



Haydale Graphene Industries plc

("Haydale" or the "Company")

Delivery of Two New Plasma Reactors

29 December 2014

Haydale Graphene Industries plc (AIM:HAYD), the Company focused on enabling technology for the commercialisation of graphene, whose functionalisation process has been verified by the National Physical Laboratory, is pleased to announce the arrival of two new Rotovac plasma reactors. These reactors, designed in collaboration with Haydale and built by Tantec A/S, have been delivered and are currently being commissioned.

Ray Gibbs, CEO at Haydale, commented:

"As we announced on 23 October, these two new machines will increase our capacity and operational flexibility to meet the anticipated further increase in demand in 2015. The delivery of these reactors represents the achievement of another milestone in the development targets we set out at the time of our IPO. Commissioning has already begun and we expect these reactors to be fully operational in January 2015. We will then be capable of functionalising a significantly higher volume and range of graphenes and other carbon nanomaterials to enable effective dispersion into target materials such as thermoplastics, thermosets and specific fluids. The commercialisation of these nano-enhanced materials requires the correct dispersion as a pre-requisite for enhanced performance of both monolithic and composite systems to enable the raw material manufacturer and industrial user to realise the true technical and commercial opportunities that nano enhancement provides to the end user.

"We see the market as needing material of a consistent, repeatable quality that can then be scaled up even further as demand increases. Accordingly, we have ordered a further plasma reactor, which is larger and will also be used as a demonstrator. This is expected to be delivered within three months and will provide us with substantial volume capability as well as the ability to control the reactor remotely which is essential as Haydale seeks to install them into customers' production facilities."

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Images of the reactors are available on request.

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## **About Haydale**

Haydale has developed a patent-pending proprietary scalable plasma process to functionalise graphene and other nanomaterials. This enabling technology can provide Haydale with a rapid and highly cost-efficient method of supplying tailored solutions to enhance applications for both raw material suppliers and product manufacturers.

Functionalisation is carried out through a low-pressure plasma process that treats both mined, organic fine powder and other synthetically produced nanomaterial powders, producing high-quality few layered graphenes and graphene nanoplatelets. The process can functionalise with a range of chemical groups, with the level of functionalisation tailored to the customer's needs. Good dispersion improves the properties and performance of the host material and ensures the final product performs as specified.

The Haydale plasma process does not use wet chemistry, nor does it damage the material being processed; rather, it can clean up any impurities inherent in the raw material. The technology is a low energy user and most importantly environmentally friendly. The Haydale method is an enabling technology, allowing the Company to work with a raw material producer who seeks to add value to the base product and tailor the outputs to meet the target applications of the end user.

Haydale, based in South Wales and housed in a purpose-built facility for processing and handling nanomaterials, is facilitating the application of graphenes and other nanomaterials in fields such as inks, sensors, energy storage, photovoltaics, composites, paints and coatings.

[www.haydale.com](http://www.haydale.com)

**About Tantec**

The Tantec Group is a privately held company founded in 1974 and is located in Lunderskov, Denmark. It is a leading manufacturer of standard and customised Plasma and Corona systems for surface treatment of plastics and metals to enhance adhesion properties with more than 40 years of experience in delivering and manufacturing quality, high-end surface treatment products for any industry.