

ASX Announcement

8 May 2017

Optimisation of Graphene Cell Provides Significant Increase in Capacity



first graphite
A high-quality graphene producer

Highlights

- Excellent improvements in productivity of Graphene Cell
- No loss in quality at higher production rates
- Confirms FGR's position as an industry leader, ideally positioned to capitalise on the graphene revolution

First Graphite Limited (ASX:FGR) is pleased to advise continuing optimisation of its graphene production cell has resulted in better than a 150% increase in capacity.

The Company first announced the successful commissioning of its Graphene Cell in September 2016. This was a noteworthy milestone as it took the results achieved from bench-scale test work at Adelaide University to commercial scale in a relatively short period of only a few months. The expenditure to achieve this outcome was relatively modest to this point, on equipment, establishment costs and research. The actual manufacturing cost of the Cell as announced previously, was less than \$50,000.

At the time, it was estimated the annualised graphene production for this initial design was approximately five tonnes per annum. While there is no firm terminal market for graphene products, and market information is at best opaque, speciality marketers have advised the Company the market price for graphene out of China, destined for the battery market, sells at a price of US\$100-150/kg (US\$100,000-150,000 per tonne). Should these prices continue to be applicable for graphene produced by First Graphite, the initial Cell has the potential to generate sales in the order of A\$1m per annum at the lower production rate. Thus, the Company believes it has developed a capital item which has the potential to deliver extraordinary profits.

The latest optimisation work has more than doubled the capacity of the Cell so that it can now produce up to 13 tonnes per annum with full utilisation, with the ability to produce at even higher rates demonstrated in some test runs, with as high as 300% improvement. Each Cell now has the potential to generate sales in the order of \$2m per annum as a result of these productivity improvements. The number of operating cells will increase in line with the growth in demand for graphene.

Shareholders should be very pleased with this result, especially because as recently as two years ago the Company had not even tested its vein graphite for its ability to be converted to graphene. The speed, and the costs at which the Company has consistently reached the milestones along the way, is a credit to the operating personnel.

The strategy of engaging Traxys, a specialist marketer of mining products ([2017-04-26-Strategic Marketing Alliance with Traxys.pdf](#)) should be seen in the context of this increasing graphene production capacity and the need to tap international markets. First Graphite and Traxys are already working closely to identify potential buyers and secure sales agreements. We are waiting for a

First Graphite Limited

ACN 007 870 760
ABN 50 007 870 760

Registered Office

Suite 3
9 Hampden Road
Nedlands WA 6009

Tel: +61 1300 660 448
Fax: +61 1300 855 044

Directors

Warwick Grigor
Craig McGuckin
Peter R Youd
Chris Banasik

Company Secretary

Peter R Youd

E: info@firstgraphite.com.au
W: firstgraphite.com.au

ASX Symbol

FGR, FGROB

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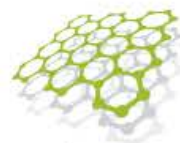
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number of potential customers to complete their test work on samples which have been provided in recent months with the most likely applications being polymers in the first instance. It would be reasonable to expect sales order within the next few months, and certainly well before the end of the year.

First Graphite is actively seeking a graphene specialist with international exposure to strengthen its graphene production and marketing capabilities.



Significantly Improved Production on Overflow 1 Screen Deck



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FGR's Managing Director Craig McGuckin said

"We believed FGR would be one of the lowest cost producers of bulk graphene when we first developed the Cell. These latest results improve this position even further, underwriting our status as an industry leader in this field. The next step is to start selling our product in commercial quantities. This will be the inflection point which will be highly significant as we switch from a company with potential to a company which delivers."

About First Graphite Ltd (ASX: FGR)

First Graphite produces high quality graphene from high grade Sri Lankan vein graphite.

First Graphite seeks to develop graphene production methods and acquire graphene related intellectual property which can provide further revenue related opportunities.

About Graphene

Graphene, the well-publicised and now famous two-dimensional carbon allotrope, is as versatile a material as any discovered on Earth. Its amazing properties as the lightest and strongest material, compared with its ability to conduct heat and electricity better than anything else, mean it can be integrated into a huge number of applications. Initially this will mean graphene is used to help improve the performance and efficiency of current materials and substances, but in the future it will also be developed in conjunction with other two-dimensional (2D) crystals to create some even more amazing compounds to suit an even wider range of applications.

One area of research which is being very highly studied is energy storage. Currently, scientists are working on enhancing the capabilities of lithium ion batteries (by incorporating graphene as an anode) to offer much higher storage capacities with much better longevity and charge rate. Also, graphene is being studied and developed to be used in the manufacture of supercapacitors which are able to be charged very quickly, yet also be able to store a large amount of electricity.

For further information, please contact

Craig McGuckin

Managing Director
First Graphite Limited
+ 611300 660 448

Warwick Grigor

Chairman
First Graphite Limited
+61 (0)2 9230 1930

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