FGR Chairman's Address

9th October 2020

Your company, First Graphene, has been pioneering the graphene industry for about five years now. In retrospect, it has not been the making of graphene that has taken this time; it is the optimisation of the process design in pursuit of the best, consistent quality that has been the time-consuming aspect. It has been the intense focus on the engineering that has put us in the position where the emphasis can now evolve to the wide scale commercialisation of our leading product, PureGRAPH®.

As the attached table demonstrates, over the past two years FGR has been involved with a lengthy path of product verification. Have a look at the large number of products that we have successfully shown can be significantly enhanced with the addition of PureGRAPH®. These products will form the basis of the push to commercialise our business, but they are only the start of that journey.

Some shareholders have complained about the time it is taking to show sales in our books. Admittedly, it is taking longer than we first anticipated, but that is typical of disruptive technology. Just proving that something is better does not alone generate sales overnight. I would suggest those shareholders stop looking in the rear-view mirror at audited accounts and cash flow statements. Instead, they should be looking ahead at the doors which are opening with the strongly positive test results, for these will lead to a strong sales book.

It has been a long-held belief that graphene is a revolutionary nanomaterial which will enable a new generation of products to perform much more efficiently. The key point to recognise is graphene is an enabler which will be combined with existing product lines as opposed to a stand-alone product itself. It is not simply a matter of substituting one product for another, which would be an easy decision to make; in with the new and out with the old.

The need to integrate graphene, with its benefits into existing products, is a much more complicated process than one might first imagine. Manufacturing companies already using the state-of the art processes will be sceptical of anything that suggests otherwise. Industry leaders will already be operating from a position of strength so they will not rapidly adopt new technologies if there is no urgent need to do so. Recognition of this observation goes a long way to explaining why the large-scale adoption of graphene-enhanced products is taking its time.

However, there has been a speed bump even before this observation has come into play. This has been the uncertainty regarding the availability of commercial scale graphene supply upon which industry could plan a new generation of products. Without security of supply the integration of graphene could only ever be a curiosity. It matters not how many exciting press releases universities and entrepreneurial promoters may publish if there is no follow through from industry.

Early in its career First Graphene recognised the obstacle that supply represented and it decided to do something about it. A commercial scale production plant was commissioned at Henderson in WA, with a nominal capacity of 100 tpa of graphene if it were to be operating 24/7. The initial capital cost was in the order of $1m, but continual improvements in equipment and automation methodology has resulted in the expenditure of perhaps another $2-3m. No-one in the world had previously built such a facility. There was no guidebook available, so everything had to be designed, assessed and modified in a continuing process of optimisation. This evolutionary process doesn't stop. Nothing is ever perfect. So, the First Graphene team continues to make improvements and advances.

Maybe FGR was ahead of its time in constructing this facility given the time it is taking to build a graphene sales book, but it is a question of the chicken or the egg. The issues of quality control and manufacturing capability at commercial scale had to be addressed first in order for industry to take the advent of this new material seriously. Having done this, the next step is to get verification of suitability of the graphene for the mixing with a wide range of materials, which we are doing.

The manufacturing industry is not sitting around waiting for the next white knight to come charging through the gates. It is not looking for a saviour because it doesn't think it needs one. Any disruptive technology is, quite rightly, treated with scepticism in the first instance. Why should manufacturing equilibrium in any operation be changed just because someone tells them they can do it better? Again, the scepticism is going to be the greatest with industry leaders who are in a position of dominance and comfort. Why should they upset the apple cart with the promise that the grass is greener on the other side of the fence? Yet, it is the leaders who hold the key to wide scale adoption of new technologies. They are the most difficult companies to convince.

At the other end of the scale are the smaller, higher risk tolerant junior companies that are seeking a leg up. They are more aggressive in seeking new technologies that may accelerate their push for bigger market share. They want both opportunity and promotion. We are seeing these companies are more likely to be the early adopters of innovation and can make rapid, pragmatic decisions.

First Graphene has made ground-breaking headway with a number of smaller businesses in its efforts to commercialise graphene and it has reported these to the market. As positive and as encouraging as they have been, these should be seen as door openers as opposed to "company making" events. They are proofs of concept along the path with each of them providing verification of the benefits graphene can offer industry. In time there will be enough of them to convince the sceptics there must be something here of value. Other companies will be watching to see if there is any momentum developing that they should be getting involved with.

Whether it is a small company or an industry leader, every company considering the benefits of graphene will need to undertake extensive test work. Even when they decide they want to use graphene each potential customer needs to decide how much to add and how to incorporate it into their particular product. It has to decide on the quality of graphene it needs to achieve the desired benefits, considering the costs and the impact of the pricing of its product. It also needs to consider product differential issues. If the product is better and lasts longer, how does it introduce a line to the market without cannibalising its existing sales book? The objective is to increase sales revenue, not reduce it. Irrespective of how much better a product may be with graphene, there is no incentive to introduce it unless the profit motive is satiated. Eventually, further down the track, a company may be forced to adopt it if its competitors are gaining market share, but that is an issue for the future.

Nevertheless, we are actually engaging with a large number of world leading companies in the assessment of the suitability of PureGRAPH® for addition to their product lines. While they may not be the earliest adopters, they realise they need to be on top of potential developments. These companies have numerous departments all with their own responsibilities and objectives such that the decision to adopt an innovating technology is longer winded than with more entrepreneurial companies, but this hasn't stopped us from opening the doors. That is a positive. We are doing the groundwork that will in due course lead to substantial sales. Just don't ask me for a precise time.

Bringing all this back to the positioning of First Graphene today as we assess its progress to date over a five-year journey, we can legitimately say the company has never been in a stronger, more competent position both technically and financially. It is making steady progress as it opens up new avenues every month. No other company has made as much progress anywhere in the world. Critics of the Company may castigate the board for the time it is taking to evolve to a profit earning organisation, but before they become too rabid in this pursuit, they should look at what the rest of the graphene industry have achieved, as opposed to promoted. Is anyone else doing better? If they can provide us a road map or a mentor company which is doing better, then let them do so. We want to continuously improve, and we are not too proud to learn from others.

In my assessment, albeit with the bias which comes from the Chairmanship and a large financial investment in the Company, the First Graphene team under the leadership of Craig McGuckin and Andy Goodwin have done an excellent job getting us to the point we are at today. There have been no disasters. There have been no debilitating cost overruns. There have been no failures. There has been continual, value-adding progress. Everything has been well managed with discipline and prudence for the benefit of all shareholders. I expect this should continue so.

It is imprudent for a pioneering company to offer earnings guidance at the inception of its career. We had previously expressed optimism of our earnings targets, and indeed we are very optimistic about the future. This has taken longer than we had anticipated, but our focus is on turning potential into reality. This is our overriding objective. We do know there is no other graphene company, anywhere in the world, which has made more progress than First Graphene.

Finally, I would be remiss if I did not mention the news announced today of Craig McGuckin's intention to retire. Craig has been a driving force in making FGR the world's leading graphene company. He had the capability to develop the manufacturing and finishing processes used by FGR. There was no textbook on how to do this, it was done from scratch. He has assembled an excellent team of professional people and leaves the Company in a sound condition. On behalf of the board and shareholders I thank Craig for his excellent efforts and wish him well in his retirement.

First Graphene ASX Releases Summary				
Product/Sector	**ASX Release Date**	**Collaboration Company**	**Details of Announcement**	
			Highlights	**Next Step/Implications**
Mining Industry Liners	19/08/2019	newGen	One-year **sales agreement** signed for supply of PureGRAPH® to be used in ArmourGRAPH™ liners for the mining industry. Order size increased from 2 tpa to 3 tpa. The use of graphene in newGen's ArmourGRAPH™ products provides considerable mechanical improvements in tensile and tear strength and abrasive resistance.	Product range of ArmourGRAPH™ extended from bucket liners to cover piping spools. Continual growth expected as product performs in field trials.
Safety Work Boots	23/08/2019	Steel Blue	Prototype safety boots made incorporating PureGRAPH® into the sole and other components.	Further laboratory and field trials to be undertaken for a period of six months. (See subsequent releases on 15/11/19, 21/1/20).
Supercapacitors	23/09/2019	University of Manchester	Exclusive world-wide licence agreement to patented technology for the manufacturing of metal oxide decorated graphene materials to be used in a new generation of high-performance supercapacitors.	Supercapacitor market is growing at 20% p.a. and expected to be A$3.1bn by 2022. Finalisation of this agreement was subsequently announced on 23/3/20 (see below).

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Safety Work Boots	15/11/2019	Steel Blue	Launch of first safety boots with graphene. Prototype boots have been made using PureGRAPH® graphene powder. In a world first FGR has successfully dispersed graphene into thermoplastics polyurethane (TPU). The prototype boots incorporate PureGRAPH®-infused TPU soles and have undergone extensive laboratory testing in accredited laboratories.	Commencement of field trials of boots as the next step before the signing of a sales agreement and the launch of a new product range of graphene-enhanced boots. (See sales agreement announcement of 21/1/20).
Iron Ore Mining Bucket Liners	5/12/2019	newGen, Iron ore major	Bucket liners successfully completed 12 weeks of field trials with no signs of advanced wear. ArmourGRAPH™ product.	Test to continue for another 12 weeks.

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Safety Work Boots	21/01/2020	Steel Blue	Two year **sales agreement** for the supply of PureGRAPH® for the manufacturing of a new range of safety boots. The incorporation of PureGRAPH® has improved mechanical properties while providing additional benefits in thermal heat transfer and chemical resistance whilst also reducing permeability.	FGR will be the exclusive supplier of graphene for a two-year period, for incorporation in boots in Australia and NZ. Anticipating sales of one tonne in Year One and two tonnes in Year Two. (Subsequently COVID19 has disrupted Steel Blue's production and pushed back expected offtake to late 2020/early 2021). The ability to disperse graphene in thermoplastics is expected to lead to applications across a wide range of products.

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VFD Graphene Oxide	24/01/2020	2D Fluidics Pty Ltd, Flinders Uni, GEIC	Progress in development of methodology to make graphene oxide (GO), as a more benign method that could replace the traditional and pollutive Hummer's Method. Process gives better control of oxygenation of platelet surfaces. Oxygen levels of 30-35% achieved. Method makes GO hydrophilic and therefore dispersible, forming homogenous colloidal suspensions in water and organic solvents.	Further research to address upscaling potential. It will also commence examining the end applications including, but not limited to the use in electronic devices, testing levels of toxicity for biological applications, for water filtration membranes and incorporation in membranes for studying anti-fouling properties.
Iron Ore Mining Bucket Liners	3/03/2020	newGen, Iron ore major	Bucket liners successfully completed 24 weeks of field trials with no signs of advanced wear. ArmourGRAPH™ product.	Test to continue for another 12 weeks. A second bucket introduced.
Supercapacitors	23/03/2020	Uni of Manchester	Licence agreement completed for manufacture of novel hybrid-graphene materials successfully demonstrated at kg scale in pilot plant. Two high value products being used; metal oxide decorated materials with high value-added graphene products for applications needing thermal and electrical conductivity. Earlier work shows typical gravimetric capacitance of up to 500 Farads/g, whereas standard microporous carbon nanomaterials are typically only achieving 50 to 150 Farads/g.	Opens up possibility of next generation supercapacitors. Supercapacitor coin-cell testing of high capacitance materials is in progress. Seeking end-users for novel supercapacitor products, including aerospace, marine, EV and utility storage sectors. COVID19 and University of Manchester shutdown will delay progress. Potential market for supercapacitor devices is A$3.1bn p.a.

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Natural Rubbers	8/04/2020	Malaysian company, not disclosed	Commencement of research program to test the performance of PureGRAPH® in natural rubber products, focusing on improvements in mechanical strength, tear and abrasion resistance.	Dependent upon test results. Program could take 12-18 months. See releases on 27/7/20 re program with University of Warwick, and 1/9/20 re rubber polymers in mining screens.
Oyster Baskets	5/05/2020	Hexcyl Systems, South Australia	Collaboration to supply and test PureGRAPH® in Hexcyl's range of oyster baskets and long-line farming systems that use High Density Polyethylene (HDPE), which are sold globally. HDPE is also used in the production of plastic bottles, corrosion-resistant piping, geomembranes and plastic timbers.	Test work undertaken. See subsequent release of 3/8/20, which reported positive results. HDPE industry is one of the largest thermoplastic markets in the world (US$59bn in 2015).
PPE Face Masks	7/05/2020	planarTECH, Thailand	Collaboration to test face mask with graphene initiated through GEIC relationships.	Test work (which was quickly undertaken, resulting in an initial sales order announced on 5/6/20).
Solar PVC Products	11/05/2020	Foster Plastic Industries, Qld. A leading Australian extrusion company.	Supply of graphene-enhanced ethylene-vinyl (EVA) masterbatch for PVC products to be used in the manufacture and testing of solar tubes for heat transfer, compression strength and longevity in UV exposure.	Material was supplied to Foster factory. COVID19 has delayed further testing.

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Quality Control	21/05/2020	Spectroscopy Journal and ISO/TC229 Standards Committee.	Unique Raman spectroscopy developed by FGR is recognised by the Spectroscopy Journal, and FGR joins ISO/TC229 Nanotechnologies Standards Committee	Ensures continued industry leading role for FGR and recognition of high-quality standards
PPE Face Masks	26/05/2020	planarTECH, Thailand	Two year **sales agreement** signed for the addition of PureGRAPH® to face masks following successful testing. Rate initially 1.0 tpa.	Offtake. See subsequent release on 5/6/20.
Swimming Pools	2/06/2020	Aquatic Leisure, WA	Two year **sales agreement** signed for the addition of PureGRAPH® to fibreglass swimming pools. Will enable a new generation of pools. Initial order for 2.5 tpa (at 0.5% w/w loadings).	New pool range to be released in November 2020. Sales initially in Australia, NZ and USA.
PPE Face Masks	5/06/2020	planarTECH, Thailand	Initial order for 500 kg of PureGRAPH® from planarTECH pursuant to supply agreement announced 26 May 2020. Prepayment made for this order with physical drawdown over a six month period.	Working on additional products with planarTECH.
Trademark Registration in the USA	29/06/2020	USA regulatory authorities	Registration and trademark protection in the USA for PureGRAPH®.	Strong foundation for marketing in the USA, adding to Australia, China, NZ, EU and UK.

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Polymer, Rubbers and Plastics Research Partnership	27/07/2020	University of Warwick	Study to enhance the understanding of graphene in a wide range of polymers, plastic and rubber. Aiming to lift low cost polymers such as polyolefins and polyamides up the "plastic performance pyramid".	A 3-4 year long term research project with a leading academic.
Oyster Baskets	3/08/2020	Hexcyl Systems, South Australia	High Density Polyethylene (HDPE) oyster farm baskets strength +60% and abrasion loss -50%. HDPE industry is one of the largest thermoplastic markets in the world (US$59bn in 2015).	To produce super-strong oyster baskets for long-line farming systems in real world ocean conditions.
Concrete	17/08/2020	Universities of Adelaide and Manchester	Compressive and flexural strengths improved by 34% and 27% respectively. Water permeability reduced by 40%. Improved conductivity.	Continuing testing and searching for industry partners. FGR has become a member of the Concrete Institute of Australia, the Concrete Society, UK and the Mineral Producers Association to investigate the market.
Rubber Polymers	1/09/2020	Malaysian company, not disclosed	Improvements in rubber compound mining screen media and wear liner materials; tensile strength +20%, tear resistance +25%, abrasion loss -66%	Field trials continuing

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Boat Construction	22/09/2020	Ascent Shipwrights, WA	Better than 59% increase in flexural strength than existing composites	Larger scale testing; accelerated weather testing, hydrolysis resistance, water diffusion, UIV resistance
Speciality Greases & Fluids	05/10/2020	M&I Materials	PureGRAPH® evaluated in formulated products for specific markets. Collaboration between GEIC partners.	Formulation and further testing in progress.