ASX: EGR FSE: FMK

EcoGraf

New World Metals Conference

Perth 12 December 2019

BUILDING A SUSTAINABLE MATERIAL SUPPLY FOR THE EV BATTERY MARKET

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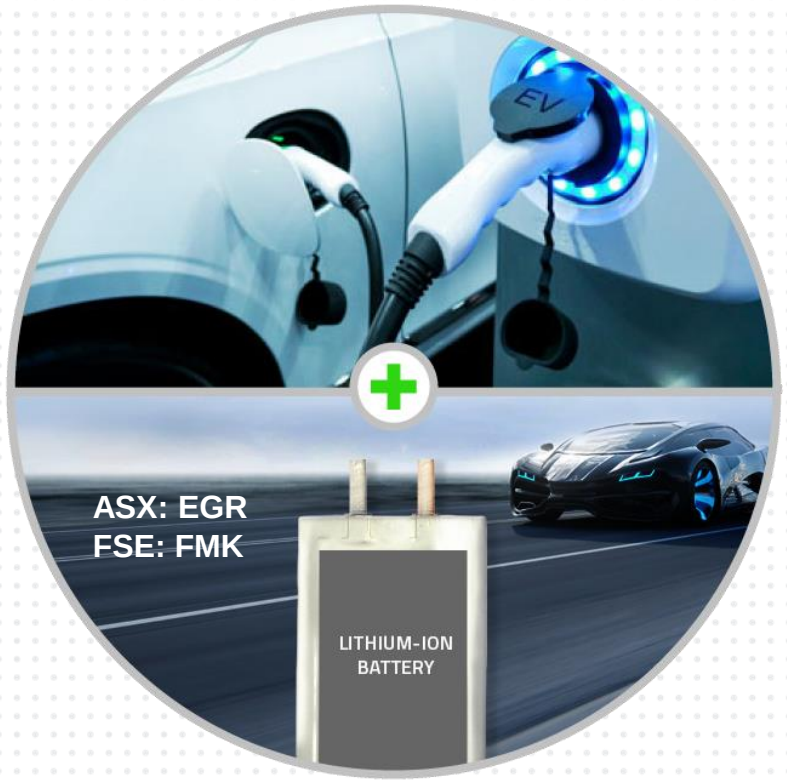
Competent Persons
Information in this presentation that relates to Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Mr Andrew Spinks, who is a Member of the Australasian Institute of Mining and Metallurgy included in a list promulgated by the ASX from time to time. Andrew Spinks is a director of Kibaran Resources 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 presentation of the matters based on his information in the form and context in which it appears.

Information in this presentation 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 presentation of the matters based on his information in the form and context in which it appears.

Information in this presentation 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 Intermine 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, evaluation and 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, Minerals Resources and Ore Reserves”. Steve O'Grady consents to the inclusion in this presentation of the matters based on his information in the form and context in which it appears.

Vertically integrated businesses for manufacture of battery graphite for the lithium-ion market



EcoGraf | TANZGraphite

Manufacturing of battery (spherical) graphite for lithium-ion batteries	Scalable mining projects for long term supply of graphite products
Australia / Asia / Europe	Scalable mining projects for long term supply of graphite products

Total pre-tax NPV10 US$546m and EBITDA US$121.5m (geared, nominal terms)

Shares on issue	Key holders	Financial
Listed 306m F-diluted 307m	Mitsubishi UFJ Group 12.5% JP Morgan Nominees 11.8% Board 10%	Cash (1 Oct) – $1.4m Share Price – 7.3c Mkt Cap - A$22.3m

Strong mix of graphite expertise, commercial and project development

- Kibaran Chairman Robert Pett, Managing Director Andrew Spinks and Project Director Grant Pierce OAM established Tanzania's Golden Pride Mine which was the recipient of the President's Award in Tanzania for environmental excellence
- German-based director Christoph Frey is a globally recognised graphite expert.
- Howard Rae, CFO has over 20 years' experience in project financing
- Listed on the Australian and German (Frankfurt) stock exchanges

2019 highlights

EcoGraf

- Delivered GR Engineering studies for planned purification facilities in Asia and Western Australia.
- Selected and declared Kwinana as preferred site for first facility
- Continued extensive customer product qualification program using new spheronising piloting equipment
- Received WA State Government support and commenced pre-development activities, including engineering, permitting and environmental approvals.
- Debt financing process commenced with potential lenders

2020 Priorities - Complete pre-development activities, secure Final Investment Decision in 1H CY2020 and commence Kwinana construction

Milestone year with the first EcoGraf development advancing towards a 'Final Investment Decision' and strong Government Support in Tanzania expected to result in financier approvals for Epanko

TANZGraphite

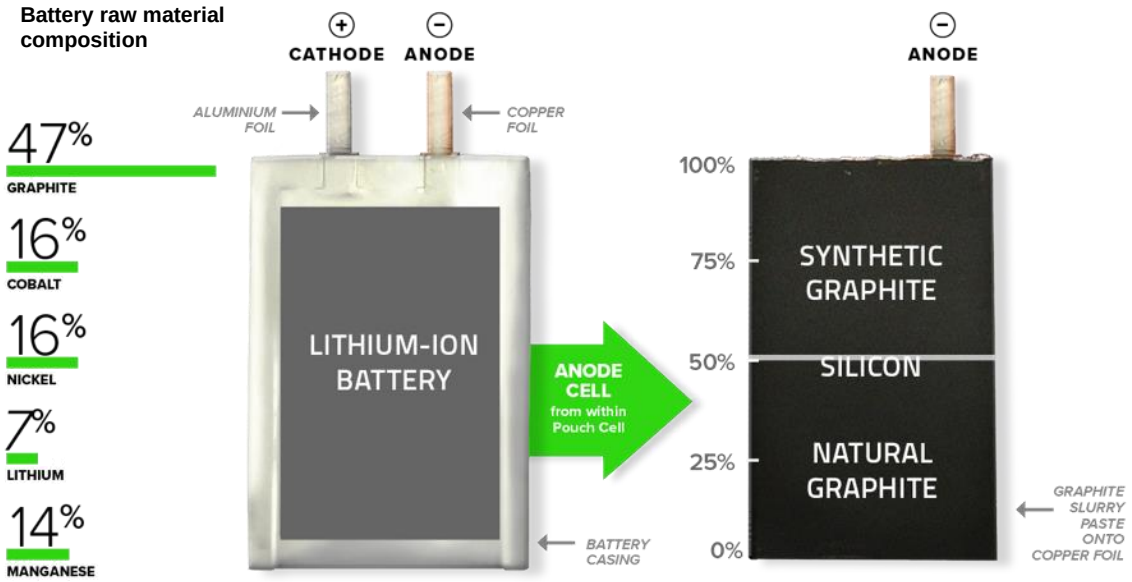
- KfW IPEX-Bank mandated for US$40m Epanko debt funding
- Extensive high-level meetings in Tanzania to satisfy financier regulatory requirements
- Commenced US$20m debt funding program with an additional lender for a total project debt funding of US$60 million

2020 Priorities - Secure financial approvals for Epanko debt financing program

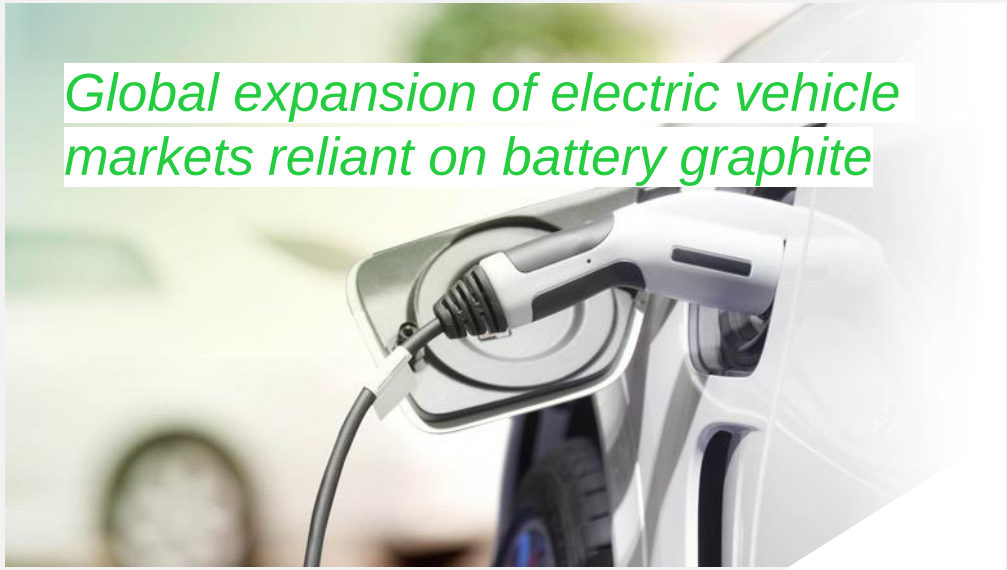
Corporate

- Attracted another large institution to the register with Mitsubishi Financial Group
- Resolved all R&D matters and received approval for overseas R&D for a total $8.4m
- Proposed name change to EcoGraf Limited

Battery market opportunity: electric vehicles



Battery graphite processed from natural flake graphite into a 99.95% high purity product suitable for anode manufacturing

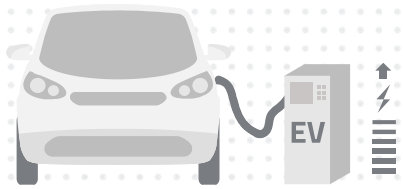


27kg Natural (Spherical) Graphite per EV

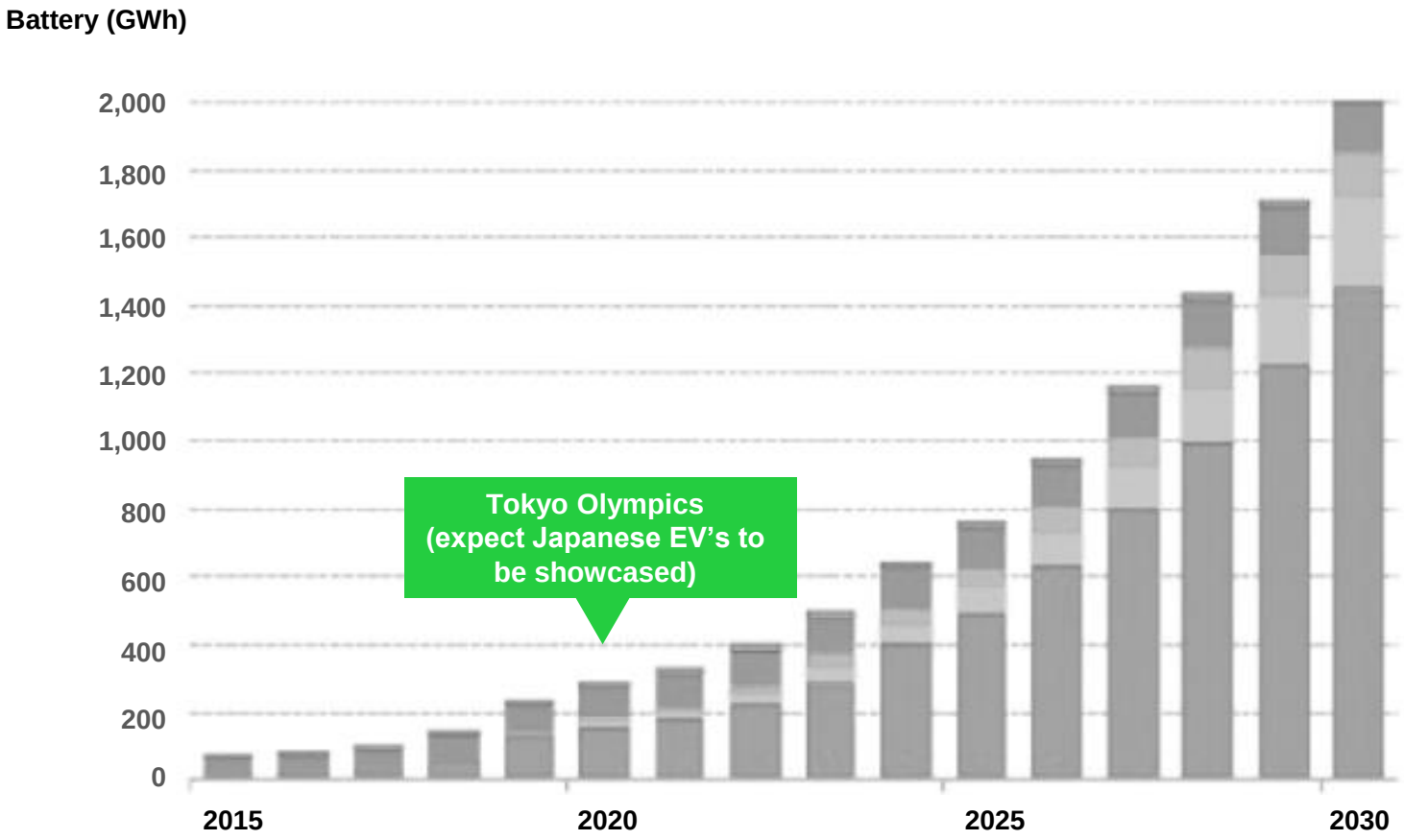
54kg 54kg of natural graphite feedstock is required to manufacture 27kg of natural (spherical) graphite

Natural (spherical) graphite used in battery anode is currently only sourced from China

Battery graphite demand

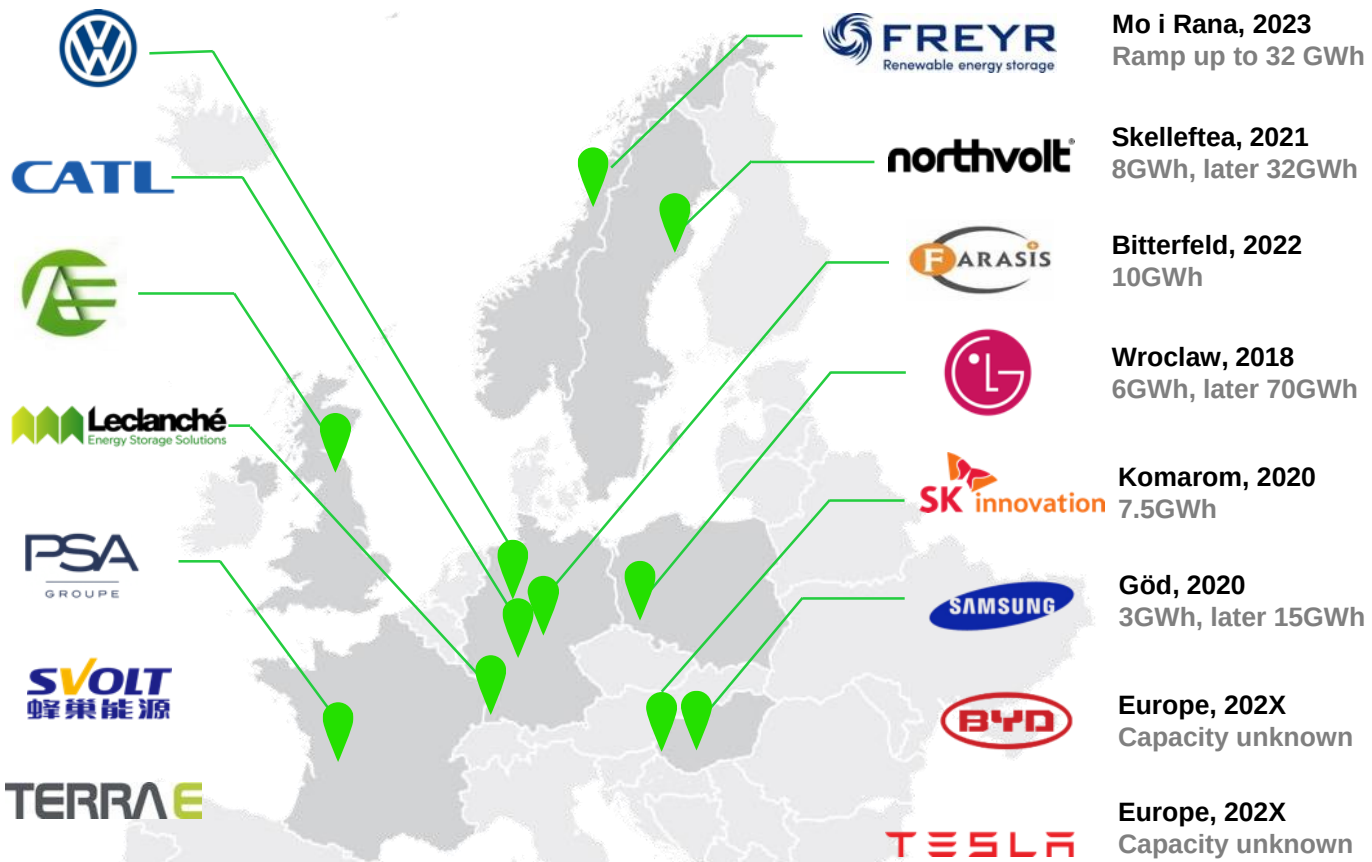


200 GWh = 4 million EV's = 100,000t Natural (Spherical Graphite)



Source: Bloomberg New Energy

Major investment underway in battery manufacturing for EV's



Salzgitter, 2024
16GWh, later 24GWh

Erfurt, 2022
14GWh, later 100GWh

Sunderland, 2010
2.5GWh

Willstätt, 2020
1GWh

France, 2023
32GWh, later 64GWh

Germany, 2023
20GWh, later 24GWh

Germany, 202X
4GWh, later 8GWh

Mo i Rana, 2023
Ramp up to 32 GWh

Skelleftea, 2021
8GWh, later 32GWh

Bitterfeld, 2022
10GWh

Wroclaw, 2018
6GWh, later 70GWh

Komarom, 2020
7.5GWh

Göd, 2020
3GWh, later 15GWh

Europe, 202X
Capacity unknown

Europe, 202X
Capacity unknown

Source: After Zenn (Europe)

- Over 300 GWh/a Li-Ion Battery Cell Production Capacity Announced in Europe
- Currently all German EV's are reliant on Asian battery anode cells
- German Government announced support for 3 new battery alliances
  - 1 billion euros to preserve the automotive value chain in Germany and Europe
- Raw materials shift into Europe expected from 2023/24

Latest market news

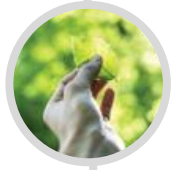
Investment continues in Europe to transition towards renewable energy for vehicle and industrial applications, supporting the shift to new raw material supplies

Toyota increases EV production and Volkswagen invests €900m to establish a new battery production facility with Northvolt.

Germany will award to three consortiums 1 billion euros in funding it earmarked last year to support domestic battery cell production.

CATL hikes investment in German battery plant 1.8 billion euros from a previous plan of 240 million euros to expand output.

By 2030, Daimler aims to have all-electric and plug-in hybrids make up more than half of its car sales.



German government supports second European EV battery consortium with BASF, BMW.

Germany Gov't announced that it would make 1 billion euros in subsidies available to help enhance and preserve the automotive value chain in Germany and Europe.

VW begins electric makeover as it unveils the ID3. The first cars will be delivered to customers in Europe in the spring of 2020.

Volvo announced that it will become the first car maker to implement global traceability by applying blockchain technology.

Elon Musk confirmed Tesla is going to build Gigafactory 4 in Germany that is expected to be operational by the end of 2021.

VW has announced plans to build 75 variants of electric car and around 60 hybrid vehicle models. By 2029 around 26 million electric cars will be built.

GERMAN GOVERNMENT

"Germany and Europe need to develop and build competitive, innovative and environmentally sustainable battery cells"

VOLVO

"Customers can drive electrified Volvos knowing the material for the batteries has been sourced responsibly"

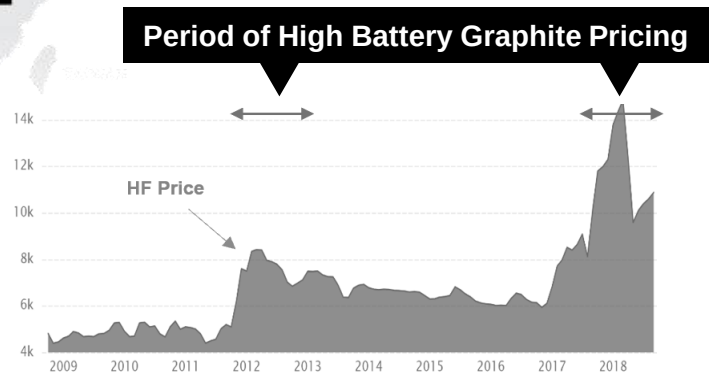
VOLKSWAGEN

"invest 60 billion euros ($66.12 billion) by 2024 in E-mobility"

Eco-friendly and cost competitive alternative to existing supply

China's top graphite producing provinces

Source: Industrial Minerals

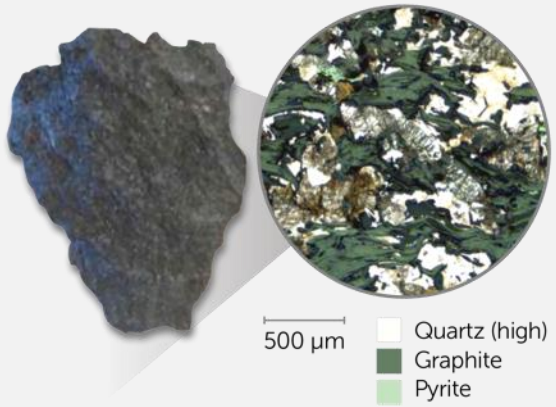


China HF Price (RMB)

- All battery graphite is presently produced in China using hydrofluoric (HF) acid to achieve 99.95%C with Hubei and Shandong the largest producing areas and increasingly subject to environmental regulation
- HF is a major contributor to the cost of Chinese battery graphite production due to increasing input costs and environmental requirements for the management of fluorine enriched wastes
- EcoGraf non-HF method is both cost competitive and eco-friendly compared to Chinese products

Chinese graphite ore with high quartz (silica) content of 40% (SiO_2).

HF is the only acid that will digest high silica remaining in the graphite concentrates.



Battery graphite business summary

MANUFACTURE OF BATTERY GRAPHITE – WESTERN AUSTRALIA

Business Description	Production of spherical graphite in Western Australia using a new eco-friendly process Initially supplying existing Asia markets, thereafter expanding to meet new European growth

Key Milestones	✓ New eco-friendly purification process developed in 2017
	✓ Feasibility studies undertaken by GR Engineering
	✓ 2 years of pilot plant test work completed in Germany:
	  ✓ Process testing and optimisation
	  ✓ Successful application to a range of global feedstock supplies
	✓ Engineering design and costings completed for Western Australia and Asia
	✓ Global patent pending over unique eco-friendly purification processing technology
	✓ Agreement in place for supply of suitable feedstock based on successful testwork
	✓ Product samples distributed to battery anode manufacturers in South Korea, Japan, China, North America and Germany
	✓ Debt and equity financing process underway to support final investment decision by mid-2020

Production	Staged production facility at Kwinana commencing at 5,000tpa, expanding to 20,000tpa by 2022

Strong Economic Returns

	CAPITAL		FINANCIAL RETURNS @ 20,000TPA			
	5,000tpa	**15,000tpa**	**Pre-tax NPV_{10}**	**EBITDA**	**IRR**	**Payback**
Kwinana, WA	US$22.8m	US$49.2m	US$141m	US$35m	37.0%	~4yrs

Manufacturing process

Process flowsheet and planned scale-up de-risked through process optimisation, engineering, off the shelf equipment, extensive product qualification and endorsement of customers for eco-friendly products

Agreements in place to secure feedstock

- 100 mesh @ 94-95%C natural flake graphite

Produced through crushing, grinding and flotation

Off the shelf equipment in use in China

Mechanical grinding and shaping

Micronising and spheronising using standard milling equipment

- ✓ **50% fines bi-product for sales into various markets**
- ✓ **Ability to purify fines for sales into higher value market**

International patent pending for chemical purification process

Multi-stage chemical purification, washing and filtration process (eliminates HF acid)

EcoGraf

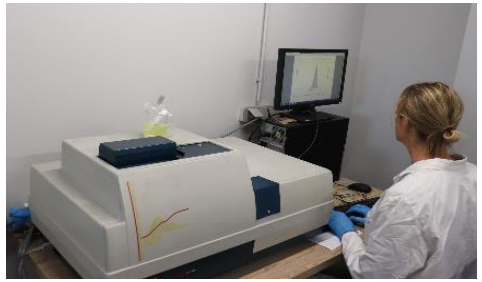
- ✓ **Eco-friendly**
- ✓ **Cost effective**
- ✓ **Reliable supply**

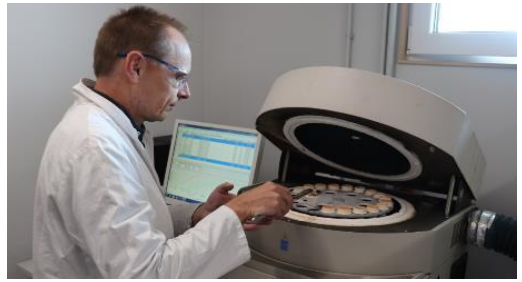
Purified battery (spherical) graphite for sale into lithium-ion battery market

Development history

Over 3 years of intensive test work and process design to develop a new eco-friendly chemical process that provides a cost competitive alternative to existing Chinese supplies

- Test work performed in Australia and Germany conducting >100 trials using a systematic, scientific method to optimise the purification process with R&D support from the Australian Government
- Evaluation of all leading micronising and spheronising equipment, resulting in improved yields of 45-55%
- Extensive product testing by potential customers in Asia and Europe confirms attractiveness of EcoGraf product as a high quality and cost effective alternative to existing Chinese supply
- EcoGraf effectiveness demonstrated through successful application to 10 existing sources of natural flake graphite from Europe, Africa, Asia and South America
- EcoGraf process suitable for purification of fines (by-products), providing options to generate additional revenues from high purity fine graphite products
- Engineering studies completed to construct facilities in Western Australia and Asia, with Europe to follow





Product qualification

Over 80 graphite product samples, including various grades of spherical graphite, tested successfully by battery anode manufacturers in South Korea and Japan

Product Spec (SpG15)

Carbon Content	>99.95%
Moisture	<0.2%
pH-Value	6-8
d10	> 9 micron
d50	14.5 – 15.5 micron
d90	< 25 micron
Tap Density	>0.93 g/ml
SSA	< 7 m^2/g
Fe	<15 ppm
Ni	< 6 ppm
Zn	< 5 ppm
Cr	< 5 ppm
Al	< 10 ppm
Ca	< 10 ppm
Cu	< 5 ppm
S	< 20 ppm
Si	< 20 ppm

Typical physical properties

Particle size distribution:
d10 = 10 micron
d50 = 15 micron
d90 = 23 micron

Tap density: 0.99 kg/l
Carbon Content: 99.97%
Moisture: 0.1%

- ✓ *Battery graphite samples (SpG14.5, 15 and 20) tested by battery anode manufacturers*
- ✓ *Testing confirms EcoGraf product meets all battery anode manufacturers' specifications*

Typical ICP analysis result of EcoGraf purified spherical graphite sample

Element	Ag	Al	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	Mg
ppm	>0.1	6.3	5.2	>0.6	5.9	>0.1	>0.2	0.3	0.3	7.1	6.6	1.5

Element	Mn	Mo	Ni	P	Pb	Si	Sn	Sr	Ti	V	W	Zn	Zr
ppm	0.2	<0.3	5	>0.8	>0.6	12	<0.5	<0.4	<0.4	<0.1	<0.5	<0.1	0.9

Battery Results of EcoGraf purified spherical graphite sample

Discharge Capacity 3rd Cycle	367 mAh/g
Discharge Efficiency 1st Cycle	94.5%

Spherical graphite price growth

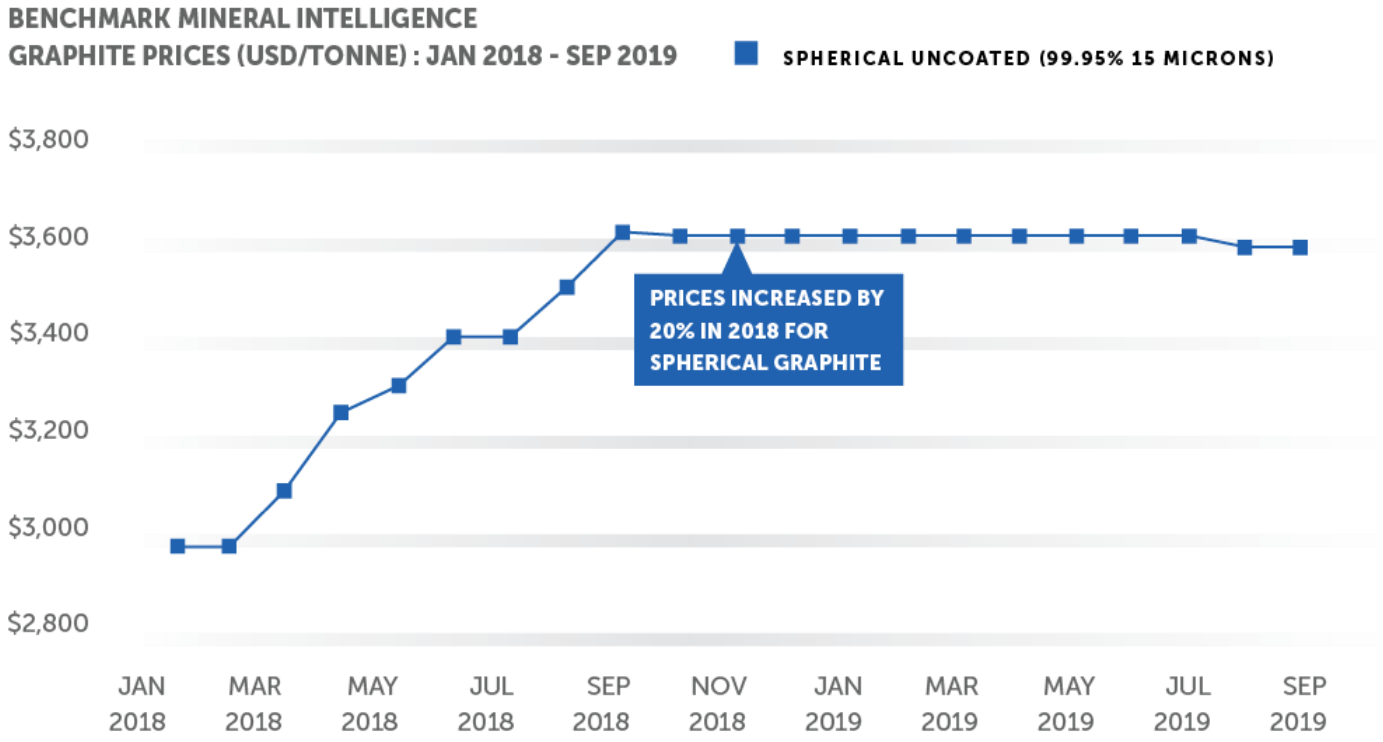
2018 Chinese demand increased 40% and Rest of World demand to exceed 100,000 tonnes by 2020

Latest news

- Prices increased 20% during 2018
- Benchmark Minerals reports battery graphite exports from China rose 16% from January-July 2019, with battery graphite growing over 200%

Positive Pricing Outlook

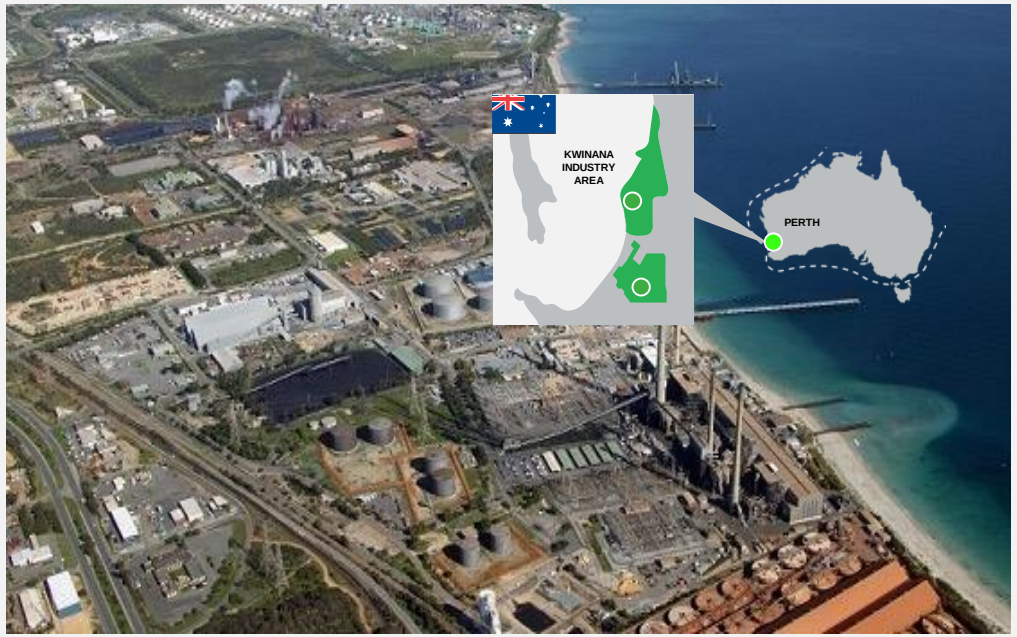
- Restriction in Chinese supply due to increasing environmental pressure with fluorine residues
- Limited availability of high-quality battery grade graphite to satisfy customer requirements



Kwinana, Western Australia

Federal and State Government support for new technology & value added manufacturing

- Lead Agency role by WA Government Department of Jobs, Tourism, Science and Innovation
- 6.7ha industrial site within Kwinana Industrial Area (KIA)
- Pre-development activities, including engineering, permitting and environmental approvals in progress
- R&D programs totaling A$8m given advance approval by AusIndustry
- Final Investment Decision by mid 2020

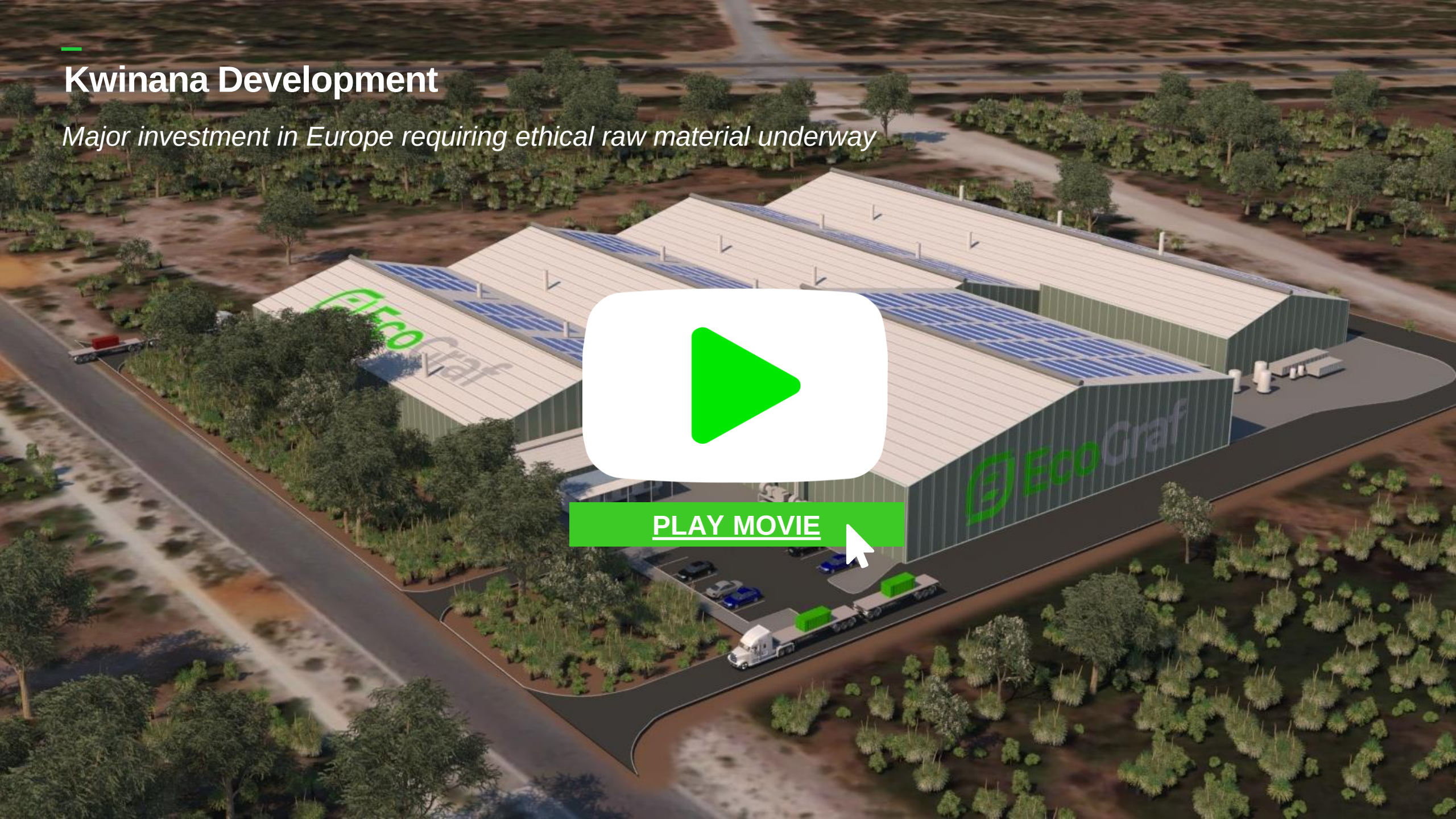


Western Australian advantages

- Geographic risk - Australia's reputation as a reliable supplier of high-quality industrial products
- Location/Infrastructure - KIA emerging as a global hub for value added processing of battery materials
- Logistics - KIA has direct port access
- Ethical transparency of raw material production supply chain
- Protection of intellectual property rights for additional downstream processing activities

Kwinana Development

Major investment in Europe requiring ethical raw material underway

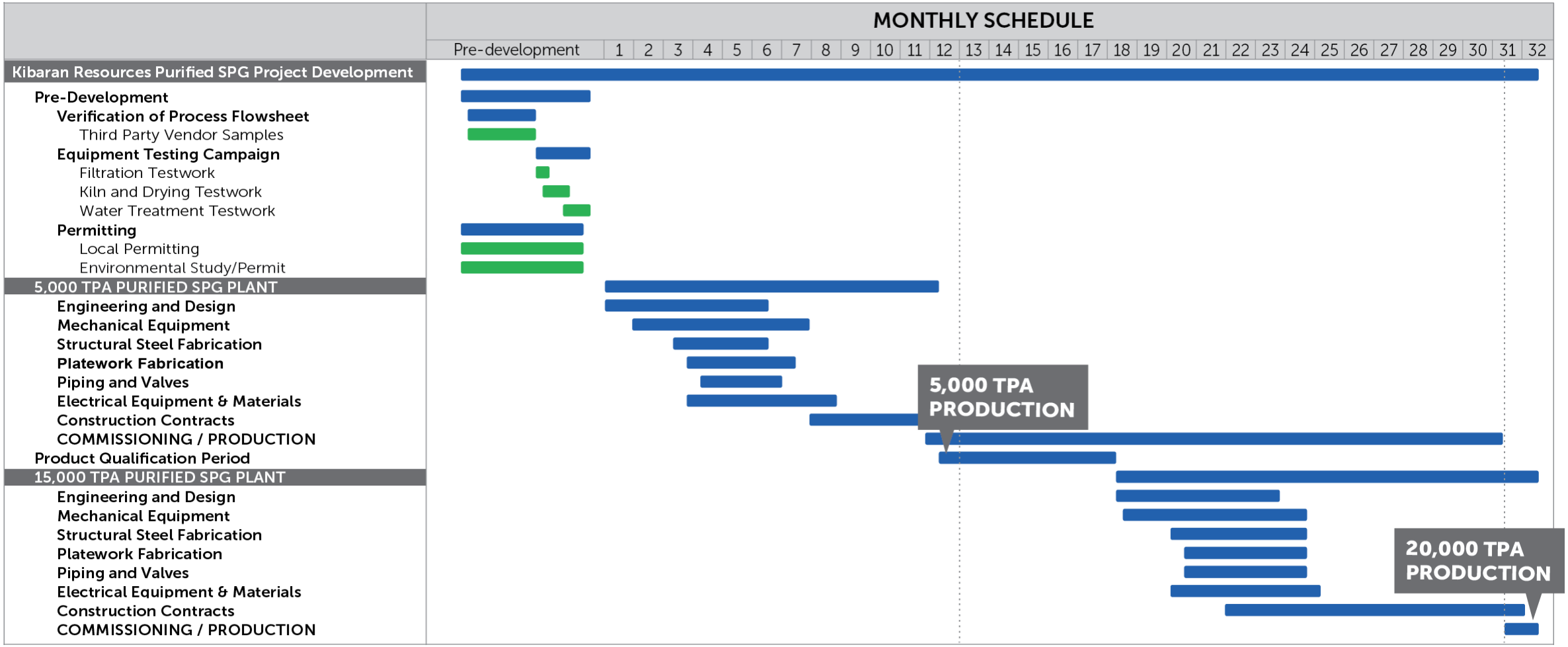


Kwinana plant location

Ideally situated for transport of product to and from Fremantle Container Terminal and direct access to reagent suppliers, infrastructure services and highly skilled labour

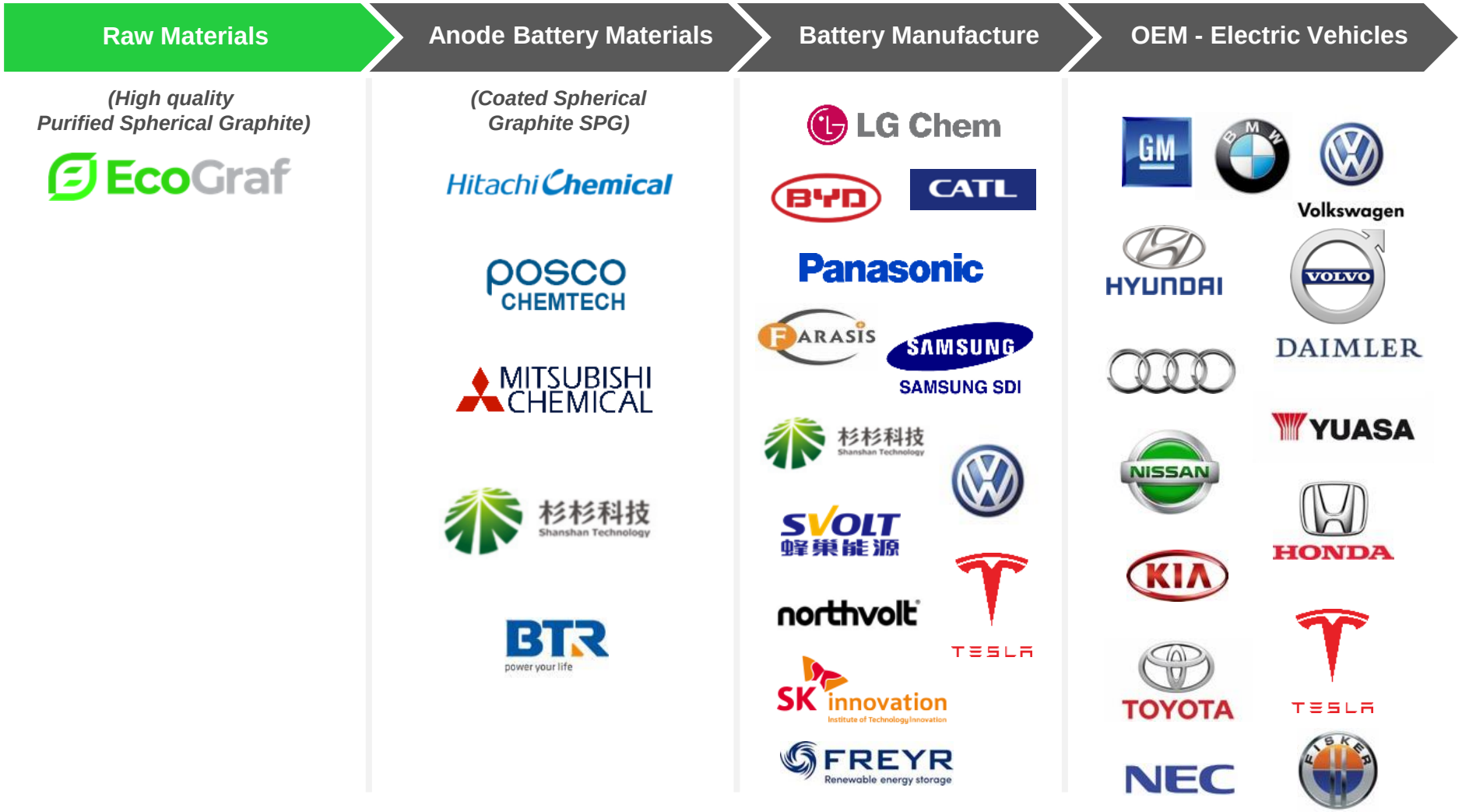
Development Timetable

Expansion to 20,000tpa commences 6 months after initial production



Position in Battery Supply Chain

Illustration of major market participants in the lithium-ion battery supply chain



TANZGraphite Flake graphite business summary

EPANKO GRAPHITE PROJECT	
Description	Natural flake graphite project
Location	Epanko Valley, Mahenge, Ulanga District, Morogoro Region, Southern Tanzania
Status – ready to construct	Bankable Feasibility Study completed June 2017 Independent Engineer's Due Diligence via KfW and SRK completed August 2017 Debt financing with German and Australian lenders
Social and environmental planning	Completed to Equator Principles standards and achieved: • International Finance Corporation Performance Standards • World Bank Group Environmental, Health & Safety Guidelines
Production	Stage 1 is 60,000 tonnes per year of natural flake graphite Scalable development model enables rapid expansion to meet market demand
Construction cost	Stage 1: US$89 million
Strong economic returns	US$44.5m pa EBITDA // 38.9% IRR // 3.5yr payback // US$211m pre-tax NPV_{10}
Committed sales and offtake with major international customers	Thyssen Krupp (Germany) and Sojitz Corporation (Japan) Offtake agreements in place for Stage 1

Summary and next steps

EcoGraf

BATTERY GRAPHITE FACILITY

Spherical Graphite (SPG)
(F) Fines (UN) Unpurified (P) Purified

	KWINANA	ASIA
Production	20ktpa	20ktpa
NPV_{10}	US$141m	US$194m
EBITDA	US$35m	US$42m

- **Sales and offtake arrangements**
- **Debt financing**
- **Pre-development activities**
- **Final Investment Decision expected in 1H CY2020**

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TANZGraphite

EPANKO GRAPHITE PROJECT

Natural Flake
Graphite (NfG)

	TANZANIA
Production	60ktpa
NPV_{10}	US$211m
EBITDA	US$44.5m

- **Secure financier debt financing approvals on final regulatory matter in Tanzania**

EcoGraf

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