



**Graphene Manufacturing Group**

**Management's Discussion and Analysis**

**For the three month periods ended**

**September 30, 2022 and 2021**

**(in Australian dollars)**

This Management's discussion and analysis ("MD&A") provides a review of Graphene Manufacturing Group Ltd's ("GMG" or the "Company") operations, performance and financial position for the three month periods ended September 30, 2022 and 2021. This MD&A should be read in conjunction with the condensed consolidated financial statements for the three month periods ended September 30, 2022 and 2021. The purpose of this document is to provide information on GMG's activities. The information contained herein is dated as of November 23, 2022.

Further information about GMG, that does not form part of, nor is incorporated within this MD&A, is available on GMG's website and on SEDAR (the official site of the Canadian Securities Administrators, which is publicly available), including all news releases.

The period from July 1, 2022 to September 30, 2022 has been referred to as Q1FY23 and the period from July 1, 2021 to September 30, 2021 has been referred to as Q1FY22. The financial year ending 30 June 2023 has been referred to as FY23 and the financial year ended 30 June 2022 has been referred to as FY22.

The financial statements of GMG and extracts of those financial statements provided in this MD&A have been prepared in accordance with IAS 34 *Interim Financial Reporting* as issued by the Accounting Standards Board ("IFRS"). The Company has consistently applied the accounting policies used in the preparation of its IFRS financial statements, including the comparative figures. References to the symbol AUD or \$ or A\$ means the Australian dollar, the official currency of Australia. References to the symbol CAD or C\$ mean the Canadian dollar. References to "K" indicate thousands. Except as otherwise set out herein, all amounts expressed herein are in Australian dollars, the functional and presentation currency of the Company. As a result of the rounding of dollar differences, certain total dollar amounts in this MD&A may not add exactly to their constituent amounts. Throughout this MD&A, percentage changes are calculated using numbers rounded as they appear. Readers are cautioned that this MD&A contains certain forward-looking information. Please see the "Forward Looking Statements" section which follows.

**(Unless specified otherwise, all amounts are expressed in Australian dollars)**

## CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING INFORMATION

This MD&A contains "forward looking statements" that reflect the Company's expectations and projections about its future results. When used in this MD&A, forward looking statements can be identified using words such as "may", or by such words as "will", "intend", "believe", "estimate", "consider", "expect", "anticipate", and "objective" and similar expressions or variations of such words. Forward looking statements are, by their nature, not guarantees of the Company's future operational or financial performance and are subject to risks and uncertainties and other factors that could cause the Company's actual results, performance, prospects or opportunities to differ materially from those expressed in, or implied by, these forward-looking statements. No representation or warranty is intended with respect to anticipated future results, or that estimates, or projections will be sustained.

In developing the forward-looking statements in the MD&A, the Company has applied several material assumptions, including the availability of financing on reasonable terms, the Company's ability and general business and economic conditions. Many risks, uncertainties and other factors could cause the actual results of GMG to differ materially from the results, performance, achievements or developments expressed or implied by such forward-looking statements. These risks, uncertainties and

other factors include, but are not limited to the following: overall economic conditions, technical de-risking and market acceptance for GMG's products and solutions, the introduction of competing technologies/products, environmental and regulation requirements, competitive pressures, change in market conditions and other factors that may cause the actual results, performance or achievements to differ materially from those expressed or implied in these forward-looking statements.

Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date of the MD&A or as of the date otherwise specifically indicated herein. Due to risks and uncertainties, including the risks and uncertainties elsewhere in this MD&A, actual events may differ materially from current expectations. The Company disclaims any intention or obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise. All forward-looking statements contained in the MD&A are expressly qualified in their entirety by this cautionary statement.

## CONTENTS

BUSINESS OVERVIEW .....	4
Company Brief.....	4
Business Highlights.....	5
Environmental, Safety, Governance Commitment.....	9
FINANCIAL HIGHLIGHTS .....	11
Income Statement.....	11
Balance Sheet.....	11
Summary of Cash Flows .....	12
Selected Quarterly Financial Information .....	12
OPERATIONS.....	13
Non-IFRS financial measures.....	13
FINANCIAL POSITION, LIQUIDITY AND CAPITAL RESOURCES.....	18
Liquidity and capital resources .....	18
Financial instruments and risk management.....	20
Off-balance sheet arrangements .....	21
Outstanding shares .....	21
RISKS AND UNCERTAINTIES.....	21

## BUSINESS OVERVIEW

### Company Brief

GMG is a clean-technology company which seeks to offer energy saving and energy storage solutions, enabled by graphene, including that manufactured in-house via a proprietary production process.

GMG has developed a proprietary production process to decompose natural gas (i.e. methane) into its elements, carbon (as graphene), hydrogen and some residual hydrocarbon gases. This process produces high quality, low cost, scalable, 'tuneable' and low/no contaminant graphene suitable for use in clean-technology and other applications. The Company's present focus is to de-risk and develop commercial scale-up capabilities, and secure market applications.

GMG is listed on the TSX Venture Exchange ("TSXV") under the ticker "GMG" and is also quoted on Tradegate in Germany under "OGF". GMG understands that its shares may have traded on OTCQB under "GMGMF". This quotation was initiated by third party market participants, not GMG. GMG share warrants trade on TSXV under the ticker "GMG.WT".

GMG's strategy has evolved over time. While GMG graphene may be suitable for a wide range of industries, GMG has narrowed its focus to target select applications and industries. GMG's management team ("Management") believes that focusing on downstream applications will provide a higher return on in-house graphene production. Also, the vertically integrated approach will enable it to build a long-term competitive advantage. In line with this approach, GMG's initial focus has been developing applications for energy savings and energy storage.

In the energy savings segment, GMG has focused on THERMAL-XR<sup>®</sup>, a graphene enhanced heating, ventilation, air conditioning and refrigeration ("HVAC-R") coating (or energy-saving paint), G Lubricant, a graphene enhanced lubricant additive that seeks to reduce fuel consumption and carbon emissions by reducing internal friction in engines, and G Coolant, a graphene enhanced engine coolant that seeks to improve the thermal efficiency of engines.

GMG and potential customers continue to undertake demonstrations on a range of HVAC coating projects as well as on large industrial applications to better understand the commercial opportunity of each taking into account mechanical, climatic, operational and economic circumstances of each. Similar demonstrations continue with respect to graphene enhanced lubricants. Notable sales are targeted to follow from these demonstrations.

In the energy storage segment, GMG and the University of Queensland are working collaboratively with financial support from the Australian Government to progress further research and development ("R&D") and commercialization of graphene aluminium-ion batteries ("G+Al Batteries"). The Company is excited by its recent R&D breakthroughs and achievements, its growing integrated ability to repeatedly manufacture battery prototypes in-house and accordingly is accelerating work on its strategic roadmap to the commercial development of G+Al Batteries as detailed in GMG'S BATTERY UPDATE: SIGNIFICANT BATTERY PERFORMANCE, CELL AND GRAPHENE PRODUCTION IMPROVEMENTS dated October 11, 2022.

GMG is focussing on near term revenue generating opportunities through the sale of THERMAL-XR® into HVAC and industrial heat management projects in Australia, the USA and various other international markets. In the medium term, GMG remains focused on transitioning from R&D to commercialisation of G+AI Batteries. Furthermore, GMG will continue to invest in new product development and graphene enhanced lubricants.

As at September 30, 2022, GMG had a cash position of \$8.4 million and no debt. Q1FY23 EBITDA was a loss of \$2,620K with the net loss for the quarter being \$3,559K primarily after adjusting for the accounting for warrants. As outlined in more detail below, the quarterly adjustments included in net loss required by IFRS to account for certain warrants on issue are a non-cash item and largely result from movements in GMG's share price during the period.

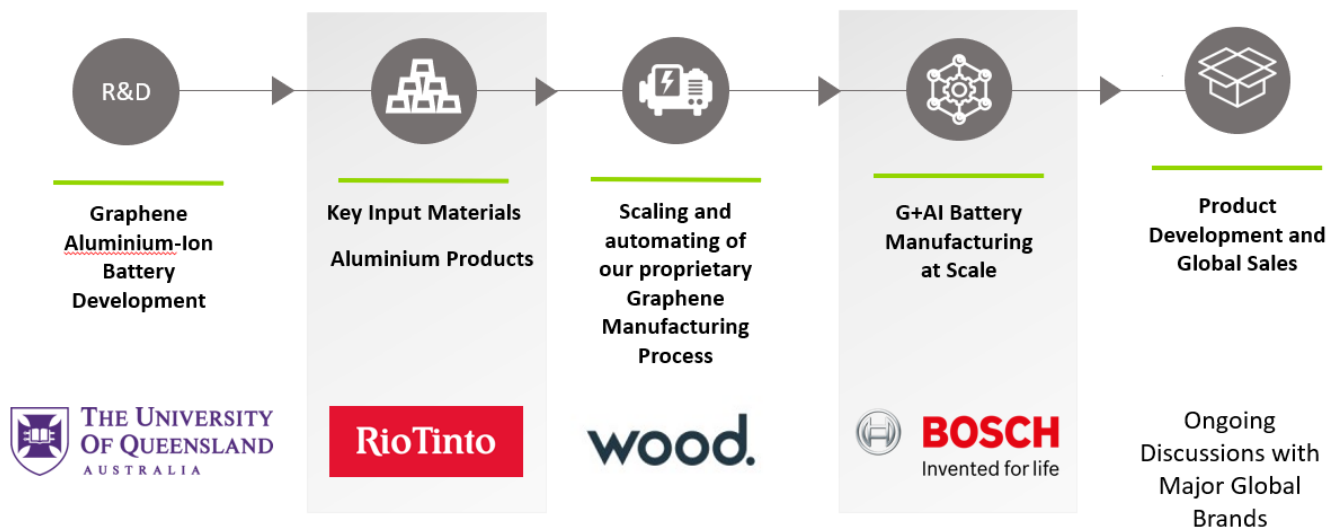
### Business Highlights

GMG continues to be focused on four Key Areas of Activity:

1. Customer and industry partner engagement for potential battery application development
2. G+AI Battery Development Centre: optimisation and testing of both coin cell and pouch cell battery prototypes
3. Securing revenue from *THERMAL-XR® powered by GMG Graphene sales*
4. Improving and scaling G+AI Battery grade graphene production

#### Key Activity 1: Customer and industry partner engagement for potential battery applications development

GMG continued to focus on developing and strengthening its battery value chain partnerships. GMG believes this approach will derisk, optimise, position and accelerate GMG's G-AI Battery technology success. Below is the current value chain partnerships.



Wood is supporting the recently announced graphene manufacturing expansion and the Company is currently engaging with Bosch to further develop its commercialisation road map for potential coin cell batteries.

The progress between BOSCH Australia Manufacturing Solutions ("BAMS") and GMG continued with a two-day workshop in October 2022 to progress the manufacturing and design for GMG's potential Coin Cell production facility. The workshop covered GMG requirements and gained insights from BAMS experience to enable customised manufacturing solutions for GMG's Graphene Aluminium-Ion Battery in the Coin Cell format. Both teams reviewed the Battery Development Centre's current and future prototypes and discussed scaling mass production capabilities, production testing (moving from research and development to full scale production). As GMG optimises the cell technology, BAMS will in parallel, look to optimise production designs. Potential pouch cell development will be subsequently covered.

Ongoing engagement between other partners continued throughout the quarter.

Non-disclosure agreements have been signed with a number of international, high profile potential customers across a wide range of industry segments to explore opportunities to collaborate, understand their application requirements and priorities for the subsequent development and commercial production of GMG's battery prototypes.

GMG is a founding member of the Australian Advanced Material and Battery Council that was officially launched at Queensland Parliament House in October, 2022. Craig Nicol is the council's Chair.

**Key Activity 2: G+AI Battery Development Centre: optimisation and testing of both coin cell and pouch cell battery prototypes**

During Q2FY22, GMG's Battery Development Centre ("BDC") for its G+AI Batteries became operational and the first G+AI Batteries prototypes in coin cell format were manufactured.

The BDC was further upgraded during Q3FY22 to become a fully climate-controlled facility providing optimum temperature, moisture and dust conditions to research and develop batteries in a spacious, fully integrated work environment, incorporating the equipment required to assemble and test batteries. The Company has also successfully increased its organisational capability by attracting new staff experienced in coin cell and pouch cell manufacturing, thereby enabling the acceleration of its battery performance optimisation programme.

During Q4FY22, GMG commissioned pouch cell development equipment and produced the first working pouch cell prototype.

GMG can now develop and test its own G+AI Battery in coin cell and pouch cell format in-house. This has allowed GMG to further improve and manufacture coin cell prototypes in a proven, repeatable and timely manner that sets the Company up to accelerate the potential commercial development of G+AI Batteries, work with future customers and further build on GMG's internal expertise. Pouch cells are typically used in a wide range of potential applications such as personal electronics, grid storage batteries and can also be used in electric vehicles and are in an earlier phase of development by GMG.

In October 2022 GMG provided the latest progress and performance update on its Graphene Aluminium-Ion Battery technology being developed by GMG and the University of Queensland and the GMG battery grade graphene production quality program. Notably, this update included information about GMG's G+Al Battery regarding:

- Ongoing development from GMG's Battery Team has resulted in a significant increase in battery performance of GMG's Graphene Aluminium-Ion Battery. Latest testing data has demonstrated a calculated energy density that has increased by 93% from 150-160 Wh/kg to 290-310 Wh/Kg since the last battery update on the 22nd of June 2021.
- Power density has also increased to around 9,350 W/kg, a 33% increase since previous update.
- Battery cell enhancements and repeatability.
- Growing confidence in repeatability of battery grade quality graphene production at scale.
- Next steps toward commercialisation, including to undertake further engineering and development activities to achieve a coin cell capacity for the desired product application(s) being targeted for initial customer sales, and the Company hopes to make significant progress on the pouch cell in 2023.

GMG will continue to work on various scientific and engineering methods to optimise capacity, energy and power density, and overall design of the coin cell and pouch cell products.

In addition to the announcement GMG released on YouTube a demonstrator video of its 2016 Coin Cell prototype fast charging capabilities.



With this progress and current plans the company aims to progress from the current viability prototype and early commercial prototype stages to subsequent stages of cell development(s).

**Key Activity 3: Securing revenue from THERMAL-XR® powered by GMG Graphene (TXR)**

During the quarter GMG achieved sales revenue as a result of a successful paid proof of concept in the industrial heat market segment in late 2021 and the client looking for step up to a large scale installation. This project has enabled GMG to explore industrial heat exchanger requirements for THERMAL-XR®. GMG will continue to work with the client to over the coming months to assess the THERMAL-XR® performance under high heat loading. Success in this area would open the door to very significant industrial markets.

GMG also continues to steadily build a pipeline of HVAC-R opportunities and is in discussion with a number of potential HVAC-R distributor partners in Australia and internationally, to formalise agreements.

GMG and potential clients continue to undertake demonstrations of THERMAL-XR<sup>®</sup> powered by GMG Graphene to assess the commercial opportunity taking into account a range of real world factors (see GMG's website for examples of successful projects) and the performance of the THERMAL-XR<sup>®</sup> in different conditions. Momentum is building in the Singapore market with several of these trials now converting to sales. Results supported by GMG management and a number of external parties generally demonstrate improved heat transfer in space cooling (air-conditioning) and cooling units thereby delivering energy and emission reductions and cost savings. Learnings regarding specific location climatic conditions, HVAC equipment, and economic parameters continue to be derived and are being used for prioritising subsequent efforts.

To further support, build and convert the opportunity pipeline and speed up market adoption additional appointments were made in the Energy Savings Teams with an Australian Sales Manager and a Product Development Manger.

As announced in September, GMG has completed the acquisition of the manufacturing intellectual property and brand rights of OzKem Pty Ltd.'s ("OzKem") THERMAL-XR<sup>®</sup> coating products. OzKem developed the THERMAL-XR<sup>®</sup> coating system products using GMG graphene together with OzKem's base HVAC (Heating Venting and Air Conditioning) coating. GMG is an international distributor of THERMAL-XR<sup>®</sup> products with a number of global commercial demonstrations underway or initial sales completed. GMG now owns the THERMAL-XR<sup>®</sup> brand, will buy the base coatings product from OzKem, and will manufacture the THERMAL-XR<sup>®</sup> products containing GMG graphene. Since September, Good progress has been made in establishing the in-house blending capability to manufacture THERMAL-XR<sup>®</sup>. A project is now well underway to install and commission the required equipment to manufacture THERMAL-XR<sup>®</sup> in-house with first production expected in the first quarter of 2023. All required equipment has been specified, assessed and ordered.

**Key Activity 4: Improving and scaling G+AI Battery grade graphene production**

October's press release provided a positive update on GMG's ability to develop a scalable process to make graphene from natural gas to a definable and tuneable graphene type for the GMG G+AI Battery in a repeatable fashion. Further testing is planned in the near term to further validate this confidence.

GMG has also assessed battery performance with several different grades of GMG produced graphene using industry standard tests and have demonstrated repeatable and reproducible performance. GMG has increasing confidence that it has found an economically sustainable path to scale the graphene process.

GMG also compared the performance of the GMG made graphene, to graphene made by other processes by several other companies and identified GMG's graphene as having more favourable specific discharge capacity, ie. a higher energy density performance. The Company expects ongoing iteration and improvement over time of both the graphene quality from the GMG graphene production process, as well as the G+AI Battery performance as GMG further develops, deploys and scales both of these technologies.



## *G™ LUBRICANT*

This product is under development and testing both internally and externally with prospective customers. Good results have been achieved by customers in Malaysia and orders are now in the system. Results achieved so far are encouraging. A formalised trial is being developed jointly with Rio Tinto to build the business case for adoption of G Lubricant into Rio Tinto mining operations. Research is ongoing and there is no fixed end date. The blending facility that is soon to be installed for the production of Thermal XR will also provide advanced capability for the production of G Lubricant. These activities will be managed by the newly appointed and very experienced Product Development Manager.

### **Environmental, Safety, Governance Commitment**

“No Harm to People or Environment” remains at the core of GMG’s values. The board appointed Sustainability Committee continues to take a holistic view of sustainability factors with a vision to enrich our environment and society. The United Nations 17 Sustainable Development Goals (“SDGs”) were identified as the benchmark for goal alignment and enabled the Sustainability Committee to identify key focus areas.

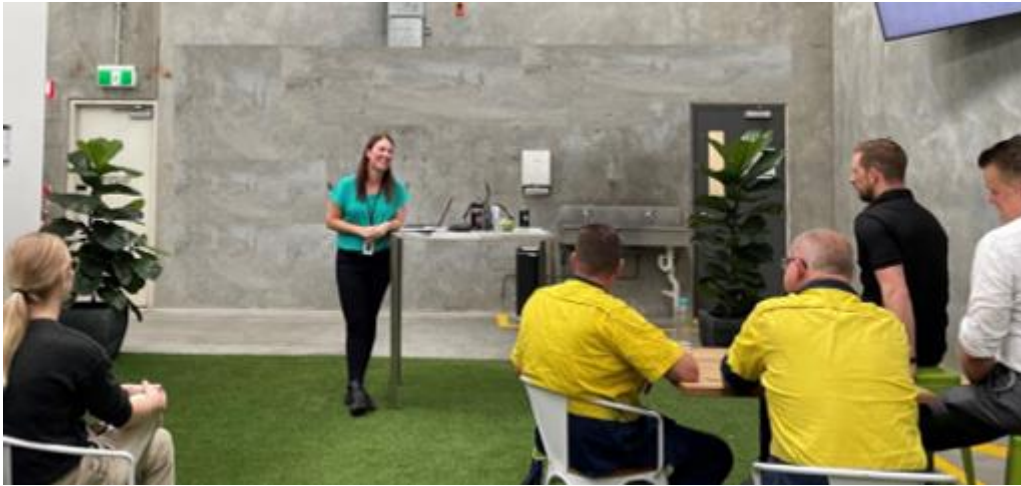
GMG is committed to focus on targeted SDGs where the Company can best contribute. These are currently identified as:

- # 7 Ensure access to affordable, reliable sustainable and modern energy for all.
- # 13 Take urgent action to combat climate change and its impact.
- # 9 Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.

These goals form part of the standing agenda within the Sustainability Committee and are aligned with goals in GMG’s business plan.

GMG is committed to providing transparent reporting on the Company’s carbon emissions footprint from its operations, verified by an independent party using the National Greenhouse and Energy Reporting (“NGER”) Framework and guidance notes on estimating emissions and energy from industrial processes. Once GMG’s baseline carbon emissions are verified, GMG is committed to continued focus on Environmentally Sustainable Governance practices to ensure ongoing improvement within its business activities. Through the application and use of GMG’s products and services the Company will continue to maintain transparent reporting on its carbon footprint and carbon footprint reductions through the application of energy saving products and services with our customers.

In November 2022, GMG held its first Stop For Safety training session. Personal risk assessment and management were the key focus.



## FINANCIAL HIGHLIGHTS

### Income Statement

\$'000 unless otherwise stated	3 month period ended September 30		Variation	
	2022	2021	\$'000	%
Revenue from operations	86	13	73	562%
Other income including subsidies, grants and incentives	142	4	138	*
Employee expenses	(1,846)	(941)	(905)	96%
Plant expenses	(124)	(44)	(80)	182%
Occupancy expenses	(84)	(38)	(46)	121%
Overheads expenses	(794)	(515)	(279)	54%
Change in fair value of warrants	(693)	2,403	(3,096)	(129%)
Finance costs	(28)	(5)	(23)	460%
Depreciation and amortisation	(218)	(36)	(182)	506%
<b>Profit / (loss) before income tax</b>	<b>(3,559)</b>	<b>841</b>	<b>(4,400)</b>	<b>(523%)</b>
Income tax expense	-	-	-	-
<b>Profit / (loss) for the period</b>	<b>(3,559)</b>	<b>841</b>	<b>(4,400)</b>	<b>(523%)</b>
Basic and diluted profit / (loss) per share (cents)	(4.51)	1.18	(5.68)	(484%)
<b>Non-IFRS financial measures <sup>(1)</sup></b>				
EBITDA	(2,620)	(1,521)	(1,099)	72%
Adjusted loss before income tax	(2,866)	(1,562)	(1,304)	83%
Adjusted basic and diluted loss per share (cents)	(3.63)	(2.18)	(1.45)	66%

(1) Refer to Non-IFRS financial measures for further information.

\* Percentage removed for presentation purposes only.

### Balance Sheet

\$'000	As at 30	As at 30
	September, 2022	June, 2022
Cash and cash equivalents	8,406	12,258
Trade and other receivables	303	143
Research and development grants receivable	1,554	1,412
Inventories	335	350
Other current assets	369	318
Property, plant and equipment	2,936	2,162
Intangible assets	1,984	33
<b>Total assets</b>	<b>15,887</b>	<b>16,676</b>
Trade and other payables	1,291	804
Lease liabilities	249	137
Financial liabilities	4,744	4,410
Employee benefit liabilities	250	207
Provisions	20	20
Long term liabilities	1,439	998
<b>Total liabilities</b>	<b>7,993</b>	<b>6,576</b>
<b>Total equity</b>	<b>7,894</b>	<b>10,100</b>

## Summary of Cash Flows

\$'000	For the year ended September 30		Variation	
	2022	2021	\$'000	%
Net cash used in operating activities	(2,677)	(1,489)	(1,188)	(80%)
Net cash used in investing activities	(1,322)	(112)	(1,210)	*
Net cash from financing activities	147	12,355	(12,208)	(99%)
<b>Net increase / (decrease) in cash and cash equivalents</b>	<b>(3,852)</b>	<b>10,754</b>	<b>(14,606)</b>	<b>(136%)</b>

\* Percentage removed for presentation purposes only

## Selected Quarterly Financial Information

The following table contains selected reviewed consolidated quarterly financial information for the last eight quarters through to September 30, 2022:

IFRS					
\$'000 unless otherwise stated		Revenue and other		Basic and diluted	Notes (IFRS)
		income	Profit / (loss)	profit / (loss) per share (cents) <sup>(1)</sup>	
Q1-2023	September 30, 2022	228	(3,559)	(4.51)	1
Q4-2022	June 30, 2022	1,430	1,764	2.25	2
Q3-2022	March 31, 2022	15	1,877	2.42	3
Q2-2022	December 31, 2021	54	(16,252)	(21.22)	4
Q1-2022	September 30, 2021	17	841	1.18	5
Q4-2021	June 30, 2021	836	(5,384)	(7.91)	6
Q3-2021	March 31, 2021	114	(1,134)	(1.91)	7
Q2-2021	December 31, 2020	93	(926)	(1.57)	8

NON-IFRS					
\$'000 unless otherwise stated		Profit / (loss)	Less: Adjustment items <sup>(2)</sup>	Adjusted Profit / (loss)	Adjusted basic and diluted profit / (loss) per share (cents) <sup>(1)</sup>
		Q1-2023	September 30, 2022	(3,559)	693
Q4-2022	June 30, 2022	1,764	(3,452)	(1,688)	(2.15)
Q3-2022	March 31, 2022	1,877	(3,777)	(1,900)	(2.45)
Q2-2022	December 31, 2021	(16,252)	14,190	(2,062)	(2.69)
Q1-2022	September 30, 2021	841	(2,403)	(1,562)	(2.18)
Q4-2021	June 30, 2021	(5,384)	4,058	(1,326)	(1.95)
Q3-2021	March 31, 2021	(1,134)	-	(1,134)	(1.91)
Q2-2021	December 31, 2020	(926)	-	(926)	(1.57)

(1) Adjusted for the impact of the Share Split Transaction as disclosed in the condensed consolidated financial statements for the three months ended September 30, 2022 and 2021.

(2) Refer to Non-IFRS financial measures for further information. Adjustment items relate to the change in fair value of warrants, in addition to, a one-off listing expense associated with Cuspis Capital Ltd of \$2,226K (in the three month period ended June 30, 2021).

**Notes (IFRS):**

1. Revenue during the quarter included \$86K for TXR sales and installation, in addition to \$142K of additional refundable R&D tax offset, recoverable from further assets qualifying for immediate tax write-off. The higher loss in Q1FY23 is driven by increased staff employed, premises occupied and plant and equipment compared to Q1FY22. This accelerated growth is reflected in the higher employee, overhead and depreciation expenses, in addition to a \$693K increase in the fair value of financial liabilities due to the higher share price since FY22.
2. Higher profit in Q4FY22 was driven by higher revenue, mainly comprised of the refundable R&D tax offset of \$1,412K for FY22, as well as the gain recognised from the reduction in the fair value of financial liabilities. The reduction in fair value was attributable to GMG's lower share price at reporting date compared to the prior quarter end on March 31, 2022. Higher operating expenses were mainly driven by the increase in staff resources in line with the strategic growth of the business.
3. Higher profit in Q3FY22 was driven by a reduction in the fair value of financial liabilities due mainly to changes in GMG's share price compared to the prior reporting date at December 31, 2021. Lower revenues are considered a normal fluctuation given GMG's various products being at an early stage of commercialisation.
4. The increase in Q2FY22 losses was mainly due to fair value adjustments required to reflect the higher value of financial liabilities (warrants), due to share price increases during the quarter.
5. Higher profit in Q1FY22 was driven by a reduction in the fair value of financial liabilities due to a lower share price than the prior reporting period at the end of FY21. Lower revenues were due mainly to the refundable R&D tax offset of \$736K and the \$84K Export Market Development Grant in the prior quarter and conclusion of a quarterly take or pay customer contract at 30 June 2021.
6. Higher revenue in Q4FY21 was mainly due to the refundable R&D tax offset of \$736K and the \$84K Export Market Development Grant. The higher loss was due mainly to \$2,226K listing expenses related to the Cuspis transaction (due to the premium paid to acquire the listing vehicle Cuspis Capital Ltd.), \$1,832K change in fair value of warrants issued and other legal, investor relations, compliance and consultancy costs associated with the Company's listing on the TSXV.
7. Revenue during the quarter included \$80K of sales of graphene powder to GMG's TXR supplier (OzKem), for the production of TXR. The higher loss in the quarter was due to \$275K of legal expenses incurred in preparing for listing, as well as for advisory services related to commercial and research collaboration agreements.
8. Revenue primarily consists of sales of graphene powder, as well as approximately \$48K in COVID-19 related government subsidies.

## OPERATIONS

### Non-IFRS financial measures

This MD&A refers to adjusted profit and loss for the period and adjusted basic and diluted loss per share that are measures with no standardised meaning under IFRS. They are non-IFRS measures and may not be comparable to similar measures presented by other companies. Their measurement and presentation is consistently prepared and is intended to provide additional information and should not be considered in isolation or as a substitute for measures of performance prepared in accordance with IFRS.

#### *Adjusted loss for the period and adjusted loss per share*

Adjusted loss for the period and adjusted loss per share are used by management and investors to measure the underlying operating performance of the Company. Adjusted loss for the period, excludes specific items that are significant but not reflective of the underlying operating performance of the Company, such as the impact of changes in the fair value of warrants. Adjusted loss per share amounts are calculated using the weighted average number of shares outstanding on a basic and diluted basis as determined by IFRS.

The following table provides the calculation of the adjusted loss for the period and adjusted basic and diluted loss per share, as adjusted and calculated by the Company:

\$'000 unless otherwise stated	3 month period ended September 30	
	2022	2021
Loss for the period	(3,559)	841
Less:		
Change in fair value of warrants	693	(2,403)
Total adjustment items	693	(2,403)
<b>Adjusted loss for the period</b>	<b>(2,866)</b>	<b>(1,562)</b>
<b>Loss per share</b> <sup>(1)</sup>		
Basic and diluted (cents) <sup>(2)</sup>	(4.51)	1.18
Adjusted basic and diluted (cents) <sup>(3)</sup>	(3.63)	(2.18)
Weighted average number of ordinary shares - basic and diluted	78,915,842	71,535,899

- (1) Due to the loss recognised for the years, all outstanding stock options, warrants, broker warrants, restricted share units and performance share units were excluded from the calculation of diluted loss per share due to their anti-dilutive effect.
- (2) Calculated using loss for the period over the weighted average number of ordinary shares as per IFRS.
- (3) Calculated using adjusted loss for the period over the weighted average number of ordinary shares (non-IFRS measure).

## Revenue

\$'000	3 month period ended September 30		Variation	
	2022	2021	\$'000	%
Revenue from operations	86	13	73	562%
Grants, subsidies and tax incentives	142	-	142	-
Interest, sundry and forex gains	-	4	(4)	(100%)

Revenue from operations was higher at \$86K in Q1FY23 compared to \$13K in Q1FY22 and consisted of THERMAL-XR® sales to a globally recognised customer trialling the product for the first time as a step towards a potential scale up in the resources sector. Discussions continue with a number of international, high profile potential customers across a wide range of industry segments, and initial sales such as these are a positive sign towards customers adopting the product and exploring the benefits through their own internal assessments of performance.

## Other income

Other income of \$142K in Q1FY23 consisted of additional refundable R&D tax offset recoverable from assets qualifying for the Full Temporary Expensing and Investment Allowance 100% immediate write off. The full R&D grant receivable of \$1,554K has been received in cash in November 2022.

## Operating costs

Global economic market conditions have resulted in an increase in operating expenses. Management continues to monitor these inflationary pressures and strictly control operating expenses where feasible.

Shown in the table that follows, are total operating expenses, which exclude finance costs and depreciation and amortization.

\$'000	3 month period ended September 30		Variation	
	2022	2021	\$'000	%
Employee expenses	1,846	941	905	96%
Plant expenses	124	44	80	182%
Occupancy expenses	84	38	46	121%
Overheads expenses	794	515	279	54%
<b>Total operating expenses</b>	<b>2,848</b>	<b>1,538</b>	<b>1,310</b>	<b>85%</b>

Following is a description of, and commentary on the high-level expense categories of GMG:

### *Employee expenses*

Employee expenses consist of salaries, on-costs (e.g. superannuation), and share based payments for all employees, directors and certain contractors. The total amount to be expensed as share based payments is determined by reference to the fair value of any options granted under the employee share option plan, and share units granted under the Share Incentive Plan:

- including any market performance conditions (e.g. the entity's share price); and
- excluding the impact of any service-based vesting conditions (for example, remaining an employee of the entity for a period of time).

The total expense is recognised over the vesting period, which is the period over which all of the specified vesting conditions are to be satisfied.

Total salary costs have increased with increases in the number of employees and any adjustments to salaries of existing employees during the relevant period.

### *Plant expenses*

This includes raw materials and production inputs, general warehouse expenses, Health, safety and environment ("HSE"), machinery parts and consumables, repairs and maintenance ("R&M") and other costs. While expenses on items such as consumables can be estimated, there are various expenses relating to R&M, machinery spares and components for battery prototype development that are variable and cannot be estimated with a high degree of certainty.

Plant expenses, excluding raw materials and production inputs, were \$99K in Q1FY23 and \$36K in Q1FY22. The \$63K increase was primarily \$37K in battery and machinery consumables, in addition to \$29K in health and safety assessment costs and equipment, offset by minor reductions in general warehouse expenses.

### *Occupancy*

Occupancy expenses relate primarily to lease costs for the production facilities located at Sumner, Queensland held under short-term leases. These are short-term leases to which the IFRS 16 *Leases* exemption has been applied, and as such, lease costs are recognised on a straight-line basis as an expense.

In July 2022, as part of the graphene manufacturing expansion project, the Company expanded its lease agreement at the Richlands Headquarters to include a new warehouse in the same office location. The new lease which covers a five year lease term, meets the recognition criteria as a right-of-use ("ROU") asset under IFRS 16. The ROU assets and corresponding lease liabilities are recognised on the balance sheet with lease payments split between lease liability principal repayments and interest expense and therefore do not appear under occupancy expenses. Depreciation of the leased asset is recorded on a straight-line basis.

Overall occupancy expenses increased from \$37K to \$84K from Q1FY22 to Q1FY23, primarily due to \$35K higher rental outgoings costs associated with the Company's Richlands headquarters lease, including the new warehouse lease, which has resulted in a corresponding increase in all occupancy expenses.

### *Overheads*

Insurance, IT, legal, travel, sponsorships, other R&D related expenses, and various other expenses have been classified as 'Overheads'. While expenses such as IT related expenses, travel and marketing are expected to increase as the business grows, others such as licensing and registration, website, other R&D, and filing fees will be uncorrelated to the number of employees, product offerings or number of customers. Following are various sub-items that constitute 'Overheads', for which the change from Q1FY22 to Q1FY23 has been greater than \$10,000:

- Consultants and contracting expenses increased from \$125K in Q1FY22 to \$154K in Q1FY23, reflective of the additional specialist technical consultants, North America sales representation and the additional director that were not yet engaged in the prior Q1FY22 period;
- Investor relations expenses in the prior Q1FY22 period were higher at \$207K due to the increased investor communications required with management post transition to public markets – this was subsequently scaled back to more normalised activity levels through revised investor relations agreements in FY22, reflective in the lower \$156K expense in Q1FY23;
- Legal expenses of \$107K in Q1FY23 were higher than the \$49K incurred during Q1FY22, due to additional advisory costs incurred for the renegotiation of the Richlands office and warehouse leased premises, Ozkem intellectual property and brand rights acquisition, as well as legal consultation for various commercial agreements and matters;
- Accounting and tax planning expenses decreased to \$16K in Q1FY23 from \$31K in Q1FY22 primarily due to the prior period including additional costs incurred in preparation for capital raising;
- International and domestic travel expenses collectively increased from \$1K in Q1FY22 to \$78K in Q1FY23 due to costs associated with travel for investor engagements and other travel required for research and development projects;



- Insurance increased from \$32K in Q1FY22 to \$54K in Q1FY23, mainly due to increases in policy coverage and limits, ongoing business growth, and expansion of business premises since Q1FY22;
- Filing fees of \$72K in Q1FY23 were higher than the \$2K in Q1FY22, due to the financial year-end filings fee (which increased from \$23K to \$51K) and \$15K of TSXV fees expensed (both payments of which were incurred in a later quarter in FY22), as well as \$6K for TSXV search fees required for newly appointed directors;
- IT expenses increased from \$17K in Q1FY22 to \$27K in Q1FY23, mainly due to the increased staff employed during the year;
- Licensing and registration expenses increased from \$6K in Q1FY22 to \$54K in Q1FY23 due to additional development applications in respect of expansion project planning, product development and commercialisation activities;
- Testing and quality control expenses increased from \$16K in Q1FY22 to \$40K in Q1FY23; and
- Research and development expenses were \$11K higher in Q1FY23 due to the membership with Stanford University for the 'Thermal and Fluid Sciences Affiliates Program' not yet established in the Q1FY22 period.

#### **Fair value of warrants**

The change in fair value of warrants of \$693K in Q1FY23 was mainly driven by the increase in GMG's share price from FY22 to Q1FY23, which resulted increased the fair value of the warrant liability during Q1FY23.

The share purchase warrants impacted by this adjustment are certain warrants that are recognised by the Company as a derivative liability due to their Canadian dollar denominated, fixed exercise price being different to the Company's functional currency which is Australian dollars. IFRS requires such instruments to be treated as a derivative liability and not equity, until the warrants are exercised or expire. The fair value of the warrants is determined using the Black Scholes option pricing model at the period-end date, or the market trading price in respect of GMG's traded warrants.

There are no cash obligations for the Company relating to this liability. Changes in fair value will continue to be reported in subsequent periods until the warrants are exercised or expire at which time the derivative liability ceases.

A number of factors influence the warrant liability valuation including share price, interest rates and a volatility assumption. For example, share price increases may result in an expense recorded in the profit and loss in conjunction with any increase in the fair value of the warrant liability, while share price decreases, warrant exercises or a reduced time to expiry with the passage of time would result in a gain and decrease in the fair value of the warrant liability.

For warrants exercised, the cumulative difference between the fair value of the warrant liability recognised at grant date, and the fair value based on the GMG share price at exercise date, which is applied to profit or loss, is then extinguished as a liability, with the offsetting entry applied to equity.

## FINANCIAL POSITION, LIQUIDITY AND CAPITAL RESOURCES

Cash and cash equivalents during the quarter decreased by \$3,852K in Q1FY23, with cash outflows being partly offset by proceeds from the exercise of warrants and options. Further information regarding the share capital movements, as well as warrants and options exercised during Q1FY23, is disclosed in the condensed consolidated interim financial statements for the three month period ended September 30, 2022.

Trade and other receivables increased by \$160K to \$303K as at September 30, 2022, primarily due to \$288K of GST receivables. The recoverable amount of GST was impacted by the \$200k GST applicable to the combined cash and share consideration paid to OzKem Pty Ltd, to acquire the manufacturing intellectual property and brand rights of THERMAL-XR<sup>®</sup> coating products ("OzKem Transaction").

The gross R&D tax incentive relating to FY22 of \$1,554K remains as a receivable as at Q1FY23, and has been subsequently received in cash during November 2022.

Inventories decreased by \$15K to \$335K as at September 30, 2022, due to the sales of TXR during Q1FY23 offset by increased graphene powder production.

Other current assets of \$369K is largely \$360K of prepayments, primarily \$241K for insurance, \$28K for research and development costs, \$25K for investor relations and platform costs, \$15K for filing fees and \$19K for lease payments made in advance including related outgoings.

Trade and other payables relate to expenses in the ordinary course of business, including accounts payable, wages payable, PAYG withholding tax payable, superannuation payable, and other accrued expenses. The balance of \$1,291K at September 30, 2022 were higher than June 30, 2022, mainly due to \$543K of share issue payables, consisting of \$500K being the remaining consideration yet to be issued for the OzKem Transaction. In addition to \$43k of funding from warrant exercises, which had required validations pending.

The financial liability relates to certain share purchase warrants issued with an exercise price denominated in Canadian dollars (as described in detail in a previous section).

### Liquidity and capital resources

GMG has generated limited revenue to date. Cash expenses mainly relate to R&D activities and other operational expenses. Capital raised has been mainly used to fund the development of the Company's proprietary graphene powder production technology, graphene enhanced products and solutions, and plant and equipment and expenses for developing, testing, manufacturing and marketing these products. Development of G+AI Battery technology, production and commercialisation planning has been an increasing focus area for GMG's employees and intended use of current cash resources.

Timing for commercialisation of G+AI Batteries will depend on the further successful development of a commercial G+AI Battery prototype including the process technology required to produce the necessary grade graphene powder, timing for completion of front end design and construction of a battery manufacturing facility (subject to a final investment decision).

Revenue in the near term is targeted to be generated from TXR. Growth in customer demand for this and other product offerings, and timing for commercialisation of G+AI Batteries, will influence the future funding requirements for GMG. The go-to-market strategy for TXR will change significantly now that GMG has moved from customer and distributor status to manufacturer status. A large part of the strategy will involve identifying and recruiting distribution channel partners and providing them the marketing, product and technical support necessary to grow revenues in their regions.

In Q1FY23, the Company incurred a loss of \$3,558,633 after income tax and net cash outflows from operating activities of \$2,676,487. As at September 30, 2022, the Company had net current assets of \$4,412,624 (June 30, 2022: \$8,902,964).

The ability of the Company to continue as a going concern is principally dependent upon current cash funding held and the ability to raise additional capital or secure other forms of financing, as and when necessary to meet the levels of expenditure required for the Company. This is required to continue its ongoing development and commercialisation of energy saving and energy storage solutions and to meet the Company's working capital requirements.

These conditions give rise to material uncertainty which may cast significant doubt over the Company's ability to continue as a going concern.

Whilst acknowledging these uncertainties, the Directors have concluded that the going concern basis of preparation of the MD&A is appropriate considering the following circumstances:

- As at September 30, 2022, the Company had cash on hand of \$8,406,295, which together with the Bought Deal Unit Offering as disclosed in the condensed consolidated financial statements for the three month periods ended September 30, 2022 and 2021, is sufficient to meet the ongoing corporate costs and expected project expenditure for twelve (12) months;
- As at the date of this report there are 4,498,559 options and 2,205,875 warrants on issue with exercise prices ranging from AUD\$0.36 to AUD\$2.91. If exercised these could raise up to \$8,791,315 in additional capital;
- The Company continues to closely monitor expenditure, and the Board is confident that it will be able to manage its cash resources appropriately;
- The Company continues to engage with potential energy saving products customers with the aim to increase sales; and
- To the extent required, the Company has capacity under the TSXV Listing Rules to raise further funds through the issue or placement of securities.

Should the Company be unable to continue as a going concern, it may be required to realise its assets and extinguish its liabilities other than in the ordinary course of business, and at amounts that differ from those stated in the MD&A. This MD&A does not include any adjustments related to the recoverability and classification of recorded asset amounts or classification of liabilities and appropriate disclosures that may be necessary should the Company be unable to continue as a going concern.

## Financial instruments and risk management

Financial assets and financial liabilities are recognised in the balance sheet when the Company becomes party to the contractual provisions of the financial instrument. GMG's financial instruments are its cash and cash equivalents, trade and other receivables, trade and other payables. The Company is exposed to a variety of financial risks, which result from its financing, operating and investing activities. The objective of financial risk management is to contain, where appropriate, exposures in these financial risks to limit any negative impact on the Company's financial performance and position.

The risks arising from the Company's financial instruments are mainly credit risk and foreign currency risk. The risk management policies employed by the Company to manage these risks are discussed below:

### *Credit risk*

Credit risk arises when a failure by counterparties to discharge their obligations could reduce the amount of future cash inflows from financial assets on hand at the balance sheet date. The maximum exposure to credit risk at balance date in relation to each class of recognised financial assets is the gross carrying amount of those assets.

As the company expands and increases sales, this will become a larger consideration. Management closely monitors, the activities of its counterparties and potential counterparties.

### *Liquidity risk*

Liquidity risk is the risk that arises when the maturity of assets and the maturity of liabilities do not match. Some financial assets may not be able to be monetised in a timely manner. Based on current cash resources, the companies outstanding warrants and options, and the recently announced "bought deal", Management considers liquidity risk to be low for at least 12 months. While the company does not have any credit facilities from banks, GMG ensures it maintains enough cash, to fulfil its near-term liabilities.

### *Currency risk*

Currency risk is the risk that the value of financial instruments will fluctuate due to changes in foreign exchange rates. Currency risk arises when future commercial transactions and recognized assets and liabilities are denominated in a currency that is not the Company's functional currency. The Company is exposed to foreign exchange risk, however, at present, this risk is relatively low as revenue is limited and most expenses are denominated in Australian dollars. However, in the past, the Company has sourced funding from investors and will increasingly source capital equipment from overseas. Because of the short term nature of these foreign currency exposures to date and low level of associated risk, the Company has not considered it necessary to enter into any currency hedging transactions. More recently the Company has become exposed to currency risk relating to the financial liability required by IFRS to be recognised in relation to certain warrants with exercise prices denominated in Canadian dollars. As there is no cash obligation associated with this liability, the Company considers the associated currency risk to be low.

### Off-balance sheet arrangements

As of the date of this MD&A, the Company did not have any off-balance sheet arrangements, except for the non-cancellable operating leases for the Sumner warehouse and portable office units. The Company has elected not to recognise right-of-use assets and lease liabilities for leases of low-value assets, as well as short-term leases, including for leased premises and portable office units, and recognises the lease payments associated with these leases as an expense on a straight-line basis over the lease term.

The Company recognises a contingent liability as at September 30, 2022, of approximately C\$102,195 relating to the repatriation of cash acquired in the Cuspis transaction at the time of listing, prior to the dissolution of Cuspis Capital Ltd on August 12, 2021. The contingent liability relates to a potential withholding tax obligation in Canada at the rate of 5% of the amount of cash distributed. The transaction is being treated as a return of capital for Australian tax purposes. At the date of this report, GMG is consulting with the Canadian tax authorities in relation to this amount.

### Outstanding shares

As at November 21, 2022, the Company has:

- 79,699,878 ordinary shares issued and outstanding;
- 4,498,559 options outstanding with expiry dates ranging between March 12, 2024 and March 11, 2028, with exercise prices between A\$0.36 and C\$1.00. If all the options were exercised, 4,498,559 shares would be issued for proceeds of A\$2,335,795<sup>1</sup>;
- 2,205,875 warrants outstanding with an expiry date of September 2, 2024, with exercise prices between C\$2.05 and C\$2.60. If all the warrants were exercised, 2,213,965 shares would be issued for proceeds of A\$6,455,520<sup>1</sup>; and
- 1,114,343 restricted share units and 111,867 performance share units outstanding with a nil exercise price and expiry dates ranging between October 20, 2026 and October 20, 2027.

## RISKS AND UNCERTAINTIES

The Company's business is subject to numerous risks and uncertainties, including those described elsewhere in this MD&A, as well as general economic and market risks. These risk factors could materially affect the Company's future operating results and could cause actual events to differ materially from those described in forward-looking information relating to the Company. For a detailed description of risks and uncertainties, please refer to the Prospectus available on the Company's SEDAR profile.

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<sup>1</sup> Assuming a C\$/A\$ exchange rate of 1.12.