

Sustainability Focus Drives Value for Australian BAM Facility

ZERO WASTE, RENEWABLE ENERGY AND USE OF SECONDARY GREYWATER TO COMPLEMENT EXISTING ESG CREDENTIALS

Diversified battery anode materials company **EcoGraf Limited (EcoGraf or the Company)** (ASX: **EGR**; FSE: **FMK**; OTCQX: **ECGFF**) is pleased to announce progress on key sustainability activities for its new Australian Battery Anode Material facility, that include:

- **Zero waste operating strategy with the goal of utilising 100% of feedstock through product innovation and development**
- **Engineered water processing solutions to treat and recycle Kwinana-Rockingham wastewater and achieve a 75% reduction in water usage**
- **Adoption of renewable energy content within the Kwinana–Rockingham Industrial zone**
- **Lowering carbon emissions footprint through the development of Life Cycle Assessment (LCA) models with customers.**

Increasing the sustainability content to complement the Company's existing strong ESG credentials has been a key focus during the pre-construction and detailed engineering design phase.

Zero Waste Operating Strategy

A zero waste philosophy with process waste management, including developments to manage all waste streams, has been adopted. The strategy includes no gaseous emissions, secondary use of the processing plant graphite bi-product fines and calcite waste products generated from wastewater treatment.

A product development program to value-add 100% of the bi-product fines streams is being undertaken to fully utilise and re-process all bi-product fines into higher value industrial application products.

A green carbon recarburiser additive for the steel manufacturing industry, **greenRECARB** is one of the products under development.

Steel manufacturing using arc furnaces requires up to 4% carbon additive as recarburiser which is currently being sourced from high polluting petroleum coke materials.

Steel manufacturing currently ranks first when it comes to polluting emissions and global efforts to reduce emissions is expected to lead to new cleaner supply chain materials. EcoGraf is positioning its product development program to support changes in manufacturing methods, like the move to hydrogen generated steel manufacturing.

In addition to **greenRECARB** product development initiatives include **superBAM**, an enhanced lithium-ion battery performance material and **ecoCEM** a cathode enhanced material for the cathode and alkaline battery market.

superBAM	greenRECARB	ecoCEM
<ul style="list-style-type: none"> Enhanced performance Higher charge discharge capacity 	<ul style="list-style-type: none"> Carbon additive to Cast/Grey Cast Steel & EAF Steel manufacturing 	<ul style="list-style-type: none"> AA, AAA, 8V alkaline battery, NMC CEM material
END USE: HYBRID CARS/ POWER TOOLS & 3C APPLICATION	END USE: CAST & GREY CAST STEEL FOUNDRY/EAF FURNACE	END USE: AA, AAA, Li-ION CEM CATHODE & CAN COATING

Water Recycling

The Kwinana-Rockingham plant is designed to process water from partly treated effluent from one of the Government's wastewater treatment plants. This water will be treated to produce high quality demineralised water used in the purification plant.

Final design of the feed and wastewater streams will also allow recycling of a significant proportion of the wastewater with the precipitation of a final gypsum rich product suitable for use as a soil enhancer.

Renewable Energy

Existing renewable energy options are being evaluated to maximise the renewable content to meet long term CO₂ and sustainability targets mandated by the European Union (EU).

It is expected that the energy mix at Kwinana will include solar and the waste to energy plants currently under construction.

Carbon Emissions Management

Life Cycle Assessment (LCA) methodology for the EV automobile industry is a topic of increasing importance that will ensure raw material supply chains meet rigorous standards applied by the EU and which are being adopted by the Australian Government.

LCA studies consider all the environmentally significant processes throughout the life cycle of vehicles, including raw material extraction and recycling from end-of-life treatments.

The Company has developed models to support the total life cycles and is working with a European EV automobile manufacturer to provide inputs for their internal LCA models.



EcoGraf™ Battery Anode Material facility, located in the Kwinana-Rockingham Industrial Zone, will be the first of its kind to be constructed outside of China, providing a new supply of sustainably produced, high quality and cost competitive purified spherical graphite for the lithium-ion battery market.

The Western Australian mineral industry is a leading global supplier of cathode minerals (Nickel, Lithium, Cobalt, Manganese and Alumina) and EcoGraf's battery anode material facility will complement these, given it is an important related constituent in lithium-ion batteries.

The future value multiplier of battery cell manufacturing benefit to Australia is discussed by CSIRO's Dr Jerad Ford, Mission Lead, Critical Energy Metals recent webinar, which highlights the opportunity for Australia's battery and critical minerals industry

EcoGraf's WA anode video clip: <https://bit.ly/3z0qLtn>  PLAY VIDEO

CSIRO full video: <https://vimeo.com/583643371>  PLAY VIDEO

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

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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 HFfree 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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