

## Epanko Showcased at Tanzanian Government Mining Conference

### Positive Support for New Mine Development

EcoGraf Limited (“EcoGraf” or the “Company”) (ASX: **EGR**; FSE: **FMK**; OTCQX: **ECGFF**) is pleased to report encouraging progress on the development of its long-life, high quality Epanko Graphite Project in Tanzania.

In recent weeks EcoGraf’s in-country project development company TanzGraphite (TZ) Limited has held a series of meetings across all levels of Government in Tanzania to discuss arrangements for the development of the Epanko Graphite Project (“Epanko” or “the Project”).

Since the appointment of new President Samia Suluhu Hassan last year, the Government has been actively encouraging additional international investment in the minerals sector and Epanko is ideally placed to support Tanzania’s industrialisation plans through the long-term production of high quality graphite products in accordance with sector leading Environmental, Social and Governance standards.

Epanko was showcased during 4<sup>th</sup> International Minerals and Mining Investment Conference held on 22-23 February in Dar es Salaam.

This annual forum in Tanzania attracts wide interest from local and international stakeholders in the resources sector and this year focussed on fiscal policy solutions to accelerate project financing in Tanzania, local content and corporate social responsibility, investment opportunities and the legal and regulatory framework for the mining sector.

The TanzGraphite team presented to a number of key Government officials, including Vice President, the Hon Dr Philip Mpango and Minister of Minerals, the Hon Dr Doto Biteko.

There was significant interest in Epanko at the conference and its ability to provide long-term inter-generational benefits for Tanzanians through access to new industries, export markets, employment, training and community development programs.



Photos: TanzGraphite team presenting to Tanzania’s Vice President, the Hon Dr Philip Mpango (left) and Minister of Minerals, the Hon Dr Doto Biteko (right).

The Company was honoured to be recognised as ‘first runner’ at the conference, with the award presented by former Minister of Minerals, the Hon Nazir Karamagi, in recognition of the interest generated by the Epanko Graphite Project and TanzGraphite’s support for the Government’s efforts to promote Tanzania’s minerals sector.



Photo: TanzGraphite being presented with awards by former Minister of Minerals, the Hon Nazir Karamagi.



Photo: TanzGraphite team at the 4th International Minerals and Mining Investment Conference.



In conjunction with the Government meetings in Dar es Salaam, briefings have also been held in Morogoro and Mahenge along with participation in a number of social initiatives to support regional communities.



Photos: TanzGraphite meeting with the District Commissioner, the Hon. Ngollo Malenya and district representatives (left). Receiving Ulanga 'certificate of appreciation' presented to TanzGraphite by the District Commissioner (right).



Photos: TanzGraphite donating supplies for the Mahenge Hospital with the District Commissioner and hospital representatives.

EcoGraf and its financial advisors are continuing to advance the Epanko debt financing program, supported by this positive Tanzanian investment climate and increasing demand and prices for battery graphite to enable the global transition to electric energy.

A summary of the Epanko Graphite Project is attached to this announcement.





**TANZGraphite**

**Epanko Graphite Project  
Strictly Confidential**

**EcoGraf**

**ASX: EGR FSE: FMK OTCQX: ECGFF**

**FEBRUARY 2022**



# TANZGraphite



**60,000 TPA**

NATURAL FLAKE GRAPHITE  
30.7MT @ 9.9% TGC

**US\$3B**

DIRECT CONTRIBUTION  
TO TANZANIA

**US\$44.5M**

ANNUAL EBITDA

**300**

DIRECT EMPLOYMENT

**>40 YEARS**

OF MINE OPERATION

**4,500**

INDIRECT EMPLOYMENT

# Natural graphite business summary

## Defined, De-risked and Ready For Construction

- Bankable Feasibility Study completed by GR Engineering
- Independent Engineer's Review completed by SRK Consulting
- Supporting Tanzania's industrialisation strategy
- Granted Mining Licence



## Sector Leading ESG Credentials



Equator Principles development model, satisfying:

- International Finance Corporation Performance Standards
- World Bank Group Environmental, Health & Safety Guidelines

## Scalable Production Plant

60,000tpa initial development with low cost expansion to meet market demand

## Sales Agreements with Major International Customers



## LONG LIFE EPANKO GRAPHITE MINE TO SUPPLY INDUSTRIAL AND BATTERY MARKETS

### Capital investment

60,000tpa

US\$89m

### Financial returns @ 60,000tpa

Pre-tax project NPV <sub>10</sub>	Annual EBITDA	IRR
US\$211m	US\$44.5m	38.9%



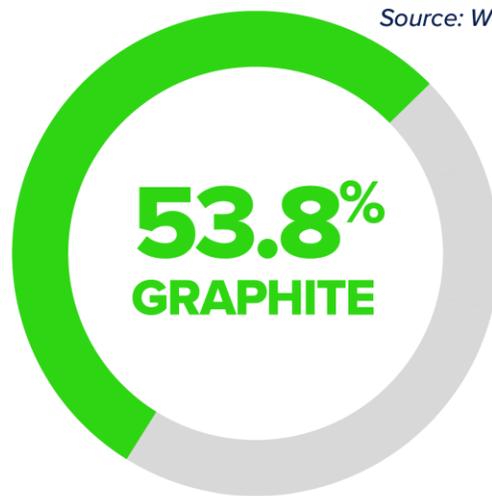
Refer ASX announcement dated 21 June 2017

# Compelling market opportunity



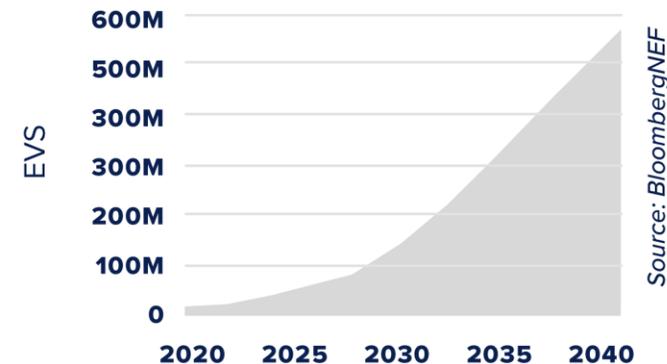
## PURE CARBON (GRAPHITE) IS THE KEY RAW MATERIAL TO DECARBONISE THE ECONOMY

Source: World Bank

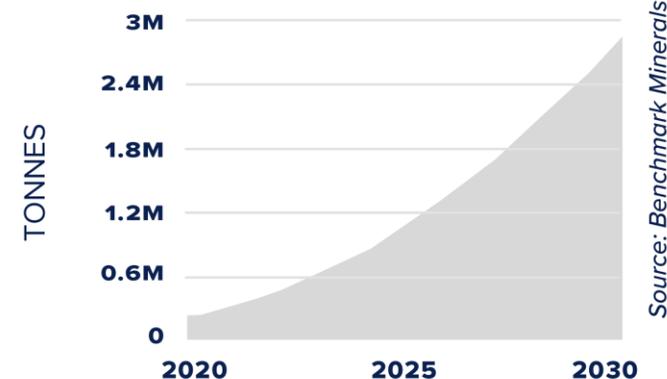


**DEMAND DRIVEN BY THE TRANSITION TO LOW CARBON EMISSION TECHNOLOGIES**

## EV DEMAND



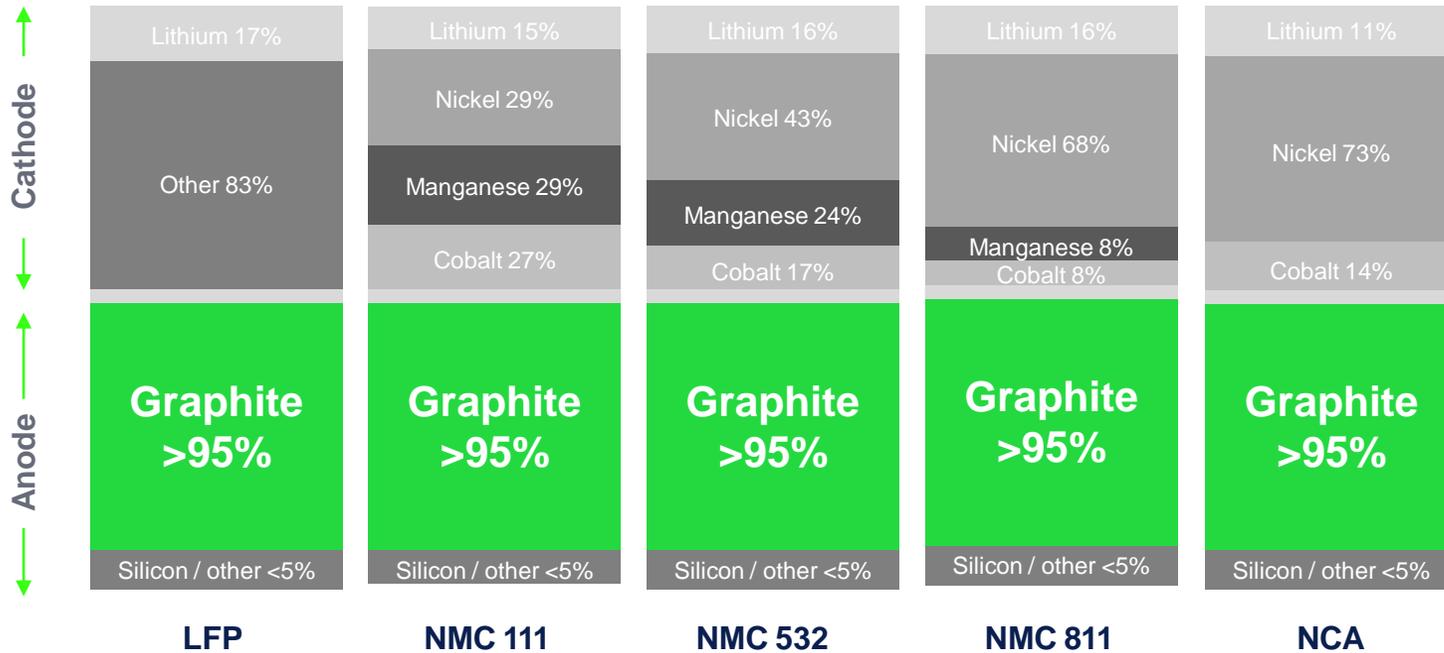
## ANODE DEMAND



# Lithium-ion battery chemistry



## Graphite is the major raw material in lithium-ion batteries



**27kg** PURIFIED NATURAL GRAPHITE PER EV WHICH REQUIRES 50KG – 55KG FLAKE GRAPHITE

**BATTERY GRAPHITE = 99.95%** HIGH PURITY PRODUCT FOR ANODE MANUFACTURING

EcoGraf™ provides a high quality, cost competitive alternative to existing battery anode material produced using toxic hydrofluoric (HF) acid

**GRAPHITE DOMINATES LITHIUM-ION BATTERY ANODES**

# Significant contribution to the Tanzanian economy



## **US\$3+ BILLION**

*direct contribution to the economy over 40+ years through local procurement of goods and services, employment, royalties, taxes and dividends*

## **300 TANZANIANS**

*to be directly employed (over 95% of all staff) for 40+ years  
4,500 indirect jobs + new industry*

## **COMMUNITY DEVELOPMENT**

*via new housing, school, Church, medical dispensary, health insurance, training and positive engagement to build lasting social partnerships*

- Transforming financial and social upliftment for the Mahenge region
- Strong multiplier effect across the economy, with an estimated **US\$9+ billion additional indirect economic benefits over 40 years**
- New manufacturing industry

## **EPANKO STANDARDS**

*to operate under International Finance Corporation - Equator Principles*

*opportunity to support further manufacturing industries*

## **RENEWABLE ENERGY**

*estimated to increase from 25% to 65% by 2050*

*opportunity for graphite in solar panel batteries to power remote villages*



# Epanko provides mine-to-market ESG supply chain assurance



- Epanko mine development satisfies Equator Principles social and environmental planning standards
- Long-life, high quality supply of natural flake graphite for industrial and battery markets
- Ideally located to support European customers' supply chain management under the Paris Agreement on climate change
- US\$60m debt funding proposal developed in conjunction with Germany's KfW IPEX-Bank
- Recent initiatives by the Government of Tanzania to encourage greater foreign investment will support the project development program
- Financial advisors appointed to manage debt financing arrangements



January 10, 2022  
5:24 PM GMT+8  
Last Updated 9 days ago

Deals

## BHP re-enters Africa with Tanzania nickel investment

Reuters

**>40 YEARS**  
**OF MINE OPERATION**

**US\$3B**  
**DIRECT CONTRIBUTION**  
**TO TANZANIA**

# Epanko bankable feasibility study highlights



Epanko is a world class, development ready graphite project located in Tanzania with a granted Mining Licence, completed bankable feasibility study in accordance with Equator Principles, independent technical due diligence via SRK and offtake arrangements with leading European and Japanese counterparties.

Initially producing 60,000tpa of graphite, with a geological resource to support rapid expansion to meet growing demand and maintain production for an expected 40-50 years.

US\$25M invested to date.

- **Location** – covers 32km<sup>2</sup> in the Ulanga District of Tanzania
- **Bankable Feasibility Study** – utilised leading industry consultants, including GR Engineering, Knight Piesold, CSA Global and IMO Metallurgy with independent technical due diligence completed by SRK (UK)
- **BFS economics** – pre-tax NPV<sub>10</sub> of US\$211M and IRR of 38.9% based on production rate of 60ktpa of graphite, 18year life, capex of US\$89M, C1 operating cost of US\$500/t FOB concentrate and annual EBITDA of US\$44.5M
- **Metallurgy** – test work demonstrates ability to produce 99% purity flake graphite product from fresh ore with no additional milling or cleaning stages
- **Infrastructure** – existing road access to Mahenge provides an effective logistics solution to the Port of Dar es Salaam with the option to utilise rail transport from Ifakara
- **Power** – grid hydropower
- **Approvals** – granted Mining Licence, Environmental Approval & Relocation Action Plan
- **Sales agreements** – offtake arrangements with key European and Japanese parties for the sale of graphite products to established industrial markets



# Epanko bankable feasibility study outcomes

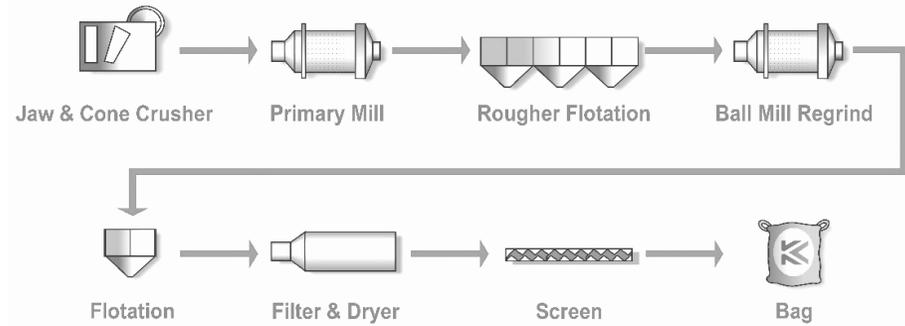


## Robust technical and financial Bankable Feasibility Study completed

- Average production of 60ktpa graphite concentrate over initial 18 years covered by Ore Reserves
- High proportion of >150µm large flake graphite at attractive carbon grades of >97%C
- Potential for low-cost expansion to >100ktpa to meet demand from the high-growth lithium-ion battery market

## Flexible process flowsheet design

- Process flowsheet based on established industry techniques and equipment
- Independent testwork conducted to support BFS, including 200 tonne bulk sample toll treated through an operating graphite production plant
- Testing confirmed ability to produce a 99% purity flake graphite product from fresh ore
- Rigorous testing of flowsheet dynamics to produce desirable product properties for both industrial uses and high growth lithium-ion battery markets



## Summary Bankable Feasibility Study KPIs

Development period	months	19
Average annual throughput	tonnes	695,000
Strip ratio	waste to ore	0.4:1
Average feed grade	% TGC	8.3
Graphite recovery	%	94.7
Medium, large and jumbo product grade	%	>97%
<b>Graphite production</b>	<b>tonnes pa</b>	<b>60,000</b>
Mining cost	US\$/t processed	7.9
Processing cost	US\$/t processed	19.6
General & administration cost	US\$/t processed	4.8
Transport and port charges	US\$/t sold	107.0
<b>C1 FOB cost</b>	<b>US\$/t sold</b>	<b>500.0</b>
AISC	US\$/t sold	572.0
<b>Pre-production capital cost</b>	<b>US\$ M</b>	<b>88.9</b>

# Capital and operating costs



- Pre-production capital costs US\$88.9m
- 60,000tpa bankable feasibility study delivers a significantly improved capital efficiency:
  - US\$1,482/t from US\$1,937/t
- Scalable plant design enables low-cost future expansion to match growth in graphite market demand
- Rigorous process applied to generate operating cost estimates
- Power costs based on diesel power for 2 years of operations with connection to the Tanzanian power grid in year 3
- Mining costs based on contractor mining



## Summary of pre-production capital costs (US\$ million)

	60,000tpa	40,000tpa
Mining	0.7	2.4
Process plant	48.8	45.1
Infrastructure	13.2	10.9
EPC	11.5	11.0
Contingency	7.1	6.2
Owner's costs	7.6	1.9
<b>Total</b>	<b>88.9</b>	<b>77.5</b>

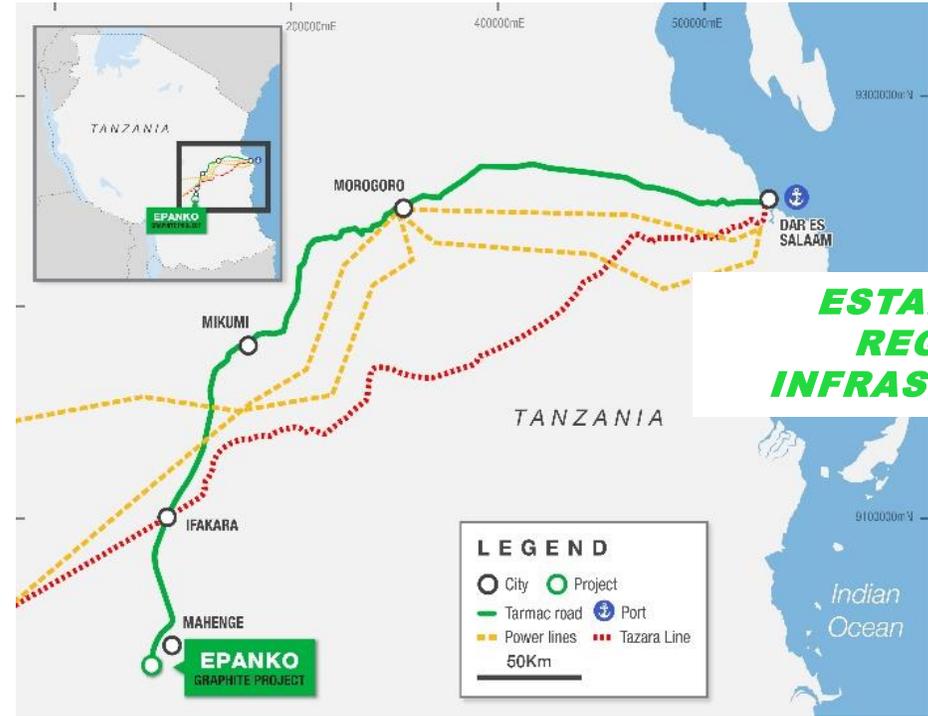
## Operating costs (US\$/t FOB Dar es Salaam)

Mining	96	117
Processing	239	277
Transport & port charges	107	102
General & administration	58	74
<b>C1 cost FOB Dar es Salaam</b>	<b>500</b>	<b>570</b>
Royalties	39	43
Other sustaining costs <sup>1</sup>	33	9
<b>All in sustaining cost</b>	<b>572</b>	<b>622</b>

<sup>1</sup>: Includes sustaining capital (US\$15/t), off-site corporate functions (US\$10/t) and rehabilitation (US\$8/t)

# Supported by existing infrastructure

- Existing road access to Mahenge provides an effective logistics solution to Dar es Salaam
  - New bridge across the Kilombero River, linking Ifakara and Ulanga districts simplifies project logistics
  - Freeway flyover constructed to provide efficient access to Dar es Salaam port
  - Proximity to the Ifakara rail siding provides a long-term strategic logistics option as Epanko production increases
- Graphite products to be exported from the port of Dar es Salaam



**EXPORT INFRASTRUCTURE AT DAR ES SALAAM**



# High quality graphite deposit with scale

- Mineral Resource supports potential for depth and strike extensions of the Ore Reserve pit shells
- Mineralisation commences at surface with minimal cover
  - Average LOM strip ratio 0.4:1
- Favourable mineralogy delivers quality and drives robust project economics
  - High proportion of large flake sizes
  - Graphite easily liberated and delivers high yield
  - Higher carbon grade achieved through simple processing
  - Low levels of in-situ deleterious elements



## Epanko Mineral Resource estimate >8% TGC

JORC classification	Tonnage (Mt)	Contained graphite (t)
Measured	7.5	738,900
Indicated	12.8	1,280,000
Inferred	10.4	1,030,600
<b>Total</b>	<b>30.7</b>	<b>3,049,500</b>

Refer ASX announcement dated 21 June 2017

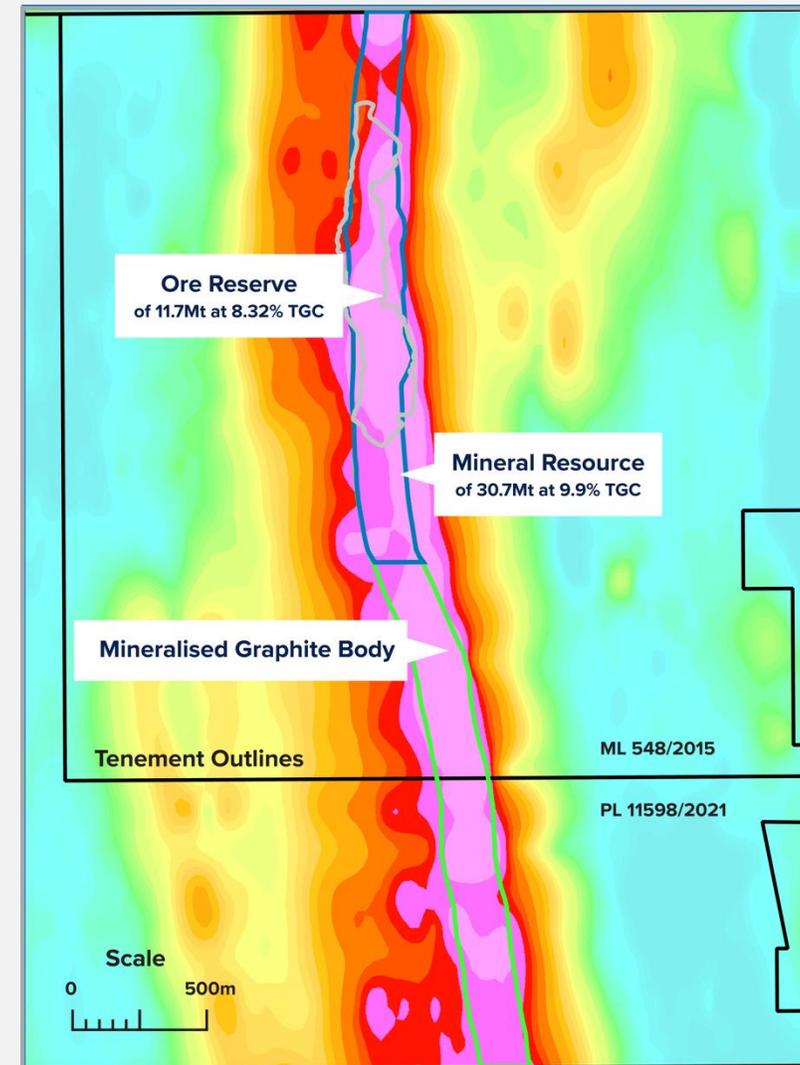


Epanko rocks have undergone extremely high metamorphic pressure and temperature forces that have created unique 'cheetah' like rock textures



# Resource supports future expansion to meet growing demand

- Significant mineralisation exists outside of the Mineral Resource estimate modelled on an 8% TGC cut-off compared to the 5% TGC cut-off utilised for the Ore Reserve
  - Mineral Resource at lower 5% TGC is 113.3Mt at 7.2% TGC grade for 8.1Mt contained graphite
  - Importantly the 7.2% TGC grade under the 5% TGC cut-off above is higher than comparable Tanzanian deposits of relative scale
- Strong conductivity identified in VTEM survey highlights the potential for the delineation of additional mineralisation along strike and at depth
- Only 1.13km of the 4km strike identified by VTEM survey has been drilled on the West Pit
  - Remains open at depth with the deepest reported graphite intersection at 200m
  - Potential for significant tonnages of additional graphite mineralisation



## Epanko Ore Reserve

JORC classification	Tonnage (Mt)	Grade (% TGC)	Contained graphite (Mt)
Proven	5.7	8.4	0.5
Probable	5.9	8.2	0.5
<b>Total</b>	<b>11.7</b>	<b>8.3</b>	<b>1.0</b>

## Outlook of Epanko western zone ridge line



# Favourable mineralogy

- Epanko dominant host mineral is a calc silicate mineral
  - Result of a pre-existing sedimentary unit subjected to contact metamorphism and local structural effects
- Metamorphism defines crystallinity
  - Epanko rocks have undergone extremely high metamorphic pressure and temperature that has created unique 'cheetah' like rock textures
- Benefits of favourable mineralogy and metamorphism
  - Graphite is easily liberated and delivers high yield
  - Higher carbon grade achieved through simple processing
  - Low levels of in-situ deleterious elements
- All graphite projects have different mineralogy
  - Favourable Epanko mineralogy delivers quality and drives strong project economics



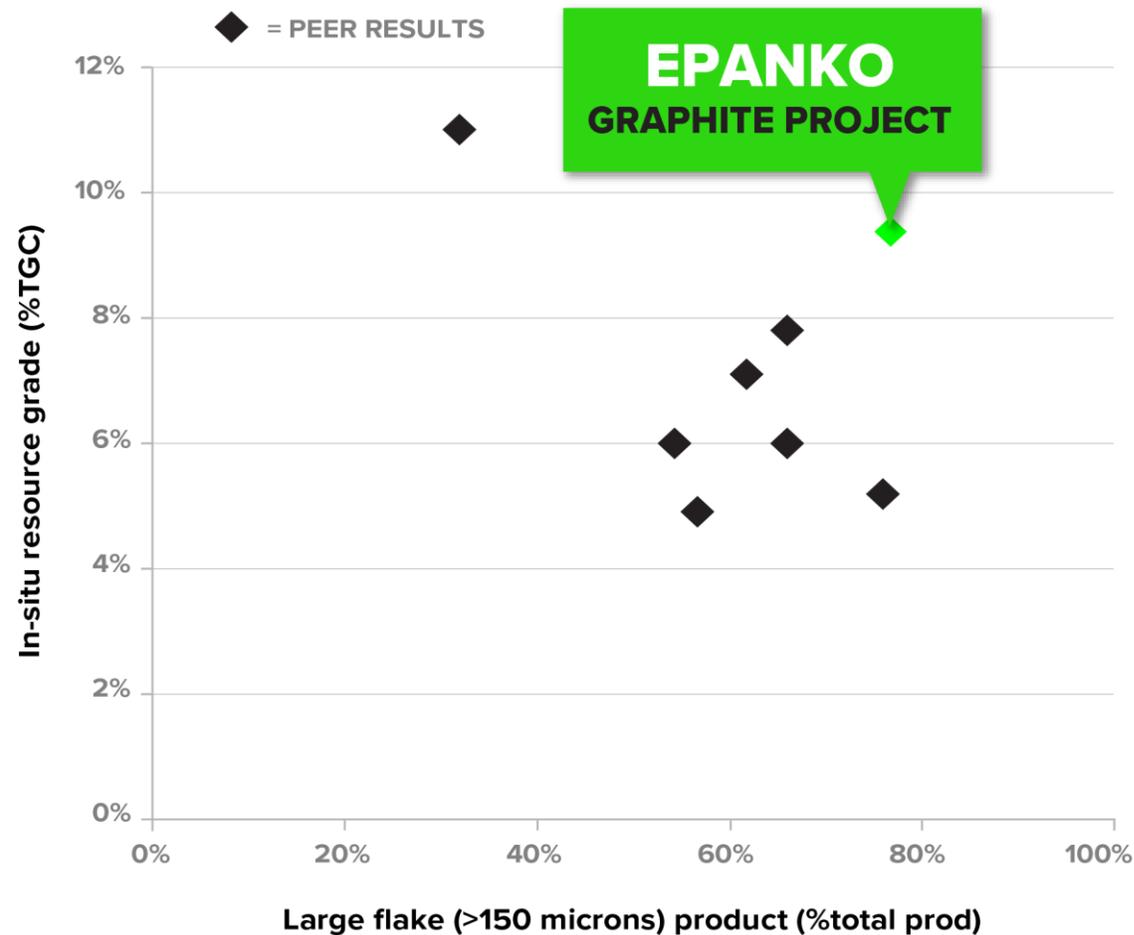
## ***EPANKO'S UNIQUE 'CHEETAH' LIKE ROCK TEXTURES***





# Grade and flake size peer comparison

- Grade combined with flake size determines value
- Epanko's high grade combined with a high proportion of large flake sizes (>150 micron) provides high margins



# Development ready opportunity

- Epanko positioned for development
  - Bankable feasibility study completed, applying rigorous and conservative design principles
  - Bank appointed independent technical engineer SRK approved the study and confirmed:
    - + International Finance Corporation Performance Standards satisfied
    - + World Bank Group environmental, health and safety guidelines achieved
- Tanzanian anti-corruption regulatory reforms align with TanzGraphite's Corporate Social Responsibility operating principles
- Resettlement Action Plan approved by Government
- Annual Local Content Plans and Integrity Pledges submitted to the Mining Commission

***SOCIALLY AND ENVIRONMENTALLY RESPONSIBLE ECONOMIC DEVELOPMENT***



# Disclaimer



## Securities Disclaimer

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## Forward looking statements

Various statements in this document constitute statements relating to intentions, future acts and events. Such statements are generally classified as “forward looking statements” and involve known and unknown risks, uncertainties and other important factors that could cause those future acts, events and circumstances to differ materially from what is presented or implicitly portrayed herein. The Company gives no assurances that the anticipated results, performance or achievements expressed or implied in these forward-looking statements will be achieved.

## Production targets and financial information

Information in relation to the feasibility study conducted on the production of battery graphite using the Company’s EcoGraf technology, including production targets and forecast financial information derived from the production targets, included in this document is extracted from an ASX announcement dated 5 December 2017 “Battery Graphite Pilot Plant”, as updated on 17 April 2019 “EcoGraf Delivers Downstream Development” and 5 November 2020 “Completion of EcoGraf™ Processing Facility Development Report”, available at [www.ecograf.com.au](http://www.ecograf.com.au) and [www.asx.com.au](http://www.asx.com.au). The Company confirms that all material assumptions underpinning the production targets and forecast financial information derived from the production targets set out in the announcement released on 5 December 2017, as updated on 17 April 2019 and 5 November 2020 continue to apply and have not materially changed.

Information in this document relating to the Bankable Feasibility Study conducted on the Epanko Graphite Project, including production targets and forecast financial information derived from the production targets, included in this document is extracted from an ASX announcement dated 21 June 2017 “Updated Bankable Feasibility Study” available at [www.ecograf.com.au](http://www.ecograf.com.au) and [www.asx.com.au](http://www.asx.com.au). The Company confirms that all material assumptions underpinning the production targets and forecast financial information derived from the production targets set out in the announcement released on 21 June 2017 continue to apply and have not materially changed.

## Competent persons

Any information in this document that relates to Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Mr Andrew Spinks, who is a Member of the Australasian Institute of Mining and Metallurgy included in a list promulgated by the ASX from time to time. Andrew Spinks is a director of EcoGraf Limited and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the “Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves”. Andrew Spinks consents to the inclusion in this document of the matters based on his information in the form and context in which it appears.

Information in this document that relates to Mineral Resources is based on information compiled by Mr David Williams, a Competent Person, who is a Member of the Australasian Institute of Mining and Metallurgy. David Williams is employed by CSA Global Pty Ltd, an independent consulting company and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the “Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves”. David Williams consents to the inclusion in this document of the matters based on his information in the form and context in which it appears.

Information in this document that relates to Ore Reserves has been compiled by Mr Steve O’Grady, who is a Member of the Australasian Institute of Mining and Metallurgy. Steve O’Grady is a full-time employee of Interline Engineering and produced the Mining Reserve estimate based on data and geological information supplied by Mr Williams. Mr O’Grady has sufficient experience which is relevant to the estimation, assessment and evaluation of the economic extraction of the Ore Reserve that he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the “Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves”. Steve O’Grady consents to the inclusion in this document of the matters based on his information in the form and context in which it appears.

This announcement is authorised for release by Andrew Spinks, Managing Director.

**For further information, please contact:**

### INVESTORS

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## ENGINEERING CLEAN ENERGY



### About EcoGraf

EcoGraf is building a diversified battery anode material business to produce high purity graphite products for the lithium-ion battery and advanced manufacturing markets. Over US\$30 million has been invested to date to create two highly attractive, development ready graphite businesses.

The first new state-of-the-art **EcoGraf** processing facility in Western Australia will manufacture spherical graphite products for export to Asia, Europe and North America using a superior, environmentally responsible HF free purification technology to provide customers with sustainably produced high performance battery anode material. Subsequently, the battery graphite production base will be expanded to include additional processing facilities in Europe and North America to support the global transition to clean, renewable energy in the coming decade and the rapid growth in battery materials.

In addition, the Company's breakthrough recovery of carbon anode material from recycled batteries using its EcoGraf™ process will enable the recycling industry to reduce battery waste and use recycled carbon anode material to improve battery lifecycle efficiency.

To complement these battery graphite operations, the Company is also advancing the **TanzGraphite** natural flake graphite business, with development of the Epanko Graphite Project, which will supply additional feedstock for the battery anode material facilities and provide customers with a long term supply of high quality graphite products for industrial applications such as refractories, recarburisers and lubricants.



A video fly-through of this new facility is available online at the following link:

<https://www.ecograf.com.au/#home-video>

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