

# WHAT DO COMPOSITES, RUBBERS, ENERGY STORAGE AND CONCRETE **ALL HAVE IN COMMON?**

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CORPORATE PRESENTATION  
JUNE 2021



# 'The answer... Graphene'

A growing number of established products and applications globally that are related to these markets, are being significantly enhanced by applying 'graphene' as a chemical additive.



What makes graphene compelling – current trends, facts and statistics:



Rubbers and elastomers show major improvements in tensile strength, elongation, abrasion resistance and tear strength with the **addition of graphene**



Independent studies found graphene can make selected products up to 30% stronger **and more resistant to wear**



Graphene is the thinnest material ever isolated, despite this, it is up to 300 times stronger than steel and the **most conductive material in the world**



Add just 0.01% of graphene into concrete - responsible for around 8% of the world's CO<sub>2</sub> emissions - **reduces its carbon footprint by approximately 30%**

# Global markets ‘industry eco-systems’

## MINING APPLICATIONS



## EVERYDAY APPLICATIONS

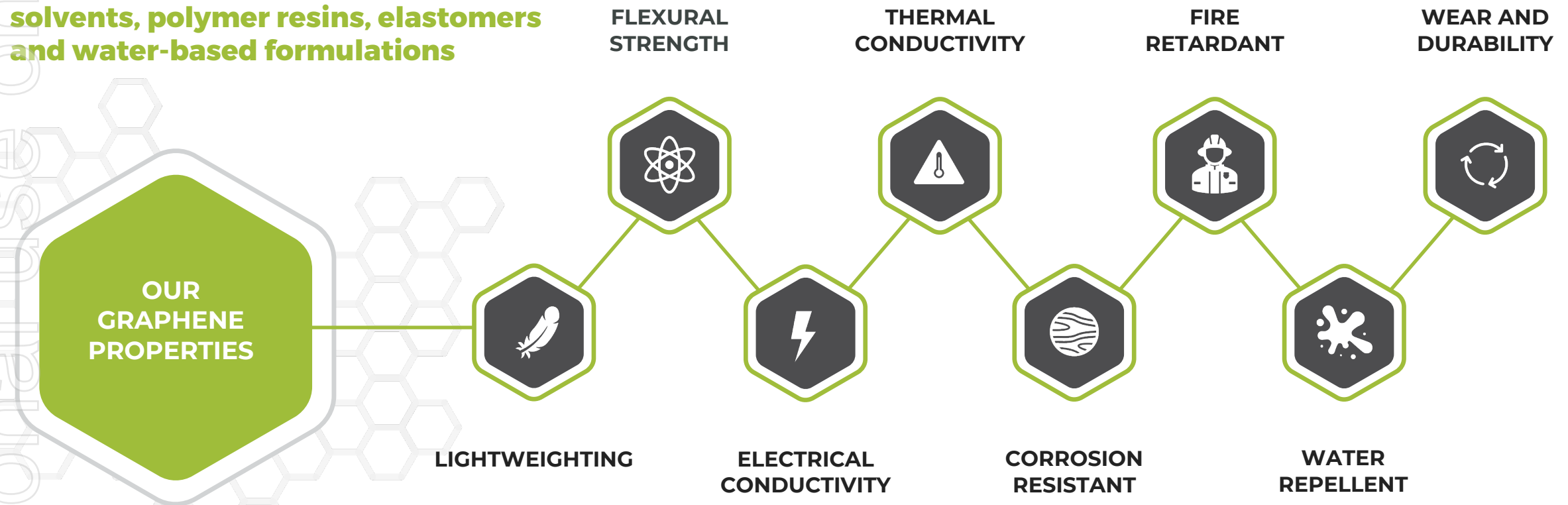


## ENERGY STORAGE APPLICATIONS



# Graphene properties

Our graphene has a unique chemical fingerprint which makes it easy to use and **disperse in a multitude of solvents, polymer resins, elastomers and water-based formulations**



# About FGR

first graphene

## WHO WE ARE

- First Graphene (ASX:FGR) is an Australian technology and manufacturing company.
- World leading graphene manufacturer based in Henderson, Western Australia.
- Tier 1 partner at the Graphene Engineering and Innovation Centre (GEIC), Manchester, UK.
- New substance registration in United Kingdom (UK-REACH), Europe (EU-REACH) and Australia (AICIS) in place.
- Active membership of ISO standards committee for graphene registration.
- Market capitalization: **AUD\$133m**
- Share price 50-day average: **AUD\$0.24**

## WHAT WE DO

- Producer of high performing PureGRAPH® products creating value in key markets.
- Quality leader in graphene materials – acknowledged by our customers.
- Robust 100 tonne/year modular manufacturing facility - built and operational today.
- Developed IP to mass produce commercial scale graphene for multiple products and industries.

## CORE MARKETS

- Rubbers and elastomers – automotive, industrial and leisure.
- Cement and concretes – recycled, precast panels, ready mix and grouts.
- Composites and plastics – plastic parts, carbon and glass fibre, including boats, surfboards and swimming pools.
- Coatings – thermal, antistatic and anti-corrosion.
- Energy storage – supercapacitors, battery anodes, petroleum feedstock derived green hydrogen.

## OUTLOOK

- With the production process and capacity “banked”, strongly focused on the commercialisation of PureGRAPH® and driving sales demand.
- Invest into new applications for emerging PureGRAPH® markets.

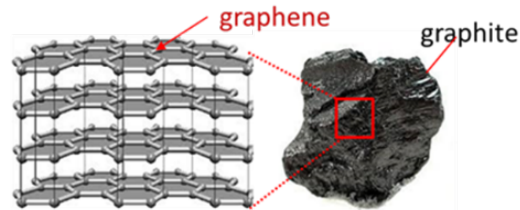


# FGR – World Leading Supply Capabilities



## VEIN GRAPHITE RM's

- Captive – ensures reliability
- No processing at mine
- In-house stock
- Low metals
- Large graphene plates



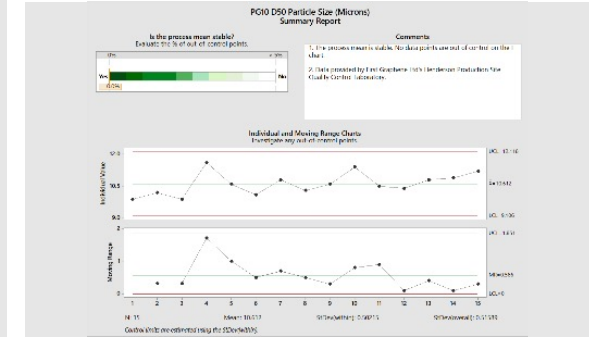
## ELECTROCHEMICAL EXFOLIATION

- High Yield
- Single Step
- Unique to FGR
- Scalable/Low Cost
- Low waste



## INDUSTRIAL FINISHING

- Well established
- Controlled Quality
- Finishing Options
- Scalable/Low Cost
- Low Waste



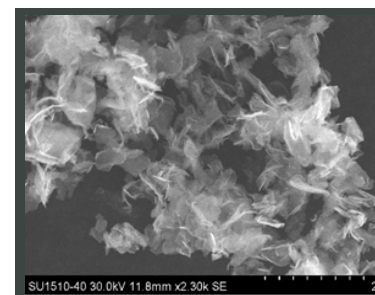
## QUALITY ASSURANCE

- 6-sigma approach
- Industry leading measurement techniques
- ISO/TC229 aligned
- At-line testing
- C of A for each batch

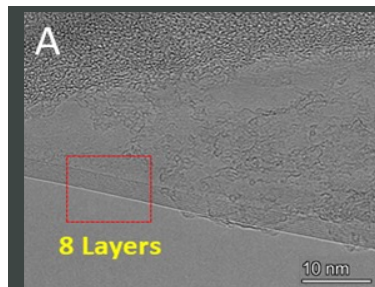
# About PureGRAPH®

first graphene

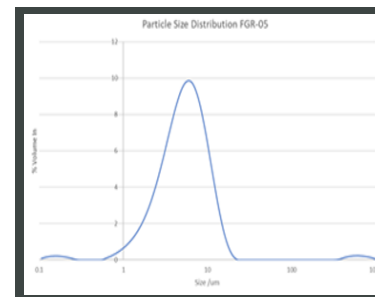
- Highest performing graphene additive available at tonnage quantities
- **PureGRAPH®** powders contain pristine, high aspect ratio platelets with typical thickness of 5-10 carbon atoms
- Lateral sizes are carefully controlled in the **PureGRAPH®** range at 5µm, 10µm, 20µm and 50µm ensuring consistent and repeatable performance
- Easily dispersed, delivering **multiple benefits** across a range of materials
- **PureGRAPH® AQUA** products allow easier dispersion into water and solvent-based formulations, beneficial for specific applications including coatings, cement and rubbers
- Continued **product development** to make tailored **PureGRAPH®** platelet sizes and functionalised platelets – to aid formulation and extend applications.



PureGRAPH® 5 Scanning Electron Microscopy (scale bar = 20µm): This analysis of dried product powder shows aggregated powders of high aspect ratio graphene platelets. These particles disperse readily in solvent and polymer media.



PureGRAPH® 5 Transmission Electron Microscopy image of platelet edges, showing 8 layers thickness. An average of 6 layers was reported - Courtesy of University of Adelaide.



PureGRAPH® 5 Malvern Mastersizer analysis showing  $D_v(50) = 5\mu\text{m}$  and  $D_v(90) = 11\mu\text{m}$  i.e no large particle tail is present. Laser light scattering is used as a powder size quality control tool. PureGRAPH® products have very reproducible  $D_v(50)$  and  $D_v(90)$ .

# Commercialisation process

first graphene

## Unrivalled production and scalable capacity

- Modular and scalable production process
- 100 tonnes per annum
- Low capital cost and short lead times to increase capacity

## Positive cashflow

- Operational performance with cost base of 20 tonnes

## Production efficiency

- Breakeven point at ~6 tonnes per annum

## Existing agreements

- planarTECH – Graphene coated textiles and wearables
- Aquatic Leisure Technologies – Aqua Technics pools
- Steel Blue – work boots and safety footwear
- newGen Group – mining wear liners and abrasion resistant surface treatments

## Global sales outlook and strategic appointments

- Recruitment of key Commercial Leads for material segments - Composites & Plastics, Rubbers & Elastomers, Cement & Concrete, Coatings and Energy Storage.
- Global reach through direct, distributor, reseller and structured channels.



# Executives and Board of Directors



**Michael Bell**

Chief Executive Officer

- International sales, engineering and business leadership expertise across a diverse range of industries
- 20 years' experience in high growth across both SME and Corp. environments - former Senior Vice President of ST Engineering Group Singapore
- Bachelor of Science - Physics, Management Science University of Canterbury.



**Paul Ladislaus**

Senior Process Engineer

- Chartered Chemical Engineer with 20 years' chemicals experience in operational, design, project management and R&D roles
- Extensive particle manufacturing expertise with Huntsman and Thomas Swan.
- Master's Degree in Chemical Engineering from the University of Cambridge.



**Aditya Asthana**

Chief Financial Officer

- More than 15 years experience in finance and business across Australia and Asia
- Significant expertise in risk management, transformation and business turnarounds with Orica Ltd and its international subsidiaries
- Held a number of CFO and Director roles in Australia, Singapore and Indonesia.



**Warwick Grigor**

Non-Executive Chairman

- Respected and experience mining analyst
- Graduate of the Australian National University, with degrees in law and economics
- Former Chairman of Cannacord Genuity Australia Ltd.



**Michael Quinert**

Non-Executive Director

- Founding partner of Quinert Rodda Lawyers
- Focus on capital raising and listing rule compliance
- Over 20 years experience with ASX-listed companies in the capacity as legal counsel and director, in the mining and technology sectors
- Non-Executive Chairman of West Wits Mining Ltd.



**Dr Andy Goodwin**

Non-Executive Director

- Ph.D. scientist with extensive leadership experience in innovation and new business growth with specialty chemicals industry
- 35 years in pharma & specialty chemicals with Sanofi, Dow Corning Corporation and Thomas Swan.
- Business leadership in carbon nanomaterials since 2012.

# Commercial sales team



## Neil Armstrong

Commercial Manager –  
Composites & Plastics

- Chemical engineer with 10 years commercial experience
- Significant role in developing FGR's production facility and facilitating early adopters of PureGRAPH®
- Previously held roles with Wear Systems Solutions



## Todd McGurgan

Commercial Manager –  
Cement & Concrete

- More than 25 years experience in the global cement industry
- Former leadership position at Holcim Australian & NZ
- Previous roles include BASF, Cement Australia, Sunstate Cement and Readymix



## Matt Curthoys

Commercial Manager –  
Marine Composites &  
Windfarms

- More than 25 years experience in the Marine industry
- Chartered Naval Architect in Europe and Asia
- Expertise designing, engineering and producing composite structures for America's Cup and other boats



## Recruiting

Commercial Manager –  
Rubbers & Elastomers

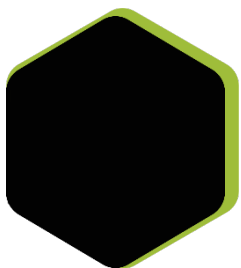
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## Recruiting

Commercial Manager –  
Energy Storage

- TBC



## Recruiting

Commercial Manager –  
Coatings

- TBC

# Financials

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<b>Share price (12 MAY 2021)</b>	<b>A\$0.24</b>
Issued shares – fully paid	<b>535m</b>
Listed options (25c) August 2021	<b>101m</b>
Unlisted options – (18c) – expiry February 2022	<b>2.0m</b>
Unlisted options (25c) – expiry November 2023	<b>15.0m</b>
12-month price range (A\$)	<b>0.06c – 0.33c</b>
Market capitalisation	<b>~A\$128</b>
Cash – June 2021	<b>A\$7.0m</b>

0.35  
0.30  
0.25  
0.20  
0.15  
0.10

**\$0.33**  
8 JAN 2021

**\$0.24**  
12 MAY 2021

AUG 2020

OCT 2020

DEC 2020

FEB 2021

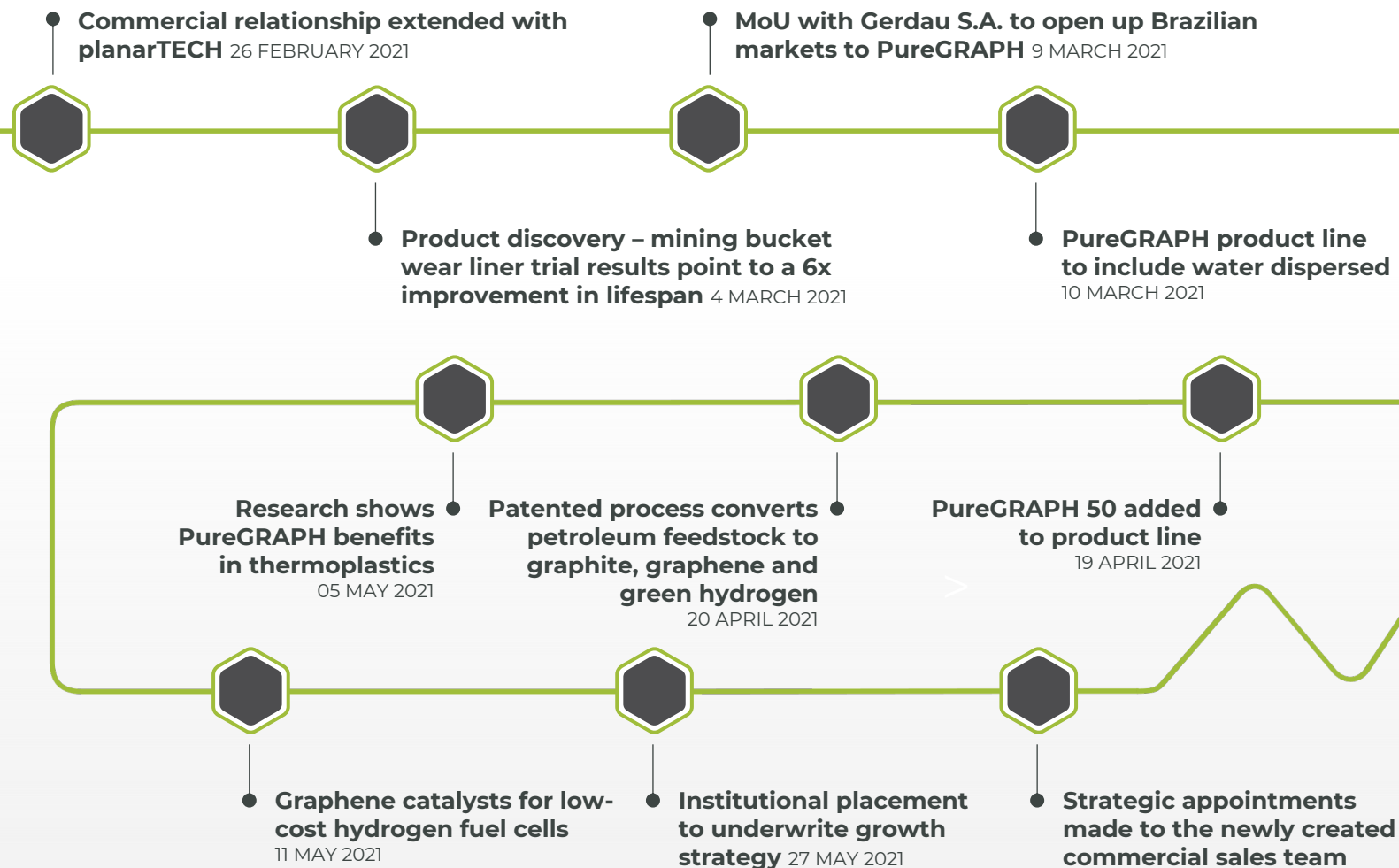
APR 2021

One year share chart – Source ASX and Westpac

# Progress and recent FGR accomplishments

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2021



# Sales and growth strategy

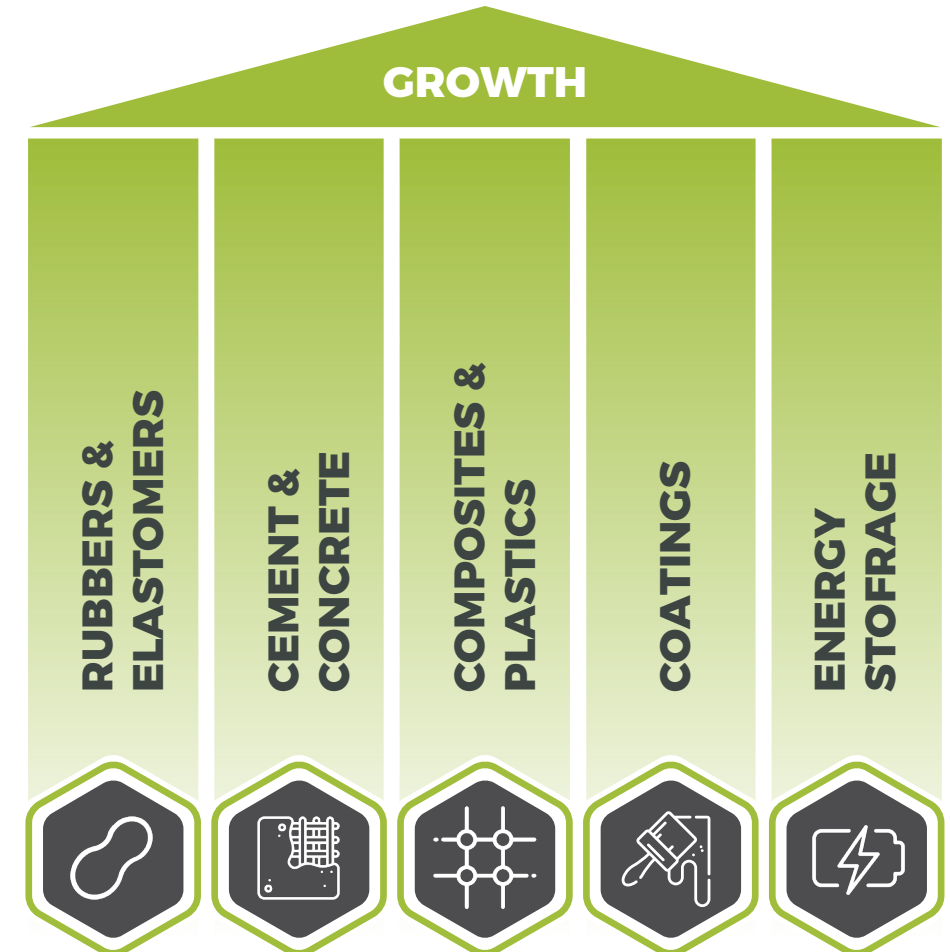
## 1. Global markets

Clear sales focus on immediate sectors include:

- **Rubbers & Elastomers**
- **Composites & Plastics**
- **Cement & concretes**
- **Coatings**
- **Energy storage**

## 2. New & innovative solutions

- Discovered new hydrodynamic cavitation process to convert petroleum feedstock into high-grade graphite and graphene.
- Applicable in lithium-ion battery anodes for electricity storage devices, also produces 'green' hydrogen' - appealing to oil producers looking to enter the green energy market.
- Successful tonnage sales in polymer strengthening and wear resistance.
- Qualifying trials with composites and concrete.
- Progress in novel supercapacitor and battery materials.



# Investment highlights

first graphene



1.

## COMMERCIAL GRADE PRODUCTION SCALE

FGR is the world's largest producer of commercial grade graphene – PureGRAPH® is a commercial grade, high volume and high quality/repeatable specifications adaptable to many products and industries



2.

## EXPANDING GLOBAL SALES CAPABILITY

We're on an aggressive sales campaign to secure global market share – given the capability of our production facility we're ready to diversify our client base and grow



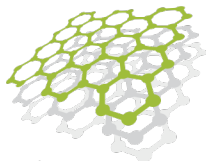
3.

## COMMITTED TO RESEARCH AND PRODUCT DISCOVERIES

Ongoing research of new applications for driving greater demand of graphene led products and technologies – Green Hydrogen and process to convert petroleum feedstock (crude oil) into graphite/graphene materials

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**first graphene**

The world's leading graphene company

## **Corporate Headquarters & Manufacturing Plant**

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