

# Engineering Study Completed for Midstream Development

## Mechanical Shaping Facility Positioned to Lead Graphite Value-Addition in Tanzania

**EcoGraf Limited** (ASX: **EGR**; FSE: **FMK**) is pleased to announce the completion of its Independent Engineering Study ('**Study**') for the development of its TanzGraphite Mechanical Shaping Facility at Ifakara in Tanzania.

### Key Highlights

- **Stage 1 processing of 20,000 tonnes per annum of flake graphite feedstock, delivering a highly competitive spherical graphite (SpG) yield of over 60% and supported by extensive pilot and commercial scale mill testing**
- **Stage 1 construction cost US\$58.6m**
- **Forecast operating cost US\$419 per tonne as Study confirms significant power and transport cost advantages with Tanzanian location**
- **Potential Export Processing Zone designation would deliver additional Tanzanian investment incentives, including corporate tax exemption for the initial 10 years**
- **Sales and European funding interest received to support development planning programs**
- **Discussions with EU Commission in Tanzania following roundtable meetings in Brussels last year and recent follow-up meetings in Africa on supporting additional studies on 'value-addition' of graphite fines, including EcoGraf's GreenRECARB<sup>1</sup>**
- **TanzGraphite Mechanical Shaping Facility to provide spherical graphite feedstock for planned EcoGraf HFfree<sup>®</sup> Purification Facilities, with strong interest on locating these plants in Europe to support an independent, low cost and sustainably produced EcoGraf BAM supply**

The Study is the result of extensive technical work completed over the last 10 years by EcoGraf and is based upon the preferred site near Ifakara, which provides significant clean-power and transport advantages.

Selection of Ifakara supports the Company's proposed expansion of its Epanko operation to produce approximately 300,000 tonnes per annum flake graphite products<sup>2</sup>, with engineering programs continuing on the Ifakara site and optimisation of logistics for the planned transport of Epanko graphite products to the export port of Dar es Salaam.

The TanzGraphite Mechanical Shaping Facility will value-add 20,000 tonnes per annum<sup>3</sup> of Epanko natural flake graphite into spherical graphite. The mechanical micronizing and shaping process is the first step in the conversion of high-quality flake graphite into battery grade anode material for use in the production of lithium-ion batteries.

The design and layout is based on the extensive piloting and commercial scale testing programs that demonstrate an Epanko yield in excess of 60% and included:

- Batch scale piloting equipment testing and analysis;
- Campaigns through commercial scale plants with 4.4 tonnes processed over 11 campaigns to evaluate equipment performance and refine operational procedures;
- Benchmarking Epanko feedstock against other existing natural graphite products currently mined in Africa, Europe, South America and Asia; and
- Extensive product evaluation by a global prospective customer base in Europe, Asia and North America.

Milling and shaping campaigns have also provided product qualification samples to satisfy a range of customer specifications covering particle size distribution, tap density and specific surface area.

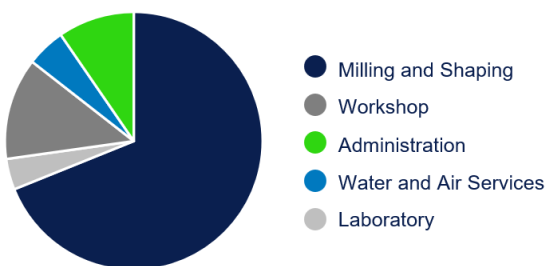
**Figure 1 – Commercial scale testing program**



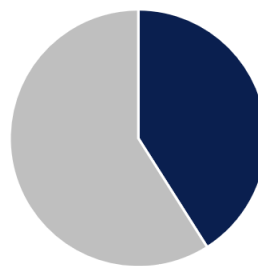
The capital cost estimate developed during the Study is based on an engineering, procurement, construction and management (EPCM) approach and includes process plant infrastructure, earthworks, roads, fencing, buildings, water storage, and power reticulation across the facility. The estimate excludes the spares, initial fills, light vehicles, waste treatment and owner’s costs and these items will be incorporated once final site layout designs are completed.

A breakdown of operating costs is shown below, relating to the production of SpG, with the remaining 40% by-product fines prioritised for the production of EcoGraf GreenRECARB for the global steel sector.

**SpG OPERATING COST BREAKDOWN**



**LOWER ANODE MATERIAL CO<sub>2</sub> EMISSIONS**



41% of CO<sub>2</sub> impacts come from mechanical shaping for SpG.

Tanzania delivers a ~20% reduction in CO<sub>2</sub>.

For personal use only

In addition to the Study, the Company has undertaken and updated an earlier Independent Life Cycle Assessment study which confirmed a ~20% reduction in CO<sub>2</sub> emissions during the shaping process by using Tanzania's cost-competitive hydro-energy, with the country's location providing an efficient logistics export-hub for global graphite markets (refer Figure 2)<sup>3</sup>.

Positive discussions are in progress with the European Union (EU) Commission regarding support for the Mechanical Shaping Facility development to produce spherical graphite for EcoGraf HF<sup>free</sup>™ facilities in Europe. Following meetings last year, the Company is also working with the EU on the development of new Tanzanian industries that will benefit from the graphite by-product fines generated by the Mechanical Shaping Facility.

The selected Ifakara site is on the main road network and is adjacent to the existing railway, with the opportunity for connection via a dedicated rail-siding into the proposed facility. Power for the area is provided via the EU-funded Ifakara sub-station which was opened in June 2024, and allows for connection to the clean power generated from the Julius Nyerere Hydropower Project. This is all supported by a sealed highway for the entire Dar es Salaam – Ifakara road option. Ifakara itself is approximately 75km by road from Epanko.

**Figure 2 – Regional transport and infrastructure**



The encouraging Study outcomes follow the recent announcement on EcoGraf's HF<sup>free</sup>® purification technology having operated on a continuous basis with key equipment and materials of construction performing reliably during the production campaigns<sup>4</sup>.

EcoGraf's patented HF<sup>free</sup>® processing technology and vertically integrated battery anode materials business is positioned to provide significant cost and environmental benefits for the EV OEM's and battery manufacturers, utilising high-quality Tanzanian natural graphite sourced from its long-life Epanko Graphite Project. Epanko is the largest "development-ready" graphite mineral resource in Africa and a life-of-mine Special Mining Licence (SML) was granted for Epanko on 3 March 2025 by the Government of Tanzania<sup>5</sup>.

The new SML will be sufficient to allow for a multi-generational operation at an expanded production capacity and covers the updated Epanko Mineral Resource of 290.8Mt at 7.2% TGC (comprised of 32.3Mt Measured, 55.7Mt Indicated and 202.8Mt Inferred)<sup>6</sup>. The Epanko Ore Reserve consists of 14.3Mt at 8.8% total graphitic carbon (TGC) for 1.25Mt and includes an industry-leading 82% of total Ore Reserves classified as Proven, delivering increased confidence on metallurgical factors such as process recoveries, flake sizes and concentrate grades, which are key factors for graphite pricing<sup>7</sup>. The selected Ifakara site provides sufficient area to allow for the future expansion of the Mechanical Shaping Facility from the 20,000 tonnes per annum initial development, in conjunction with the planned expansion of Epanko production.

**Table 1 – July 2024 Ore Reserve Statement for the Epanko Deposit**

JORC Classification	Proven			Probable			Total		
	Tonnes (Mt)	Grade (%TGC)	Cont. (Kt)	Tonnes (Mt)	Grade (%TGC)	Cont. (Kt)	Tonnes (Mt)	Grade (%TGC)	Cont. (Kt)
Oxide	8.9	9.0	805	0.2	8.4	15	9.1	9.0	820
Transitional	1.0	8.0	79	0.8	8.3	65	1.8	8.1	144
Fresh	1.8	8.3	149	1.6	8.6	140	3.4	8.4	289
<b>Total</b>	<b>11.7</b>	<b>8.8</b>	<b>1,033</b>	<b>2.6</b>	<b>8.5</b>	<b>220</b>	<b>14.3</b>	<b>8.8</b>	<b>1,253</b>

Notes for Table 1: Cut-off grade applied Eastern Zone is 4% TGC; Cut-off grade applied Western Zone is 6.25% TGC. Tonnage figures contained within Table 1 have been rounded to nearest 100,000. % TGC grades are rounded to 1 decimal figure. Abbreviations used: Mt = 1,000,000 tonnes, Kt = 1,000 tonnes. Rounding errors may occur in tables.

**Figure 3 – Major infrastructure to support industrialisation of the Ifakara area**



For personal use only

The Company has mandated KfW IPEX-Bank to undertake advisory, structuring and arranging services to obtain import credit cover (UFK Cover) and arrange a senior debt facility (UFK Tranche) of up to US\$105 million for the construction of Epanko. Subject to satisfactory due diligence and credit approvals, KfW IPEX-Bank may act as the sole funder of the UFK Tranche.

The UFK program is provided by the Federal Republic of Germany through credit insurer Euler Hermes to incentivise the development of key projects that can provide a long-term supply of critical minerals for German industry. Subject to satisfaction of defined due diligence criteria, loan cover on behalf of the Federal Republic of Germany with a long tenor can be provided under the program, which upon approval of binding cover provides Epanko with increased financial flexibility during ramp-up and operation.

The German Government Inter-Ministerial Committee has provided non-binding confirmation that Epanko is in principle eligible for UFK Cover under the UFK program and that an expert opinion (Independent Expertise) on the Project and proposed financing arrangements is now required to obtain Preliminary Approval for a binding offer of cover<sup>8</sup>.

A key requirement of the UFK program is the promotion of the highest environmental and social construction and operating standards. Epanko's social and environmental planning programs have been developed to comply with the Equator Principles, a globally recognised risk management framework adopted by leading financial institutions for assessing and managing social and environmental risks in new developments. The Company has recently finalised a substantial environmental and social planning program to support the financing and development of Epanko<sup>9</sup>.

**Figure 4: EcoGraf HFfree<sup>®</sup> BAM competitive and cost benefit advantages<sup>10</sup>**



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

**For further information, please contact:**

**INVESTORS**

**Andrew Spinks**  
 Managing Director  
 T: +61 8 6424 9002

## Notes:

1. ASX announcement dated 25 January 2022
2. ASX announcement dated 28 April 2023
3. ASX announcement dated 19 September 2023
4. ASX announcement dated 6 February 2025
5. ASX announcement dated 4 March 2025
6. ASX announcement dated 11 March 2024
7. ASX announcement dated 25 July 2024
8. ASX announcement dated 23 January 2025
9. ASX announcement dated 17 March 2025
10. Company reports and internal studies ([www.ecograf.co.au](http://www.ecograf.co.au))

### Competent Person Statements

The information in this announcement that relates to Mineral Resources is based on, and fairly reflects, information compiled by Mr. David Williams and Mr. David Drabble. Mr. David Williams is a full-time employee of ERM and is a Member of the Australasian Institute of Geoscientists (#4176)(RPGeo). Mr. David Drabble is a full-time employee of EcoGraf Ltd and is a Member of the Australasian Institute of Mining and Metallurgy (#307348). Mr David Williams and Mr David Drabble have sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as Competent Persons as defined in the 2012 Edition of the Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code). The Company confirms that it is not aware of any new information or data that materially affects the information included in the relevant market announcement on 11 March 2024 and all material assumptions and technical parameters underpinning the estimates continue to apply and have not materially changed. The Epanko Mineral Resource is comprised of 32.3Mt Measured, 55.7Mt Indicated and 202.8Mt Inferred resources.

The information in this announcement that relates to the Ore Reserve has been compiled by Mr Steve O'Grady. Mr O'Grady, who is a Member of the Australasian Institute of Mining and Metallurgy (#201545), is a fulltime employee of Intermine Engineering and produced the Mining Reserve estimate based on data and geological information supplied by Mr Williams. Mr O'Grady has sufficient experience that is relevant to the estimation, assessment, evaluation and economic extraction of Ore Reserve that he is undertaking to qualify as a Competent Person as defined in the JORC Code. The Company confirms that it is not aware of any new information or data that materially affects the information included in the relevant market announcement on 25 July 2024 and all material assumptions and technical parameters underpinning the estimates, including production targets and forecast financial information derived from the production targets in the relevant market announcement continue to apply and have not materially changed. The Epanko Ore Reserve is comprised of 11.7Mt Proven and 2.6Mt Probable reserves.

### Forward looking statements

Various statements in this announcement 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

Production targets and forecast financial information derived from the production targets, included in this report is extracted from ASX announcements dated 21 June 2017, 28 April 2023 and 25 July 2024 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 announcements released on 21 June 2017, 28 April 2023 and 25 July 2024 continue to apply and have not materially changed. The production targets referred to in this report are based on the updated Epanko Reserve (25 July 2024 announcement) which is comprised of 82% Measured Resources and 18% Indicated Resources for an initial 18-year life of mine. The Measured Resources and Indicated Resources underpinning the production target have been prepared by a competent person in accordance with the requirements in Appendix 5A (JORC Code). The Company has not used Inferred Mineral Resources as part of the production target. The Study includes some Inferred Resources which are mined incidentally with the Measured and Indicated Resources and treated as waste for scheduling purposes.

### About EcoGraf

EcoGraf is building a vertically integrated battery anode materials 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 a highly attractive graphite business which includes:

- Epanko Graphite Mine in Tanzania;
- Mechanical Shaping Facility in Tanzania; and
- EcoGraf HFfree® Purification Facilities located in close proximity to the electric vehicle, battery and anode manufacturers.

In Tanzania, the Company is developing the TanzGraphite natural flake graphite business, commencing with the Epanko Graphite Project, to provide a long-term, scalable supply of feedstock for EcoGraf® battery anode material processing facilities, together with high quality large flake graphite products for specialised industrial applications.

In addition, the Company is finalising its planned location for its Mechanical Shaping Facility in Tanzania, which will manufacture natural flake graphite into spherical graphite (SPG). This mechanical micronising and spheronising is the first step in the conversion of high-quality flake graphite concentrate into battery grade anode material used in the production of lithium-ion batteries.

Using its environmentally superior EcoGraf HFfree® purification technology, the Company will upgrade the SPG to produce 99.95%C high performance battery anode material to supply electric vehicle, battery and anode manufacturers in Asia, Europe and North America.

Battery recycling is critical to improving supply chain sustainability and the Company's successful application of the EcoGraf® purification process to recycle battery anode material provides it with a unique ability to support customers to reduce CO<sub>2</sub> emissions and lower battery costs.

Follow EcoGraf on LinkedIn, Twitter, Facebook and YouTube or sign up to the Company's mailing list for the latest announcements, media releases and market news.



**JOIN OUR MAILING LIST**