ASX ANNOUNCEMENT

22 JULY 2024

Pivotal role secured in $3.72m project to develop hydrogen storage solution

Highlights

- **HyPStore project launched to accelerate low-carbon hydrogen production and safe storage for transportation**
- **FGR joins nine-member consortia to lead production of graphene enhanced material applied to strengthen cryogenic hydrogen storage tanks and reduce permeability**
- **Combined project value of ~$3.72m contributed by UK and Australian members**
- **FGR to receive and benefit from portion of funding package worth circa $382k[1]**

First Graphene Limited (ASX:FGR; "First Graphene" or "the Company") is pleased to announce it has secured a partnership in a cross-sector project named "Accelerating Low-carbon Hydrogen Production and Safe Storage for Utilisation in Mobility" ("HyPStore").

HyPStore brings together Australian and UK expertise to develop and commercialise novel light-weight impermeable cryogenic all-composite (Type-V) tanks for the safe storage of liquid hydrogen.

Grant supplements project delivery

The project cost of approximately $3.72 million is supported to the tune of $1.73 million through Innovate UK's UK - Australia Renewable Hydrogen Innovation Partnership Programme ("RHIPP") and commences in July 2024 for a duration of approximately 21 months.

First Graphene is one of nine entities involved in the consortia and will contribute approximately $382,000 towards the project, of which $267,000 will be directly received by FGR through RHIPP.

This funding will support the Company's pivotal project role focused on developing graphene enhanced resins to reduce hydrogen permeability and increase strength in composite systems.

Driven by growing demand for safe production, storage and transportation of hydrogen as a highly sustainable source of clean energy in transportation sectors, HyPStore is led by Manchester-based Graphene Innovations Manchester ("GIM").

Other industry players include Australian Sunlight Group ("ASL"), aerospace industrial partners Slingsby Advanced Composites and Hydrogen Aircraft Services Ltd. ("HASL").

Universities involved include Queen Mary University of London ("QMUL"), Brunel University London ("BUL"), University of Melbourne ("UoM"), and University of Southern Queensland ("UniSQ").

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[1] Ibid.

Supply chain enhancements

HyPStore is designed to facilitate a disruptive solution for the production and storage of liquid hydrogen, enabling a new generation of mechanically robust impermeable tanks with enhanced safety through integration of leak-before-break ("LBB") and a range of other innovative features.

The project will explore hydrogen gas production through a novel plastic recycling process developed by ASL known as Flash Joule Heating ("FJH"), before the hydrogen is purified and compressed into liquid.

On the storage front, the project aims to develop and commercialise GIM's Type-V tank (refer to Type-V pressure vessel below) manufacturing process to create an impermeable cryogenic tank for liquid hydrogen storage.

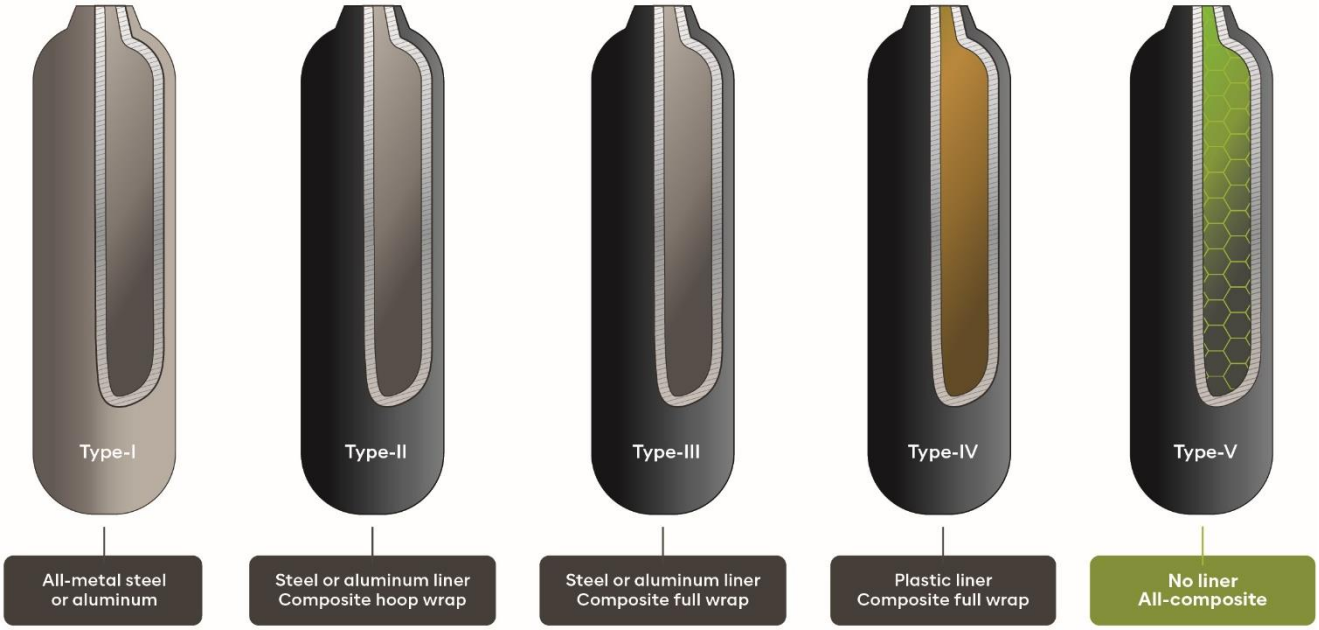

Figure 1: Five common pressure vessel types including Type-V tank.

Impermeability is achieved by combining dry filament with graphene nanoplatelets, forming a protective barrier within the structure of storage tanks – a process that has demonstrated a reduction in hydrogen permeability by up to 48 times.

Other innovations including capsular and thermoplastic self-healing systems developed by QMUL, and LBB safety designed by BUL will be built into the consortia's work and applied to storage tanks designed and manufactured.

Graphene to strengthen storage solution

First Graphene will impart knowledge and expertise of graphene nanoplatelets to manufacture an array of materials tailored for optimal performance in composite pressure vessel ("CPV") to minimise hydrogen permeation, whilst seeking to introduce other application benefits such as enhanced fire retardancy and inherent strength.

The developed CPV storage solution will be integrated, tested and validated by HASL's hydrogen-fueled, unmanned High-Altitude Platform System, used to provide greater broadband and cellular network connectivity from the stratosphere.

First Graphene Managing Director and CEO Michael Bell said:

"One of the main challenges the hydrogen industry faces is efficient storage and distribution, which is why this project is looking to accelerate solutions that can feed into a more efficient and safe supply chain, with immediate application to the aerospace sector.

Graphene has a clear role to play in the manufacture of improved lightweight composite pressure vessels with the ability to store cryogenic fuels such as liquid hydrogen.

With one foot in each country, FGR can leverage our extensive practical experience in the preparation of functionalised nanomaterials through manufacturing in Perth, WA, together with deep technical expertise in the characterisation and formulation of graphene-based resin systems through our technical team in Manchester, UK.

The HyPStore Project is pushing the boundaries in developing a solution to serve the hydrogen storage market, which is set to expand exponentially - particularly in the APAC region – over the next four years."

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This release has been approved for release by the Chairman.

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About First Graphene Ltd (ASX: FGR)

First Graphene Limited is focused on the development of advanced materials to help industry improve. The Company is a leading supplier of graphitic materials and product formulations with a specific commercial focus on large, high-growth global markets including cement and concrete; composites and plastics; coatings, adhesives, sealants and elastomers (CASE); and energy storage applications.

One of the key outcomes these advanced materials offer is the reduction of carbon dioxide emissions, whether directly through a reduction in output of these harmful greenhouse gases or lower energy usage requirements in manufacturing, or indirectly due to enhanced performance characteristics and extending the usable life of products.

First Graphene has a robust manufacturing platform based on captive and abundant supply of high-purity raw materials, and readily scalable technologies to meet growing market demand. As well as being the world's leading supplier of its own high performance PureGRAPH® graphene product range, the Company works with multiple industry partners around the world as a supplier of graphitic materials and partner to research, develop, test and facilitate the commercial marketing of a wide range of sector-specific chemical solutions.

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 member of the Graphene Engineering Innovation Centre (GEIC), Manchester, UK, where it has a strong marketing and R&D capability.