

Leading Graphite Developer Powering a Green Revolution

Investor Presentation
September 2021

 **ARMADALE**
CAPITAL PLC



Corporate Information

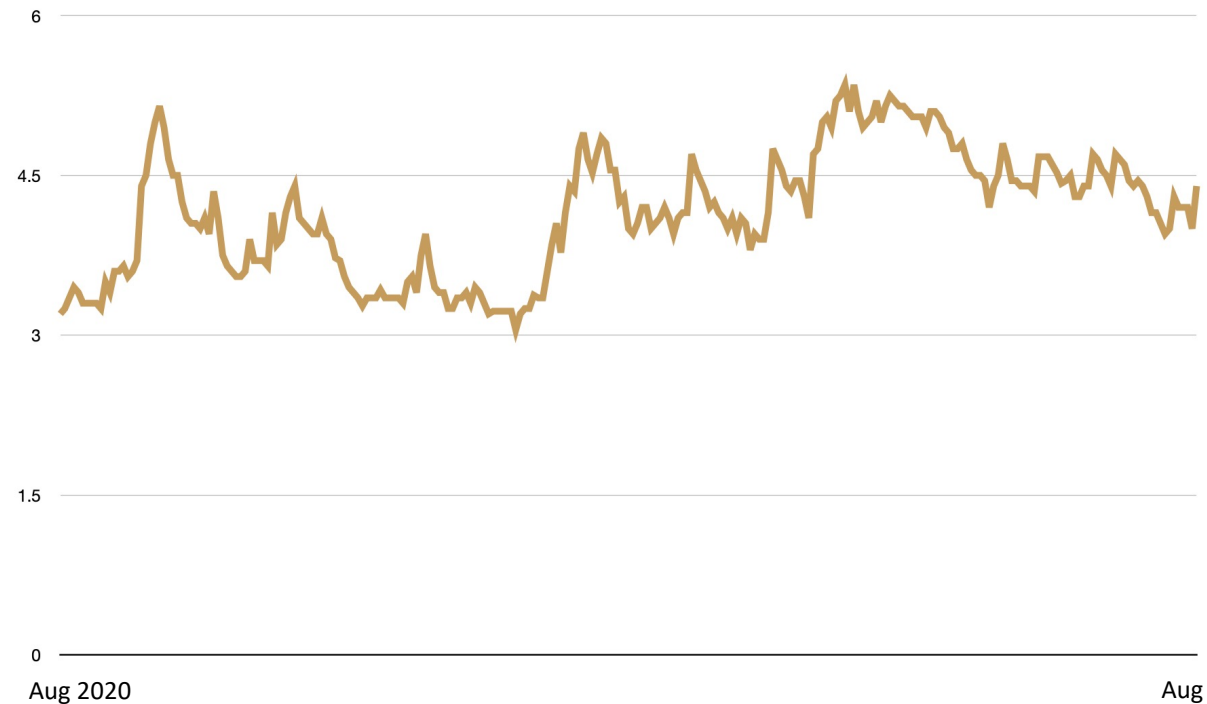
Key Data

Ticker LSE	ACP
Shares in Issue	531,759,411
Share Price (15 June 2020)	4.4p
52 week high/low)	3.05p / 5.65p
Market Cap.	£22m

Director Holdings

Matt Bull	8.56%
Other Directors	0.04%

Share Price





Board & Management

Nicholas Johansen

BEcon GDLP LLB (Hons)

Chairman

Experienced legal practitioner based in Northern Territory, Australia

Extensive involvement in junior mining exploration and production companies across many different commodities

Expert in environmental regulation

Law degree with Honours from Charles Darwin University, NT and Bachelor of Economics from the University of Adelaide

Matt Bull

BSc (Hons)

Technical Director

A geologist with experience in graphite, gold and iron ore across Australia and Africa

Worked greenfield exploration & resource development programs for Rio Tinto, Golden West, Volt & Linden Resources

Former director of Volt Resources (ASX: VRC) and currently on the Board of Patterson Resources on the ASX

Bachelor of Science with honours in geology and geophysics from the University of Adelaide

Jenny Lee

China Representative

Graphite Marketing

Experienced marketing executive with 24 years in the mining sector focused on raw material procurement

Headed large China-based shipping & logistics group importing into the Chinese market

Highly experienced at obtaining and managing off-take agreements and product marketing

Group Overview



- Armadale Capital (ACP) is an AIM-listed diversified investment company focused on natural resource projects in Africa
- Current focus on advancing the Mahenge Liandu Graphite Project in Tanzania to production
 - Low technical risk project - a large, high-grade open cut resource
 - Located in East Africa - the world's largest graphite province
 - Robust DFS \$430m NPV10, low Capex \$39.7m with an IRR of 91%
 - Mining License Awarded Sep 2021
 - Strong market dynamics - accelerating demand for spherical graphite driven by new energy sector, EV and expandable graphite



Project Economics

■ NPV10: \$430m

■ LOM EBITDA: \$1.085B

■ Capex: \$39.7m

■ IRR: 91%

Production 53kt rising to 120ktpa in year 4	Financial Revenue 1,823 US\$ Real
Initial Capex \$US39.7m	Low Capital Intensity \$US750 for stage 1 \$US475 for stage 2
NPV/IRR US\$430m pre-tax 91% IRR	Low Cash Cost \$US369 for LOM
Payback Period 1.6 Years	High Mine Grade of 12.5% Low Strip Ratio of 2:1 15 year Mine Life

- Mahenge will be a significant low cost supplier to the graphite industry
- Potential to create pre tax cashflow of US\$985m over an initial 15 year mine-life
- Scope for further improvement as this utilises just 25% of the current resource

Project Overview



- 100% owned, near surface, high grade deposit
- Focus on commencing construction in 2022, targeting first production 2023
- One of the largest graphite projects in Tanzania
- Proven potential as a commercially viable deposit
- Robust DFS delivered June 2020 confirming Mahenge as a low cost, high grade and high purity (97%+) project
- Mining Licence ML/007744/2020 granted covering the Mahenge Liandu Graphite Project

2021/2022 Milestones

- Conversion of off-take MOU's to binding agreements
 - Complete FEED Phase 2 to construction
 - Close project development funding
 - Commence Construction
-
- **Considerable offtake interest**
 - Four MOUs signed and advanced discussions underway with other potential customers
 - **Project development funding progressing well**
 - Two NDA's remain in place and advanced discussions underway with a number of Asian parties



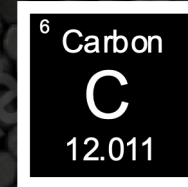
GRAPHITE MARKET



Graphite Market



- Graphite is a grey crystalline allotropic form of carbon and is known for its electrical conductivity, lubrication and resistance to corrosion and high temperatures.
- Graphite ore is mined and processed through crushing, grinding and flotation before being dried and classified into high grade concentrate for sale to end users.
- Graphite concentrate varies by the concentrate grade and the flake sizes of the graphite. Larger flake size graphite concentrate receives a premium and a higher price per tonne. Similarly a higher-grade concentrate also receives a higher price.
- Graphite is utilised in traditional industries including refractory and foundry, expandable graphite, carburisation, graphite shapes and lubricants. Graphite is also utilised in the anode for batteries which is a larger driver of forecast demand given the developments in the electric vehicle market.



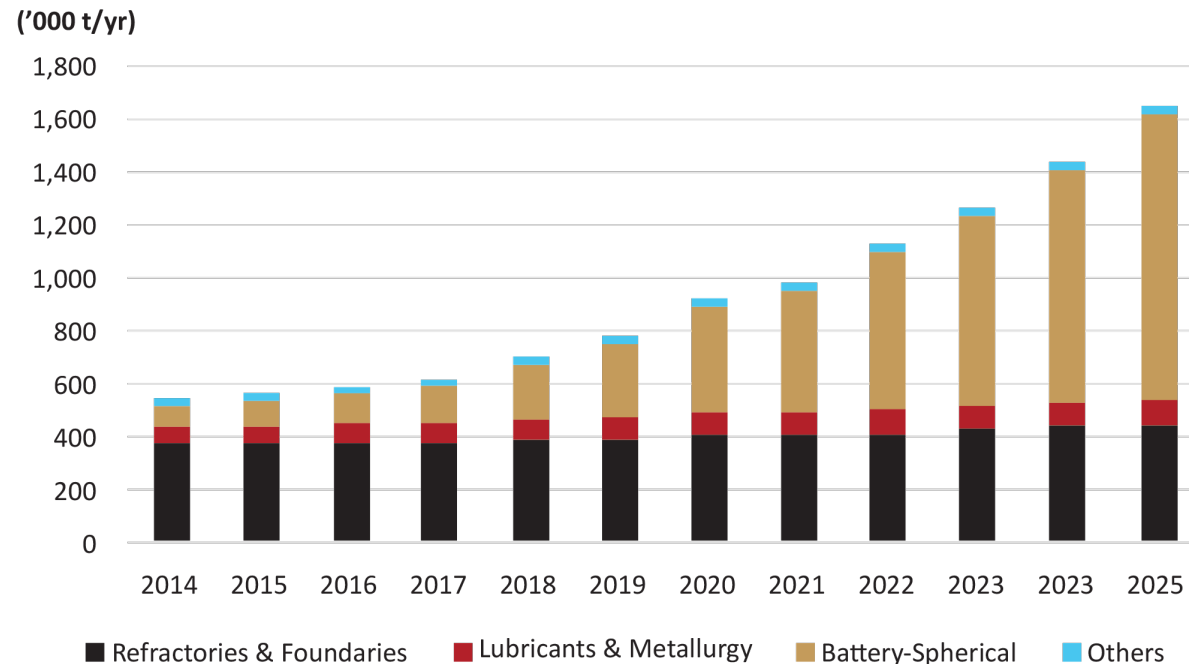


Graphite Market

Demand Drivers

- Natural flake graphite demand linked to major industrial sectors forecast to grow broadly in line with GDP growth.
- Expandable graphite fire-retardants market forecast to exceed industrial and GDP growth due to increased fire safety regulations.
- Growing demand for low carbon technologies will mandate a higher & of world's mineral production including Graphite

Industrial Minerals estimates natural flake graphite could reach 1.6Mtpa by 2025E which is up circa 180% on 2014's level



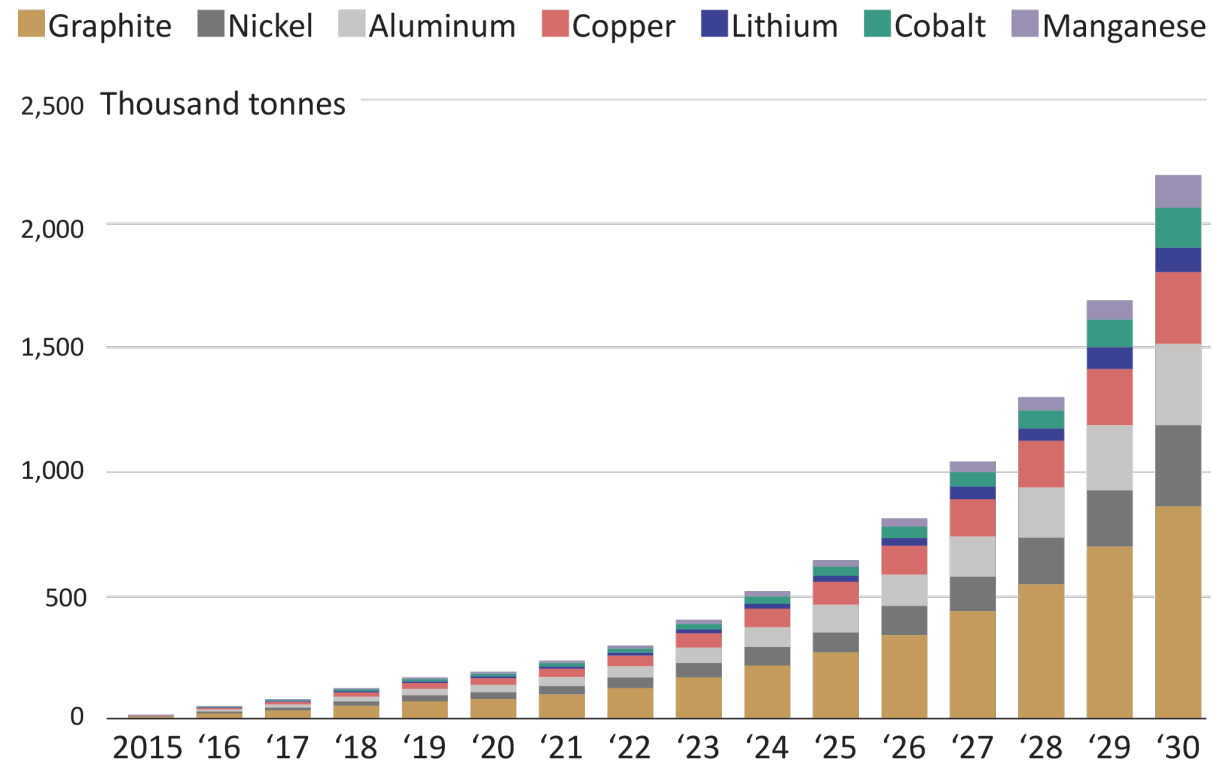
Source: Industrial Minerals



Graphite Market

EV Revolution

- Consumption of metals in EV Li-ion batteries dominated by graphite (2015-2030). Battery demand will become the main driver influencing the graphite market



Spherical graphite for lithium-ion battery manufacturers, which are rapidly expanding capacity via new mega-giga factories, reflecting growing end user demand for

- Electric Vehicles
- Electronic Equipment
- Power storage equipment to enable off-peak use of power

Global Supply

CHINA DRIVING GLOBAL GROWTH:

- China slowly moving to net-natural graphite importer, which will lead to severe supply deficits moving into the 2020s (BMI)
- Growing opportunities for east African producers to fill an expanding void
- More pertinently, suppliers that produce battery grade natural graphite should be able to command premium pricing
- However, securing premium pricing is a bilateral process that depends on purity, flake-size, product consistency, supply reliability and suitability for downstream applications
- Notably, test-work from the Mahenge Liandu region has shown suitability for a wide range of high-value applications, especially for the rapidly growing lithium-ion battery market





MAHENGE LIANDU GRAPHITE PROJECT



Project Location

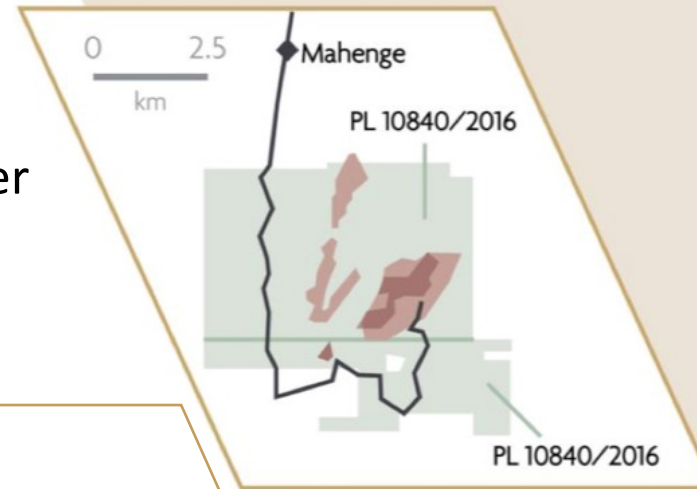
Located close to established infrastructure

Mains power within 5km

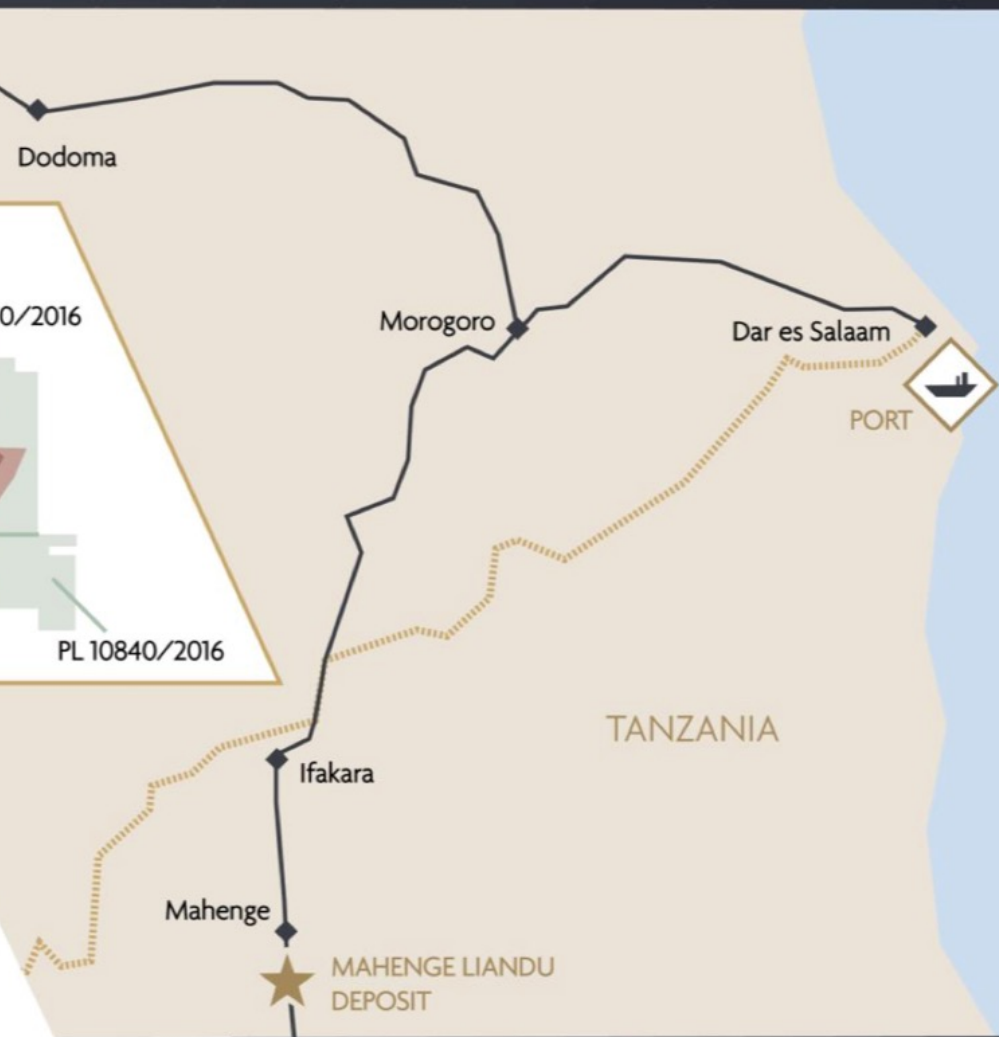
Direct rail access to Dar es Salaam port 320km away

80km by sealed and gravel roads to central rail hub at Ifakara

Labour and materials within 10km at Mahenge town



Tanzania-Zambia Railway



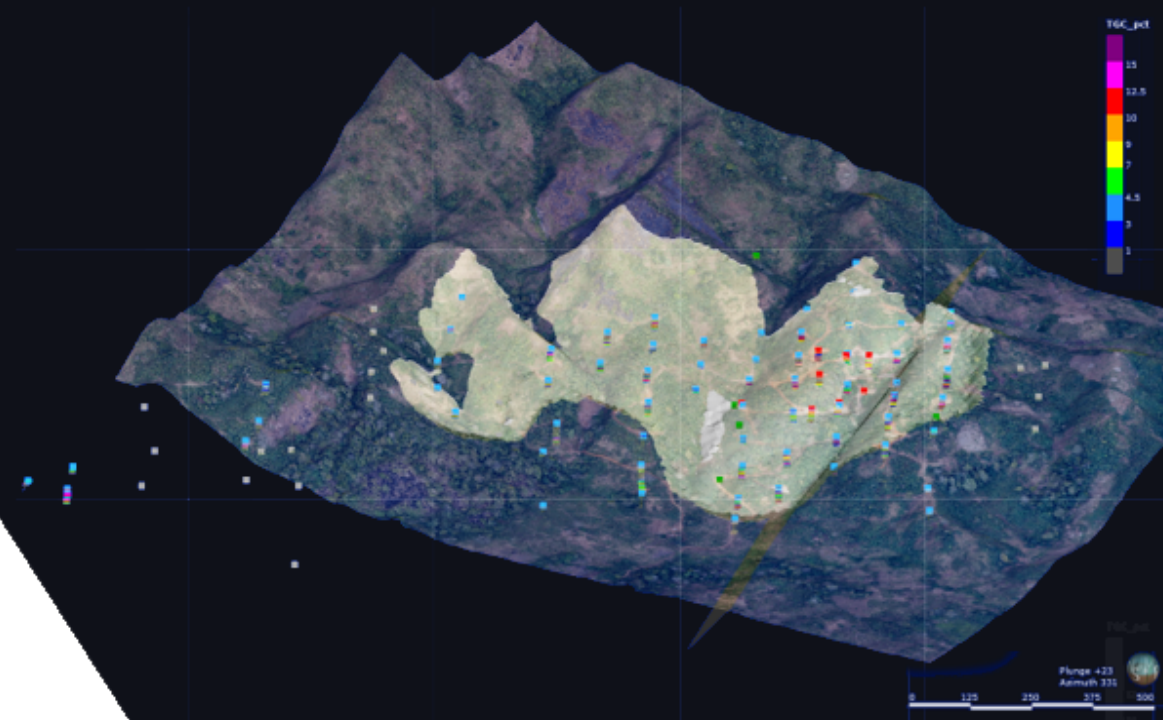
- Railway
- Roads
- Licence Boundary
- Graphite Mineralisation

Geology

- The geological setting of the Liandu prospect is characterised by complex deformation and metamorphism



- The graphite mineralisation is of Early to Mid-Neoproterozoic age, and form part of the world class East African Graphite Province



- The mineralisation is dipping to the south east and remain open along strike and at depth.
- Limited drilling to the along strike shows continuing high grade mineralisation along scope for future production increases

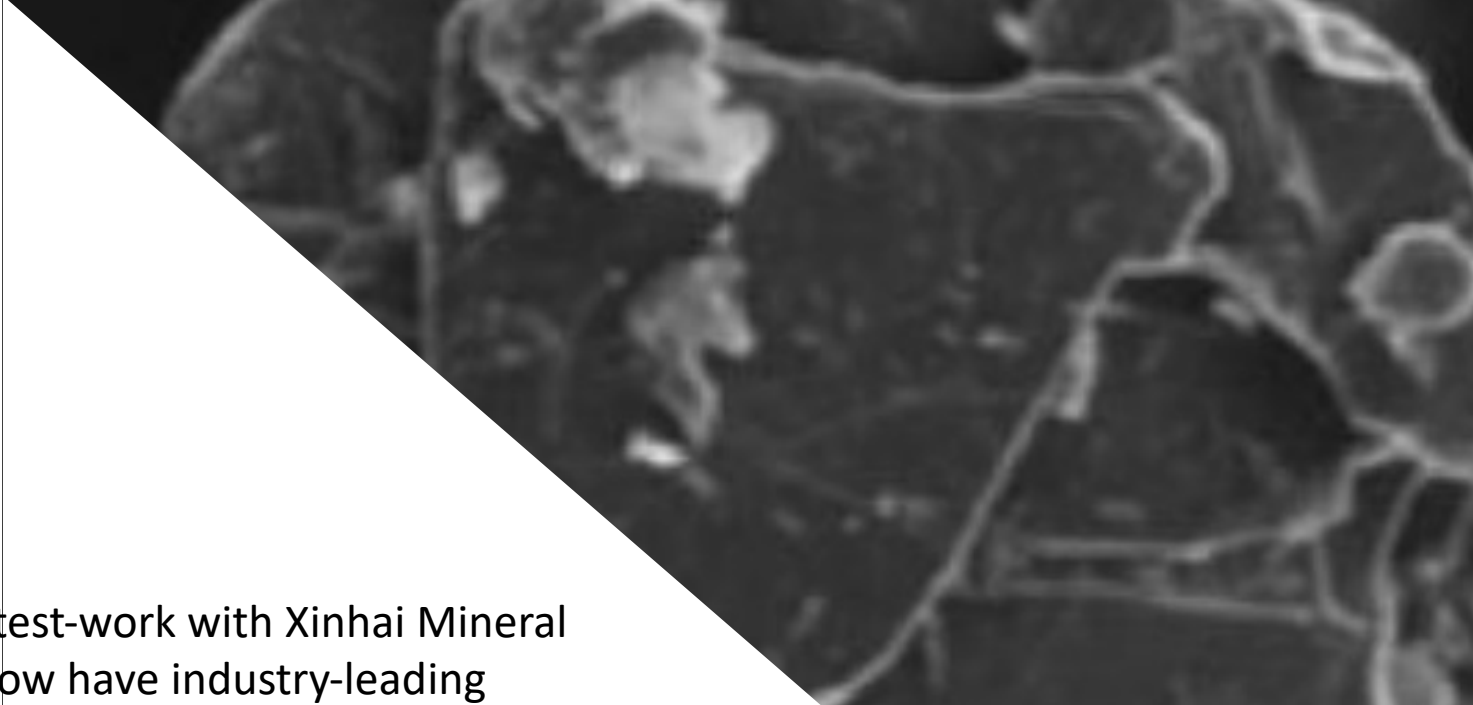
Our Product

- Phase 1 test work in collaboration with CSIRO's world-class specialist battery team confirmed that the Mahenge natural flake graphite is a premium quality product and suitable for use in lithium-ion batteries



- Through test-work with Xinhai Mineral EPC we now have industry-leading independent confirmation of our mine processing plant design to produce high quality and high purity graphite concentrate
- Flake size distribution compares favourably to other projects
- > 48% within the large, jumbo and super-jumbo categories
- Very low proportion in the lower size fractions

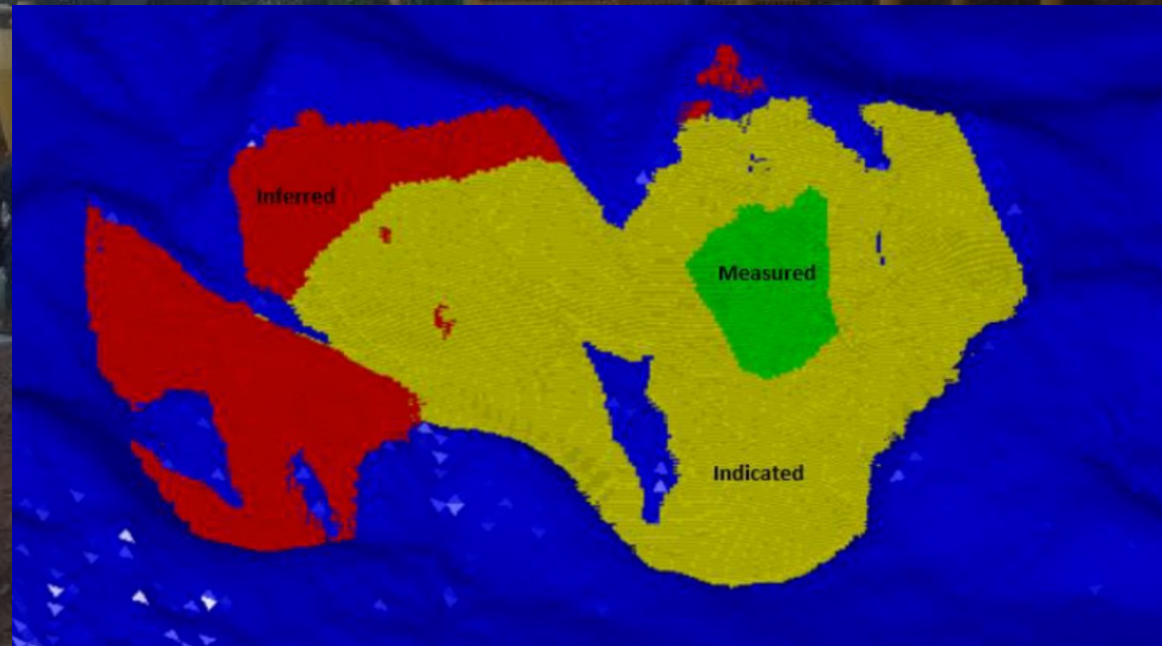
Flake Size	Weight %	TGC %
> 500 μ	3.6	97.7
> 300 μ	20.9	97.8
> 180 μ	23.6	97.8
> 150 μ	18.4	98.0
> 106 μ	13.3	98.2
> 75 μ	7.9	97.6
< 75 μ	3.6	95.2



Resource & Mine

- Multiple High-Grade Zones
- Resource is open in all directions for future development
- Mineralogy well defined
- Optimised resource for mining schedule

Optimised Resource for mining study showing ore classifications



Apr - 20	7.5% TGC Cut-off	
	Mt	%TGC
Inferred	6.10	12.60
Indicated	12.70	12.90
Measured	1.60	12.30
Total	20.40	12.70

Ore material

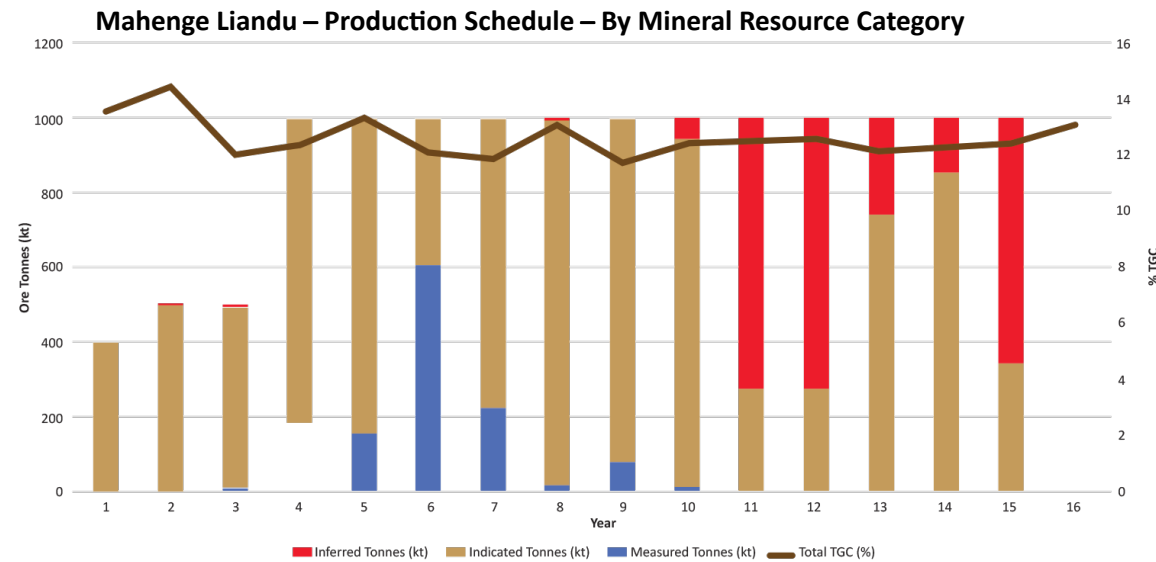
● Measured

● Indicated

● Inferred

Resource & Mine

- Optimisation of mining schedule has delivered a 15-year life of mine at 12.7% TGC
- First 5 years of operation at 13.2% TGC
- Mining Measured & Indicated for the first 10 years of operations



Resource for Future Mining

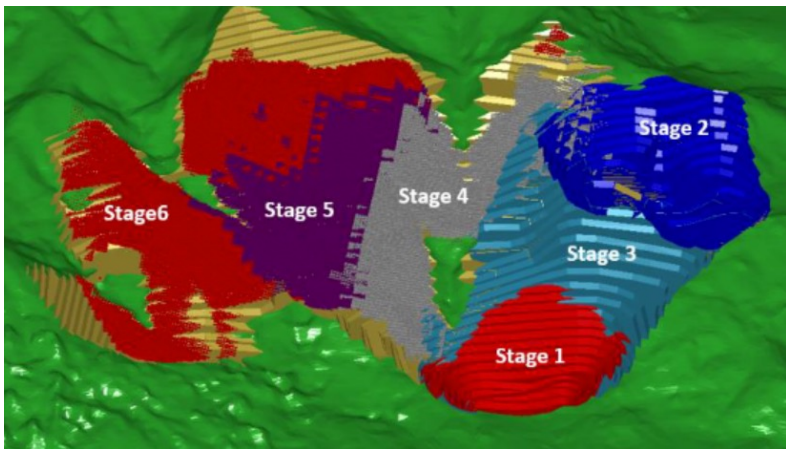
25% of Resource utilized for the first 15 years with the resource open in all directions



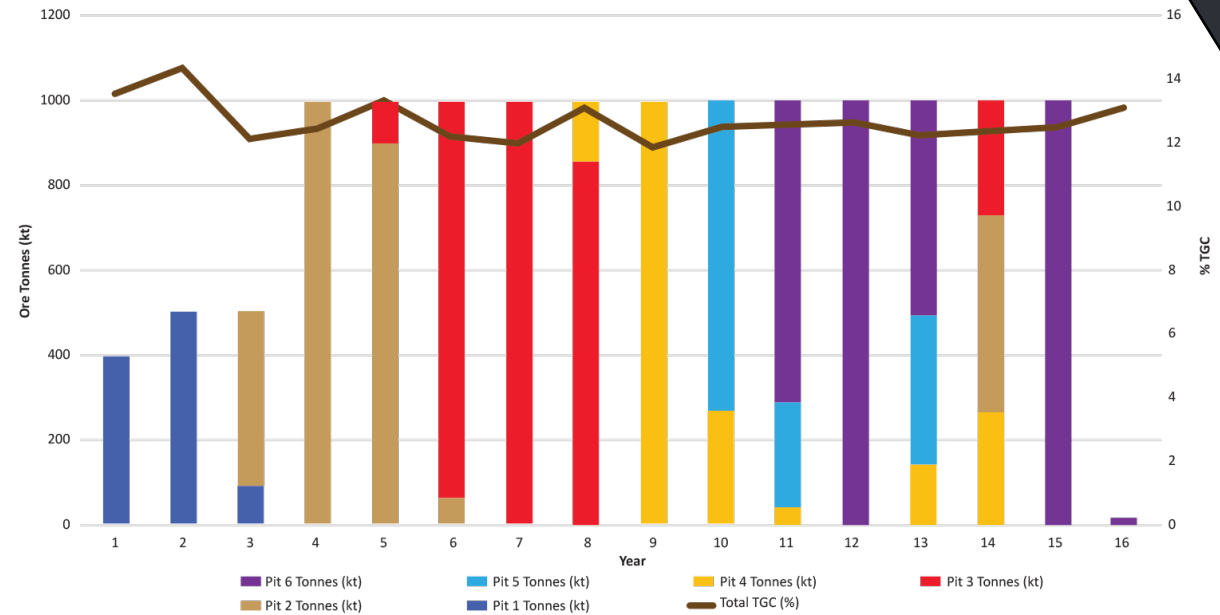
Resource & Mine



- Mining pit sequence incorporating a two-stage ramp-up
- Stage 1 - 60,000tpa for the first three years
- Stage 2 - moving to a LOM average of 109,000tpa from year four



Mahenge Liandu – Production Schedule – By Source

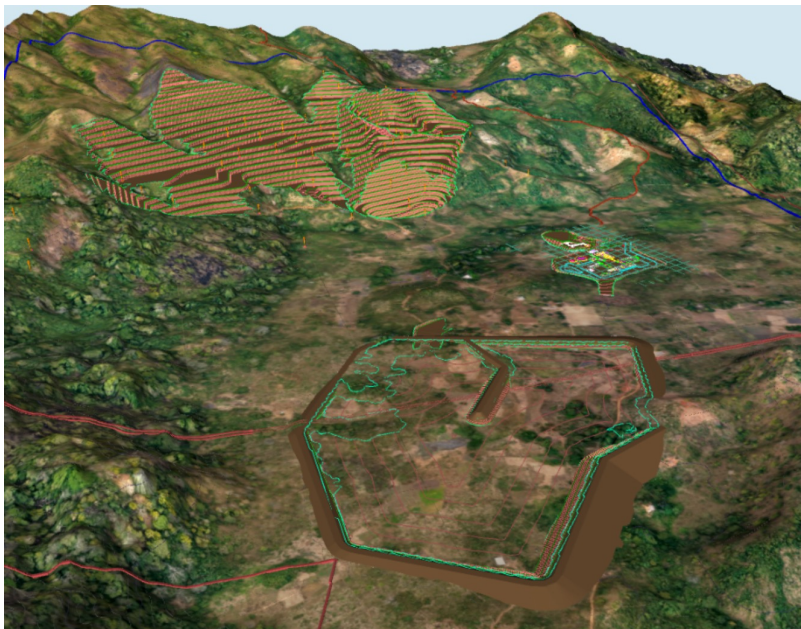
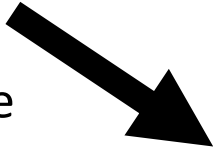


- Optimised resource for mining study showing ore classifications & mining pit sequence
- Final pit design showing the 6 stages of the mine development



Resource & Mine

- Mining Schedule by Year showing high grade long-life project
- **Doubling of ore processing in year four**
- Plant expansion anticipated to be funded from earlier years cashflow



Mine Schedule over 15-year initial mine life

Year	Mill feed Mt	Head Grade TGC%	Concentrate Kt
Y1	0.4	14.50%	53.3
Y2	0.5	12.10%	71
Y3	0.5	12.40%	59.1
Y4	1	13.40%	121.5
Y5	1	12.10%	131.3
Y6	1	11.90%	118.6
Y7	1	13.10%	116.3
Y8	1	11.70%	128.5
Y9	1	12.40%	115.1
Y10	1	12.50%	122
Y11	1	12.60%	122.1
Y12	1	12.20%	123.6
Y13	1	12.30%	119.1
Y14	1	12.50%	120.2
Y15	1	13.10%	121.9

Graphite Project



Project Outcomes

- Projected timeline to first production is expected to be approximately 10-12 months from the start of construction
- The capital cost estimate is US\$39.7m, which includes a contingency of US\$4.1m or 15% of total direct capital cost, with a 1.6 year payback
- A 20% favourable price assumption increases the NPV to US\$588m the IRR to 118%
- The sensitivity analysis indicates robustness of the project where a 30% reduction in product pricing still results in a US\$192m NPV and IRR of 49%.

NPV sensitivity analysis (before tax)

Key metric	30% Unfavourable US\$M	20% Unfavourable US\$M	10% Unfavourable US\$M	Base Case US\$M	10% Favourable US\$M	20% Favourable US\$M
CAPEX	407	415	422	430	437	445
OPEX	324	360	395	430	465	500
Grade	224	293	361	430	498	567
Price	192	271	350	430	509	588
LOM Average Sales Price \$/t	778	889	1000	1112	1223	1334

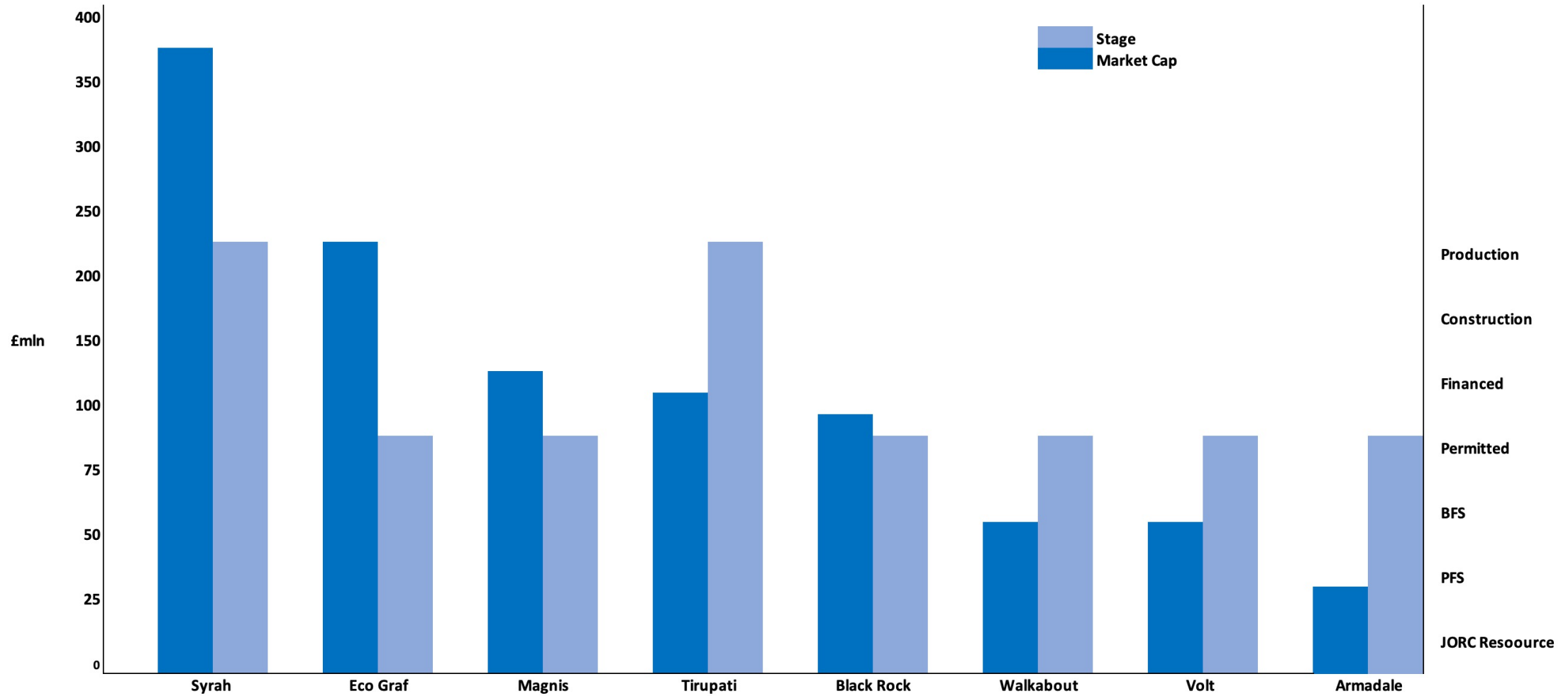
IRR sensitivity analysis (before tax)

Key metric	30% Unfavourable	20% Unfavourable	10% Unfavourable	Base Case	10% Favourable	20% Favourable
CAPEX	71%	77%	83%	91%	100%	111%
OPEX	71%	78%	84%	91%	97%	104%
Grade	55%	67%	79%	91%	103%	114%
Price	49%	63%	77%	91%	104%	118%

Peer Comparison



Peer comparison illustrates Armadale's lower valuation Vs peers at similar stage



Legislative Environment

- Tanzania is a stable democracy with a legal system founded on English common law
- The official languages are Swahili and English
- Tanzania has a long mining history and currently the 4th largest gold producer in Africa
- 30% corporate tax rate
- New mining legislation introduced in July 2017 had a moderate impact on the graphite sector
- 3% royalty levied for industrial minerals
- Mining Commission established in April 2018 to facilitate grant, renewal and transfer of mining licences





INVESTMENT CASE - WHY ARMADALE?



Investment Case



- Building a significant high-grade graphite mine at the Mahenge Liandu Graphite Project
- The June 2020 DFS demonstrated potential to support a staged production ramp up over a 15-year initial mine life with an average LOM production of 109,000tpa
- Significant upside – 15-year mine life based on just a quarter of the resource
- DFS shows robust economics with a pre-tax NPV of \$430m and IRR of 91%
- Project potential underpinned by increasing global demand for graphite products – four MOUs signed and significant sales interest
- Armadale entering a transformational stage transitioning from developer to producer
- Experienced team actively reviewing other exciting investment opportunities
- London Stock Exchange Green Energy Mark and recognised as contributing to the global green economy



Additional Interests



- Armadale also holds a portfolio of royalty, listed company and unlisted company investments where the Board considers there is an opportunity for material capital appreciation
- The Board continues to review additional investment opportunities in which Armadale may invest, in line with its investing policy, with any material investments notified to the market as appropriate



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