



7 December 2021

Canaccord Genuity Inaugural “Charging Up” Battery Technology Conference Presentation

ASX: EGR FSE: FMK OTCQX: ECGFF

ENGINEERING CLEAN ENERGY

Disclaimer



Securities Disclaimer

This presentation is for informational purposes only and does not constitute an offer to sell, or solicit to purchase, any securities. Such offer can be made only through proper subscription documentation and only to investors meeting strict suitability requirements. Any failure to comply with these restrictions may constitute a violation of applicable securities laws.

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 and 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 and 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.



DIVERSIFIED HFfree™ BATTERY ANODE MATERIAL BUSINESS

SUPPORTING THE GLOBAL TRANSITION TO CLEAN ENERGY AND E-MOBILITY



HFfree™ = Purification process eliminates Hydrofluoric (HF) Acid

Corporate summary



Board & Executive Management



Chairman
Robert Pett



Managing Director
Andrew Spinks



Director
John Conidi



Chief Financial Officer
Howard Rae



Joint Company Secretary
Karen Logan



Executive Manager – Project Development
Shaun O'Neill



Executive Manager – Product Development
Michael Chan



Commercial Manager
Marshall Hestelow

Business Locations



Share Price



Shares on issue: 450m

Unlisted performance rights: 7.45m

Major Shareholders (Top 20 = 55%)

BNP Paribas Nominees 23.9%
First Sentier Investors 8.6%
Board & Management 7.5%
Paradice Investment 5.1%

ASX : EGR
Börse Frankfurt : FMK
USA OTCQX : ECGFF

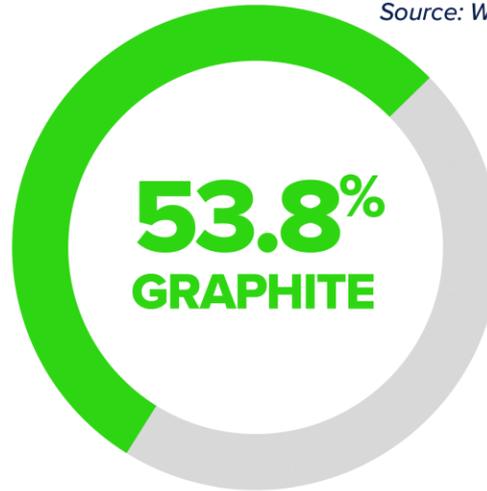
Share price A\$0.65
Market capitalisation A\$292m
Cash on hand 30 Sep A\$51.4m

Compelling market opportunity



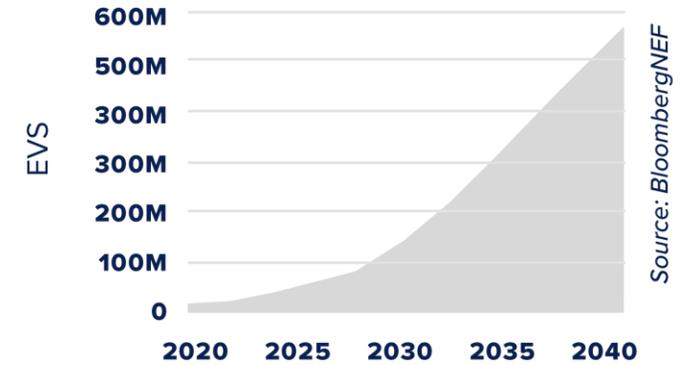
PURE CARBON (GRAPHITE) IS THE KEY RAW MATERIAL TO DECARBONISE THE ECONOMY

Source: World Bank

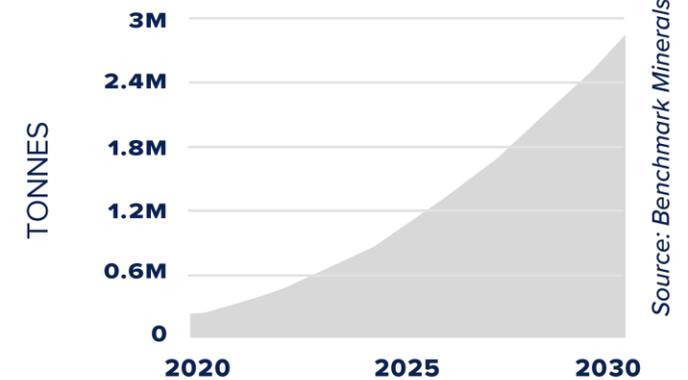


DEMAND DRIVEN BY THE TRANSITION TO LOW CARBON EMISSION TECHNOLOGIES

EV DEMAND



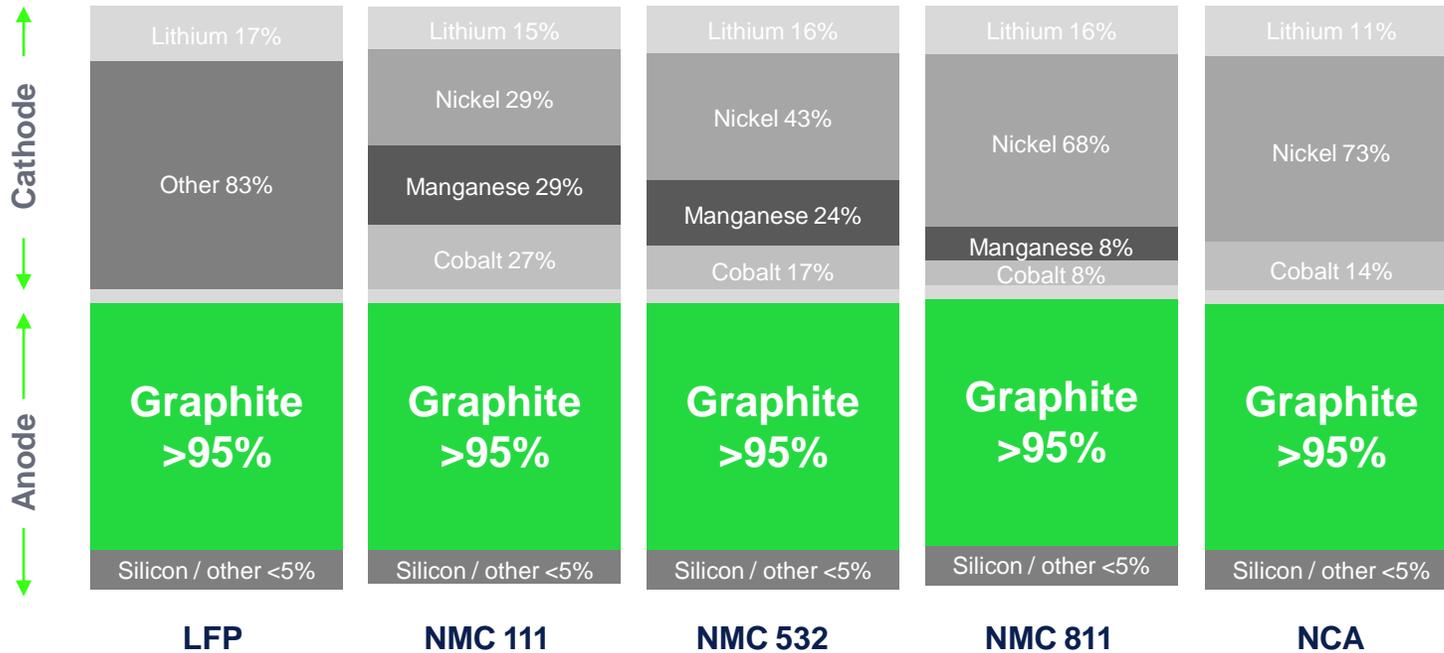
ANODE DEMAND



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

99.95% BATTERY GRAPHITE = HIGH PURITY PRODUCT FOR ANODE MANUFACTURING

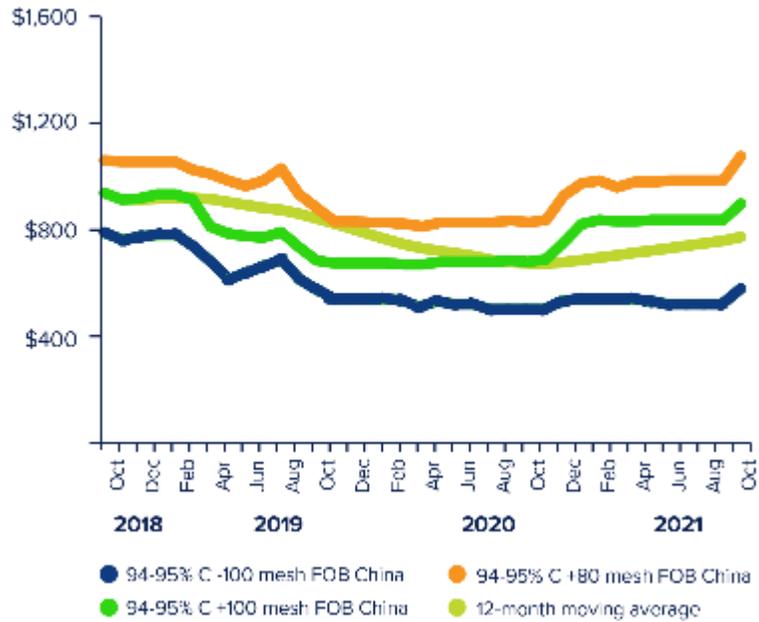
EcoGraf™ provides a high quality, cost competitive alternative to existing battery anode material produced using toxic hydrofluoric (HF) acid

GRAPHITE DOMINATES LITHIUM-ION BATTERY ANODES

Market and pricing outlook



Flake graphite \$/Tonne

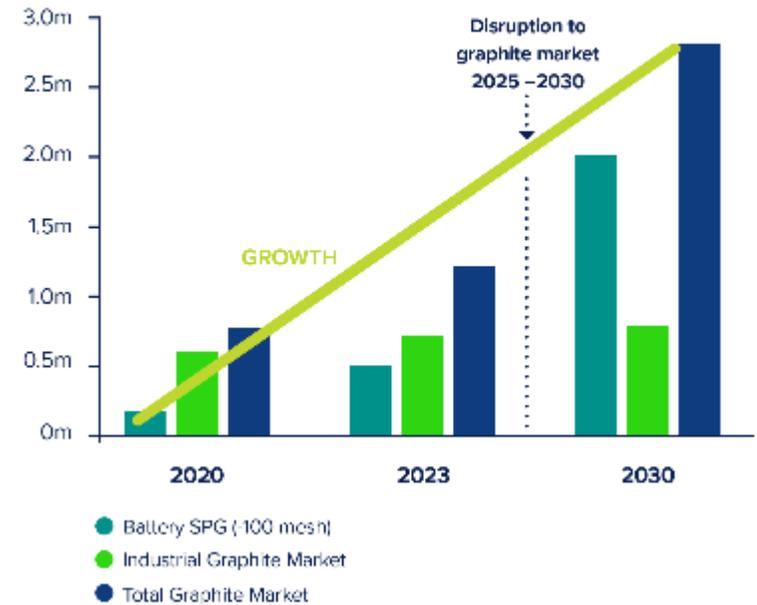


**GRAPHITE PRICES
UP 16%
LAST QUARTER**

Benchmark Flake Graphite Price Index



Battery Anode Material Forecast Demand



**FORECAST BATTERY
MARKET GROWTH OF
30%PA TO 2030**



European demand growth in 3 key regions

Over 1,000 GWh/a lithium battery cell production capacity announced through to 2030

WESTERN EUROPE

UK Σ ~55 GWh/a



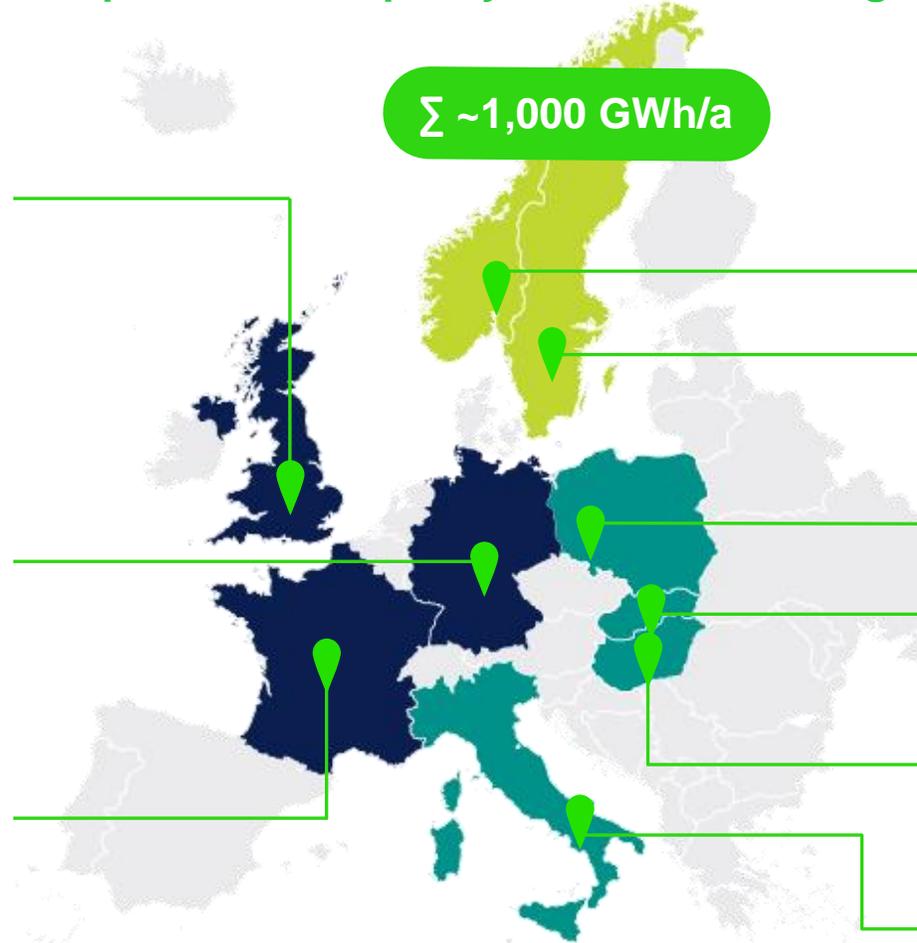
Germany Σ ~270 GWh/a



France Σ ~125 GWh/a



Σ ~1,000 GWh/a



NORTHERN EUROPE

Norway Σ ~70 GWh/a



Sweden Σ ~40 GWh/a



EASTERN EUROPE

Poland Σ ~65 GWh/a



Slovakia Σ ~10 GWh/a



Hungary Σ ~50 GWh/a



Italy Σ ~110 GWh/a



Location TBA

Σ ~240 GWh/a



Source: Roland Berger July 2021

¹ Estimate based on 100-200 m units of 21,700 cells

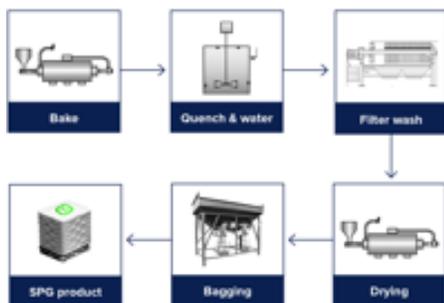


Patent Accepted for HFfree Battery Anode Material Process

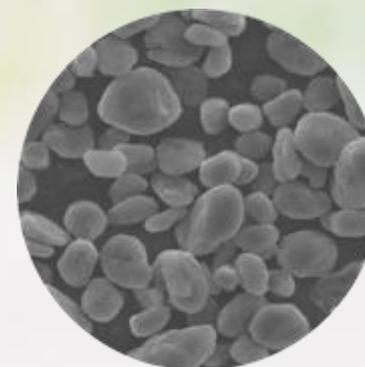


- International Examining Authority deems all 25 patent claims novel and inventive.
- Paves the way for grant of the patent
- Covers production of battery anode material and recycling

**PROPRIETARY PURIFICATION PROCESS
UNDERPINS PRODUCT DEVELOPMENT
PROGRAMS IN BATTERY ANODE MATERIALS**



Multi-stage chemical purification, washing and filtration process that eliminates hydrofluoric acid



**PURIFIED BATTERY
ANODE
MATERIAL**

- ✓ **ECO-FRIENDLY**
- ✓ **COST EFFECTIVE**
- ✓ **HIGH PURITY**



POSCO Intl. enters into battery anode material agreement

posco

is a major South Korean industrial group and leading battery anode manufacturer

Highlights:

Intention to enter into a formal offtake agreement for the supply of EcoGraf™ HFfree battery anode material products from:

- Australian battery anode material facility
- Planned European facility

Cooperation:

- Product development
- Battery anode recycling
- Development of EcoGraf's vertically integrated battery anode material business



South Korean (SK) market to drive raw material demand:

- SK largest EV battery market outside China for battery minerals at 34.8%
- The three major SK battery manufacturers to invest US\$35.3 billion over the next decade

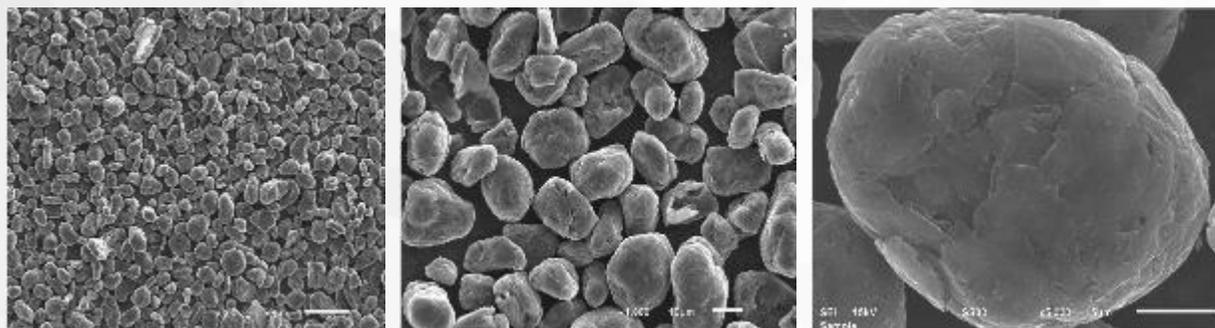
***SUSTAINABLY PRODUCED
ECOGRAF™ HFFREE PRODUCTS
TO SUPPORT POSCO'S BATTERY
MATERIALS EXPANSION PLANS***





DEVELOPMENT READY

Battery Anode Material Business.



>60% YIELD

**MAXIMISE EFFICIENCY
AND PROFITABILITY**

**75% WATER
TO BE REUSED IN OPERATION**

HFfree™



Western Australia: Kwinana-Rockingham battery minerals developments

Globally recognised location for processing of battery minerals

AUSTRALIAN MADE

PERTH

Westport Kwinana Development Potential Location

TIANQI LITHIUM
Tianqi Lithium Lithium Hydroxide Plant

BHP
BHP Nickel West Nickel Plant

covalent LITHIUM
Wesfarmers & SQM Lithium Hydroxide Plant

EcoGraf™
Battery Anode Material Processing Facility

KWINANA-ROCKINGHAM INDUSTRIAL AREA

EcoGraf

ROCKINGHAM

BATTERY ANODE FACILITY IS COMPLEMENTARY TO THE CATHODE DEVELOPMENTS

Western Australia: Kwinana-Rockingham hydrogen developments

Planning commenced for new hydrogen clean energy developments





Battery graphite business summary

STATE-OF-THE-ART FACILITY TO DELIVER HIGH QUALITY, SUSTAINABLY PRODUCED HF-FREE BATTERY ANODE MATERIAL PRODUCTS

Initial commercial production plant commencing at 5,000tpa and expanding to 20,000tpa

- Development awarded Australian Government Major Project Status and Lead Agency support from the WA State Government
- Export Finance Australia support received for US\$35m expansion loan
- Four years of pilot plant test work undertaken in Germany:
 - Successful application of EcoGraf™ purification process to a range of global feedstock supplies
 - Long-term feedstock agreement with leading German trading group **TECHNOGRAFIT** GmbH
 - Extensive product testing completed and sales arrangements via **thyssenkrupp** AG
 - **POSCO** enter into battery anode material agreement to support their battery materials expansion plans



ECOGRAF'S FIRST FACILITY TO MEET HIGH GROWTH GLOBAL BATTERY DEMAND

Financial returns @ 20,000tpa

Pre-tax project NPV ₈	Pre-tax equity NPV ₈	Annual EBITDA	IRR
US\$642m	US\$448m	US\$35m	42.4%



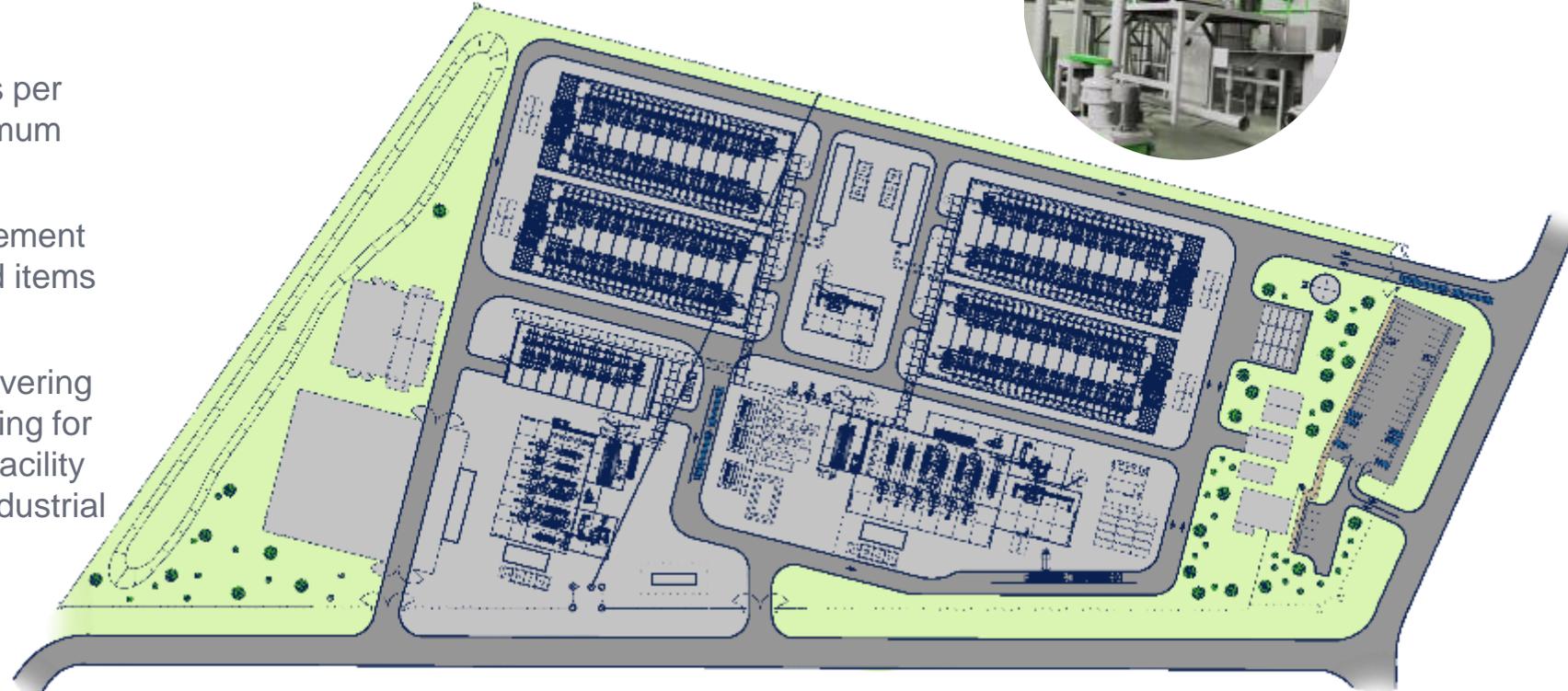
Refer ASX announcement dated 5th November 2020

Western Australian battery anode materials processing facility



IMMEDIATE NEXT STEPS

- Site layout and design for 5,000 tonnes per annum plant optimised to extract maximum efficiency
- Project schedule de-risked with procurement activities focused on securing long lead items of plant & equipment
- Approvals processes well advanced covering environmental, health and safety planning for construction and operations phases. Facility is located in an established strategic industrial zone.



HFfree™

The new state-of-the-art processing facility will incorporate the Company's proprietary EcoGraf™ HFfree purification technology to manufacture 20,000tpa spherical graphite for the lithium-ion battery market.

Sustainability focus and product development initiatives



HFfree™ BATTERY ANODE MATERIAL PRODUCTS

Main Product

Secondary Product

Product Development of Bi-Product Fines

hdBAM

superBAM

greenRECARB

ecoCEM

hpFINEs



END USE

ELECTRIC VEHICLES,
STORAGE PACK

HYBRID CARS/ POWER TOOLS
& 3C APPLICATION

CAST & GREY CAST STEEL
FOUNDRY/EAF FURNACE

AA, AAA, LI-ION CEM
CATHODE & CAN COATING
FUEL CELLS

LUBRICANTS, THERMAL
EFFICIENT AND FIRE
RESISTIVITY MATERIALS

MARKET SIZE

MEDIUM

MEDIUM

VERY HIGH

LOW

LOW

GROWTH

VERY HIGH

VERY HIGH

LOW

MEDIUM

LOW

VALUE

HIGH

VERY HIGH

LOW

VERY HIGH

HIGH

**INDUSTRY
/CUSTOMERS**



ELECTRIC VEHICLES



ELECTRIC VEHICLES



STEEL/ GREEN STEEL



BATTERY , CHEMICAL
MANUFACTURING



BATTERY AND CHEMICAL
MANUFACTURING



Global expansion strategy for EcoGraf's battery anode business

Supply of sustainably produced HF_{free} battery anode materials to key growth markets

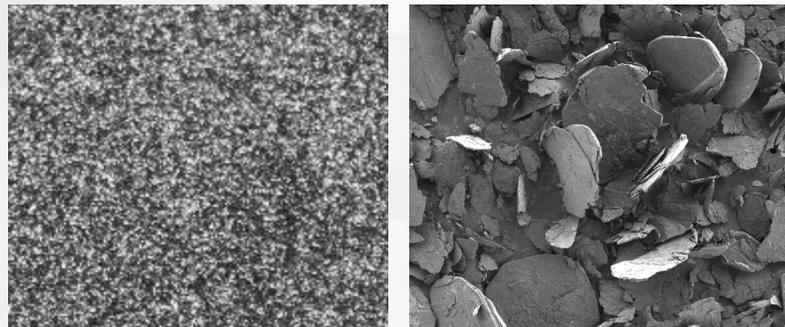


Current battery anode materials supply chain is 100% reliant on China. Strategy to expand production and regionalise additional manufacturing facilities in Europe, Asia and the US to support high growth battery anode markets.



DEVELOPMENT READY

Natural Flake Graphite Business.



US\$44.5M

ANNUAL EBITDA

60,000TPA

NATURAL FLAKE GRAPHITE

Natural graphite business summary

Defined, De-risked and Ready For Construction

- Bankable Feasibility Study completed by GR Engineering Services
- Bank appointed 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

thyssenkrupp (Germany) and Sojitz Corporation (Japan)



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 ₁₀	Annual EBITDA	IRR
US\$211m	US\$44.5m	38.9%



Refer ASX announcement dated 21 June 2017

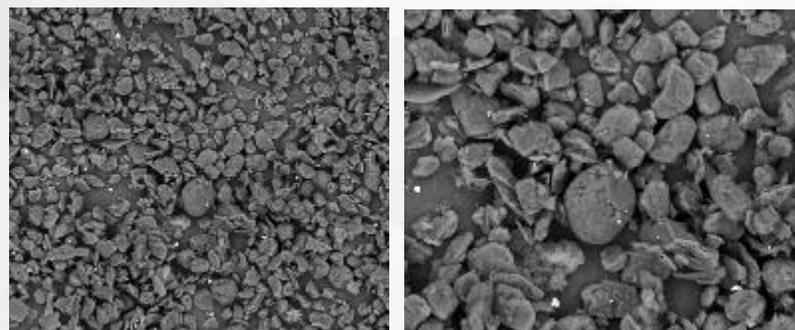


PILOT SCALE READY

Lithium-ion Battery Recycling Business.



HFfree™



Battery recycling



Market Overview

 Recycling efforts have focused on cathode metals

 Carbon anode materials are currently not recovered

PRODUCTION SCRAP	Carbon material which is a waste product generated from each stage of battery anode manufacturing, cell manufacturing and battery testing
BLACK MASS	Carbon material remaining after hydrometallurgical processes have recovered the high value cathode metals from end-of-life lithium-ion batteries

Benefits and Opportunity

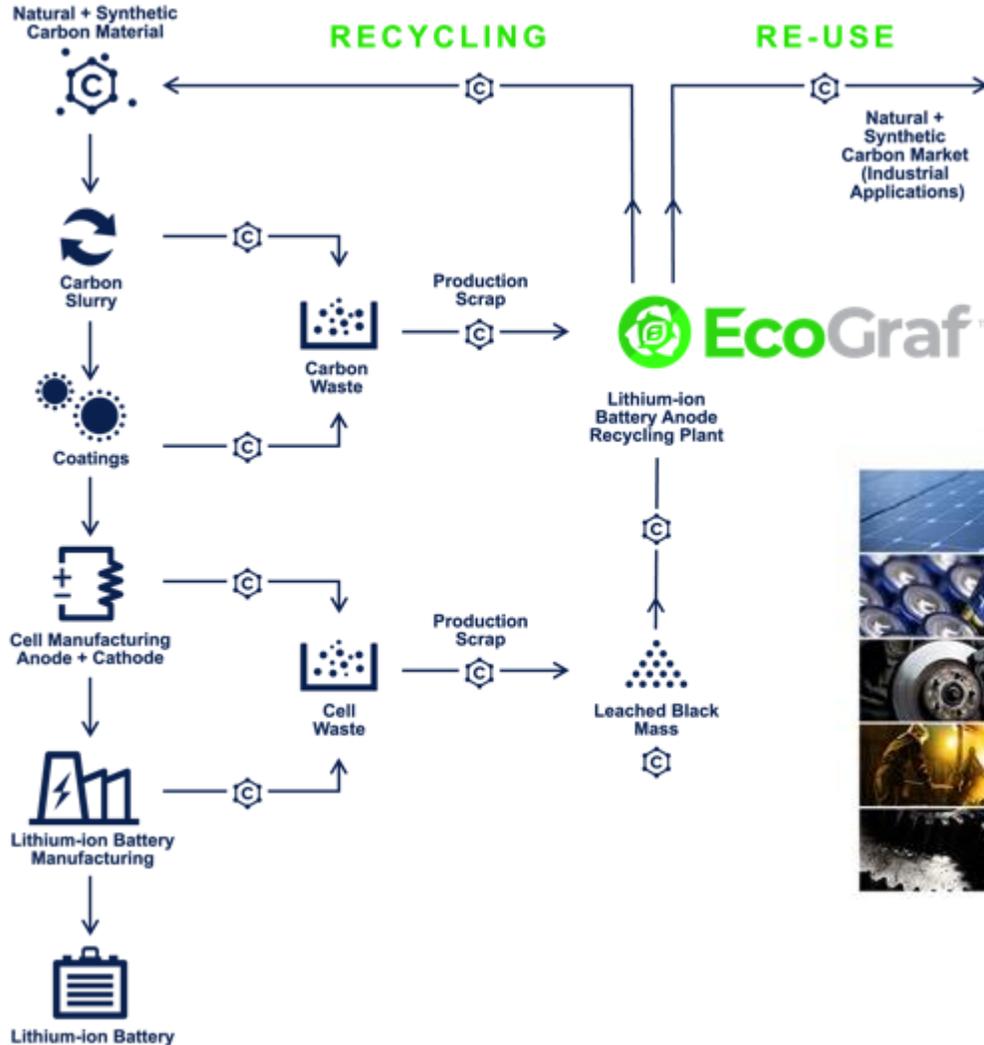
 Reducing battery production costs

 Lowering the EV carbon footprint

EU legislation to require more battery recycling and greater transparency in the raw materials supply chain



Recycling strategy for recovered anode material



Prioritising high value natural and synthetic industrial applications for reuse of carbon anode material in industrial applications.

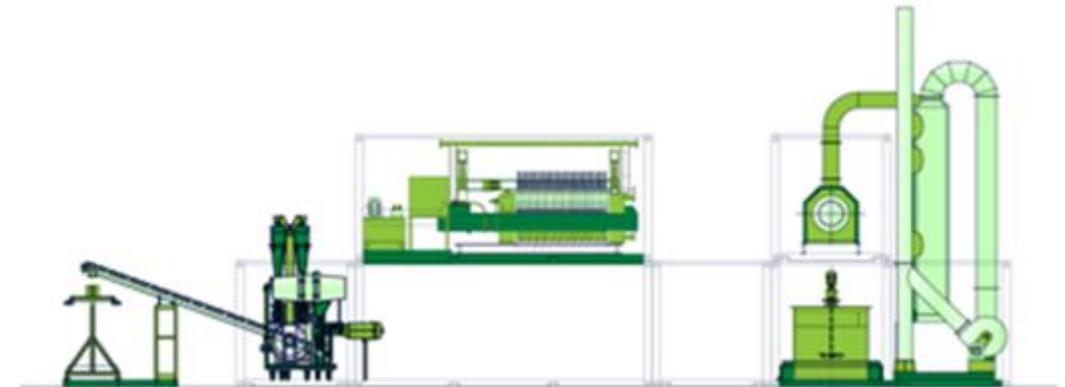
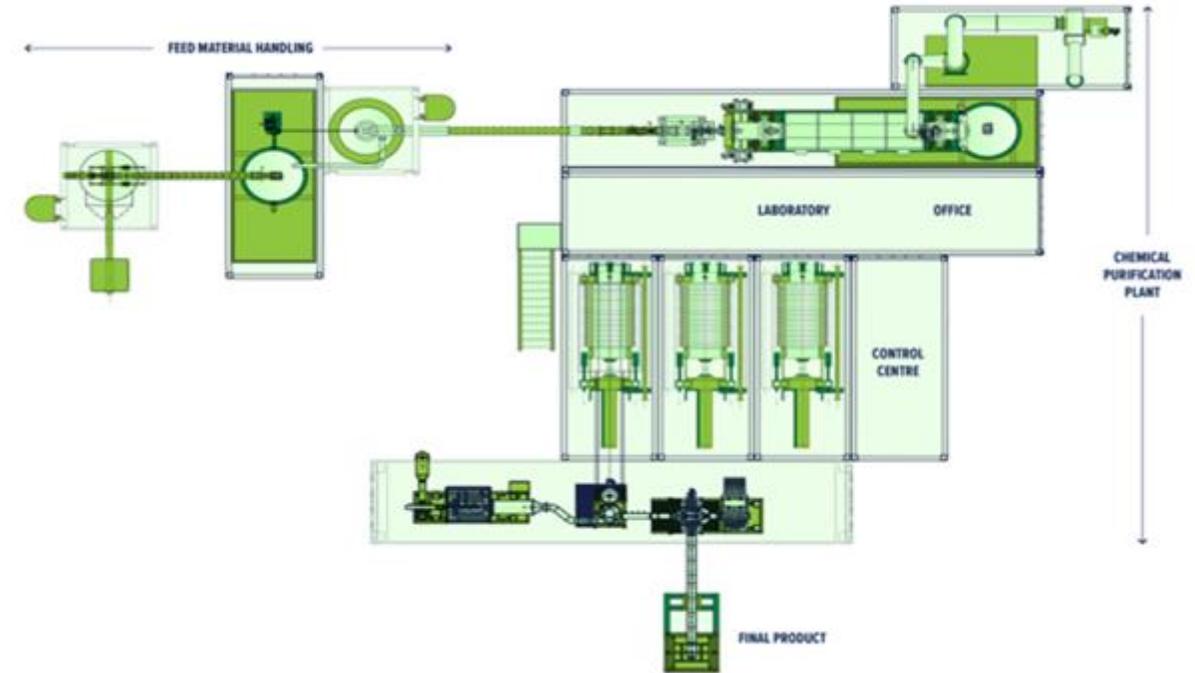
INDUSTRIAL MARKET OPPORTUNITIES FOR RECOVERED CARBON ANODE MATERIAL		NATURAL	SYNTHETIC	
	Lithium-ion batteries	RECYCLING	✓	✓
	Alkaline and zinc carbon batteries	RE-USE	✓	✓
	Friction materials	RE-USE	✓	-
	Refractories	RE-USE	✓	-
	Carbon additives	RE-USE	-	✓

Next steps - modular recycling pilot plant



Key features:

- Capacity of 50-100kg/hr
- Capital cost US\$4.5m
- State-of-the-art-facility utilising EcoGraf™ HF free purification process with design providing location flexibility
- Design criteria based on operating at the highest environmental standards and providing process flowsheet flexibility to evaluate various feedstocks
- Plant to provide tailored customer solutions to support new EU battery legislation for increased recycling
- Recycling of the carbon anode material to lower battery costs and reduce CO₂ footprint



50-100KG/HR
TREATMENT RATE



Position and Value Proposition .



EcoGraf's vertically integrated product flow



HFfree™



Global Graphite Feedstock

TANZGraphite
Epanko Graphite Project



EcoGraf™

Battery Anode
Material Facility



hdBAM

superBAM



Lithium-ion Battery
Manufacturing

CLOSED LOOP
RECYCLING
Production Scrap

EcoGraf™

Lithium-ion Battery
Anode Recycling Plant



RE-USE MARKET
Natural + Synthetic
Applications

greenRECARB
ecoCEM
hpFINES

Industrial Applications
and Alkaline Batteries



Electric Vehicles

Value proposition



BATTERY ANODE MATERIAL FACILITY

- + 20,000tpa battery graphite
- + US\$35m annual EBITDA
- + 42.4% internal rate of return
- + US\$642m pre-tax project NPV₈
- + US\$448m pre-tax equity NPV₈ and payback of ~3.3yrs

Diversified battery anode material business positioned for the global transition to clean energy



TANZGraphite

EPANKO NATURAL GRAPHITE PROJECT

- + 60,000tpa natural flake graphite
- + US\$44.5m annual EBITDA
- + 38.9% internal rate of return
- + US\$211m pre-tax equity NPV₁₀
- + US\$3bn forecast contribution to Tanzania

Development ready businesses forecast to generate US\$80m EBITDA per annum



RECYCLING OF CARBON ANODE MATERIAL

- + Significant results 99.98%C
- + Production scrap – large market
- + Lower battery costs and emissions
- + Blended anode material opportunity
- + Modular recycling pilot plant

Proprietary EcoGraf™ purification technology provides sector leading ESG credentials with application to battery recycling industry

THE FUTURE IS ELECTRIC



**NATURAL
GRAPHITE**

**BATTERY
ANODE
MATERIAL**

**LITHIUM-ION
BATTERY
RECYCLING**

**PRODUCT
DEVELOPMENT &
INNOVATION**



18 Richardson Street
West Perth, WA 6005
www.ecograf.com.au

Follow EcoGraf on LinkedIn, Twitter or sign up to the company's newsletter for the latest announcements, media releases and market news.



SUBSCRIBE TO STAY UPDATED

ASX: EGR FSE: FMK OTCQX: ECGFF

ENGINEERING CLEAN ENERGY