Date: 24th February 2025

GMG Unveils G® Lubricant Engine Performance Testing Results:

A Transformative Graphene Energy Saving Solution for the Multi Trillion Dollar Global Liquid Fuel Industry

BRISBANE, QUEENSLAND, AUSTRALIA – Graphene Manufacturing Group Ltd. (TSX-V: GMG) (OTCQX: GMGMF) ("GMG" or the "Company") is pleased to announce the results of the multi-year performance testing of **G® Lubricant**, a transformative graphene liquid concentrate additive designed to enhance the performance of diesel and gasoline (petrol) engines. This product has the potential to reshape the future of the global liquid fuels industry and offers an innovative solution that optimizes efficiency and power for stationary or mobile engines.

G® Lubricant
Powered by GMG® GRAPHENE

GMG is in the process of preparing packaging and marketing materials for **G® Lubricant**, and expects to begin a direct marketing campaign, targeting fleet owners and initially commencing in Australia and then expanding into other markets from April 2025 onwards.

Click here to order a **G® Lubricant** sample for your own engine testing.

Unleashing the Power of Graphene

G® Lubricant, a graphene liquid concentrate that can be added to any mineral or synthetic oil used in an internal combustion engine, has been shown to increase fuel efficiency by up to 8.4% in a diesel engine. The amount of graphene in the final lubricant once **G® Lubricant** is mixed in is only ~ 1:10,000, with the balance of the concentrate consisting of lubricating base oil. As a result, **G® Lubricant** can be used safely in any internal combustion engine. Over the past four years, GMG has conducted environmentally controlled testing of **G® Lubricant** in internal combustion engines monitored and verified by The University of Queensland. GMG's test results have been corroborated by similar savings realized by customers over a number of years of field testing.

Figure 1 below shows the high level fuel efficiency improvement provided by the **G® Lubricant** additive, while Figure 8 provides the detailed fuel testing parameters.

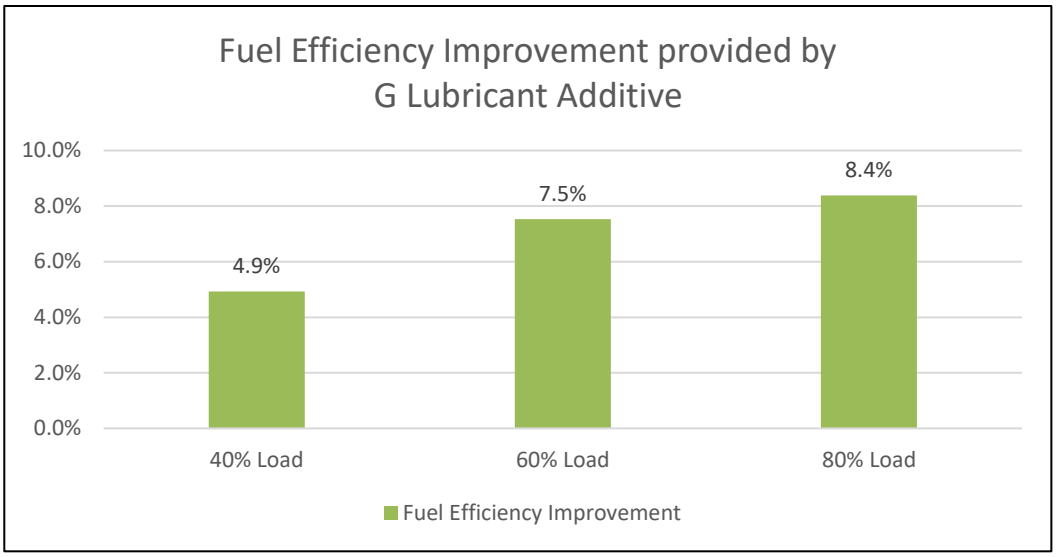

Figure 1: Diesel Engine Fuel Efficiency Improvement provided by G Lubricant

The data shows a clear increase in fuel efficiency performance from **G® Lubricant** when the load is increased on the engine. High loads for truck diesel engines are usually seen when the truck starts to move, and then at high speeds when encountering wind resistance. Usually stationary diesel engines for power generation operate at high load.

Figure 2 shows the potential savings for the main types of diesel engine commercial vehicles in use in Australia – with average vehicle data sourced from the Australian Bureau of Statistics[1] (ABS).

Parameter	Light Commercial	Rigid Truck	Articulated Trucks
Vehicle			
Average Diesel Used (litres/100 km)	12.8	28.6	53.1
Oil Used per Change (litres)	5	15	50
Average Oil Used per Truck pa (litres)	7.7	31.6	391.6
Average Distance per Truck pa (km)	15,305	21,057	78,331
Average Fuel Used pa (litres)	1,959	6,022	41,594
Average Fuel Cost per Truck pa AU$ (using Fuel price of AU$ 1.95/litre)	$3,810	$11,713	$80,900
Potential 8% Fuel Savings pa AU$	**$304**	**$937**	**$8,090**
G® Lubricant cost each vehicle pa AU$ when priced at 10% of fuel saving	AU$ 30	AU$ 93	AU$ 809
Payback Period for owner (days)	37 days	37 days	37 days

Figure 2: Potential Cost Savings per Vehicle Type provided by G Lubricant

[1] ABS Source: https://www.abs.gov.au/statistics/industry/tourism-and-transport/survey-motor-vehicle-use-australia/latest-release

Exceptional Performance Confirmed by University of Queensland

GMG's Managing Director and CEO, Craig Nicol, commented: "**G® Lubricant** has taken over 4 years of advanced product testing and is transformational for energy efficiency and emissions reduction for the liquid fuels industry – it is the culmination of decades of lubricants, engines, energy markets and graphene knowledge which is inherent in the GMG business. The next challenge to commercialise this product awaits – which we are eagerly preparing for."

GMG's Chairman and Director, Jack Perkowski, commented: "**G® Lubricant's** performance, which demonstrates an 8.4% improvement in fuel efficiency using only a very small amount of graphene in an easy to use graphene concentrate, is a 'Category Creator' that has the potential to redefine the multi trillion dollar liquid fuels market. The fact that only 1% of **G® Lubricant** is needed to achieve such savings provides a very attractive value proposition for fleet owners."

Click here to order a **G® Lubricant** sample for your own engine testing.

US$ 1.4 Trillion Global Diesel Industry

Whilst **G® Lubricant** can be used to reduce fuel consumption in both diesel and gasoline/petrol engines GMG intends to focus on the diesel market initially, which is largely B2B focused, and therefore, more targeted as far as fuel cost savings and performance. GMG calculates that global diesel fuel sales totalled US$1.4 Trillion per annum[2] including taxes and duties on approximately 28 million barrels of diesel per day as detailed by the EIA[2]. Figure 3 shows the top 34 countries in the world with diesel fuel sales greater than US$10 Billion per annum.

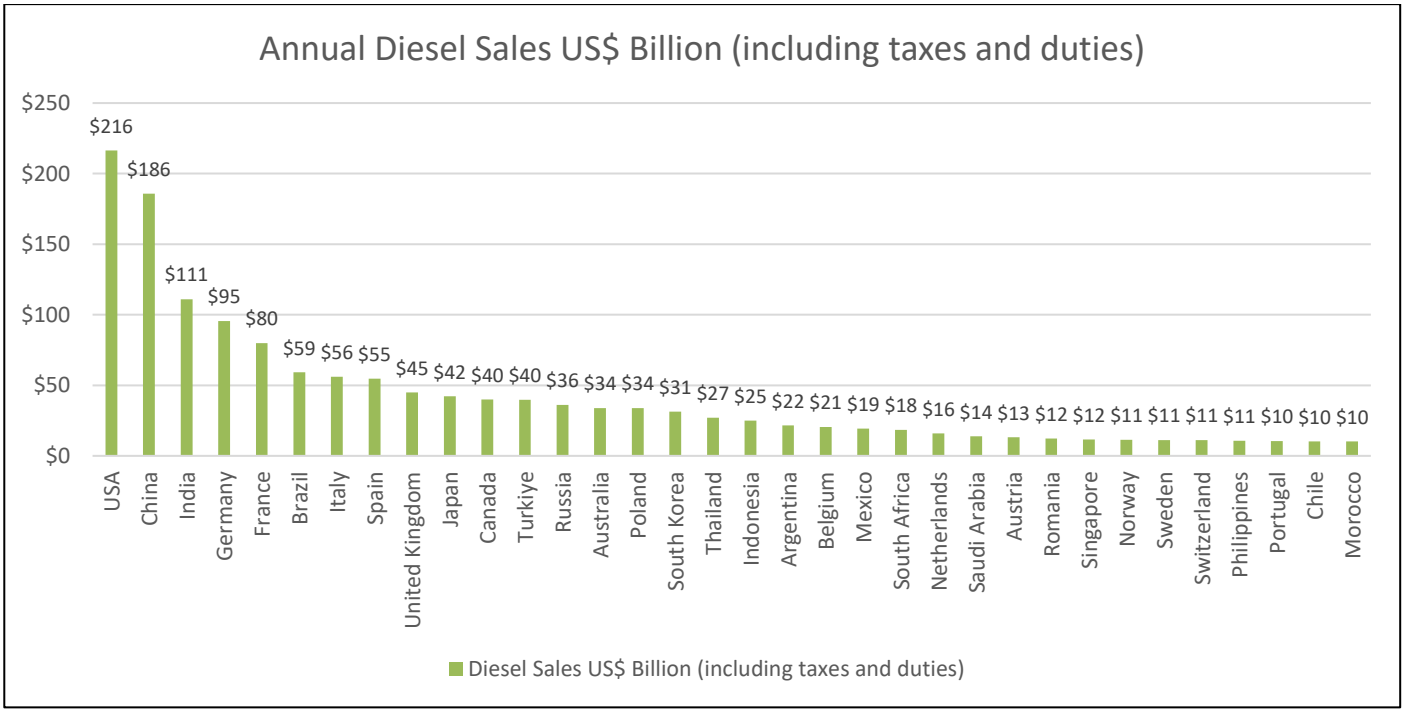

Figure 3: Total Diesel Fuel Sales US$ Billion

[2] Using EIA diesel volumes for 2023 and www.globalpetrolprices.com diesel prices per country as of January 15th 2025

Estimated US$ 1.2 Billion Per Annum Global Diesel Market For G® Lubricant

Assuming an average fuel savings of 8.4%, GMG believes that a conservative estimate of the potential market for **G® Lubricant** is 10% of the fuel savings realized by users annually. Assuming **G® Lubricant** pricing equal to 10% of the savings realized, GMG estimates that the potential global revenue for G® Lubricant is US$ 1.2 Billion sales per annum. Figure 4 shows GMG's estimates of potential annual sales of **G® Lubricant** by country.

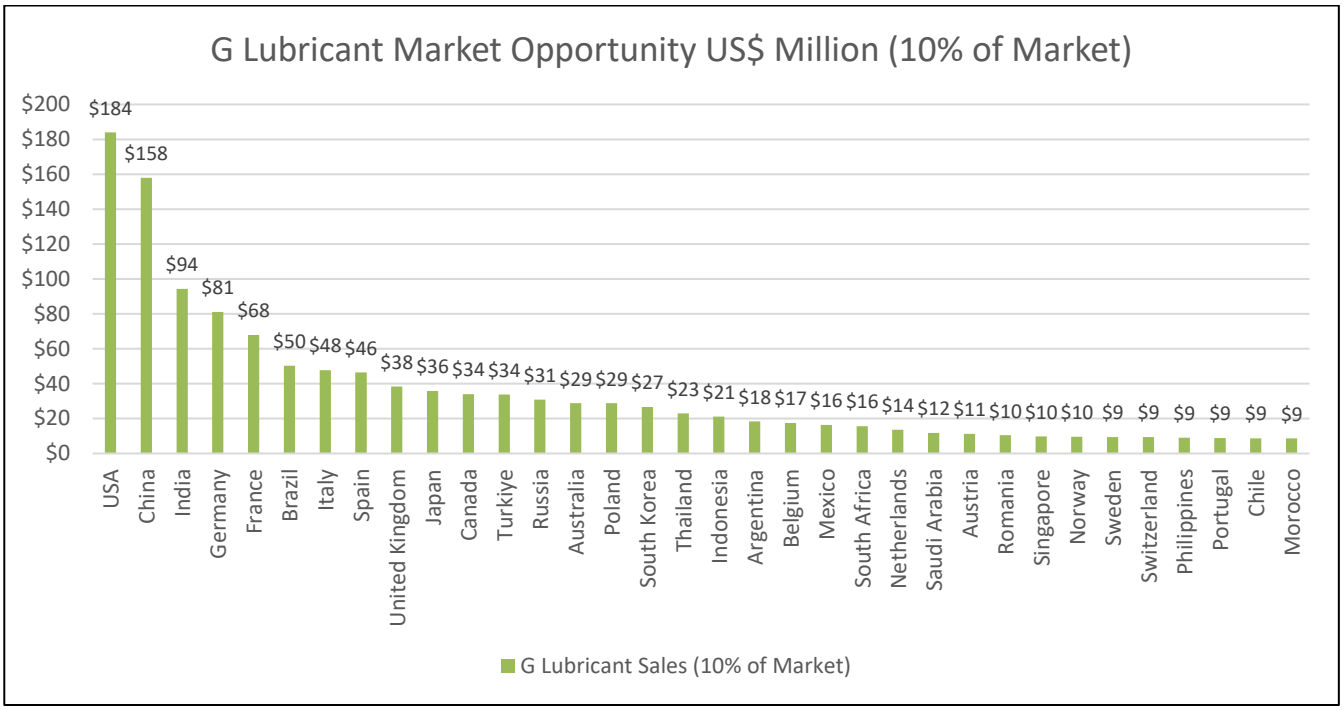

Figure 4: Total G® Lubricant Sales Opportunity

Detailed Equipment and Process for Testing G® Lubricant

The following describes the equipment used and the process followed by the Company in demonstrating the fuel saving demonstration of the G® Lubricant in the diesel engine generator:

- A 30kVA (24 kW) Cummins diesel engine generator (with 14,784 hours of run time) as seen in Figure 5 and described in Figure 6 was purchased and setup in the GMG Richlands warehouse.
- The generator was connected to a 40 kW power load bank which consumed the energy produced by the generator and created the load and a 500 litre self-contained fuel tank.
- Two calibrated flow sensors were connected (inflow and return/outflow) to the fuel lines and to a data logger which recorded the fuel consumption.
- An Energy Analyzer was used to log and track energy produced by the generator.
- Tests were conducted on loads of 40%, 60% and 80% loads of the 40 kW power load bank – 12, 18, 24 kw respectively.
- A baseline to record diesel fuel consumption under normal engine oil and operating conditions was completed with newly changed recommended premium diesel engine oil and a new oil filter. This oil change was carried out by a professional engine maintenance service company.
- The engine was run at the different loads (40%, 60% and 80%) and the baseline and G® Lubricant data set used for the analytics is when the maximum ambient temperature for the day was less than 33 degrees Celsius and relative humidity was between 50% and 80% with no rain. Fuel consumption for diesel engines changes when operating in rain or very high humidity or

temperatures, so the fuel consumption data baseline and G® Lubricant engine oil additive performance testing were excluded for these times.

- Only steady state data was used and so any variance or anomalous data seen in either baseline or G® Lubricant datasets were removed from the analytics. Data sets were grouped into minute blocks.
- Once the baseline fuel tests were completed, the engine oil was drained and the oil filters were replaced. G-Lubricant with approximately 1:100 concentration was mixed at approximately 1% ratio by weight with a new batch of the same premium recommended engine oil and added to the generator engine. The end ratio of GMG's Graphene to the diesel engine oil was approximately 1:10,000 by weight. The oil change was carried out by the same professional engine maintenance service company.

G® Lubricant Packaging

G® Lubricant is currently sold by GMG in different small pack sizes, a 500 ml pack is shown in Figure 5 which can be diluted into 50 litres of engine oil to provide improved engine performance. GMG intends to direct market the product to its targeted markets through various pack sizes for direct and bulk use.

Figure 5: G® Lubricant 500 ml pack (which can be used to dose 50 litres of engine oil)

Click here to order a **G® Lubricant** sample for your own engine testing.

Figure 6: Diesel Engine Generator Equipment

Engine:	**CUMMINS S3.8G7**	Naturally aspirated, liquid cooled electric start diesel
	HP:	37 approximately
	RPM:	1500
	Cylinders:	4
	Run Hours Shown:	14784
Alternator:	**STAMFORD UCI224F1**	
	kVA:	33 Standby rated (30 Prime rated)
	kW:	26 Standby rated (24 Prime rated)
	Power Factor:	0.8
	Other:	240/415V at 50Hz, brushless
Comments:	Engine, alternator and radiator mounted on a substantial skid base Installed in a weather protected, sound reduced canopy Dimensions: 2520x1100x1650mm (LxWxH). Weight 1,460kg Residential grade engine muffler and flexible connection fitted Single wall integral base fuel tank approximately 100 litres Battery pack heavy duty 12 Volt, with battery isolator Engine driven battery charger Cummins D521 generator control panel, with automatic & manual starting Engine protection for high coolant temperature and low oil pressure HMI with LCD panel, showing oil pressure, oil temperature, coolant temperature, battery charging Amps, Volts, Amps and Hz Generator mounted 3 pole Schneider NS100N adjustable MCCB, & E/L shunt trip Outlets: IP66 1 x 32A 3Ph, 3 x 15A 1Ph, w/CB & RCD protection Build date: 2004 Load test report Cleaned and painted Operating and maintenance manuals	

Figure 7: Diesel Engine Generator Equipment Parameters.

The detailed data for this fuel test is shown below in Figure 8

Load	Engine Oil Used	No of Data Points	Fuel Used (litre per hour)	Power Output (kWh)		Fuel Efficiency (kWh per litre)		% Fuel Efficiency Increase from G® Lubricant
40% Load	Premium Diesel Engine Oil (PDEO)	1073	70	Mean:	211.95	Average:	3.03	
				Standard Deviation:	0.60	Standard Deviation:	0.01	
				Min:	210.31	Min:	3.00	
				Max:	214.49	Max:	3.06	
	PDEO + **G® Lubricant**	1367	66.7	Average:	211.84	Average:	3.18	4.9%
				Standard Deviation:	0.68	Standard Deviation:	0.24	
				Min:	209.89	Min:	2.64	
				Max:	213.45	Max:	3.56	
60% Load	Premium Diesel Engine Oil (PDEO)	418	90	Average:	297.13	Average:	3.30	
				Standard Deviation:	0.65	Standard Deviation:	0.01	
				Min:	295.06	Min:	3.28	
				Max:	298.42	Max:	3.32	
	PDEO + **G® Lubricant**	1486	84.9	Average:	301.31	Average:	3.55	7.5%
				Standard Deviation:	7.62	Standard Deviation:	0.20	
				Min:	294.13	Min:	3.27	
				Max:	313.85	Max:	4.22	
80% Load	Premium Diesel Engine Oil (PDEO)	811	120	Average:	404.52	Average:	3.37	
				Standard Deviation:	0.79	Standard Deviation:	0.01	
				Min:	402.62	Min:	3.36	
				Max:	406.20	Max:	3.38	
	PDEO + **G® Lubricant**	1756	110.6	Average:	404.21	Average:	3.65	8.4%
				Standard Deviation:	1.26	Standard Deviation:	0.13	
				Min:	401.30	Min:	3.34	
				Max:	407.37	Max:	4.49	

Figure 8: Detailed Diesel Engine Generator Performance Data.

Basis for Performance Improvement

As seen in Figure 9, **G® Lubricant** GMG improves fuel efficiency by creating less friction in the boundary layer lubrication of the pistons inside the cylinder block of the engine. It is widely accepted that approximately 30% of the fuel is used in an engine to overcome internal friction, and that approximately 60% of the engine friction is in the piston area. Graphene has also been seen to prevent wear and also fill in wear scars of an engine, helping to improve piston sealing.

Figure 9: G® Lubricant is believed to reduce friction in the engine pistons.

Patent Progress of G® Lubricant

GMG submitted a patent application on the **G® Lubricant** product as soon as it was possible, and this is progressing through the usual process to be approved for the main target markets.

About GMG:

GMG is an Australian based clean-technology company which develops, makes and sells energy saving and energy storage solutions, enabled by graphene manufactured via in house production process. GMG uses its own proprietary production process to decompose natural gas (i.e. methane) into its natural 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. In the energy savings segment, GMG has initially focused on graphene enhanced heating, ventilation and air conditioning ("HVAC-R") coating (or energy-saving coating) which is now being marketed into other applications including electronic heat sinks, industrial process plants and data centres. Another product GMG has developed is the graphene lubricant additive focused on saving liquid fuels initially for diesel engines.

In the energy storage segment, GMG and the University of Queensland are working collaboratively with financial support from the Australian Government to progress R&D and commercialization of graphene aluminium-ion batteries ("G+Al Batteries"). GMG has also developed a graphene additive slurry that is aimed to improve the performance of lithium-ion batteries.

GMG's 4 critical business objectives are:

1. Produce Graphene and improve/scale cell production processes
2. Build Revenue from Energy Savings Products

3. Develop Next-Generation Battery
4. Develop Supply Chain, Partners & Project Execution Capability

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Such forward-looking statements are based on a number of assumptions of management, including, without limitation that G Lubricant has the potential to optimize efficiency and power for stationary or mobile engines, that G Lubricant has the potential to reshape the future of the global liquid fuels industry, that GMG will commercialize and market G Lubricant, that the Company's patent applications will progress as anticipated, and that the potential market and revenue available for G Lubricant will be as currently forecasted. Additionally, forward-looking information involves a variety of known and unknown risks, uncertainties and other factors which may cause the actual plans, intentions, activities, results, performance or achievements of GMG to be materially different from any future plans, intentions, activities, results, performance or achievements expressed or implied by such forward-looking statements. Such risks include, without limitation: that G Lubricant will not offer an innovative solution that optimizes efficiency and power for stationary or mobile engines, that G Lubricant will not reshape the future of the global liquid fuels industry, that GMG will commercialize and market G Lubricant as anticipated, that the Company's patent applications will not progress as currently anticipated, that the potential market and revenue available for the G Lubricant product is not as currently calculated, risks relating to the extent and duration of the conflict in Eastern Europe and its impact on global markets, the volatility of global capital markets, political instability, the failure of the Company to obtain regulatory approvals, attract and retain skilled personnel, unexpected development and production challenges, unanticipated costs and the risk factors set out under the heading "Risk

Factors" in the Company's annual information form dated October 3, 2024 available for review on the Company's profile at www.sedarplus.ca.

Although management of the Company has attempted to identify important factors that could cause actual results to differ materially from those contained in forward-looking statements or forward-looking information, there may be other factors that cause results not to be as anticipated, estimated or intended. There can be no assurance that such statements will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements. Accordingly, readers should not place undue reliance on forward-looking statements and forward-looking information. Readers are cautioned that reliance on such information may not be appropriate for other purposes. The Company does not undertake to update any forward-looking statement, forward-looking information or financial out-look that are incorporated by reference herein, except in accordance with applicable securities laws. We seek safe harbor.