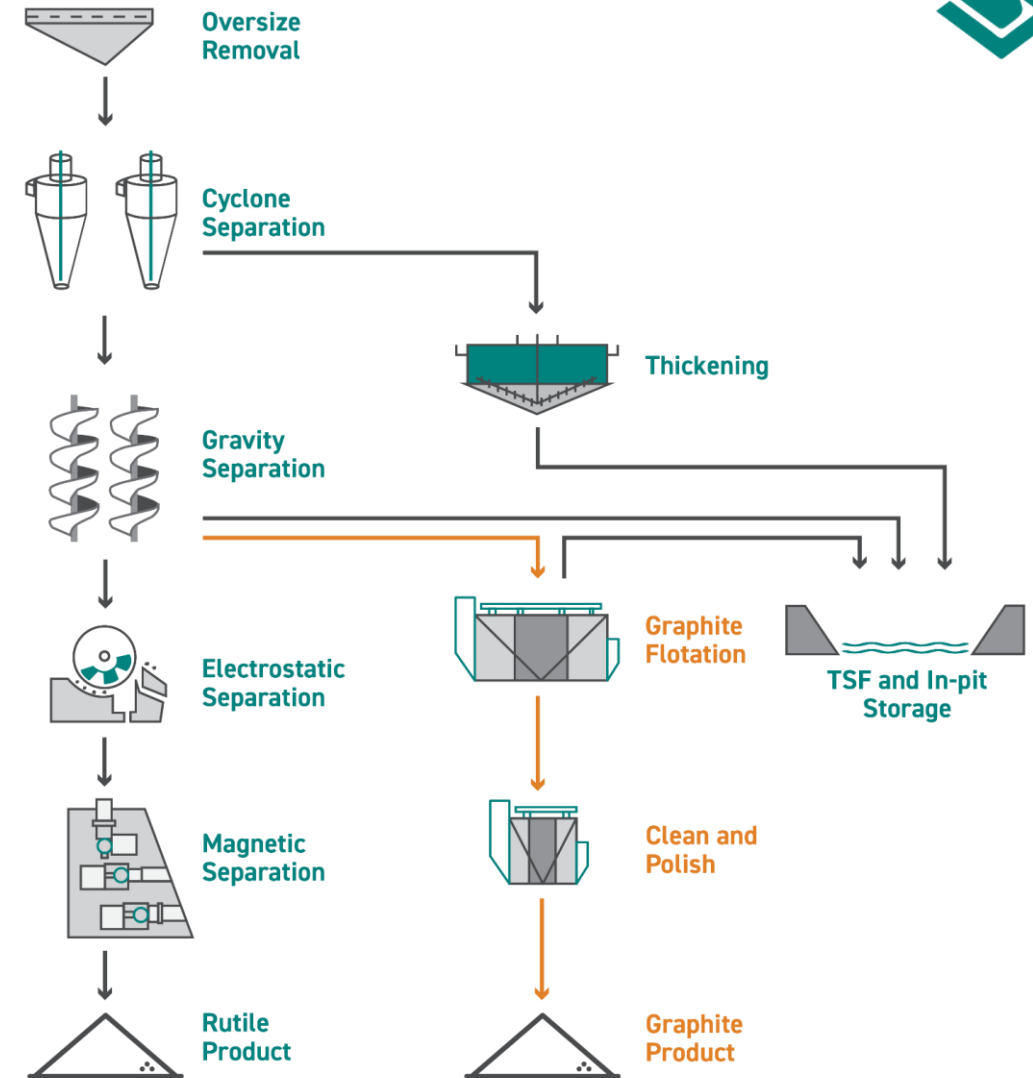
Premium-grade rutile produced via conventional flowsheet

- Robust metallurgy
- Conventional graphite flotation plant at marginal incremental cost

**98%**  
Stand-out Rutile Metallurgical Recoveries

**96% TiO<sub>2</sub>**  
Premium Specification Rutile

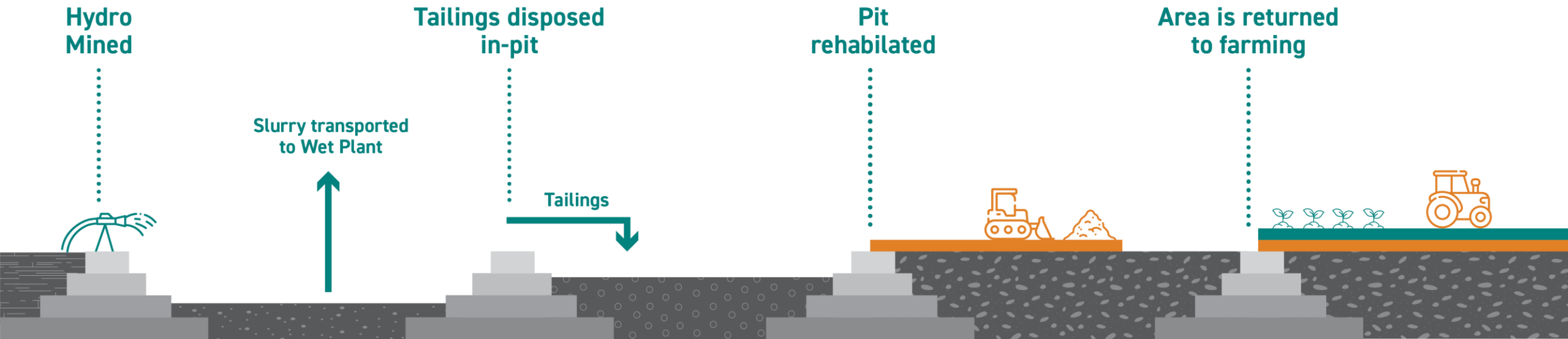
**96% TGC**  
Coarse Flake High-grade Graphite





# Simple Mining and Progressive Rehabilitation

Socially responsible and sustainable

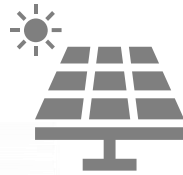


- In-pit disposal minimises disturbance
- Progressive returning of land to communities
- Efficient closure campaign at end of mine life





# Exceptionally low carbon operation



## 100% renewable

hydro-power from the grid plus solar facility on site

### Cleaner sustainable operation

- Hydro-mined (significant dust and noise reduction)
- Simple low energy processing
  - Gravity
  - Electrostatic
  - Magnetic
  - Flotation (graphite only)
- Investigating options for a totally carbon neutral operation



JCM Power 60MW Solar facility Salima, Malawi

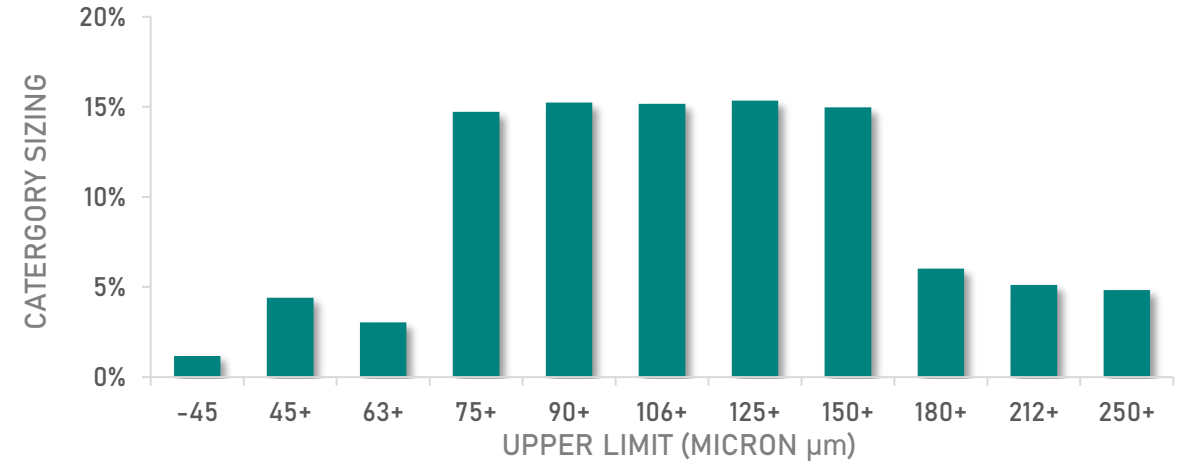


# Rutile - Premium Product

## Kasiya Rutile Specifications

Constituent		Kasiya		Peer Comparisons (Producers)	
		98% Recovery Product		Sierra Rutile (Iluka)	Base Resources (Kwale)
TiO <sub>2</sub>	%	96.0		96.3	96.2
ZrO <sub>2</sub> +HfO <sub>2</sub>	%	0.21		0.78	0.72
SiO <sub>2</sub>	%	0.90		0.62	0.94
Fe <sub>2</sub> O <sub>3</sub>	%	0.94		0.38	1.25
Al <sub>2</sub> O <sub>3</sub>	%	0.90		0.31	0.23
Cr <sub>2</sub> O <sub>3</sub>	%	0.14		0.19	0.17
V <sub>2</sub> O <sub>5</sub>	%	0.70		0.58	0.52
Nb <sub>2</sub> O <sub>5</sub>	%	0.40		0.15	-
P <sub>2</sub> O <sub>5</sub>	%	0.013		0.01	0.00
MnO	%	0.02		0.01	0.03
MgO	%	0.003		0.01	0.10
CaO	%	0.003		0.01	0.04
S	%	0.002		<0.01	-
U+Th	ppm	32		26	53

## Kasiya Rutile Particle Size Distribution



## Product Sample Photomicrograph





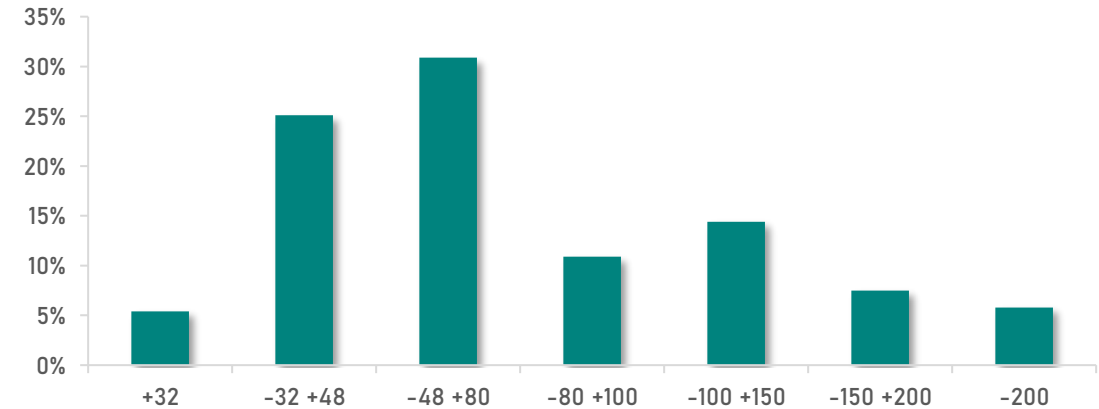


# Graphite – Premium Product Specifications

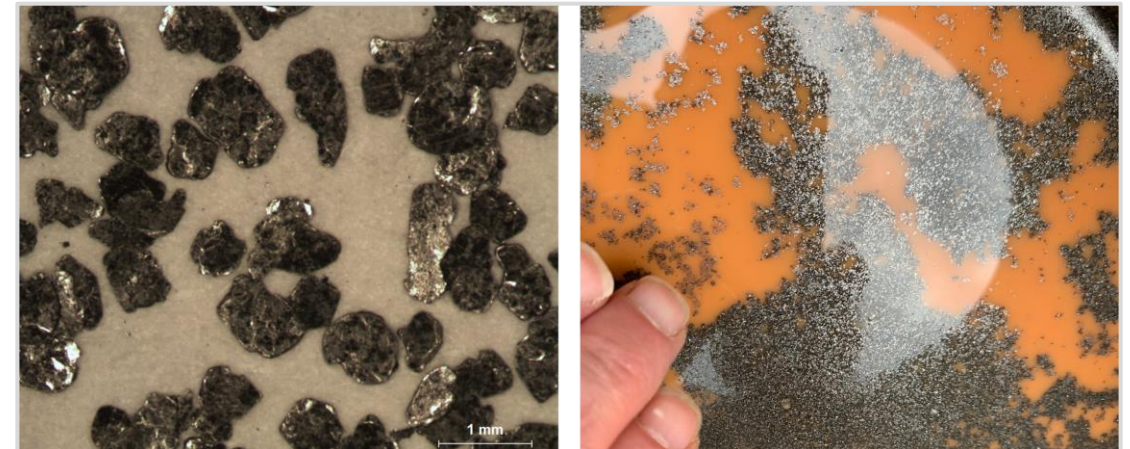
## Kasiya Graphite Specifications

Particle Size		Carbon	Weight Distribution	Flake Category
Tyler Mesh	Micron ( $\mu$ )	(%)	(% w/w)	
+32	+500	96.0	5.4	Super Jumbo
-32 +48	-500 +300	96.6	25.1	Jumbo
-48 +80	-300 +180	96.7	30.9	Large
-80 +100	-180 +150	96.8	10.9	Medium
-100 +150	-150 +106	96.11	14.4	Small/Medium
-150 +200	-106 +75	95.8	7.5	Small
-200	-75	93.8	5.8	Amorphous
Total		96.3	100	

## Kasiya Graphite Flake Size Distribution

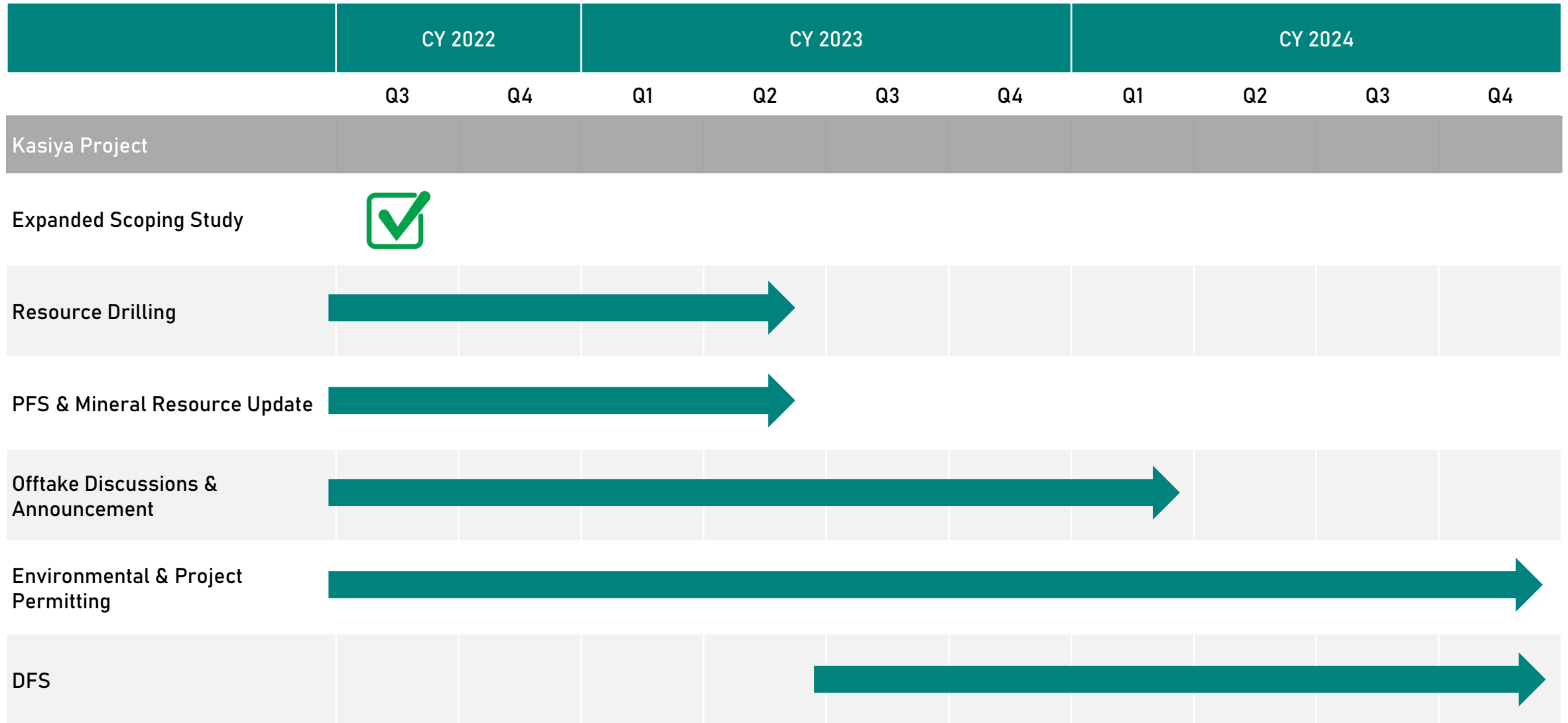


## Kasiya Flake Graphite Product Sample





# Ongoing Activities to PFS and Future Work Program



# Demerger of Standalone Graphite Projects



Sovereign shareholders\*  
for every  
11 shares



=



Receive  
1 share



Priority offer to  
subscribe for  
an additional  
1 share  
for \$0.20

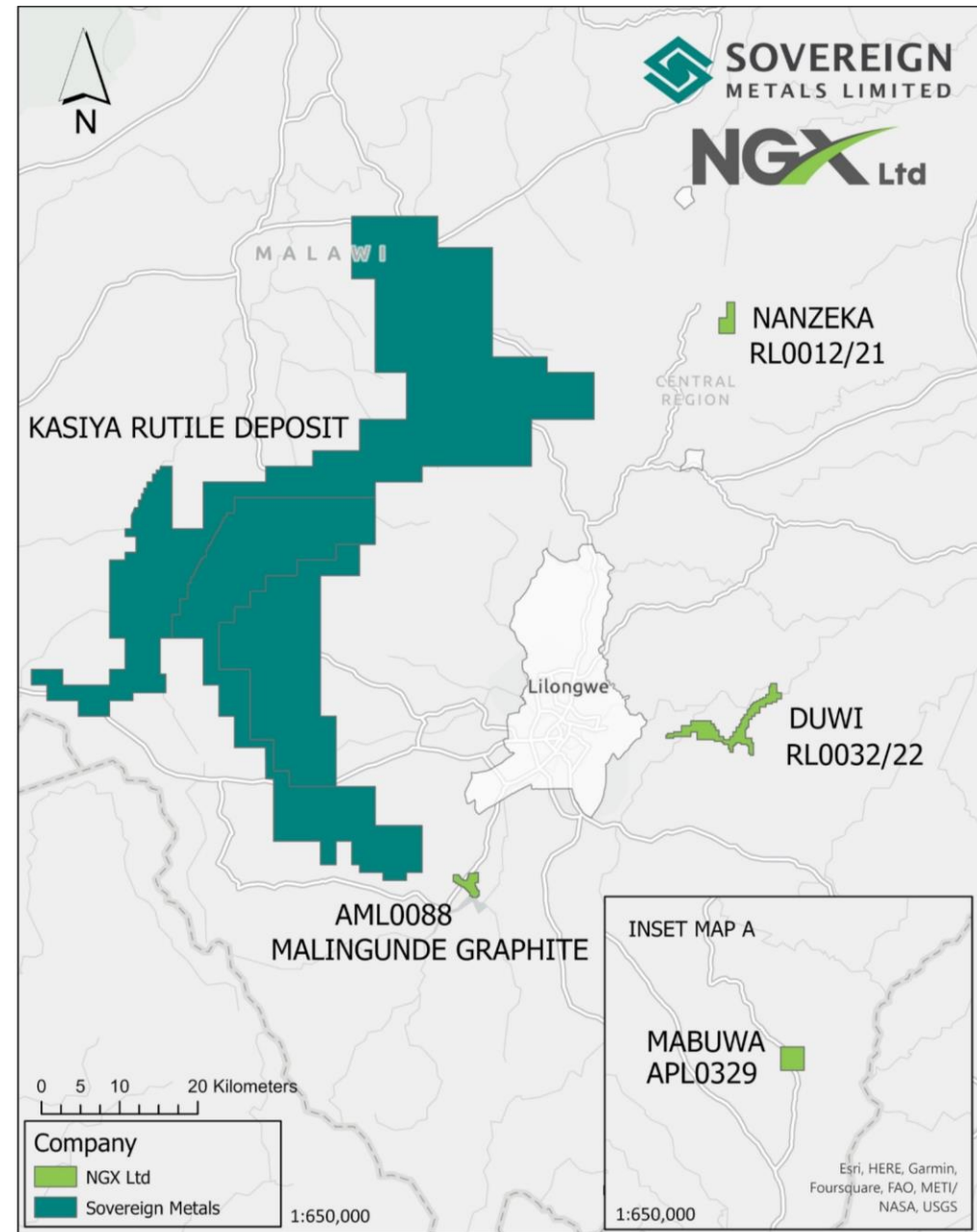


NGX aims to IPO on the ASX

Three graphite projects ranging from exploration and development level (Malingunde, Duwi and Nanzeka)

New dedicated board and management team to focus on the development of the Graphite Projects

Sovereign will retain all graphite co-product from the Kasiya Project





# Demerger of Standalone Graphite Projects (cont.)

## Rationale for the Demerger

- The Demerger allows the Company to better focus its efforts and resources on Kasiya and other primary rutile discoveries.
- The Demerger will provide shareholders with an interest in two companies – Sovereign and NGX. The Board believes a separate entity with a separate management team focused on the Graphite Projects presents a better prospect of delivering value to Sovereign shareholders.
- The Board sees considerable potential in the Graphite Projects that is not recognised by the market and, therefore, a dedicated, separately funded vehicle may realise appropriate value for shareholders.
- Future capital raisings are expected to be more readily achieved by each individual entity as the focus of the funding will be on their specific projects. In addition, it is expected to provide greater flexibility to both Sovereign and NGX to attract strategic investors.
- NGX will have a dedicated board and management team to focus on the development of the Graphite Projects.
- After a full and proper assessment of all available information, the Directors believe that the Demerger is in the best interests of Sovereign shareholders.

## Timetable and Key Events

- Announcement of Demerger
- Notice of Meeting for Shareholder Approval
- General Meeting
- Shareholders Approval
- Record date
- Distribution of securities
- Public offer
- IPO on to ASX
- Trading of NGX on ASX



**SOVEREIGN**  
METALS LIMITED

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**Thank you**

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# Appendix - Peer Sources



## MINERAL SANDS PEER INFORMATION

Reference	Company	Project	Stage of Development	Revenue to Cost ratio	Source
Ilmenite -Madagascar	Base Resources	Toliara	FS Complete	3.5	ASX Announcement: <a href="https://wcsecure.weblink.com.au/pdf/BSE/02426235.pdf">https://wcsecure.weblink.com.au/pdf/BSE/02426235.pdf</a>
Ilmentie – Western Australia	Strandline	Coburn	Construction	2.4	Investor Presentation: <a href="https://www.strandline.com.au/irm/PDF/35d74951-750a-4bdf-8234-62e58a2d10a9/InvestorPresentation">https://www.strandline.com.au/irm/PDF/35d74951-750a-4bdf-8234-62e58a2d10a9/InvestorPresentation</a>
Zircon – Western Australia	Sheffield Resources	Thunderbird	FS Complete	2.1	ASX Announcement: <a href="https://www.sheffieldresources.com.au/site/PDF/1b39388b-3a10-4733-9976-167a3d4a2333/BFSUpdateMateriallyImprovesProjectEconomics">https://www.sheffieldresources.com.au/site/PDF/1b39388b-3a10-4733-9976-167a3d4a2333/BFSUpdateMateriallyImprovesProjectEconomics</a>
Ilmenite – Greenland	Bluejay Mining	Dundas	FS Complete	2.0	Investor Presentation: <a href="https://bluejaymining.com/wp-content/uploads/2021/09/Jay-Corporate-September-2021-1.pdf">https://bluejaymining.com/wp-content/uploads/2021/09/Jay-Corporate-September-2021-1.pdf</a>

## GRAPHITE PEERS INFORMATION

	Company	Project	Stage of Development	Operating Costs (FOB) US\$/t	Steady State Production tpa	Current Production tpa	Source
A	Walkabout Resources	Lindi	Construction	347	40,000	n/a	ASX Announcement: Updated DFS Confirms Standout Graphite Project(7 Mar 2019)
B	Renascor	Siviour	DFS Complete	355	105,000	n/a	ASX Announcement: Siviour Definitive Feasibility Study (11 Nov 2019)
C	Mason Graphite <sup>1</sup>	Lac Gueret	FS Complete	370	51,865	n/a	SEDAR FILING: NI 43-101 Technical Report: Feasibility Study Update of the Lac Gueret Graphite Project (12 Dec 2018)
D	Nouveau Monde <sup>1</sup>	Matawinie	Construction	382	100,000	n/a	SEDAR FILING: NI 43-101 Technical Feasibility Study Report for the Matawinie Graphite Project (10 Dec 2018)
E	Syrah Resources <sup>2</sup>	Balama	Production	464	184,000	46,000	ASX Announcement: Q1 2022 Quarterly Activities Report (27 Apr 2022)
F	NextSource Materials	(Molo Phase 2)	PEA Complete	496	150,000	n/a	Press Release: MD&A March 2022 (16 May 2022)
G	Ecograf	Epanko	BFS Complete	500	60,000	n/a	ASX Announcement: Positive Response to Proposed US\$60m Epanko Debt Financing (10 Mar 2019)
H	SRG Mining	Lola	FS Complete	508	55,000	n/a	SEDAR FILING: Lola Graphite Project NI 43-101 Technical Report - Feasibility Study (16 Aug 2019)
I	Magnis Energy	Nachu	BFS Complete	559	220,000	n/a	ASX Announcement: Nachu Bankable Feasibility Study Finalised (31 Mar 2016)
J	NextSource Materials	(Molo Phase 1)	Construction	566	17,000	n/a	SEDAR Filing: 2021 Annual Information Form (28 Sep 2021)
K	Triton Minerals	Ancuabe	DFS Complete	634	60,000	n/a	COMPANY PRESENTATION: Developing the World Class Ancuabe Graphite Project (16 Feb 2022)
L	Northern Graphite <sup>3</sup>	Bisset Creek	FS & PEA	660	44,000	n/a	COMPANY PRESENTATION: Building the leading public graphite company (May 2022)
M	Volt Resources	Bunyu (Stage 1)	FS Complete	664	23,700	n/a	ASX Announcement: Positive Stage 1 Feasibility Study For Bunyu Graphite Project, Tanzania (30 Jul 2018)
N	Graphite One	Graphite One	PEA Complete	960	60,000	n/a	NI 43-101 Preliminary Economic Analysis On the Graphite One Project (30 Jun 2017)

# Appendix - Peer Sources



## RUTILE MINERAL RESOURCES INFORMATION

Ref	Company	Project	Status	Source
1	Iluka Resources	Sierra Rutile	Production & Development	Iluka Resources Limited's 2021 Annual Report (released on ASX 24/02/2022)
2	Iluka Resources	Balranald	Development	Iluka Resources Limited Annual Ore Reserve and Resources as at 31 December 2021: <a href="https://iluka.com/CMSPages/GetFile.aspx?guid=213396d8-1630-49ff-8d1b-fe4b1ee71e7e">https://iluka.com/CMSPages/GetFile.aspx?guid=213396d8-1630-49ff-8d1b-fe4b1ee71e7e</a>
3	Base Resources	Kwale	Production	Updated Kwale North Dune and maiden Bumamani Mineral Resource Estimate (released on ASX 19/02/2021)

### Detailed Mineral Resources by Category

1. Iluka Resources – Sierra Rutile			
	Mt	Rutile Grade*	In-situ Rutile
Measured	178	1.4%	2.4
Indicated	309	1.0%	3.1
Inferred	265	1.0%	2.6
Total	752	1.1%	8.1
2. Iluka Resources – Balranald			
	Mt	Rutile Grade*	In-situ Rutile
Measured	12	3.8%	0.5
Indicated	28	4.3%	1.2
Inferred	13	3.0%	0.4
Total	53	3.7%	2.0
3. Base Resources – Kwale			
	Mt	Rutile Grade*	In-situ Rutile
Measured	160	0.3%	0.3
Indicated	91	0.2%	0.2
Inferred	13	0.2%	0.2
Total	254	0.2%	0.7

\* Rutile grade calculated as HM% times rutile % of assemblage

# Appendix - Peer Sources



## GRAPHITE RESOURCE INFORMATION

Ref	Company	Project	Project Status	Source
1	Syrah Resources	Balama	Production	Syrah Resources Limited's 2021 Annual Report (released on ASX 24/02/2022)
2	Volt Resources	Bunyu	FS Complete	Volt Resources Limited's 2021 Annual Report (released on ASX 29/09/2021)
3	Black Rock Mining	Mahenge	FS Complete	ASX Announcement: Black Rock Mining confirms 25% increase in Measured Mineral Resource, now the largest in class globally (released 3/02/2022)
4	Mason Graphite	Lac Gueret	FS Complete	Mason Graphite's Corporate Presentation released July 2021
5	Magnis Energy	Nachu	BFS Complete	Magnis' Corporate Presentation released February 2022
6	NextSource Materials	Molo	PEA Complete	<a href="https://www.nextsourcematerials.com/graphite/molo-graphite-project/">https://www.nextsourcematerials.com/graphite/molo-graphite-project/</a>
7	Graphite One	Graphite One	PEA Complete	<a href="https://www.graphiteoneinc.com/graphite-one-increases-tonnage-grade-and-contained-graphite-of-measured-and-indicated-and-inferred-resources-in-updated-mineral-resource-estimate/">https://www.graphiteoneinc.com/graphite-one-increases-tonnage-grade-and-contained-graphite-of-measured-and-indicated-and-inferred-resources-in-updated-mineral-resource-estimate/</a>
8	Focus Graphite	Lac Tetepisca	Resource	<a href="https://focusgraphite.com/focus-graphite-reports-major-maiden-mineral-resource-estimate-at-lac-tetepisca-quebec/">https://focusgraphite.com/focus-graphite-reports-major-maiden-mineral-resource-estimate-at-lac-tetepisca-quebec/</a>

### Detailed Mineral Resources by Category

1. Syrah Resources – Balama			
	Mt	TGC (%)	In-situ TGC
Measured	23	17.5%	4.0
Indicated	378	11.2%	42.3
Inferred	1,020	9.8%	100.0
Total	1,421	10.3%	146.3
2. Volt Resources – Bunyu			
	Mt	TGC (%)	In-situ TGC
Measured	20	5.3%	1.1
Indicated	155	5.0%	7.8
Inferred	286	4.9%	14.0
Total	461	4.9%	22.6
3. Black Rock Mining – Mahenge			
	Mt	TGC (%)	In-situ TGC
Measured	32	8.6%	2.7
Indicated	85	7.8%	6.6
Inferred	97	7.4%	7.2
Total	213	7.8%	16.6
4. Mason – Lac Gueret			
	Mt	TGC (%)	In-situ TGC
Measured	19.0	17.9%	3.4
Indicated	46.5	16.9%	7.9
Inferred	17.6	17.3%	3.4
Total	83.2	17.6%	14.7

5. Magnis – Nachu			
	Mt	TGC (%)	In-situ TGC
Measured	63	4.7%	3.0
Indicated	61	5.7%	3.5
Inferred	50	5.8%	2.9
Total	174	5.4%	9.3
6. NextSource – Molo			
	Mt	TGC (%)	In-situ TGC
Measured	160	0.3%	0.3
Indicated	91	0.2%	0.2
Inferred	13	0.2%	0.2
Total	254	0.2%	0.7
7. Graphite One – Graphite One			
	Mt	TGC (%)	In-situ TGC
Measured	2	8.0%	0.1
Indicated	9	7.7%	0.7
Inferred	92	8.0%	7.3
Total	103	8.0%	8.2
8. Focus – Lac Tetepisca			
	Mt	TGC (%)	In-situ TGC
Measured	-	-%	-
Indicated	59	10.6%	6.3
Inferred	15	11.1%	1.6
Total	74	10.6%	7.9