

ASX:EV1

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**EVOLUTION**  
ENERGY MINERALS

**SUSTAINABLE GRAPHITE  
PRODUCTS  
FOR THE GLOBAL  
GREEN ECONOMY**

July 2022



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## Mineral Resources

The Chilalo Mineral Resource estimate was reported by Evolution in the prospectus dated 28 September 2021, as supplemented by a supplementary prospectus dated 6 October 2021 (collectively, the Prospectus). Evolution confirms that it is not aware of any new information or data that materially affects the Chilalo Mineral Resource estimate included in the Prospectus and that all material assumptions and technical parameters underpinning the Chilalo Mineral Resource estimate in the Prospectus continue to apply and have not materially changed.

## Forecast Financial Information

The forecast financial information (and the production target on which such forecast financial information is based) in this Presentation was reported by Evolution in the prospectus dated 28 September 2021, as supplemented by a supplementary prospectus dated 6 October 2021 (collectively, the Prospectus). Evolution confirms that it is not aware of any new information or data that materially affects the forecast financial information included in the Prospectus and that all material assumptions underpinning the forecast financial information (and the production target on which such forecast financial information is based) continue to apply and have not materially changed.

## Acknowledgments

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## SUSTAINABLE GRAPHITE PRODUCTS FOR GLOBAL GREEN ECONOMY

### Project Status



Development-ready Chilalo  
Graphite Project in Tanzania

**58% > +80 Mesh**

World leading flake size  
= highest margins



Excellent DFS economics – NPV<sub>8</sub> of  
US\$323M from capex of US\$87M

### Graphite Market



Coarse flake offtake and  
downstream collaboration with  
industry leader (YXGC)



Superior battery performance from  
environmentally friendly thermal  
purification



Qualifications of coated SPG to commence  
with leading battery manufacturers

### Corporate



Framework agreement with Tanzanian  
Government to provide certainty



Strategic cornerstone investor  
to drive project financing



Value-accretive downstream options  
underpin vertically integrated strategy

## CORPORATE OVERVIEW

**\$0.40**

Share price

**\$64.8M**

Market Cap

**\$7.5M**

Cash

(as at 31 Mar '22)

**\$57.3M**

Enterprise Value

**161.9M**

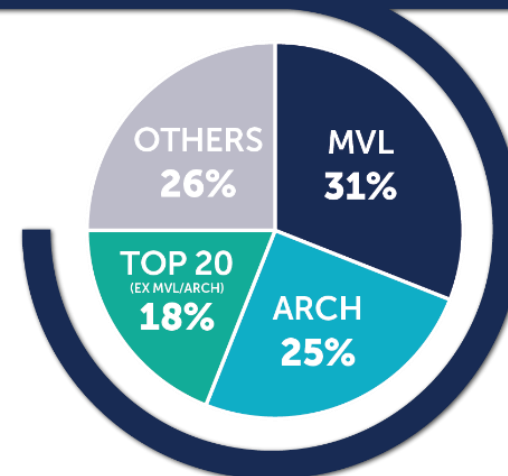
Shares on Issue

**42.1M**

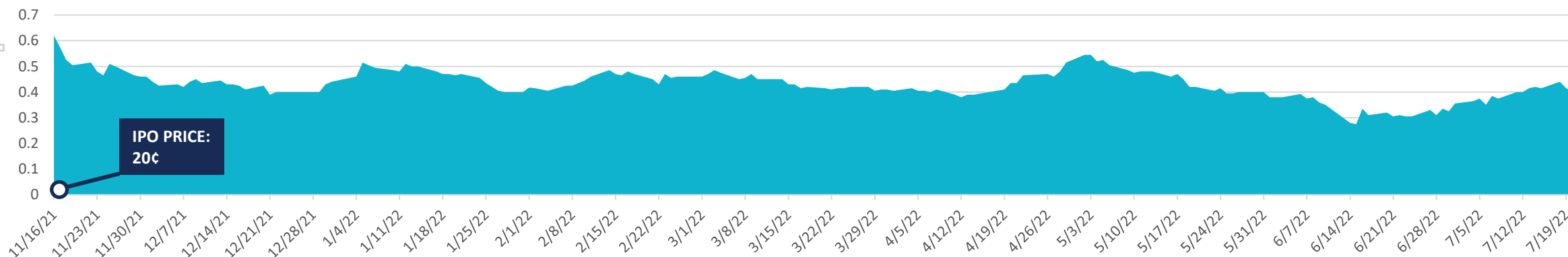
Unlisted Options

(\$0.25 exercise)

## MAJOR SHAREHOLDERS



## SHARE PRICE SINCE IPO



## BOARD &amp; MANAGEMENT WITH GRAPHITE EXPERIENCE

Board of  
Directors

**Phil Hoskins**  
MANAGING DIRECTOR

Phil is the Executive responsible for the development of Chilalo since 2014. Eight years' graphite experience.



**Trevor Benson**  
NON-EXECUTIVE CHAIRMAN

Trevor was the Executive Chairman for Tanzanian graphite company, Walkabout Resources Ltd and has 6 years' graphite market experience.



**Michael Bourguignon**  
EXECUTIVE DIRECTOR

Michael was the Project Manager for the construction of Syrah Resources' Balama graphite project in Mozambique.



**Amanda van Dyke**  
NON-EXECUTIVE DIRECTOR

Amanda is the MD of the ARCH Sustainable Resources Fund, an ESG-focused investment fund based in London.



**Henk Ludik**  
NON-EXECUTIVE DIRECTOR

Henk is a mining engineer with a career spanning over 20 years in mining with expertise in engineering, feasibility, mine optimisation, ESG and corporate finance.

Management  
Team

**Chris Knee**  
CHIEF FINANCIAL OFFICER

Chris is the finance executive involved in the development of the Chilalo project since 2015.



**Stuart McKenzie**  
COMPANY SECRETARY

Stuart has significant African experience including 6 years with Anvil Mining and involved with the Chilalo project since 2014.



**Vicky Puncheon**  
GM CORPORATE

18 years' African experience including 5 years with Syrah Resources.



**Heavenlight Kavishe**  
COUNTRY MANAGER

Experienced government advisor, with the Chilalo project since 2014.



**Chris Whiteley**  
INTERNATIONAL SALES &  
MARKETING CONSULTANT

Chris has been actively involved in all aspects of graphite marketing and product development for more than 25 years.



**Eileen Hao**  
GRAPHITE MARKETING - CHINA

Experienced graphite and battery advisor with IMERYS, Syrah and facilitating Neometals / Gangfeng transactions



“We forecast battery sector demand for raw material graphite to rise by more than 1,400% between 2020 and 2050. By the end of the forecast period, total graphite demand could be three times the 2021 supply level.”

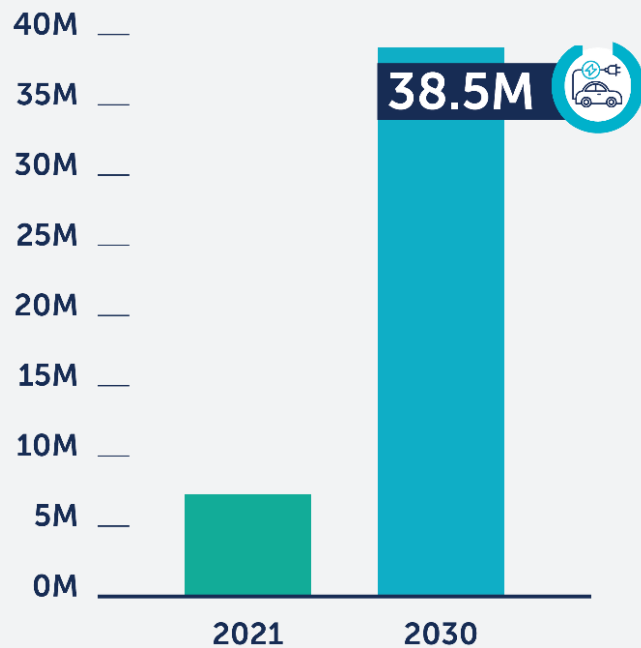
– Wood Mackenzie Graphite Market 2021 Outlook to 2050



## UNPRECEDENTED DEMAND OPPORTUNITY

EV sales continue to outperform forecasts

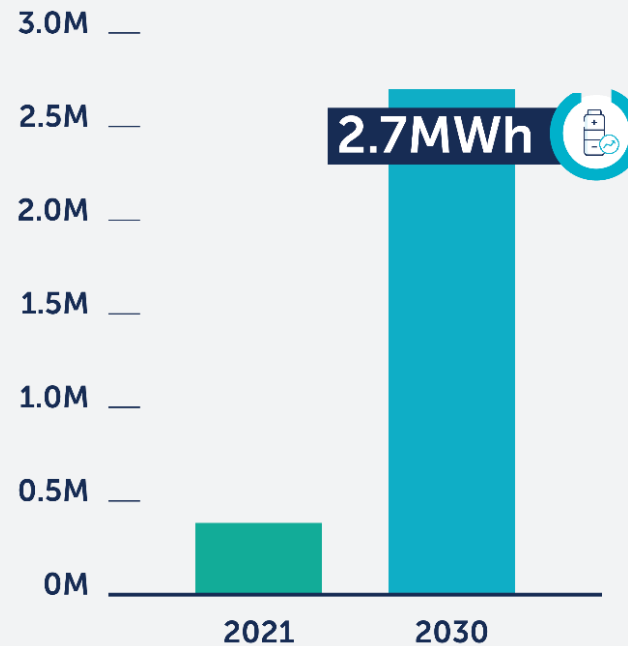
**ELECTRIC VEHICLES  
(# SALES)**



In 2021, EVs represented 15% and 20% of all vehicles sold in China and Europe respectively.

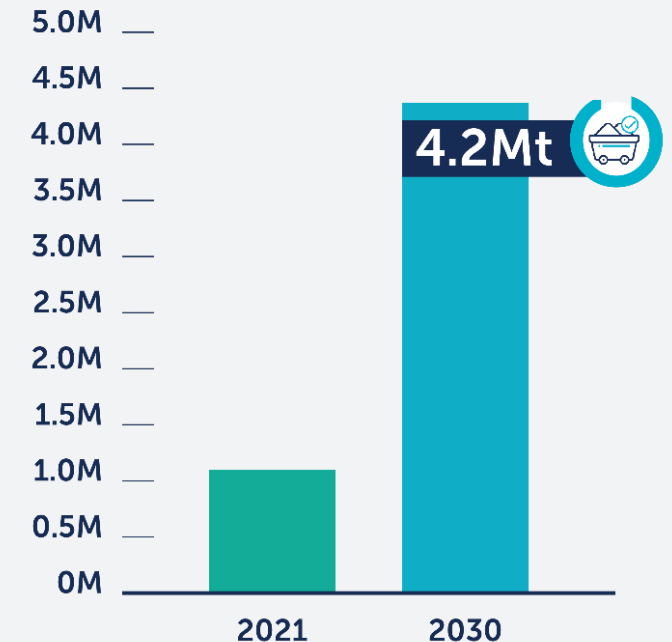
Source: Bloomberg NEF

**LI-ION BATTERY  
DEMAND (MWh)**



Source: Benchmark Mineral Intelligence – Q2 2022 Flake Graphite Forecast

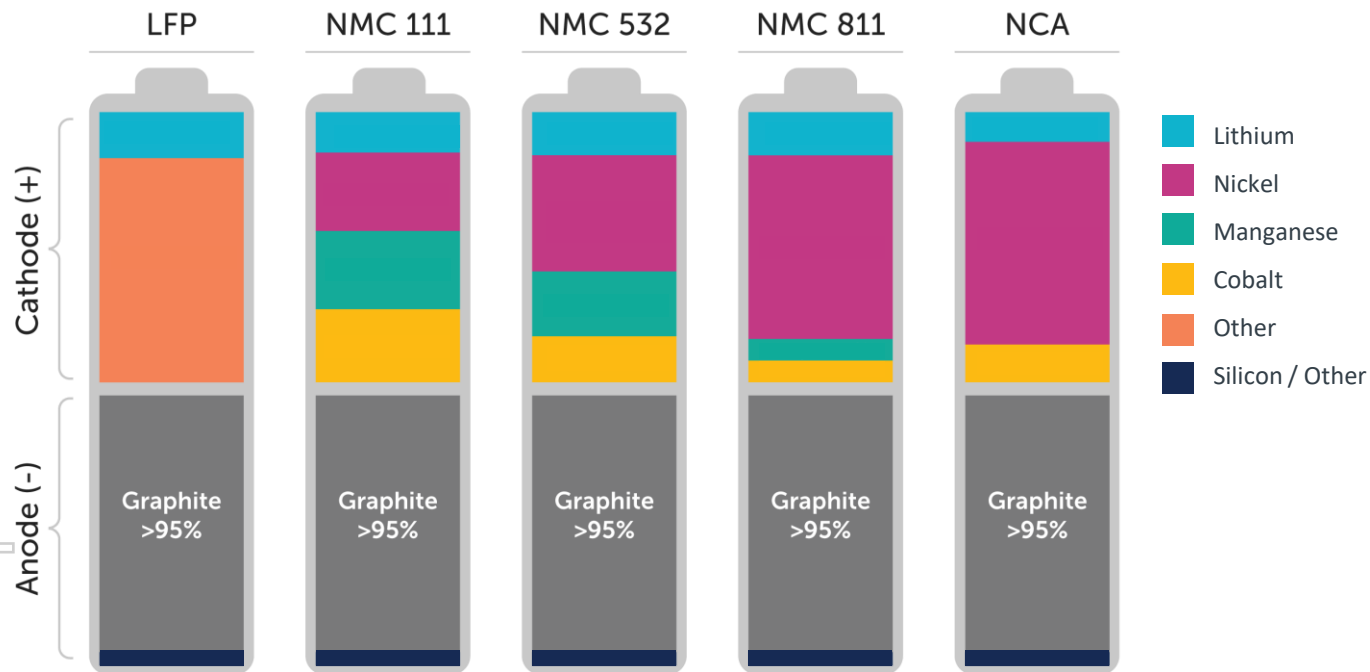
**GRAPHITE DEMAND  
(Mt)**



## GRAPHITE IN LITHIUM-ION BATTERIES

High costs and CO<sub>2</sub> footprint shifting demand from synthetic towards natural graphite

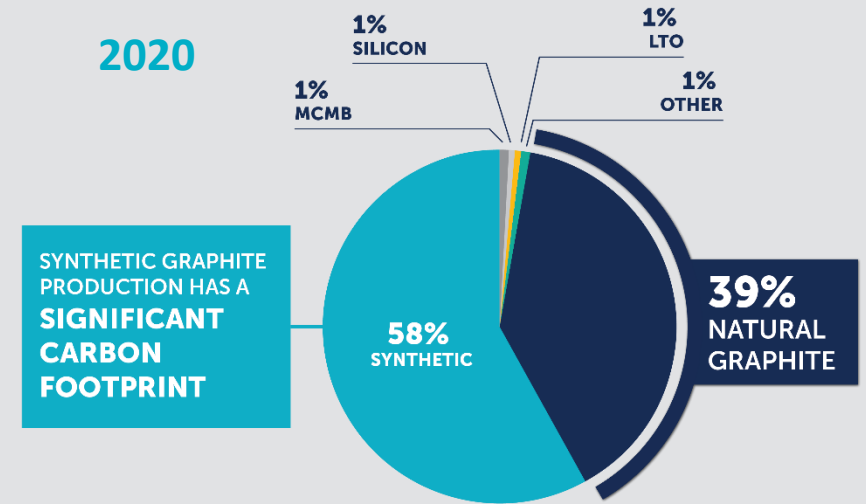
Graphite is the dominant material across all commercial battery technologies



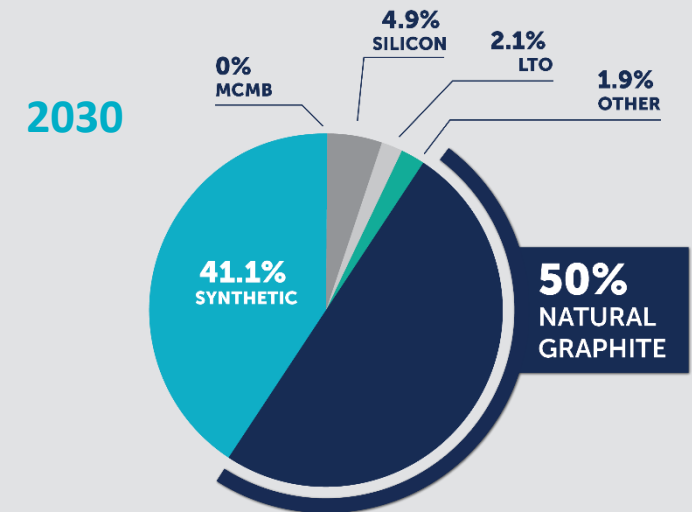
Source: Pallanghurst-Traxys battery analysis. %s represent the proportions of cathode and anode in each battery respectively/ NCA batteries contain 2% aluminium (not shown)

## NATURAL GRAPHITE DEMAND FOR BATTERIES

2020



2030



Source: Benchmark Mineral Intelligence – Q2 2022 Flake Graphite Forecast

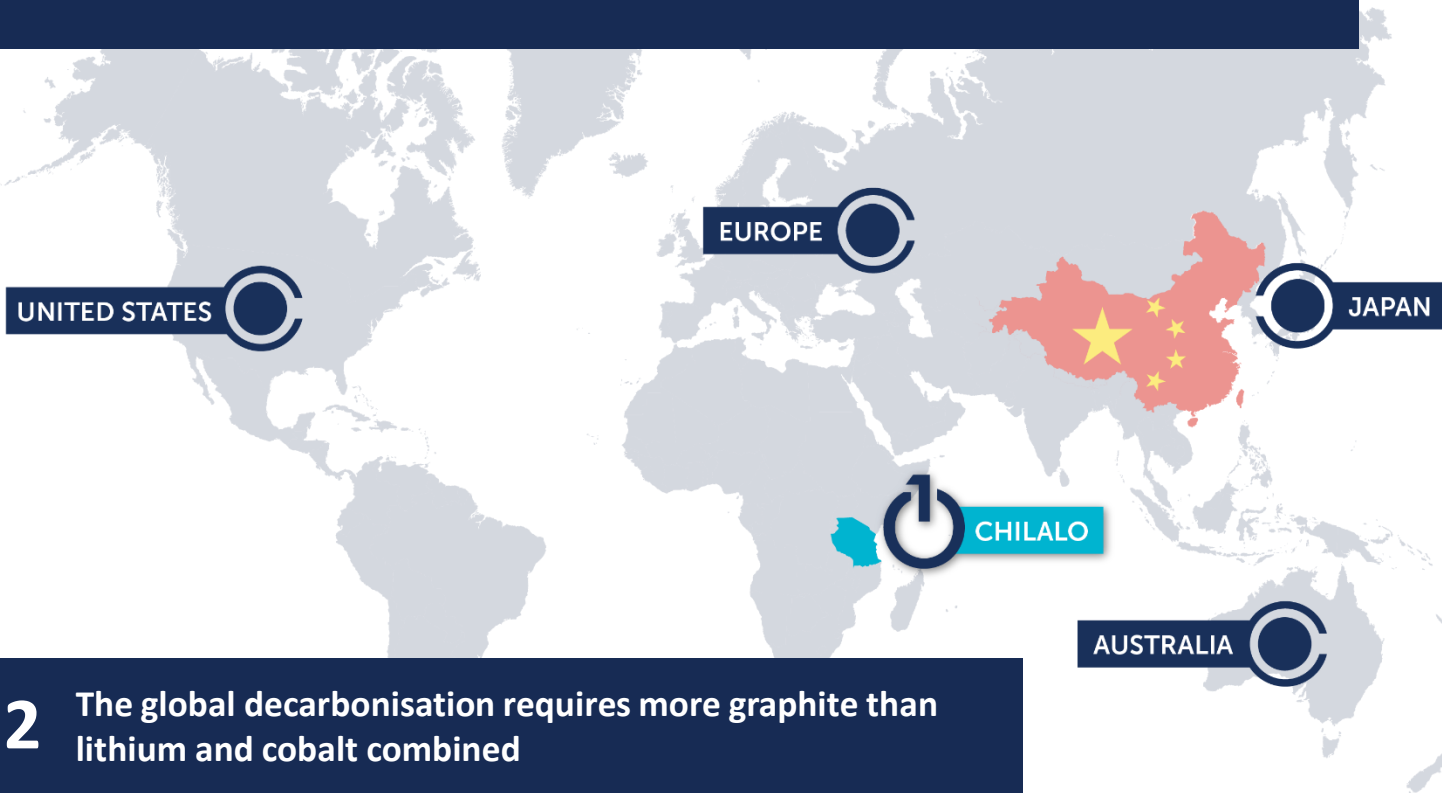


## CRITICALITY OF GRAPHITE SUPPLY

Graphite listed as a strategic critical mineral in US, EU, Japan and Australia

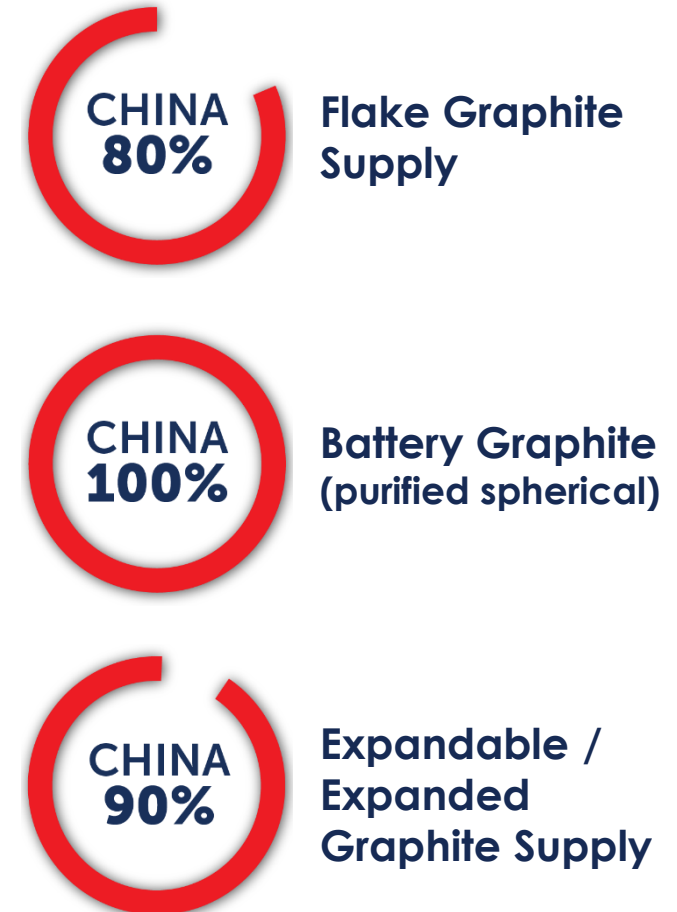
### WHY?

- 1 Due to high concentration of production in one country (China), graphite is recognized as a strategic critical mineral in many jurisdictions



- 2 The global decarbonisation requires more graphite than lithium and cobalt combined

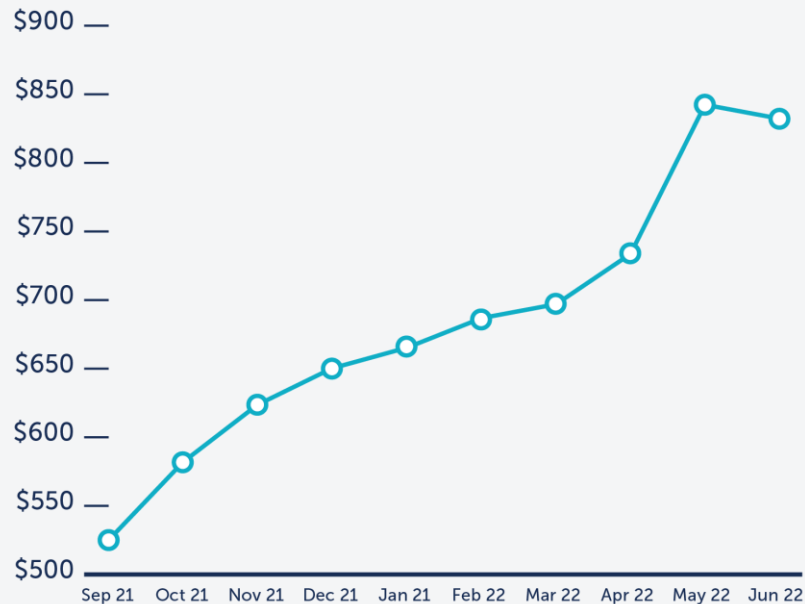
### CHINA DOMINATES GRAPHITE MARKET



## SUPPLY SHORTFALL AND RISING PRICES

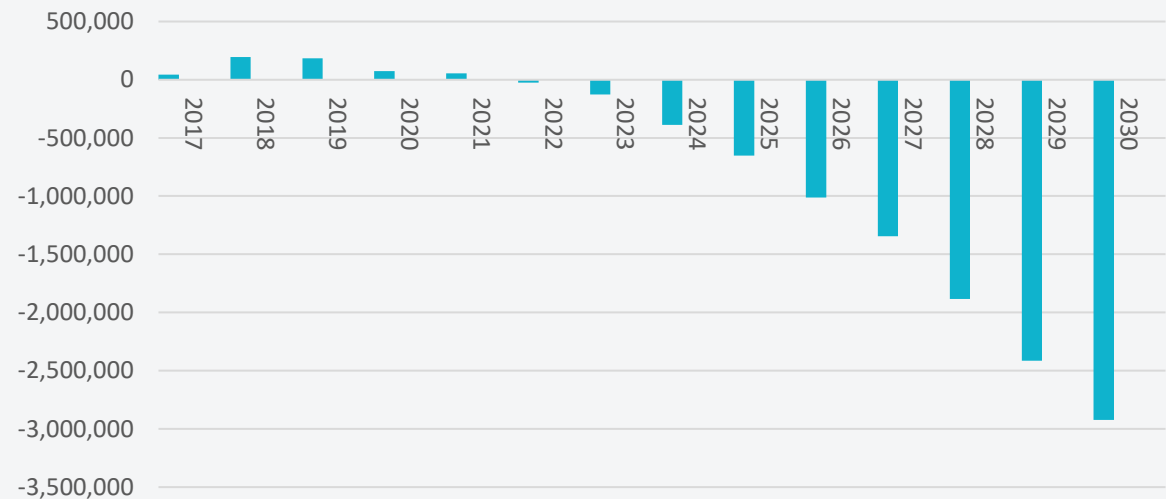
56% increase in fines price since September 2021

**FINE FLAKE (-100 MESH / -150 MICRON)  
GRAPHITE PRICES (SEP 2021 – JUN 2022)**



Source: Benchmark Mineral Intelligence Jun 2022

**DEFICIT IN NATURAL GRAPHITE HAS BEGUN**



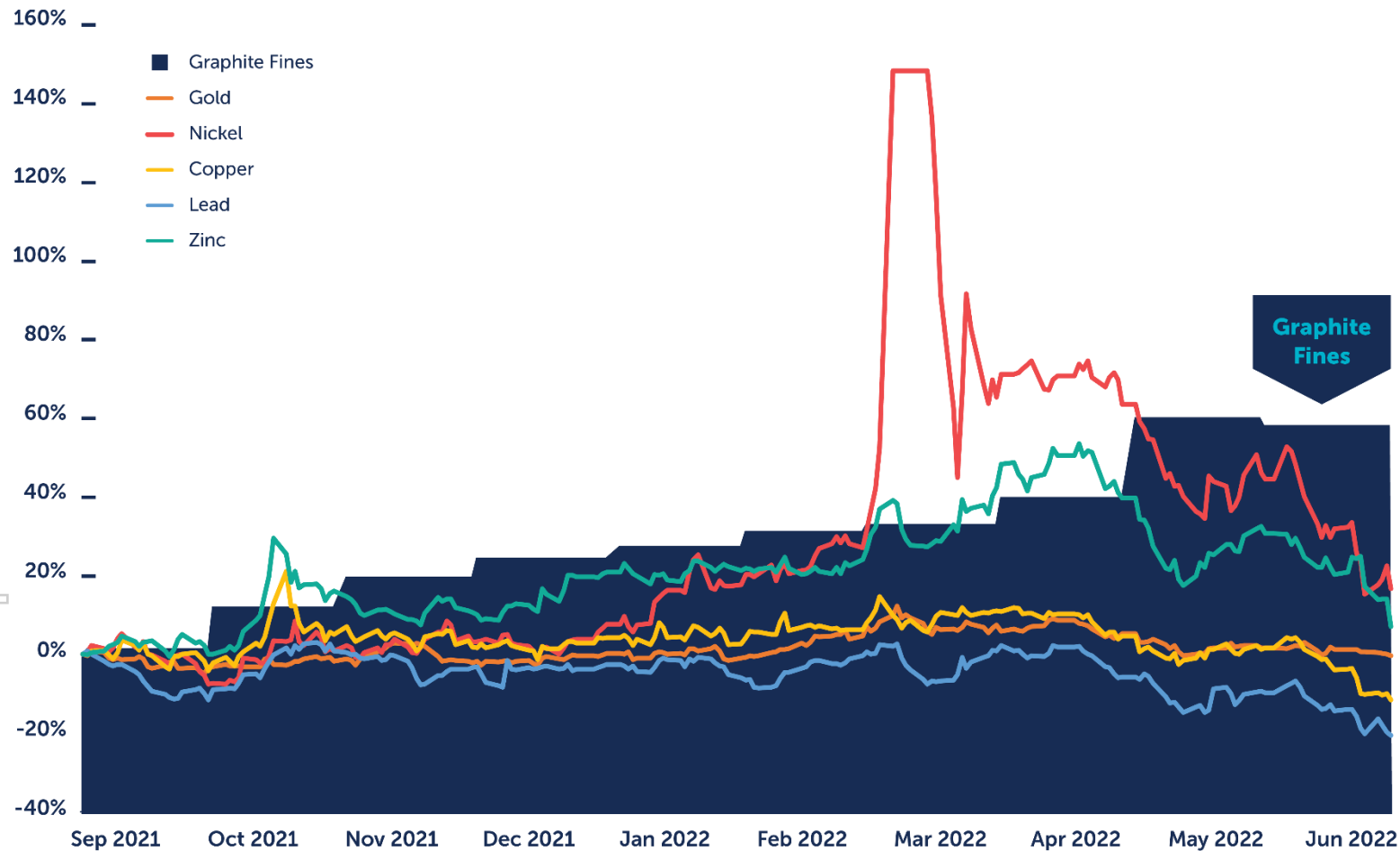
Source: Benchmark Mineral Intelligence Q2 2022 forecast

“Demand growth will be such that we have assumed space for four new projects to come online by 2025 in addition to the ramp-up of existing projects and expansions”

Source: Wood Mackenzie Graphite market 2021 outlook to 2050

## GRAPHITE FINES PRICE GROWTH

Outperforming gold and base metals



## REPUBLIC OF TANZANIA

Re-emerging as a favourable investment destination



**Her Excellency Samia Suluhu Hassan appointed as President in March 2021** (following death of the Late His Excellency John Magufuli)



**Speech on 5 April 2021 by Her Excellency**

- Directed the Tanzania Revenue Authority to stop frustrating businesses
- Ordered a review of regulations and taxes with the objective of encouraging foreign investment
- Urged Government officials to "work hard to regain the trust of international business"



**Subsequently, a noticeable change has taken place in Tanzania**

- Several ASX listed companies have obtained required licences and finalised framework agreements with the Tanzanian Government (Strandline Resources, OreCorp, Black Rock Mining)
- BHP invested \$50M in Kabanga Nickel and Barrick acquired \$60M of licences – significant vote of confidence in Tanzania

A large, stylized map of Tanzania in a light blue color, serving as a background for the text on the right side of the slide.

Evolution is nearing completion of discussions with Tanzanian Government about a Framework Agreement and Shareholders Agreement to ensure fiscal certainty



# CHILALO PROJECT

Premium graphite for high-value applications

## Development ready

DFS, Mining Licence and Environmental Approvals

## High margins

~US\$750/t concentrate margin driven by globally significant flake size

## Sustainability focus

Pursuit of net zero carbon mine among ESG commitments

## Potential for multi-decade mine life expansion

18-year DFS, drilling planned to grow mineral resource

## Premium feedstock into downstream strategies

Chilalo exhibits superior performance into batteries (fines) + EG/foil (coarse)

## Evolution Product Flake Size

### Flake Size Price Premium

10% +32 mesh	21% +50 mesh	27% +80 mesh	6% +100 mesh	36% -100 mesh
Coarse				Fine



## LARGE HIGH GRADE MINERAL RESOURCE

Potential for multi-decade mine life

### Chilalo Mineral Resource

20Mt at 9.9% TGC over 2km strike

### Long life

Existing 18 year mine life based on existing Ore Reserves

### Geophysics indicates upside

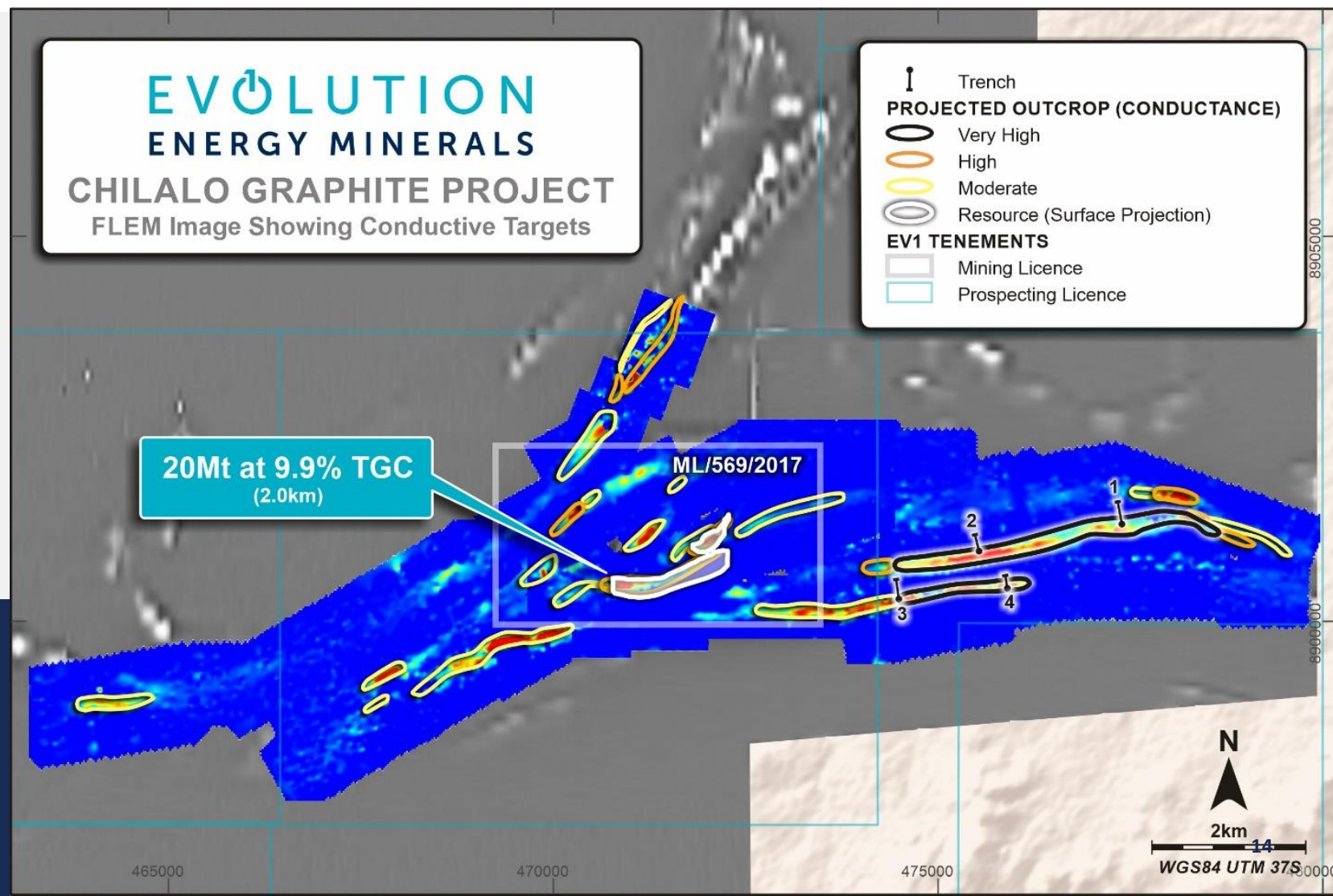
33km of conductors with same or higher conductivity (= high grade, thick deposits, near surface)

### Drilling planned

Program planned in H2 2022

### MINERAL RESOURCE GROWTH RESULTS IN:

- Lower mining costs
- Extension of mine life
- Facilitates production expansion
- Increase in project value (NPV, IRR)



## UPDATED DFS UNDERWAY

Strong economics to a bankable standard<sup>1</sup>

PHYSICALS	UNIT	2020 DFS
Mine life	years	18
Total plant feed	Mt	8.9
Annual plant feed	ktpa	500
Average head grade	%TGC	10.1%
Average graphite concentrate production	ktpa	50
Steady state expandable graphite sales	ktpa	12
Steady state micronised graphite sales	ktpa	8
PROJECT FINANCIALS	UNIT	2020 DFS
NPV (Post-tax)	US\$M	323
IRR (Post-tax)	%	34%
Post-tax payback period	years	3.4
Pre-production capital cost (incl. 10% contingency and pre-strip)	US\$M	87
Average annual EBITDA	US\$M	73

1. Graphex ASX Announcement – 29 January 2020 “DFS confirms Chilalo as high-margin graphite project.” Financial outcomes restated per Evolution prospectus



## MINE



## DOWNSTREAM

95% C  
Concentrate

Coarse

Fines

Chilalo

### EUROPEAN JV

Proposed European JV with YXGC to  
produce expandable graphite, foil

BATTERY ANODE  
MATERIALS FACILITY



## OFFTAKE PARTNERSHIP AND DOWNSTREAM COLLABORATION

Coarse flake sales commitment supports financing

### Principal offtake partner secured

Yichang Xincheng Graphite Co Ltd (**YXGC**) selected following years of dialogue

### Dual focus partnership

Collaboration covers coarse flake offtake and high-value downstream processing

### Global Leader

YXGC is the global leader in expandable graphite (**EG**) and graphite foil, supplying global electronics companies

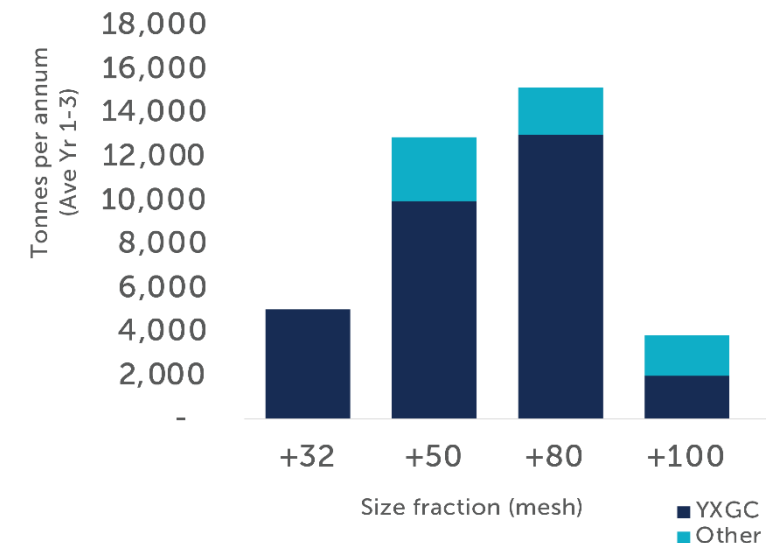
### Key terms

Initial 3-year term

30,000tpa of coarse flake graphite (+32, +50, +80, +100 mesh)

Represents 56% of planned production and over 70% of DFS concentrate revenue

Chilalo coarse production  
committed to YXGC



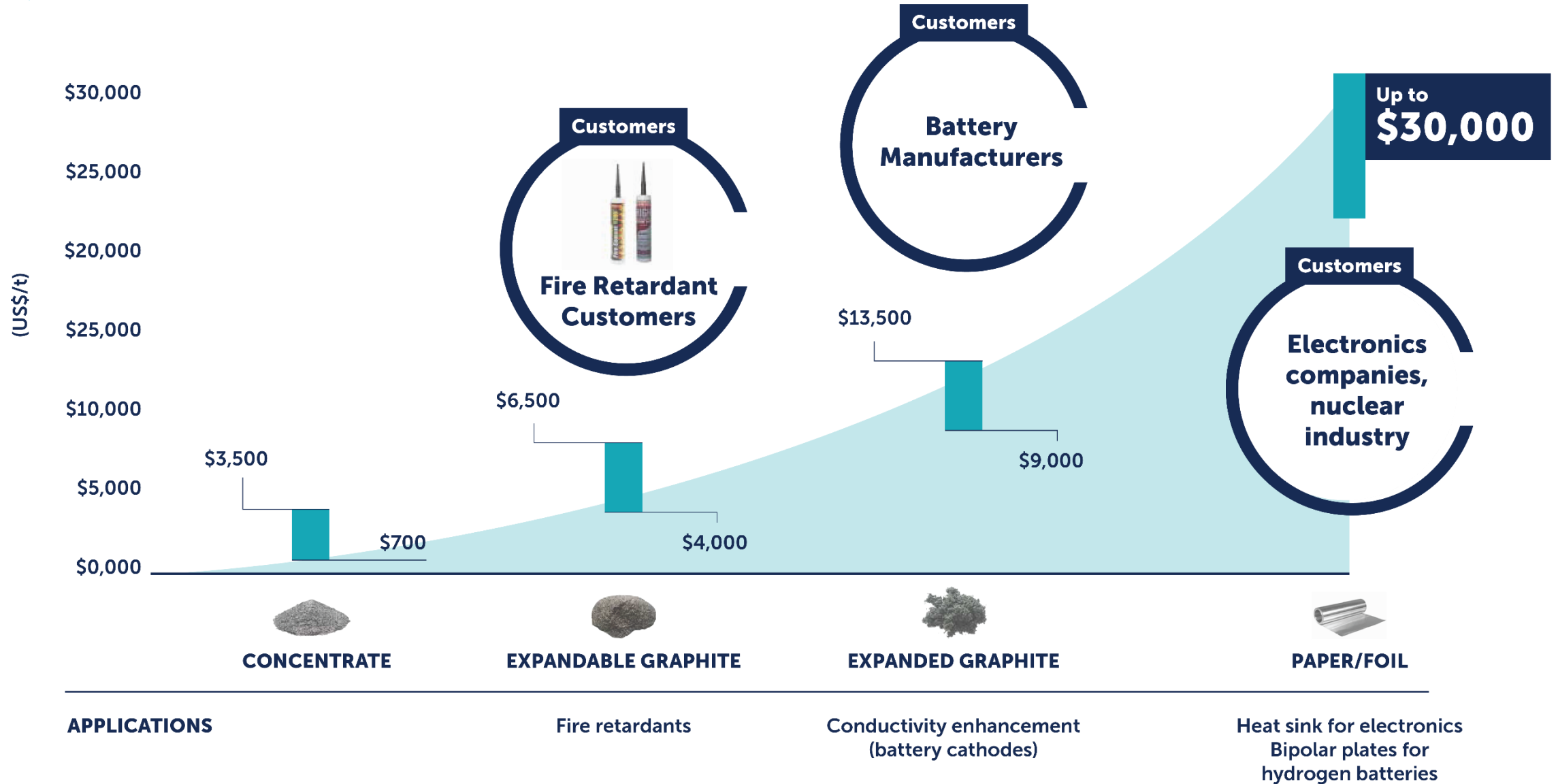
**HIGH-VALUE EG AND GRAPHITE FOIL DOWNSTREAM COLLABORATION UNIQUE TO EV1**

## PROPOSED EUROPEAN JV

Leveraging industry-leader's technology into high-value markets

Highlights	Description
<b>Formation of JV</b>	<p>Evolution and YXGC intend to execute two agreements in H2 2022:</p> <ul style="list-style-type: none"> <li>- Toll treatment agreement allowing Evolution to toll treat into expandable graphite (<b>EG</b>) using YXGC's facilities</li> <li>- JV agreement to assess the feasibility and subsequently govern the construction and operation of a downstream manufacturing facility</li> </ul>
<b>Site selection</b>	Evolution will undertake a site selection study in Europe and its surrounds prior to commencement of a feasibility study
<b>Feedstock</b>	Evolution will provide graphite concentrate feedstock to the JV at market prices
<b>Technology and equipment</b>	YXGC will provide technical knowledge and equipment to the JV
<b>Range of products</b>	<p>YXGC will undertake commercial scale product trials using Chilalo graphite for qualifications however the JV is expected to produce expandable graphite for further processing into:</p> <ul style="list-style-type: none"> <li>- Graphite foil for electronics devices</li> <li>- Seals for EVs</li> <li>- Bi-polar plates for hydrogen fuel cells</li> </ul>
<b>Marketing</b>	YXGC will provide market support including from its existing customer database
<b>Joint venture shareholdings</b>	The parties' shareholding in the JV will be determined by their respective funding contributions and the overall value contributed by each party to the success of the JV

# VALUE ADDITION JOURNEY FOR PREMIUM QUALITY COARSE FLAKE GRAPHITE





## MINE



## DOWNSTREAM

95% C  
Concentrate

Coarse

Chilalo

Fines

### EUROPEAN JV

Proposed European JV with YXGC to  
produce expandable graphite, foil

**BATTERY ANODE  
MATERIALS FACILITY**



# REGULATION DRIVING SUSTAINABLE BATTERY ANODE DEMAND

EU initiatives seeking to hold supply chains accountable

## KEY INITIATIVES



### RESPONSIBLE SOURCING

New mandatory procedures to ensure sustainable and ethical sourcing of raw materials such as graphite.



### CO<sub>2</sub> FOOTPRINT

All batteries sold in Europe must declare their carbon footprint. Batteries with the highest carbon footprint will be banned in Europe.



### TRACEABILITY

All raw material used in batteries to be produced according to OECD recognized guidelines for sustainable sourcing. Thanks to blockchain technology, each battery will have a digital passport tracking all components upstream.

Supported by



Initiative for Responsible Mining Assurance



EU list of Critical Raw Materials & European Raw Materials Alliance



EIB new energy lending policy supporting projects relating to the supply of critical raw materials



European Battery Alliance

## THE EUROPEAN COMMISSION IS GOING TO REQUIRE THAT:

**FROM 1 JULY 2024:** EV batteries must have a “carbon footprint declaration”

**FROM 2026:** EV batteries will have to bear a “carbon intensity performance class label”

**FROM 2027:** EV batteries must comply with “maximum carbon footprint thresholds”

# EVOLUTION'S SUSTAINABLE BATTERY ANODE STRATEGY

Developing a battery supply chain for the future

## Leveraging commercially proven technology

- ⌚ Evolution's US-based technology partner is an established manufacturer of advanced battery materials
- ⌚ Adopting thermal purification to achieve battery grade – greener solution than toxic hydrofluoric acid or caustic leach adopted by 100% of existing supply chain
- ⌚ Technology includes proprietary coating technologies allowing Evolution to provide full traceability from mine to battery manufacturer

## Commercial verification program for battery suitability

- ⌚ Testwork program commenced in February 2022
- ⌚ Determine suitability of Chilalo graphite to producing coated spherical graphite for lithium-ion batteries

## Future programs to consider battery recycling

- ⌚ Sustainable battery supply chains must include a recycling component as part of the circular economy



## EVOLUTION'S BATTERY ADVANTAGE

Superior performance, environmentally friendly

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### Premium coated spherical graphite

Exceptional electrochemical results on Chilalo coated spherical graphite:

- ⚡ Specific capacity 368mAh/g (compares to theoretical capacity of 372mAh/g)
- ⚡ Irreversible capacity loss (ICL) 6.95%

demonstrate Chilalo graphite can produce top quality anode materials selling for US\$18,000 – 22,000 per tonne



### Economic advantages of inverted flowsheet

- ⚡ 64% yield into useable spheroidal graphite (~40% industry average)
- ⚡ Lower opex compared to traditional process route
- ⚡ High-value non-spherical rejects given ultra-high purity (99.9995% C)



### Environmentally friendly supply chain

- ⚡ EV1 pursuing net zero carbon feedstock from Chilalo
- ⚡ EV1 using thermal purification compared to toxic HF acid / caustic leach
- ⚡ Less energy required by EV1 purification method than Acheson furnace used in traditional flowsheets

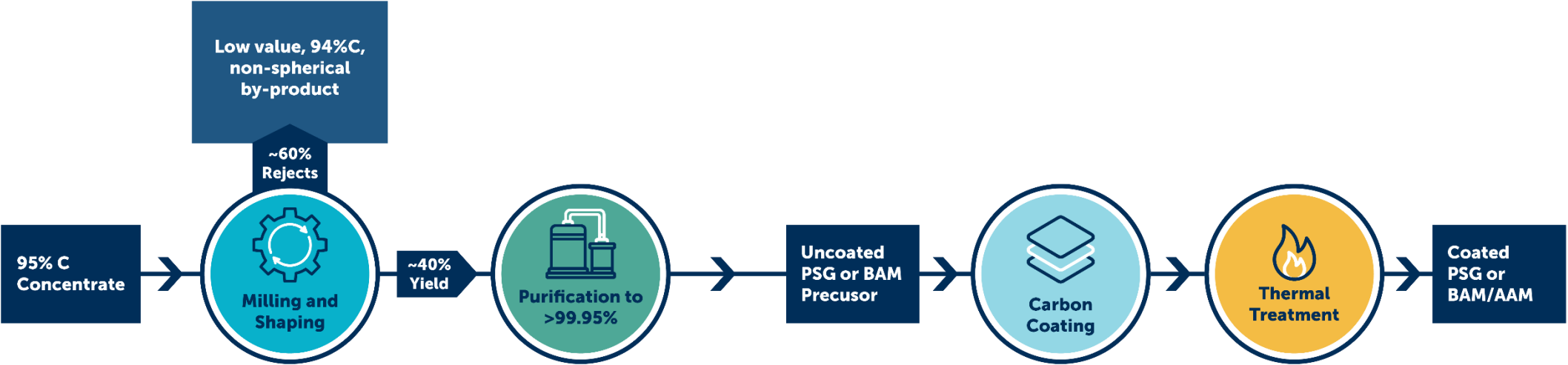


# EVOLUTION ADOPTING INVERTED FLOWSHEET

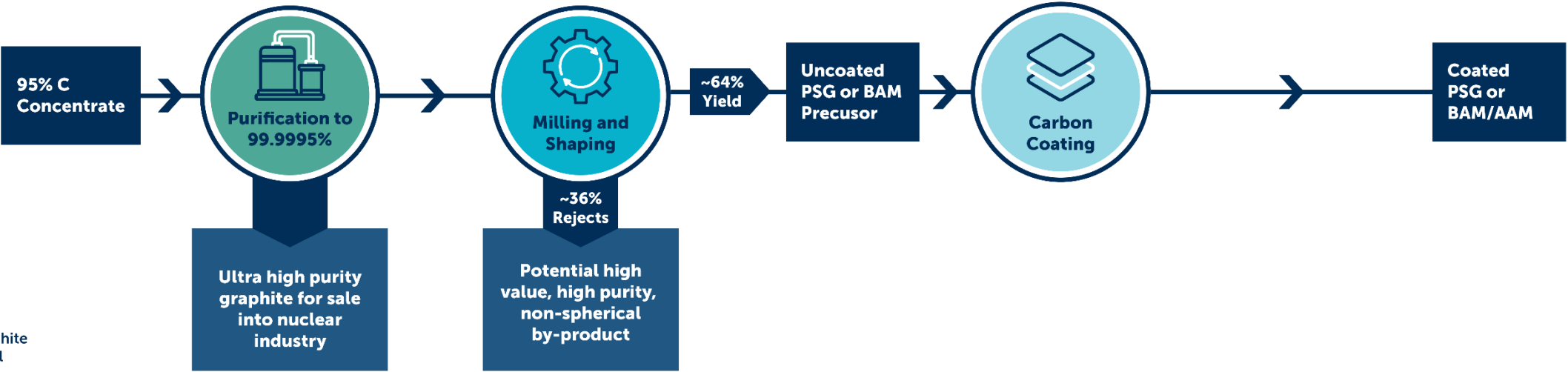
Yield advantage and high-value, high-purity by-products

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Conventional  
Flow Sheet



EVOLUTION  
ENERGY MINERALS  
Inverted Flow Sheet



**NOTE**  
PSG – Purified Spherical Graphite  
BAM – Battery Anode Material  
AAM – Active Anode Material



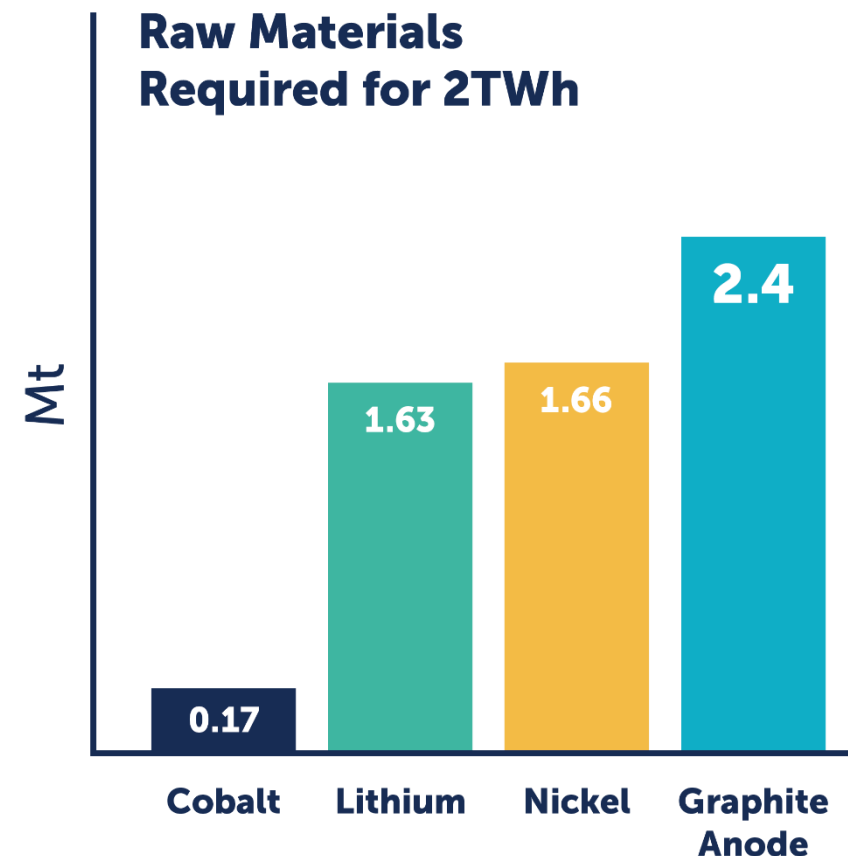
## TESLA'S 2TWh CHALLENGE

Panasonic mandated to build pipeline 45x existing Nevada Gigafactory



*"For the next challenge, Tesla wants two terrawatt hours of battery manufacturing. It's an unbelievable scale, so we have to build up more supply chains, **MINING**, everything"*

— Panasonic Energy, Chief Technology Officer, Shoichiro Watanabe



Source: Benchmark Mineral Intelligence

**100% OF CHILALO FINES PRODUCING GRAPHITE ANODES  
(ASSUMING 64% YIELD) REPRESENTS ONLY 0.5% OF TESLA'S GOAL**

## ESG AND SUSTAINABILITY

Evolution's commitment to sustainable graphite supply



## DELIVERING ON THE MAJOR MILESTONES

Focused on Chilalo FID whilst rapidly advancing lucrative downstream strategies

### MINE

-  Permitting and Approvals
-  Binding Offtake
-  Tanzanian Framework Agreement
-  Updated DFS / FEED
-  Project Financing

### DOWNSTREAM

Coarse

Fines



Testwork confirms product suitability



Secure Technology



Site Selection



Product Qualifications



Feasibility Studies



Partnering / Financing



ASX:EV1

EVOLUTION  
ENERGY MINERALS

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Managing Director

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