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## Operations Update

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ASX Symbol

FGR, FGROA, FGROB

### *First Shipment of Graphite Received*

First Graphite (ASX: FGR) is pleased to provide an update on the operations of the graphite and graphene production business units.

#### Highlights

- First 20 tonne container of high grade graphite shipped from Sri Lanka
- High grade vein graphite ore to be used for;
  - (i) conversion to graphene, and
  - (ii) development of a marketing presence for vein graphite
- Development of 100% owned graphite mines continues with shaft sinking and development operating on triple shift program
- Successful commissioning of graphene production unit gives ability to supply graphene to industry for development of functionalised uses

#### Supplies of High Grade Graphite Received

The Company is pleased to announce that it is in receipt of its first shipment of graphite in Perth, being material sourced from a third party producer in Sri Lanka. This premium quality graphite is earmarked for both conversion to graphene and for use in accelerating the establishment of the Company's position as a credible supplier to the premium graphite market.

Given the time that it takes to develop and ramp-up the 100% owned graphite mines, the Company has adopted a dual strategy of acquiring and marketing third party graphite in parallel to sourcing its material from its own mines. This will accelerate the establishment of a credible presence in the market as a reliable supplier of premium quality graphite to world markets rather than waiting until sufficient size stockpiles have been accumulated from its own mines. It will also accelerate the availability of graphene that can be supplied to potential customers, given the rapid progress with the commissioning of the graphene cell.

#### Graphene production cell progress

The 250 litre production cell built by the Company has been successfully commissioned and run during the month of September.

During that month the cell has demonstrated its capacity to continuously produce significant amounts of high-quality graphene. Product with purity as high as 96 percent has been achieved during the month.

The Company continues to research the optimum mix of power and electrolyte, and will be undertaking further development work on the methodologies for screening, washing and drying of the graphene being produced. Several methods are under consideration, including the use of sonication screens and the use of a Vortex Fluidic Device (VFD) and Turbo Thin Film processing technology.

Managing Director, Mr Craig McGuckin said *"The dual sourcing strategy being adopted by FGR will accelerate the building of FGR's credibility as a reliable supplier of vein graphite to the market place, opening up distribution lines in preparation for expanding mine production. At the same time it gives flexibility to the advancement of the "just in time graphene production portals" which can be tailored to meet the requirements on graphene customers" From this point we will be engaging with customers more closely to meet their graphite and graphene supply needs. .*

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#### *About First Graphite Ltd (ASX: FGR)*

*First Graphite is aiming to develop an underground mining operation to extract high-grade, crystalline vein graphite, which is unique to Sri Lanka. The Company holds exclusive rights to exploration licenses covering approximately 39,500 hectares in area, with historical workings located within nearly all license grids.*

#### *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.*

#### *Nature of vein graphite*

*Sri Lankan graphite deposition model is best described from the 'bottom up': tension fractures formed in the metamorphic sediments, caused by the folding of the sediments, creating 'conduits' for the hydrothermal deposition of high quality vein graphite. Historically, mining of these veins has found the veins generally increase in thickness and grade quality with increasing depth. Graphite veins generally dip steeply at  $-70^{\circ}$  to near vertical, enabling 'narrow vein' extraction mining techniques similar to those used on narrow vein, high grade gold deposits. The method commonly used is an overhead retreat stoping technique where the high grade vein graphite is mined and hauled to surface without contamination. The graphite selvages, in contact with the surrounding waste, is hauled to surface and stockpiled for upgrading. The balance of the waste is used to fill the floor of the stope.*

*Due to the nature of the vein graphite, it is anticipated vein widths of ~25cm, using narrow vein mining techniques can be economically extracted from underground operations.*

For further information:

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