

ASX Announcement

26 March 2108

first graphene

Australia's leading graphene company

Strong Improvement in Vein Graphite Mining Rates

HIGHLIGHTS

- Continuous vein graphite production being achieved
- Extraction rates up to 500 kg/day are being achieved for each shaft, being within 10% of the long-term production targets set in the original mining plan (200 tpa per shaft)
- Multiple vein intercepts prepared for graphite production
- Rationalisation programs have reduced operating costs
- Ongoing training programs have resulted in improved standards and increased efficiencies
- Recent progress at the mines ensures long term graphite supply

Advanced materials company, First Graphene Limited ("FGR" or "the Company") (ASX: FGR) is pleased to report sustainable improvement in the performance of its mining division.

The primary focus in 2017/18, has been the construction and commissioning of the Commercial Graphene Production Facility at Henderson, as the Company graduated into a technology focused enterprise. The development of the graphite mines in Sri Lanka has been continuing simultaneously, at a steady pace.

The board previously took the strategic decision that it was not necessary to accelerate mine production ahead of the completion of the graphene processing facility, preferring a more prudent and lower cost approach that involved concentrating management resources on the more exciting growth opportunity that graphene presents. Now, the improvement in the mining performance corresponds with the commissioning of the graphene facility, positioning the Company as one of the world's largest suppliers of high quality bulk graphene.

The Company has found the development of its 100%-owned mines to be a challenging exercise, as it has progressively advised shareholders. It is a credit to the management team in Sri Lanka that it has been able to progressively address and overcome the issues as they have arisen, to reach the point where we are now hoisting good volumes of vein graphite.

Shareholders should understand that the delays in achieving the higher levels of graphite production have not disadvantaged the Company to any extent. The business plan calls for the mining and stockpiling of graphite for the conversion to graphene, being a value-added product many times more valuable than raw graphite. However, it was not until early 2018, that the Commercial Graphene Production Facility was ready to receive graphite, so up until now there has not been the need for large tonnages of the feed material.

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Nevertheless, to ensure that there was no risk to the interruption to the graphene production plan, management demonstrated prudence in negotiating a purchase agreement to acquire high-grade vein graphite from the Kahatagaha Graphite Lanka Limited mine. The Company is now in a strong position with stockpiles sufficient to feed the Commercial Graphene Production Facility for at least two years, operating at maximum capacity. Negotiations are currently underway that could lead to the doubling of this stockpile size in the coming months.

The commissioning of every underground mine, across a range of commodities, requires a period of development and preparation of workings ahead of achieving continuous ore production. It is not until operations move underground that a mining team begins to experience and starts to understand the exact nature of the ground conditions and the orebodies that it seeks to exploit. It can be a steep learning curve that often requires modification of initial mining plans and schedules to ensure they are optimised for site specific conditions.

Narrow-vein underground mining will never be a walk in the park. It requires a highly skilled workforce and vigilant management on a continuous basis. Having elevated the competency of the workforce through rigorous training and the enforcement of high standards, the Company is in a much better position than at the outset of mining. The mining infrastructure that has been constructed is a long-term investment in our future, with these mines having the potential for being productive for many years, and perhaps decades. Workings are down to depths of 40-50m now, with the potential to extend to levels deeper than 500m, as has been experienced in graphite mines operating elsewhere in Sri Lanka by other parties. In accordance with best practices, the Company will periodically engage with independent expert mining engineers to provide opinions and advice to ensure high standards of safety, efficiency and productivity.

Current Position – Phase 1 Completed at Aluketiya

After an extended time frame for the development of the Aluketiya mine, the vein graphite production rates have increased to achieve up to 500 kg per day, though the mine continues to experience better and worse rates depending up daily conditions. At this level of production it is now only 10% short of the original planned rate of 200 tonnes p.a. from each shaft, which is still viewed as an attainable rate within the coming months.

The Phase 1 mining has been completed and with this there are a multiple number of seam working faces that have been developed, ready for production. While these faces have been in the process of being established the graphite production has been ongoing. The underground geological interpretation continues to reinforce the current mine plan and rationalisation programmes have reduced the operating costs. The Company has ongoing training programmes to continue to improve efficiencies and production rates and mining option rates of return will bring Aluketiya productivity to best practice levels.

The table below demonstrates the tonnes per meter of advance achieved depending on drive height and vein thickness in meters. The circled area is our target production range per meter based on geological drilling. When developed in the future the ALK 18 intersection of 1.14m may provide up to 5 tonnes per meter advance.

Production capacities based on a standard drive dimensions

	Tunnel Height	<i>Kilograms per meter advance</i>										
		0.050	0.075	0.100	0.125	0.150	0.175	0.200	0.225	0.250	0.275	0.300
Vein thickness		0.050	0.075	0.100	0.125	0.150	0.175	0.200	0.225	0.250	0.275	0.300
Graphite Specific Gravity	2.2											
Production v tunnel height	1.50	165	248	330	413	495	578	660	743	825	908	990
	1.80	198	297	396	495	594	693	792	891	990	1089	1188
	1.90	209	314	418	523	627	732	836	941	1045	1150	1254
	2.00	220	330	440	550	660	770	880	990	1100	1210	1320

Description of the Production Plan - Aluketiya

Crosscuts from development drives are being designed and excavated to follow the graphite veins to their extent and recover graphite material, with secondary production coming from winzing activities.

J Shaft: The EMS interpretation, in-situ mapping, diamond core drilling and the examination of old workings all continue to reaffirm the validity of the current mine plan. However, one important observation is that caution needs to be exhibited in the shaft, as we continue to uncover previous workings which had not be identified in drilling or the EMS survey. When the miners come across these voids they need to carefully determine the extent of the old working and how safe it is to enter the area. This necessary safety procedure will slow ore extraction rates from time to time



Graphite veins in the crown (L) and face (R) in J Shaft

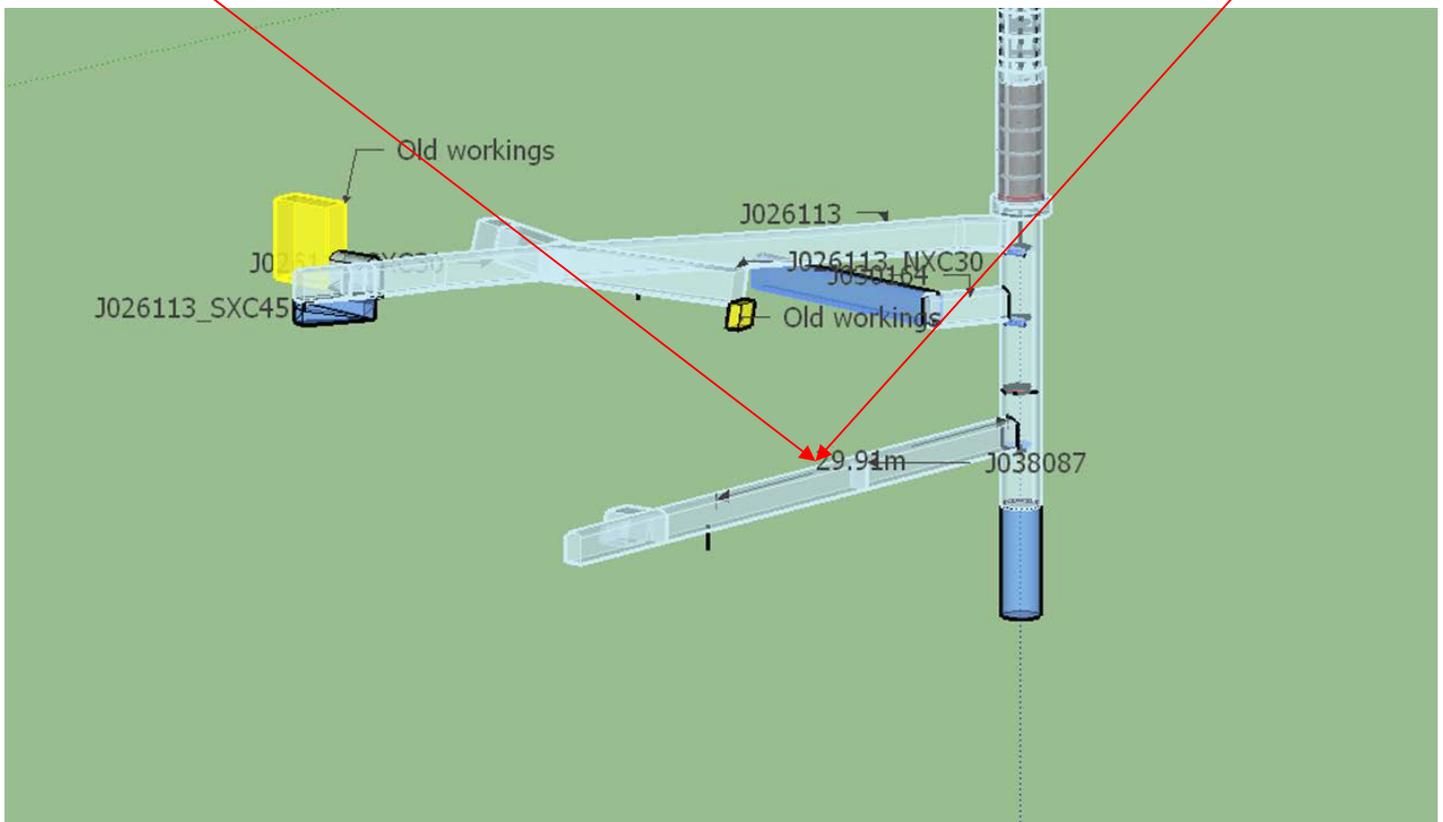
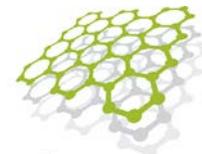


Figure 1: J Shaft Current Workings



H Shaft: As with Shaft J the EMS interpretation, in-situ mapping, diamond core drilling, along with the examination of old workings continue to reaffirm the suitability of the current mine plan. While old workings have been intersected in Shaft H they have not been as frequent as in Shaft J to date.



Graphite veins in the floor (L) and Face (R) of H Shaft

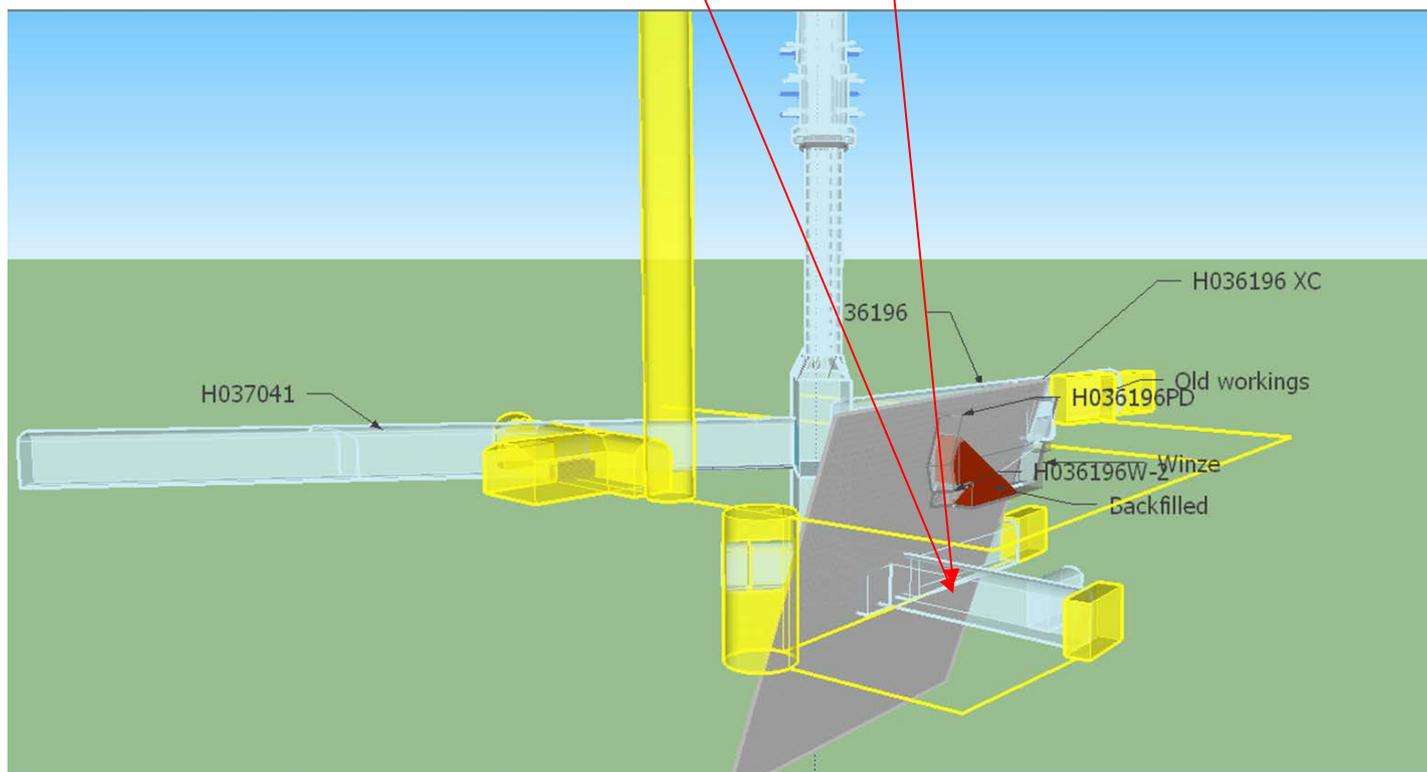


Figure 2: H Shaft Current Workings

Phase Two - Expansion

In the future there will be a requirement to expand the mine shafts past the current mining horizons to maximise the production. Drilling records and limited available historical data has indicated that the consolidation of the graphite seams occurs at depth, thereby offering the opportunity of improved productivity. This was amply demonstrated from the results of drill hole ALK18. The long-term mining at Aluketiya will require only minimal capital expenditure to establish and continue as world best system standard mine. At this point the target is for 200 tonnes per annum from Aluketiya shafts.

The June 2019 plan includes;

- there being zero HSE incidents,
- ramping to a 200 tonne per annum graphite production rate,
- a rationalisation of the mine dewatering system and improved mine ventilation network and
- a modification of the mine haulage system to facilitate the additional depths and mining rates.

Commenting on this development, FGR's Managing Director Craig McGuckin said

"The Company has made tremendous progress on its mining activities, while at the same time rationalising programmes to reduce operating costs and maintain proper safety standards. The work to date provides a strong foundation to ensure long term graphite production capability, which can be progressively expanded as and when the graphene division requires greater tonnages of feedstock. The Company remains the only entity to have been granted new "A" class graphite mining licences in Sri Lankan in the last 25 years"

About First Graphene Ltd (ASX: FGR)

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

First Graphene 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, means 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 can be charged very quickly, yet also be able to store a large amount of electricity.

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