

22 February 2022

Mayur Resources agreement paves way for low-carbon cement products

HIGHLIGHTS

- **Collaboration agreement signed with Mayur Resources on graphene technology for manufacture of low carbon cement**
- **Mayur Resources is developing Asia Pacific's first carbon-neutral quicklime, clinker and cement project for supply to Papua New Guinea, Australia and the South Pacific at much lower cost than Asian exporters**
- **Agreement strengthens FGR's position to assist cement companies in reducing carbon emissions**

First Graphene Limited (ASX:FGR; "First Graphene" or "the Company") is pleased to advise it has entered into a collaboration agreement with ASX-listed Mayur Resources (ASX:MRL) for the development of low-carbon cement products using PureGRAPH®-enhanced grinding aids and performance improvers.

The agreement is a key step in First Graphene's strategy to assist the cement and concrete industries in achieving a 25% reduction in carbon emissions. The cement industry currently accounts for up to 8% of global carbon dioxide emissions.

The purpose of the three-year collaboration agreement is to facilitate the exchange of knowledge through research and development work. Each party will contribute scientific and industry knowledge at its own cost, with First Graphene providing access to its PureGRAPH® product range, formulation and dispersion process technologies. First Graphene's technology has been developed through its previously announced works with University of Wollongong, University of Manchester and industry partners and will form the basis of the science which MRL will utilise during this collaboration period. FGR estimates its contribution of costs to be worth GBP 50,000. This will cover the time spent by the Company's R&D team and extensive laboratory trials conducted in its facilities in UK and Australia. Mayur Resources will take responsibility for manufacturing and supplying samples of cement clinker and other supplementary cementitious materials, consulting on cement materials optimisation and extensive laboratory trials. The agreement can be terminated if either party fails to deliver on its obligations noted above. There are no other material performance based or contractual terms of the agreement or an assessment of economic impact at this stage.

Ultimately, the objective of the collaboration is to jointly develop low-carbon cement for PNG, Australia and the broader Asia-Pacific cement markets using PureGRAPH®-enhanced cement additives. These would provide the Asia-Pacific cement industry with a global solution to reducing carbon dioxide emissions.

As part of its commitment to reducing emissions, the global cement segment is exploring methods to produce cements with lower clinker factor. Under current production methods, for every tonne of clinker produced, between 0.8 and 0.9 tonnes of CO₂ is emitted.

By adding low dosages of PureGRAPH®-enhanced cement additives to the final grinding phase of cement production, up to 20% lower clinker factor cement is made possible while

maintaining or improving cement performance. The PureGRAPH®-enhanced cement additives will assist cement manufacturers to gain superior strength and improved physical properties, while improving grinding efficiency in the grinding phase of cement production.

The global cement and concrete market is predicted to be valued at US\$774 billion by 2027, according to market research provider 360 Research Reports.

First Graphene Managing Director and CEO Michael Bell said: *"The agreement with Mayur Resources adds another important strategic partner to First Graphene's portfolio of global collaborators seeking to assist the cement and concrete industries to achieve its carbon reduction goals. First Graphene is implementing its go-to-market plan to become the world's leading supplier of graphene-enhanced cement and concrete solutions and Mayur Resources is ideally placed to help the Company increase traction in the Asia Pacific market."*

Mayur Resources Managing Director Paul Mulder said: *"The agreement with First Graphene presents a strategically aligned opportunity to partner with likeminded companies truly passionate about innovation and tomorrow technology. It targets the use of new additives in cement technology to increase performance and reduce carbon emission content from the final product."*

Investors

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About First Graphene Ltd (ASX: FGR)

First Graphene Ltd is the leading supplier of high-performing, graphene products. The company has a robust manufacturing platform based upon captive supply of high-purity raw materials and an established 100 tonne/year graphene production capacity. Commercial applications are now being progressed in composites, elastomers, fire retardancy, construction and energy storage.

First Graphene Ltd is publicly listed in Australia (ASX:FGR) and has a primary manufacturing base in Henderson, near Perth, WA. The company is incorporated in the UK as First Graphene (UK) Ltd and is a Tier 1 partner at the Graphene Engineering and Innovation Centre (GEIC), Manchester, UK.

About Mayur Resources (ASX: MRL)

Mayur Resources is focused on the development of natural resources in Papua New Guinea. Our diversified asset portfolio spans iron sands, lime and cement, battery minerals and renewable power generation. Mayur also holds a 43% interest in copper gold explorer/developer Adyton Resources, a company listed on the TSX-V (TSXV:ADY).

Mayur's strategy is to serve PNG and the wider Asia Pacific region's path to decarbonisation by developing mineral projects that deliver higher quality, lower cost, and "net zero" inputs for the mining and construction industries, as well as constructing a renewable energy portfolio of solar, wind, geothermal, carbon mitigation, and battery storage.

ASX ANNOUNCEMENT



Mayur is committed to engaging with host communities throughout the lifecycle of its projects, as well as incorporating internationally recognised Environmental, Social and Governance (ESG) standards into its strategy and business practices.

PureGRAPH® Range of Products

PureGRAPH® graphene powders and **PureGRAPH® AQUA** pastes with lateral platelet sizes of 50µm, 20µm, 10µm and 5µm, as well as a range of **PureGRAPH® Masterbatch** and **Admixture** products are available in tonnage volumes. The products are high performing additives, characterised by their high quality and ease of use.

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Trading Symbols

Australia: FGR

Frankfurt: FSE:M11

USA OTCQB: FGPHF

With authority of the board, this announcement has been authorised for release by Aditya Asthana, Chief Financial Officer and Company Secretary.