

5 November 2020

New Route to Hydrogen and Graphene-Based Battery Materials Funded by UK Government

HIGHLIGHTS

- **Grant awarded to FGR under the UK Sustainable Innovation Fund.**
- **Novel process technology directly converts low-cost hydrocarbon feedstocks to graphene materials and “green” hydrogen gas.**
- **Collaboration with the founding inventor at Kainos Innovation Ltd.**
- **Worldwide, exclusive licence to commercially exploit the technology.**

First Graphene Ltd (“ASX: **FGR**” or “the **Company**”), in collaboration with Kainos Innovation Ltd (UK), is pleased to advise it has been awarded a grant by the UK Government to progress the development of an innovative route to green hydrogen and battery grade materials.

The grant was awarded by Innovate UK under the UK’s Sustainable Innovation fund for the progression of unique process technology invented and patented by Kainos Innovation Ltd which directly converts low-cost hydrocarbon feedstocks to graphene materials and hydrogen gas. The technology requires the expertise of First Graphene UK Ltd to prototype manufacturing scale-up and commercial application development. First Graphene UK Ltd has a worldwide, exclusive licence to commercially exploit the technology.

The process manufactures high performing graphene products with controlled size, shape, and chemistry. Hydrogen gas is a by-product generated with no associated carbon oxide products and can be accurately described as “green” hydrogen. The project team estimates that from every tonne of petroleum feedstock, 940kg of graphene/graphitic carbon and 60 kg of green hydrogen gas is produced.

The manufacturing process is proven at the bench-top scale and the companies have now secured government support to;

- validate the process chemistry and optimise the choice of petroleum feedstock;
- confirm the capture of hydrogen gas; and
- prove the product performance in enhanced lithium-ion battery cathodes.

All research will be carried out in the UK, in collaboration with research partners at the University of Warwick and the University of Manchester. The project will provide First Graphene UK Ltd, a UK-based company with a manufacturing platform to access the multi-billion £ (GBP) energy storage market. The project begins in November 2020.

Craig McGuckin, Managing Director of First Graphene Ltd. says *"This new, innovative process provides our company with a foot in the door of both lithium-ion cathode materials and hydrogen production businesses. Further test work and process advancement is obviously required before we can comment on commerciality, but we are very encouraged by results achieved so far. The UK Government grant is a vote of confidence in what we are working on"*.

Dr. Richard Price, Director of Kainos Innovation Ltd., says *"I am very excited to be working with the First Graphene UK team based in Manchester, where they have excellent process engineering know-how which is essential for the success of this new process."*

Mark Copley, Associate Professor of WMG says *"We are looking forward to working with First Graphene on this project, which is another positive step towards helping them realize their energy storage application ambitions."*

Dr. Ian Campbell, Innovate UK Executive Chair says *"In these difficult times we have seen the best of British business innovation. The pandemic is not just a health emergency but one that impacts society and the economy. First Graphene UK Ltd's project, "An alternative route to green hydrogen and battery grade materials", along with every initiative Innovate UK has supported through this fund, is an important step forward in driving sustainable economic development. Each one is also helping to realise the ambitions of hard-working people."*

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.

PureGRAPH® Range of Products

PureGRAPH® graphene powders are available in tonnage volumes with lateral platelet sizes of 20µm, 10µm and 5µm. The products are high performing additives, characterised by their high quality and ease of use.

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With authority of the board, this announcement has been authorised for release, by Peter R. Youd Director, Chief Financial Officer and Company Secretary.