

## June 2022 Quarterly Activities Report

Advanced materials company First Graphene Limited (ASX: FGR, "First Graphene" or "the Company") is pleased to provide this update on its financial and operational performance for the quarter ending 30th June 2022.

### HIGHLIGHTS

- **Record Q4 revenue of circa A\$359,000<sup>1</sup>, closing FY22 with circa A\$723,000<sup>1</sup> total revenue, which is 111% revenue growth against FY21**
- **Q4 revenue breakdown consists of 46% from Composites and Plastics, 31% from Cement/Concrete, 12% across Coatings, Adhesives, Sealants and Elastomers (CASE), and 11% in Energy Storage and other revenue streams**
- **Forward-looking orders received for fulfilment within FY23 totalling circa A\$160,000**
- **Joint Development Agreement signed with Greatcell Australia for development of perovskite solar cells**

### Financial performance

First Graphene closed out the last quarter of the 2022 financial year with a strong revenue performance thanks to several significant orders being received.

The strong Q4 result has driven total revenue growth for FY22 to a 111% increase over FY21, which is testament to the Company's ongoing commercialisation of its graphene technologies. It also signifies a shift in market sentiment as recognition and understanding increases in key industrial segments to the benefits offered by graphene solutions.

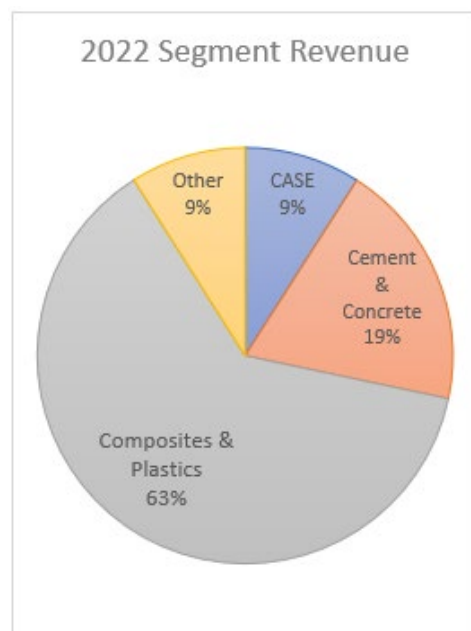
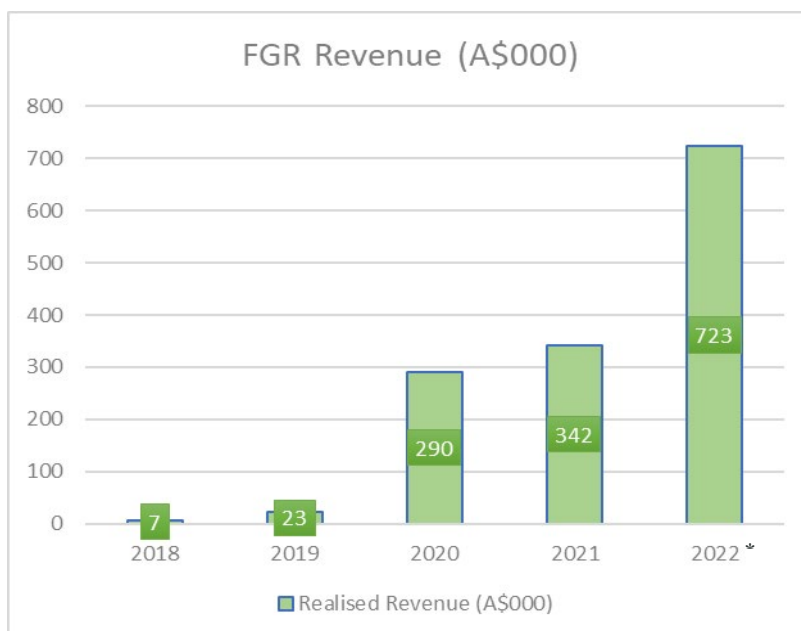
With the split of revenue across the various core segments, there is evidence that First Graphene's targeted strategies, go-to-market plans and focus on actively engaging with industry partners continues to gain traction. The revenue includes both sales of the Company's PureGRAPH® materials, and application/research development services across a broad range of materials technologies.

The Company also has significant forward orders for FY23 of circa A\$160,000, predominantly across the Cement/Concrete and Composites/Plastics segments.

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<sup>1</sup> Company's second-half revenue for FY22 is still subject to the annual audit by the company's external auditors

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## Segment Update

First Graphene's revenue performance has been driven by a continued focus on select segments that offer the greatest potential for continued global commercial gains.

Some segments are more commercially advanced than others, however each provides a strong "opportunity pipeline" over the coming financial year.

The Company has made the decision to combine the inks/coatings, and rubbers/elastomers/foams segments into one area of focus to better align with the industry standard segment: Coatings, Adhesives, Solvents and Elastomers (CASE). This segment will be led by Peter Osborne, Commercial Manager CASE.

Key milestones in each segment are listed below.

### Energy Generation and Storage

During the quarter, First Graphene entered into a Joint Development Agreement (JDA) with Greatcell Energy Limited ("Greatcell") to advance the development of graphene-enhanced solar cells.

Australian-based Greatcell specialises in the development and utilisation of photovoltaic technologies, specifically Perovskite Solar Cells (PSC), to convert low and ambient light to electricity. These solar cells are designed to be low cost and highly efficient compared to other solar technologies, but currently utilise a gold layer.

Under the agreement, First Graphene and Greatcell intend to jointly develop graphene composites and formulations to be used to manufacture more efficient and even lower cost PSCs. The graphene-based solutions remove the need for a gold layer, which could reduce the material input cost of the cell by circa 80%, and also enable a roll-to-roll type

manufacturing process, which is a continuous flow manufacturing method that is significantly more efficient both in terms of speed and cost to produce PSCs.

Pending a successful outcome of the R&D phase, First Graphene and Greatcell will pursue a mutually beneficial agreement to commercialise the technology.

According to a 2021 report by MarketWatch, the Perovskite Solar Cells market is expected to register a 42.1 per cent CAGR in terms of revenue, reaching a global market size of approximately US\$1.4 billion by 2026.

Research into supercapacitor applications continues. Through First Graphene's relationship with the Energy Innovation Centre at Warwick Manufacturing Group, funded by Innovate Edge, the Company has continued to optimise its graphene-metal-oxide pseudocapacitive active material for supercapacitors.

First Graphene has demonstrated that the materials continue to outperform activated carbon under controlled conditions and has identified a road map to optimise the product. The development focus is on ease of processing by downstream users. The Company has also invested in additional research resources to assist in manufacturing additional quantities of material for ongoing testing. Further updates are expected in FY23.

## **Composites and Plastics**

Orders from both early adopter clients and new opportunities in Q4 accounted for circa A\$166,000 in revenue.

Progress continues in collaboration with UK-based Senergy Innovations on the development of PureGRAPH® enhanced polymer solar thermal cells. Commercial-scale compounding trials have been successful, with injection moulding and extrusion trials currently in progress to confirm material properties and finalise processing conditions. Following this, Senergy will move to product trials across the UK.

While global events led to significant delays in commercial extrusion trials with Malaysian-based DSP to test the Hubron-developed HDPE masterbatch, full-scale trials have recently concluded, and material properties are being evaluated. First graphene expects to provide an update within the next quarter.

A custom fibre-grade polypropylene masterbatch has been developed using PureGRAPH® 5 for nonwoven applications. This is currently under evaluation with several industry partners.

The PureGRAPH® application range continues to grow with a focus on thermal and electrical conductivity, gas barrier, antibacterial, environmental resistance and reduced drag properties for composite and plastic applications.

## **Cement and Concrete**

The cement and concrete segment represents one of the most significant potential commercial opportunities for First Graphene, with applications offering considerable advantages in emissions reduction and the improvement of strength and durability.

Revenue over the quarter was circa A\$112,000, largely due to advanced commercial-scale trials with upstream additive manufacturers.

As part of the Innovate UK Project, announced in February 2022, a full-scale trial in a cement plant at Breedon Hope Works is on track to commence in November 2022. This will be one of the largest programs for graphene-enhanced cement/concrete undertaken globally to date.

The graphene grinding-aid addition method has been selected for use at the Breedon program and lab-scale trials at Fosroc International and Morgan Sindall Construction have been key to assessing the addition method. Further laboratory-trials are underway to define the precise graphene loading level.

Development of graphene-enhanced cement grinding aids continues with Fosroc for use in the production of reduced CO<sub>2</sub> dry-cement products. Fosroc's experience with grinding aids has led to new ideas for graphene-based grinding-aid formulations and verification of PureGRAPH® performance is being substantiated by trials with multiple large clients.

Performance verification of graphene in bespoke admixtures continues with precast, batched and admixture suppliers around the world. PureGRAPH® AM was released earlier this year as an admixture product for customer trials where the benefits of a superplasticiser and graphene are required.

## **Coatings, Adhesives, Sealants and Elastomers (CASE)**

This newly expanded segment is seeing strong interest and opportunity as a broad range of upstream and downstream manufacturers develop greater understanding of the benefits of graphene.

The segment delivered circa A\$41,000 in Q4 revenue, made up of orders from both early adopter clients and new opportunities.

Work continues with a textiles client to develop a conductive textile coating. Formulation is in progress with samples submitted to the client for trials and approval, with an expected release to market in the coming months.

Graphene enhanced applications for consumer sports apparel and luggage are advancing to production scale trials with plans to realise commercial sales in coming months.

Partners are also looking at the advantages of graphene technology in Electrostatic Dissipative (ED) coatings to enhance product features and benefits.

First graphene has been working on elastomer polyurethane system enhancements for use in mining applications and shoe sole manufacturing for high-performance athletic and branded footwear.

First Graphene have partnered with one of the largest producers of footwear manufacturing machinery based out of Achim in Germany, DESMA<sup>2</sup>, to trial and prove the compatibility of PureGRAPH® in current production processes.

The combination of current research, development and commercial trial work is expected to yield significant results within the foreseeable future. This will provide valuable data to validate the key properties of PureGRAPH®, including light weighting, fire retardancy and electrical dissipative behaviour.

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<sup>2</sup> <https://www.desma.de/en/>

In addition, the work will align further to the foams segment, with development of fire-retardant foam products already underway for a variety of uses in construction including insulation. Results from much of this work are pending and the Company anticipates advancing several commercial opportunities within the next quarter.

## Operations Update

First Graphene's contract with the Graphene Engineering Innovation Centre in Manchester has been extended by an additional 12 months beyond the end of the initial lease period. This enables the Company to continue its focus on R&D support for commercial teams and development of energy storage applications. The new lease period runs until 31 March 2023.

Electro-chemical cell optimisation trials continue at the Company's manufacturing facility in Henderson, Western Australia to investigate a potential increase the yield of graphene. The trials involve modifications to both the cell and electrode design and initial results are promising, with both an increase in the rate of graphene production observed and a corresponding reduction in electricity usage per kg of graphene produced.

## Supply Chain

While many organisations have been impacted by supply chain issues, First Graphene has been fortunate through the COVID pandemic and other global disruptions to maintain good reserves of feedstock and uninterrupted shipping.

First Graphene currently sources high-grade graphite from mines and partners in Sri Lanka, with ongoing shipments scheduled and no disruptions anticipated resulting from the current unrest in the country. Nevertheless, the Company has always ensured they have a significant buffer of feedstock stored locally to cater for production requirements.

At current output rates, and with a local stockpile of more than 600 tonnes of graphite, the Company is well-placed for several years of uninterrupted production of PureGRAPH<sup>®</sup> from our Western Australian facility and have ample supplies for ongoing research, development and manufacturing of specific, custom graphene formulations.

## Resourcing

First Graphene has successfully concluded the search for a global Commercial Director<sup>3</sup> to focus on driving growth in the cement and concrete segment. The Company has appointed a highly experienced candidate who comes from a construction chemicals company, with a focus on cement grinding aids and concrete admixtures. The Commercial Director will commence in mid-October, with a brief to help drive further adoption of First Graphene's products and services with the world's leading cement and concrete additive formulators.

The Company has also appointed additional research resources based in the UK, to drive our battery and supercapacitor materials research in order to achieving commercial adoption.

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<sup>3</sup>Note: This is not an appointment to the Company's Board and therefore does not have any Board level responsibilities or obligations.

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## Investors

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## Media

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## About First Graphene Ltd (ASX: FGR)

*First Graphene Ltd is the leading supplier of high-performing, graphene products. The company has a robust manufacturing platform based upon captive supply of high-purity raw materials and an established 100 tonne/year graphene production capacity. Commercial applications are now being progressed in composites, elastomers, fire retardancy, construction and energy storage.*

*First Graphene Ltd is publicly listed in Australia (ASX:FGR) and has a primary manufacturing base in Henderson, near Perth, WA. The company is incorporated in the UK as First Graphene (UK) Ltd and is a Tier 1 partner at the Graphene Engineering and Innovation Centre (GEIC), Manchester, UK.*

## PureGRAPH® Range of Products

***PureGRAPH®** graphene powders and **PureGRAPH® AQUA** pastes with lateral platelet sizes of 50µm, 20µm, 10µm and 5µm, as well as a range of **PureGRAPH® Masterbatch** and **Admixture** products are available in tonnage volumes. The products are high performing additives, characterised by their high quality and ease of use.*

### First Graphene Limited

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### Directors:

Warwick Grigor  
Dr Andy Goodwin  
Michael Quinert  
Michael Bell

### Trading Symbols

**Australia:** FGR  
**Frankfurt:** FSE:M11  
**USA OTCQB:** FGPHF

*With authority of the board, this announcement has been authorised for release by Aditya Asthana, Chief Financial Officer and Company Secretary.*

## Appendix 4C

### Quarterly cash flow report for entities subject to Listing Rule 4.7B

**Name of entity**

First Graphene Limited

**ABN**

50 007 870 760

**Quarter ended ("current quarter")**

30 Jun 2022

<b>Consolidated statement of cash flows</b>	<b>Current quarter \$A'000</b>	<b>Year to date (12 months) \$A'000</b>
<b>1. Cash flows from operating activities</b>		
1.1 Receipts from customers	201	599
1.2 Payments for		
(a) research and development	(333)	(1,476)
(b) product manufacturing and operating costs	(187)	(1,034)
(c) advertising and marketing	(112)	(478)
(d) leased assets	-	-
(e) staff costs	(435)	(1,782)
(f) administration and corporate costs	(377)	(1,335)
1.3 Dividends received (see note 3)	-	-
1.4 Interest received	1	2
1.5 Interest and other costs of finance paid	(3)	(10)
1.6 Income taxes paid	-	-
1.7 Government grants and tax incentives	608	1,276
1.8 Other (provide details if material)	(30)	(164)
<b>1.9 Net cash from / (used in) operating activities</b>	<b>(667)</b>	<b>(4,400)</b>
<b>2. Cash flows from investing activities</b>		
2.1 Payments to acquire or for:		
(a) entities	-	-
(b) businesses	-	-
(c) property, plant and equipment	-	(45)

<b>Consolidated statement of cash flows</b>	<b>Current quarter \$A'000</b>	<b>Year to date (12 months) \$A'000</b>
(d) investments	-	-
(e) intellectual property	-	(46)
(f) other non-current assets	-	-
2.2 Proceeds from disposal of:		
(a) entities	-	-
(b) businesses	-	-
(c) property, plant and equipment	-	-
(d) investments	-	-
(e) intellectual property	-	-
(f) other non-current assets	-	-
2.3 Cash flows from loans to other entities	-	-
2.4 Dividends received (see note 3)	-	-
2.5 Other (provide details if material)	-	-
<b>2.6 Net cash from / (used in) investing activities</b>	<b>-</b>	<b>(90)</b>

<b>3. Cash flows from financing activities</b>		
3.1 Proceeds from issues of equity securities (excluding convertible debt securities)	-	-
3.2 Proceeds from issue of convertible debt securities	-	-
3.3 Proceeds from exercise of options	-	1,617
3.4 Transaction costs related to issues of equity securities or convertible debt securities	-	-
3.5 Proceeds from borrowings	-	-
3.6 Repayment of borrowings	-	-
3.7 Transaction costs related to loans and borrowings	-	-
3.8 Dividends paid	-	-
3.9 Other (provide details if material)	-	-
- reduction in lease liability	(68)	(199)
- Cash received from third parties	-	3,000
<b>3.10 Net cash from / (used in) financing activities</b>	<b>(68)</b>	<b>4,419</b>



<b>Consolidated statement of cash flows</b>	<b>Current quarter \$A'000</b>	<b>Year to date (12 months) \$A'000</b>
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<b>4.</b>	<b>Net increase / (decrease) in cash and cash equivalents for the period</b>		
4.1	Cash and cash equivalents at beginning of period	7,739	7,077
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(667)	(4,400)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	-	(90)
4.4	Net cash from / (used in) financing activities (item 3.10 above)	(68)	4,419
4.5	Effect of movement in exchange rates on cash held	0	0
<b>4.6</b>	<b>Cash and cash equivalents at end of period</b>	<b>7,005</b>	<b>7,005</b>

<b>5.</b>	<b>Reconciliation of cash and cash equivalents</b> at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	<b>Current quarter \$A'000</b>	<b>Previous quarter \$A'000</b>
5.1	Bank balances	7,005	7,739
5.2	Call deposits	-	-
5.3	Bank overdrafts	-	-
5.4	Other (provide details)	-	-
<b>5.5</b>	<b>Cash and cash equivalents at end of quarter (should equal item 4.6 above)</b>	<b>7,005</b>	<b>7,739</b>

<b>6. Payments to related parties of the entity and their associates</b>	<b>Current quarter \$A'000</b>
6.1 Aggregate amount of payments to related parties and their associates included in item 1	173
6.2 Aggregate amount of payments to related parties and their associates included in item 2	-
<p><i>Note: if any amounts are shown in items 6.1 or 6.2, your quarterly activity report must include a description of, and an explanation for, such payments.</i></p> <p>Payment of executive Director salaries and consulting fees.</p>	

<b>7. Financing facilities</b> <i>Note: the term "facility" includes all forms of financing arrangements available to the entity. Add notes as necessary for an understanding of the sources of finance available to the entity.</i>	<b>Total facility amount at quarter end \$A'000</b>	<b>Amount drawn at quarter end \$A'000</b>
7.1 Loan facilities	-	-
7.2 Credit standby arrangements	-	-
7.3 Other (please specify)	-	-
7.4 <b>Total financing facilities</b>	-	-
7.5 <b>Unused financing facilities available at quarter end</b>		
7.6 Include in the box below a description of each facility above, including the lender, interest rate, maturity date and whether it is secured or unsecured. If any additional financing facilities have been entered into or are proposed to be entered into after quarter end, include a note providing details of those facilities as well.	-	

<b>8. Estimated cash available for future operating activities</b>	<b>\$A'000</b>
8.1 Net cash from / (used in) operating activities (item 1.9)	(666)
8.2 Cash and cash equivalents at quarter end (item 4.6)	7,005
8.3 Unused finance facilities available at quarter end (item 7.5)	-
8.4 Total available funding (item 8.2 + item 8.3)	7,005
8.5 <b>Estimated quarters of funding available (item 8.4 divided by item 8.1)</b>	10.507
<p><i>Note: if the entity has reported positive net operating cash flows in item 1.9, answer item 8.5 as "N/A". Otherwise, a figure for the estimated quarters of funding available must be included in item 8.5.</i></p>	

8.6 If item 8.5 is less than 2 quarters, please provide answers to the following questions:

8.6.1 Does the entity expect that it will continue to have the current level of net operating cash flows for the time being and, if not, why not?

Answer: n/a

8.6.2 Has the entity taken any steps, or does it propose to take any steps, to raise further cash to fund its operations and, if so, what are those steps and how likely does it believe that they will be successful?

Answer: n/a

8.6.3 Does the entity expect to be able to continue its operations and to meet its business objectives and, if so, on what basis?

Answer: n/a

*Note: where item 8.5 is less than 2 quarters, all of questions 8.6.1, 8.6.2 and 8.6.3 above must be answered.*

## Compliance statement

- 1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.
- 2 This statement gives a true and fair view of the matters disclosed.

Date: 18th July 2022

Authorised by: With authority of the board, this announcement has been authorised for release, by

Aditya Asthana  
Chief Financial Officer and Company Secretary

## Notes

1. This quarterly cash flow report and the accompanying activity report provide a basis for informing the market about the entity's activities for the past quarter, how they have been financed and the effect this has had on its cash position. An entity that wishes to disclose additional information over and above the minimum required under the Listing Rules is encouraged to do so.
2. If this quarterly cash flow report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, *AASB 107: Statement of Cash Flows* apply to this report. If this quarterly cash flow report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standard applies to this report.
3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.
4. If this report has been authorised for release to the market by your board of directors, you can insert here: "By the board". If it has been authorised for release to the market by a committee of your board of directors, you can insert here: "By the [*name of board committee – eg Audit and Risk Committee*]". If it has been authorised for release to the market by a disclosure committee, you can insert here: "By the Disclosure Committee".
5. If this report has been authorised for release to the market by your board of directors and you wish to hold yourself out as complying with recommendation 4.2 of the ASX Corporate Governance Council's *Corporate Governance Principles and Recommendations*, the board should have received a declaration from its CEO and CFO that, in their opinion, the financial records of the entity have been properly

maintained, that this report complies with the appropriate accounting standards and gives a true and fair view of the cash flows of the entity, and that their opinion has been formed on the basis of a sound system of risk management and internal control which is operating effectively.