



Graphene Manufacturing Group

Management's Discussion and Analysis
For the three and six month periods ended
December 31, 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 and six month periods ended December 31, 2022 and 2021. This MD&A should be read in conjunction with the unaudited condensed consolidated financial statements for the three and six month periods ended December 31, 2022 and 2021. The purpose of this document is to provide information on GMG's activities. The information contained herein is dated as of February 22, 2023.

Further information about GMG, including the Company's annual information form dated October 18, 2022, 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 October 1, 2022 to December 31, 2022 has been referred to as Q2FY23 and the period from October 1, 2021 to December 31, 2021 has been referred to as Q2FY22. The period from July 1, 2022 to December 31, 2022 has been referred to as 6MFY23 and the period from July 1, 2021 to December 31, 2021 has been referred to as 6MFY22. 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.

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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, scalable, 'tuneable' and low/no contaminant graphene with low cost inputs 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.

Within energy savings, GMG has focused on THERMAL-XR[®], a graphene enhanced heating, ventilation, air conditioning and refrigeration ("**HVAC-R**") coating (or energy-saving paint) and G[®] Lubricant, a graphene enhanced lubricant additive that seeks to reduce fuel consumption and carbon emissions by reducing internal friction in 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. Sales are targeted and have followed from some of 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 pleased with 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 (the "**October 2022 Press Release**").

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 proto types to commercialisation of G+Al Batteries. Furthermore, GMG will continue to invest in new product development and graphene enhanced lubricants such as G® LUBRICANT.

As at December 31, 2022, GMG had a cash position of \$12.5 million and no debt other than lease liabilities. This included a capital injection of approximately C\$5.75 million of gross proceeds from the completion of the Bought Deal Offering on November 30, 2022 (the “**Bought Deal Offering**”).

Q2FY23 EBITDA was a loss of \$3,678K. The net loss for the quarter was \$1,781K, including the change in fair value of 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 Objectives

GMG continues to be focused on four critical objectives:

1. Produce Graphene & Improve/Scale Production Process.
2. Build Revenue from Energy Savings Products.
3. Develop Next-Generation Battery.
4. Develop Supply Chain, Partners & Project Execution Capability.

Business Objective 1: Produce Graphene & Improve/Scale Production Process

The October 2022 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+Al Battery in a repeatable fashion.

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. Further testing is ongoing to further validate this confidence. GMG has increasing confidence that it has found an economically sustainable path to scale the graphene manufacturing and treatment process.

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+Al Battery performance as GMG further tests, develops, deploys and scales both of these technologies.

The Phase 1 expansion project to the Company’s Graphene manufacturing facilities announced in August 2022 remains on track, and is expected to provide additional graphene supply for the ongoing development of Company’s graphene aluminium-ion battery proto types (“G+Al Battery”), as well as the Company’s energy saving products. The total Phase 1 budget remains at approximately \$1.5 million and is expected to commence operations by mid 2023.

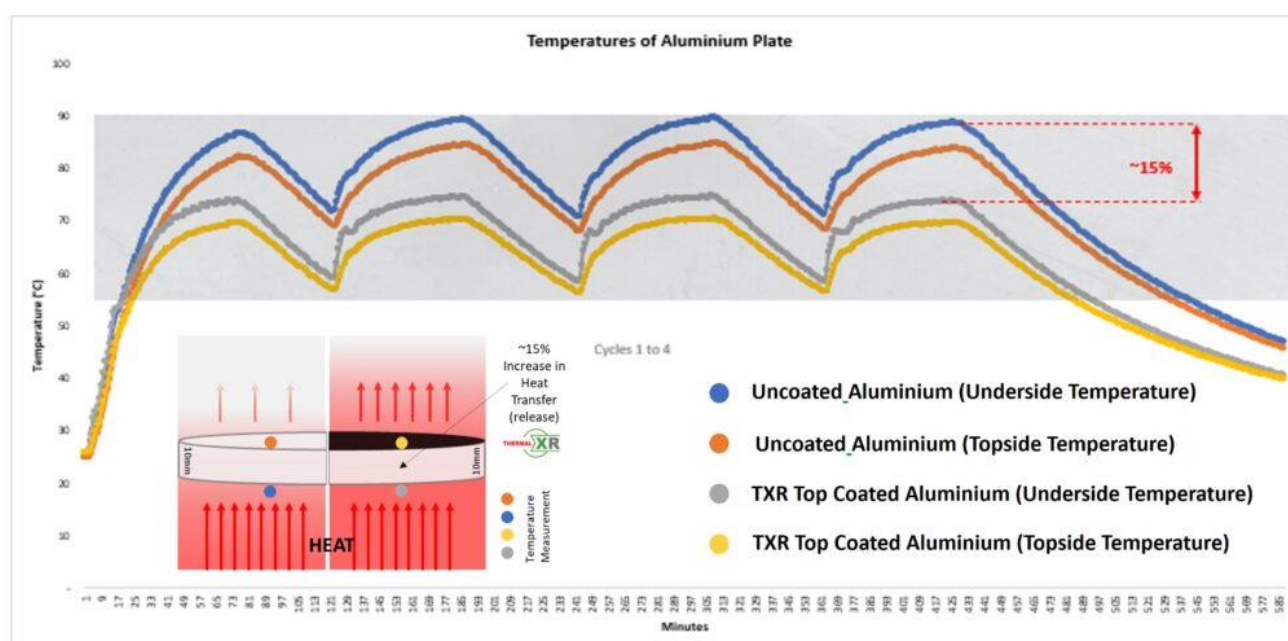
Business Objective 2: Build Revenue from Energy Savings Products

THERMAL-XR®

GMG continues to build on its knowledge of industrial heat exchanger requirements for THERMAL-XR®, and is working with various clients to assess THERMAL-XR® performance in protecting equipment from climatic factors as well as enhancing heat management compared with other HVAC-R industry solutions. Success in these areas 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. Currently, GMG is testing the improvement in defrosting or de-icing times of condenser coils achieved by the application of Thermal XR. A decrease in the de-icing time will deliver further energy savings in the operation of heat pumps in cold climates. This is significant because legislation is forcing the conversion from gas or oil fired heaters to electric heat pumps in many markets essentially doubling the market opportunity for Thermal XR. Initial trials are promising.

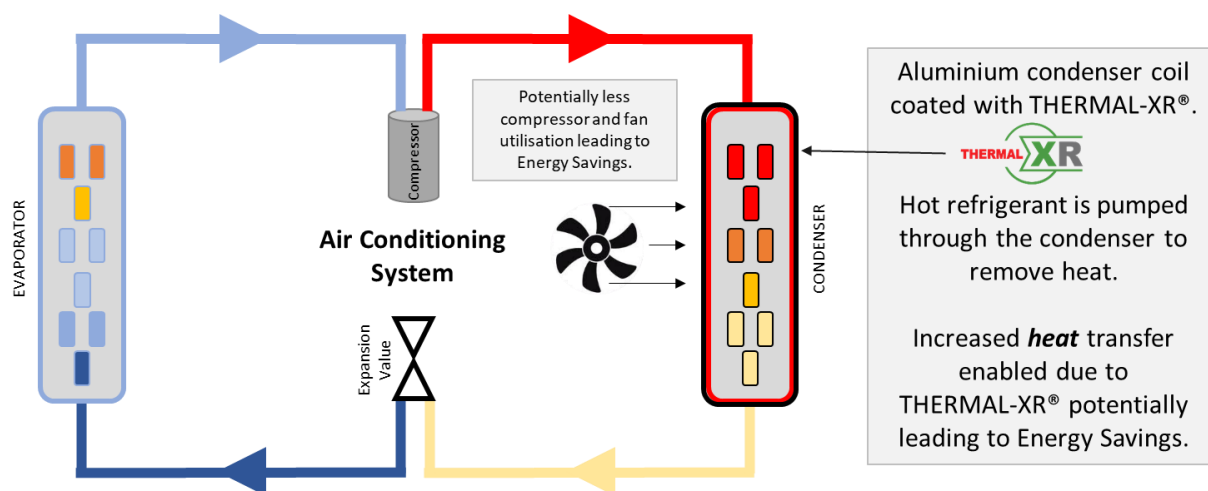
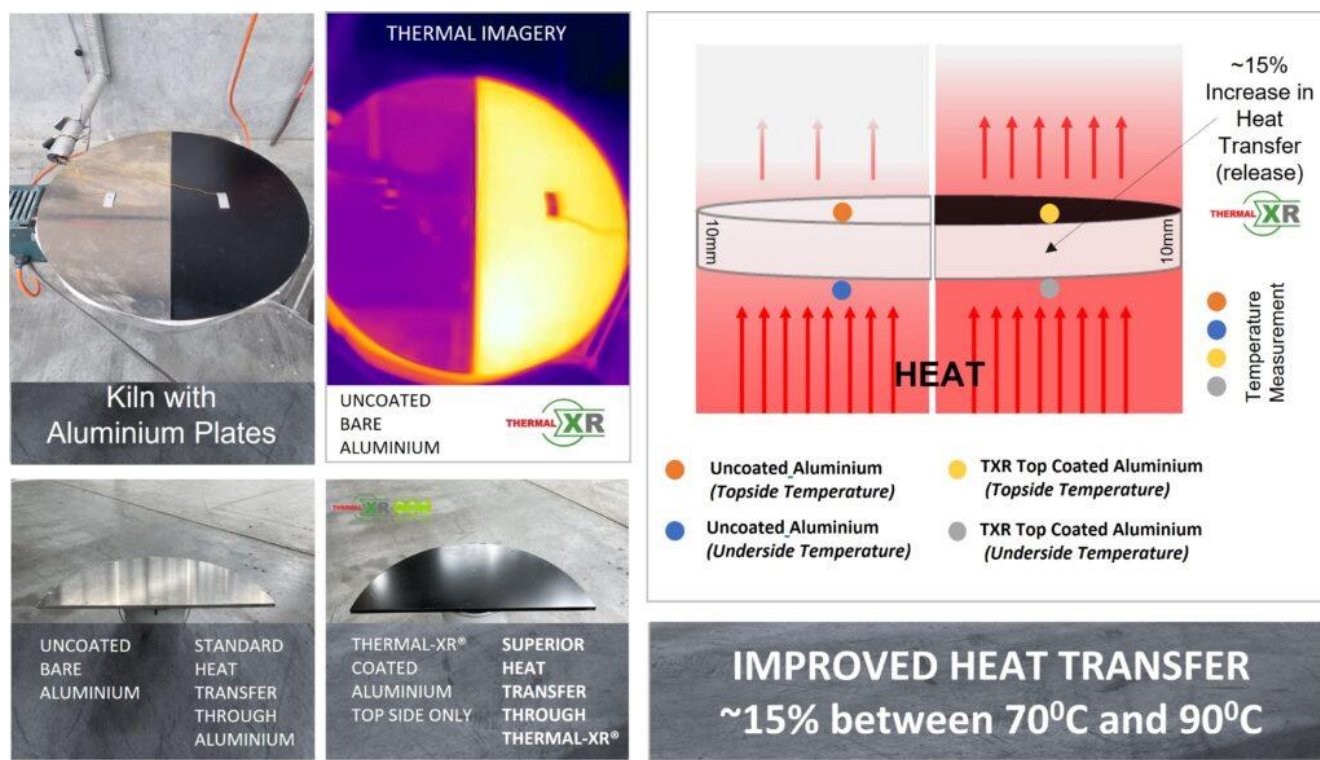
GMG and potential clients continue to undertake demonstrations of THERMAL-XR® powered by GMG Graphene to assess the commercial opportunity taking into account a range of real world factors (see GMG's website for examples of successful projects) and the performance of the THERMAL-XR® in different conditions.

In December 2022 GMG released the results of heat transfer demonstrations of Aluminium coated with THERMAL-XR® (TXR) powered by GMG Graphene, compared to uncoated bare Aluminium. The University of Queensland Materials Performance consultancy ("UQMP") verified that GMG's THERMAL-XR® when applied to aluminium improves heat transfer by approximately **15% in temperatures between 70° C and 90° C.**



When THERMAL-XR® coating was applied to the top side of the 10mm aluminium plate, an approximate 15% improvement in heat transfer was measured. This result was achieved in the temperature range

of 70° C to 90° C which is the typical operating range for a condenser coil used in a HVAC-R system. This improved heat transfer improves the operating efficiency of the system reducing energy consumption.



GMG is undertaking further assessments on other metals used in heat transfer applications and at various temperature settings and will publish market updates from time to time on these.

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.

GMG's expanded Energy Savings Team continues to focus on supporting, building and converting the opportunity pipeline and speed up market adoption.

As announced in September 2022, GMG has completed the acquisition of the manufacturing intellectual property and brand rights of OzKem Pty Ltd.'s ("OzKem") THERMAL-XR® coating products (the "**OzKem Transaction**"). Since September, good progress has been made in establishing the in-house blending capability to manufacture THERMAL-XR®. A project is now well underway to install and commission the required equipment to manufacture THERMAL-XR® in-house with first production expected in the first quarter of 2023. All required equipment has been specified, assessed and ordered.

G® LUBRICANT


Graphene Manufacturing Group

**UPDATED
G™ LUBRICANT
PACKAGING
+
EXPORT
SHIPMENT**



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ENERGY SAVING AND ENERGY STORAGE SOLUTIONS

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GMG has updated its G® LUBRICANT packaging to coincide with its recent export orders. After positive client trials, export orders were recently shipped to South-East Asia.

G® LUBRICANT is a concentrate of GMG Graphene and lubricating oil that is designed for ENERGY SAVINGS and EMISSION SAVINGS and wear prevention. The concentrate can be added to an existing fully formulated lubricant or tailored by Graphene Manufacturing Group as an addition to the client's choice of fluid. G® LUBRICANT protects the friction surfaces and reduces the friction coefficient by forming a protective layer between metal interfaces.

Business Objective 3: Develop Next-Generation Battery

GMG's Battery Development Centre ("BDC") for its G+Al Batteries has been operational since Q2FY22 and 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 development and performance optimisation programme.

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. Notably, this update included information 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.
- Calculated power density has also increased to around 9,350 W/kg, a 33% increase since previous update.

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

In December GMG provided a further update on its ongoing investment in the Company's BDC including an additional \$600,000 in capital expenditure, to accelerate the progress of semi-automatic pouch cell prototype production in the BDC.

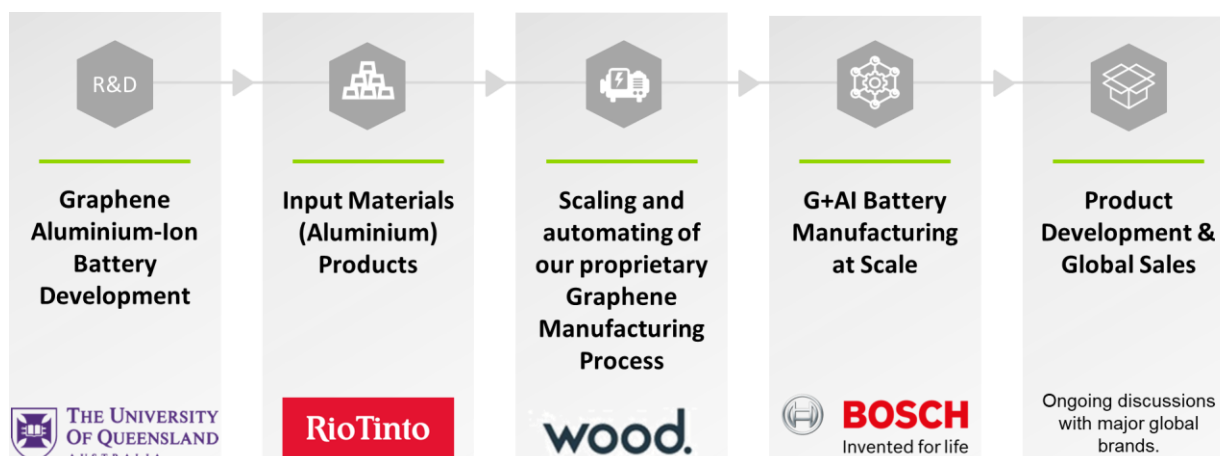
The additional CAPEX expenditure will assist with future optimisation, prototype development and production, and assembly times in the BDC. The additional equipment is expected to be operational mid 2023.

GMG continues to work on various scientific and engineering methods to optimise capacity, energy and power density, other standard battery performance criteria and overall design of the coin cell and pouch cell products.

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

Business Objective 4: Develop Supply Chain, Partners & Project Execution Capability

GMG continues to focus on developing and strengthening its battery value chain partnerships. GMG believes this approach will derisk, optimise, position and accelerate GMG's G-Al 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.

Ongoing engagement between other partners continued throughout the quarter.

In January 2023 GMG provided an update on the composition of the Company's leadership, technical and projects teams intended to support and accelerate the Company's next phase of development. GMG believes there are important business opportunities related to GMG's targeted 'energy saving' and 'energy storage' solutions, which continue to provide strong encouragement for the Company to invest resources to drive targeted sales from its energy saving business and support the continued maturation of GMG's graphene-Aluminium Ion battery technology.

To better support and accelerate these opportunities the previously separate Technology and Projects teams has been be combined into the Projects Team to better integrate the R&D of graphene production with development of the graphene production plant, the liquid graphene blend plant and the targeted development of an automated battery manufacturing pilot plant. This change is aimed at enhancing opportunities for improvement in process technology and project delivery and accelerate time to market for our future projects. In connection with this change in team composition, Bobby Bran has been promoted to the role of Chief Projects Officer, leading the combined Technology and Projects teams.

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.

The Company continues to assess the appropriate battery development and commercialisation pathway taking into account technical, engineering and customer perspectives. The Company aims to make next stage battery production decisions within 2023.

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

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 industrialisation 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 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.

FINANCIAL HIGHLIGHTS

Income Statement

\$'000 unless otherwise stated	3 month period ended December 31		6 month period ended December 31		Variation	
	2022	2021	2022	2021	\$'000	%
Revenue from operations	4	15	89	28	61	218%
Other income including subsidies, grants and incentives	-	39	143	43	100	233%
Employee expenses	(2,428)	(1,228)	(4,273)	(2,169)	(2,104)	97%
Plant expenses	(154)	(69)	(278)	(113)	(165)	146%
Occupancy expenses	(95)	(44)	(179)	(82)	(97)	118%
Overheads expenses	(1,005)	(696)	(1,800)	(1,210)	(590)	49%
Change in fair value of warrants	2,267	(14,190)	1,574	(11,788)	13,362	(113%)
Finance costs	(94)	(8)	(123)	(13)	(110)	846%
Depreciation and amortisation	(276)	(71)	(493)	(107)	(386)	361%
Loss before income tax	(1,781)	(16,252)	(5,340)	(15,411)	10,071	(65%)
Income tax expense	-	-	-	-	-	-
Loss for the period	(1,781)	(16,252)	(5,340)	(15,411)	10,071	(65%)
Basic and diluted loss per share (cents)	(2.22)	(21.22)	(6.71)	(20.81)	14.10	(68%)
Non-IFRS financial measures ⁽¹⁾						
EBITDA	(3,678)	(1,983)	(6,298)	(3,503)	(2,795)	80%
Adjusted loss before income tax	(4,048)	(2,062)	(6,914)	(3,623)	(3,291)	91%
Adjusted basic and diluted loss per share (cents)	(5.04)	(2.69)	(8.68)	(4.89)	(3.79)	77%

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

Balance Sheet

\$'000	As at 31	As at 30
	December, 2022	June, 2022
Cash and cash equivalents	12,547	12,258
Trade and other receivables	160	143
Research and development grants receivable	-	1,412
Inventories	340	350
Other current assets	285	318
Property, plant and equipment	3,503	2,162
Intangible assets	1,898	33
Total assets	18,733	16,676
Trade and other payables	1,201	804
Lease liabilities	257	137
Financial liabilities	4,110	4,410
Employee benefit liabilities	194	207
Provisions	20	20
Long term liabilities	1,372	998
Total liabilities	7,154	6,576
Total equity	11,579	10,100

Summary of Cash Flows

\$'000	6 month period ended December 31		Variation	
	2022	2021	\$'000	%
Net cash used in operating activities	(3,924)	(2,645)	(1,279)	(48%)
Net cash used in investing activities	(2,078)	(319)	(1,759)	(551%)
Net cash from financing activities	6,349	14,722	(8,373)	(57%)
Net increase / (decrease) in cash and cash equivalents	347	11,758	(11,411)	(97%)

Selected Quarterly Financial Information

The following table contains selected reviewed consolidated quarterly financial information for the last eight quarters through to December 31, 2022:

IFRS						
			Other		Basic and diluted	
\$'000 unless otherwise stated		Revenue	income	Profit / (loss)	profit / (loss) per share (cents) ⁽¹⁾	Notes (IFRS)
Q2-2023	December 31, 2022	4	-	(1,781)	(2.22)	1
Q1-2023	September 30, 2022	85	143	(3,559)	(4.51)	2
Q4-2022	June 30, 2022	17	1,413	1,764	2.25	3
Q3-2022	March 31, 2022	9	6	1,877	2.42	4
Q2-2022	December 31, 2021	15	39	(16,252)	(21.22)	5
Q1-2022	September 30, 2021	13	4	841	1.18	6
Q4-2021	June 30, 2021	38	798	(5,384)	(7.91)	7
Q3-2021	March 31, 2021	114	-	(1,134)	(1.91)	8
NON-IFRS						
			Profit /	Less:	Adjusted	Adjusted basic and
\$'000 unless otherwise stated			(loss)	Adjustment items ⁽²⁾	Profit / (loss)	diluted profit / (loss) per share (cents) ⁽¹⁾
Q2-2023	December 31, 2022		(1,781)	(2,267)	(4,048)	(5.04)
Q1-2023	September 30, 2022		(3,559)	693	(2,866)	(3.63)
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)

- (1) Adjusted for the impact of the Share Split Transaction as disclosed in the unaudited 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. The loss of \$1,781K in Q2FY23 was primarily \$3,682K of operating expenses, that were higher due to increases in staff resources, offset by a gain from the reduction of in the fair value of financial liabilities of \$2,267K arising from changes in GMG's share price since the prior reporting date at September 30, 2022.
2. Revenue during the quarter included \$85K for TXR sales and installation, in addition to \$143K 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.
3. 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.
4. 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.
5. 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.
6. 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 and other income 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.
7. Revenue and other income in Q4FY21 was mainly 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.
8. 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.

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 December 31		6 month period ended December 31	
	2022	2021	2022	2021
Loss for the period	(1,781)	(16,252)	(5,340)	(15,411)
Less:				
Change in fair value of warrants	(2,267)	14,190	(1,574)	11,788
Total adjustment items	(2,267)	14,190	(1,574)	11,788
Adjusted loss for the period	(4,048)	(2,062)	(6,914)	(3,623)
Loss per share ⁽¹⁾				
Basic and diluted (cents) ⁽²⁾	(2.22)	(21.22)	(6.71)	(20.81)
Adjusted basic and diluted (cents) ⁽³⁾	(5.04)	(2.69)	(8.68)	(4.89)
Weighted average number of ordinary shares - basic and diluted	80,343,896	76,585,046	79,629,869	74,060,473

- (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 December 31		6 month period ended December 31		Variation	
	2022	2021	2022	2021	\$'000	%
Revenue from operations	4	15	89	28	61	218%
Grants, subsidies and tax incentives	-	25	142	25	117	468%
Interest, sundry and forex gains	-	14	1	18	(17)	(94%)

Revenue from operations was lower at \$4K in Q2FY23 compared to \$15K in Q2FY22 due to focused sales assessments in progress with new, larger scale customers during the current quarter, compared to smaller sized customer sales present in the prior comparative period.

The Q2FY23 sales activity has included working with a number of international and high profile potential customers to explore their individual requirements. The Company understands that the time taken to assess customer requirements is essential to cater for the varying scope, economic and environmental conditions specific to them. This also allows assessment of the application scope of potential sales contracts to target areas where the majority of product benefits may be realised.

Other income

There was no other income in Q2FY23 compared to \$39K in Q2FY22 which consisted of \$25K in grants received and \$9K in foreign exchange gains. The 6MFY23 result includes \$142K of additional refundable R&D tax offset recovered from assets qualifying for the Full Temporary Expensing and Investment Allowance 100% immediate write off.

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 December 31		6 month period ended December 31		Variation	
	2022	2021	2022	2021	\$'000	%
Employee expenses	2,428	1,228	4,273	2,169	2,104	97%
Plant expenses	154	69	278	113	165	146%
Occupancy expenses	95	44	179	82	97	118%
Overheads expenses	1,005	696	1,800	1,210	590	49%
Total operating expenses	3,682	2,037	6,530	3,574	2,956	83%

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 \$151K in Q2FY23 and \$53K in Q2FY22. The \$98K increase was primarily \$58K in battery and machinery consumables, \$30K in R&M and minor increases in both general warehouse and HSE 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.

The Company's Richlands Headquarters and warehouse lease meets the recognition criteria as a right-of-use ("ROU") asset under IFRS 16. The ROU asset and corresponding lease liability 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 \$44K to \$95K from Q2FY22 to Q2FY23, primarily due to \$24K higher rental outgoings costs associated with the Company's Richlands headquarters lease, including the new warehouse lease from July 2022, 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 Q2FY22 to Q2FY23 has been greater than \$10,000:

- Consultants and contracting expenses increased from \$133K in Q2FY22 to \$306K in Q2FY23, reflective of the additional specialist technical consultants, North America sales representation and additional contract staff engaged throughout the business;
- Legal expenses of \$158K in Q2FY23 were higher than the \$97K incurred during Q2FY22, due to additional legal consultation for various commercial agreements and matters, as well as base shelf prospectus advisory costs;
- Insurance increased from \$41K in Q2FY22 to \$88K in Q2FY23, mainly due to increases in policy coverage and limits, ongoing business growth, and expansion of business premises since Q2FY22;
- Accounting and tax planning expenses decreased to \$61K in Q2FY23 from \$125K in Q2FY22 primarily due to the prior period including additional costs incurred in preparation for capital raising;
- International and domestic travel expenses collectively increased from \$14K in Q2FY22 to \$41K in Q2FY23 due to costs associated with travel for investor engagements and other travel required for sales representatives and R&D projects;
- Testing and quality control expenses increased from \$20K in Q2FY22 to \$38K in Q2FY23;
- Investor relations expenses increased from \$149K in Q2FY22 to \$165K in Q2FY23 due to the additional social media activities;

- Filing fees of \$33K in Q2FY23 were higher than the \$23K in Q2FY22, due to the additional filing fees associated with the preliminary short form base shelf prospectus released on December 19, 2022;
- IT expenses increased from \$16K in Q2FY22 to \$27K in Q2FY23, mainly due to the increased staff employed during the year; and
- R&D expenses were \$22K lower in Q2FY23 compared to Q2FY22, mainly due to earlier stage research projects in the prior quarter now progressing through to testing.

Fair value of warrants

Change in fair value of warrant liability of \$2,267K included the additional warrants issued during November 2022 as part of the Bought Deal Offering. The gain was driven by the fair valuation adjustment which is in particular highly sensitive to the share price at each reporting date compared to the previous reporting date among other factors.

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 increased by \$4,141K in Q2FY23, with cash outflows being offset primarily by gross proceeds of C\$5.75 million raised from the Bought Deal Offering in November 2022, and the \$1.55 million of R&D tax incentive received. Further information regarding the share capital movements is disclosed in the unaudited condensed consolidated interim financial statements for the three and six months ended December 31, 2022.

Trade and other receivables increased by \$17K in Q2FY23 to \$160K as at December 31, 2022, primarily due to \$13K held in respect of an insurance claim on flood damage to office space and a minor trade receivable.

The gross R&D tax incentive relating to FY22 of \$1,554K was received in cash during November 2022.

Inventories increased by \$5K to \$340K as at December 31, 2022, due to increased graphene powder production completed during the quarter whilst the construction for the graphene expansion project is in progress at the new Richlands warehouse.

Other current assets of \$285K is largely \$276K of prepayments, primarily \$133K for insurance, \$71K for investor relations and platform costs, \$45K for leased premises costs including related outgoings, \$18K for research and development costs and \$6K for upcoming marketing conference costs.

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 \$1,200K at December 31, 2022 remains higher than June 30, 2022, mainly due to \$500K being the remaining consideration yet to be issued for the OzKem Transaction.

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 Q2FY23, the Company incurred a loss of \$1,781,841 after income tax and net cash outflows from operating activities of \$3,923,731. As at December 31, 2022, the Company had net current assets of \$7,550,359 (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 December 31, 2022, the Company had cash on hand of \$12,547,541, which is anticipated to be sufficient to meet the ongoing corporate costs and expected project expenditure for twelve (12) months;
- As at the date of this report there are 4,417,929 options and 4,360,480 warrants on issue with exercise prices ranging from AUD\$0.36 to AUD\$3.10¹. If exercised these could raise up to \$16,471,184 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 and currently has a Base Shelf Prospectus readily available on SEDAR for this purpose.

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.

¹ Assuming a C\$/A\$ exchange rate of 1.08.

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 the 2023 calendar year. 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 December 31, 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 February 17, 2022, the Company has:

- 81,815,940 ordinary shares issued and outstanding;
- 4,417,929 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, 4,417,929 shares would be issued for proceeds of A\$2,262,482²;
- 4,360,480 warrants outstanding with expiry dates ranging between September 2, 2024 and November 30, 2026, with exercise prices between C\$2.05 and C\$3.35. If all the warrants were exercised, 4,431,325 shares would be issued for proceeds of A\$14,208,703¹; and
- 1,015,525 restricted share units and 111,867 performance share units outstanding with a nil exercise price and expiry dates ranging between July 18, 2023 and October 27, 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. A detailed description of risks and uncertainties is not incorporated herein. For a detailed description of risks and uncertainties, please refer to the Prospectus available on the Company's SEDAR profile.

¹ Assuming a C\$/A\$ exchange rate of 1.08.