



Press Release

Proven Plasma Developer Wins UK Government Funding for Green Hydrogen Study

19 May 2022, Swindon, UK: Tetronics, a world leader in plasma arc systems focussed on decarbonising challenging industrial processes, is proud to receive a contract award from the Department for Business, Energy & Industrial Strategy (BEIS) under the UK government's Low Carbon Hydrogen Supply 2 Competition (HSY2).

The competition forms part of BEIS' £1 billion Net Zero Innovation Portfolio, which aims to accelerate the commercialisation of innovative clean energy technologies and processes through the 2020s and 2030s. More specifically, HYS2 aims to catalyse innovative solutions for hydrogen production, storage and transport applications – reducing costs and ensuring that the UK continues to develop world leading technologies for a future hydrogen economy.

Tetronics is the most experienced plasma company in the world; founded on five decades of R&D and 127 patents (granted and pending), with over 20 years of operational expertise, across more than 95 global reference sites. The majority of these existing applications are in resource recovery from challenging waste streams, including automotive or industrial catalysts, and decarbonisation of heat intensive manufacturing processes – such as steel, glass and cement. World class clients include Harsco, Hitachi-Zosen, Mitsubishi, Nippon Steel and Outokumpu.

More recently the company has been researching green hydrogen production using the Tetronics' Hydrogen Plasmolysis (THP) Technology. THP applies the "plasma effect" which involves both highly concentrated electrical energy, as well as the high temperature and pressure gradients arising from the plasma arc.

Tetronics believes that, when compared with current benchmark electrolysis technologies, THP offers a step-change in performance, including: considerable energy efficiency improvements (kWh per kg of Hydrogen); associated cost savings; significant greenhouse gas reductions; improved competitiveness at small and large scale; and smaller physical plant footprint for equivalent Hydrogen production.

The primary objective of Tetronics' successful HYS2 project bid is to deliver a new, more efficient and lower cost technology for the sustainable, scalable and deployable production of green hydrogen gas – through the utilisation of its innovative THP technology at a relevant scale. The project will be conducted in two phases.

Tetronics has secured funding from BEIS for Phase one of the study as part of the Low Carbon Hydrogen Supply 2 competition; with up to £6million available in Phase two subject to a competitive tender process. Phase one is focussed on developing technical, economic and operational considerations – including the optimisation of the process through testing at a scale two orders of magnitude greater than any previous work. This will validate THP and inform the design for a demonstration plant.

Under phase two, Tetronics will build and operate an industrial scale demonstrator plant to validate a commercially viable THP process to supply green hydrogen with zero CO₂ emissions (assuming the use of green electricity), at greater efficiency and lower cost than current technologies.

Graeme Rumbol, Chief Executive of Tetronics, said: “Our highly scalable, compact and cost effective THP process offers significant improvements in energy efficiency for green hydrogen production, whilst delivering considerable greenhouse gas reductions. We look forward to combining Tetronics' fifty years of plasma expertise with BEIS' funding, guidance and contacts to demonstrate the environmental and commercial benefits of THP; while helping to accelerate the UK's green economy and create significant global exports.”

Energy Minister Greg Hands said: “The UK is truly leading the world in hydrogen innovation thanks to the exciting efforts of companies like Tetronics.

“The government support which they have received today will help to boost the development of hydrogen as the clean, affordable, homegrown superfuel of the future.”

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Notes to Editors

Tetronics

Tetronics is a leading environmental technology company with over 55 years' global experience delivering clean plasma technology for maximum resource recovery, the highest levels of hazardous material destruction, and decarbonisation of heat-intensive industrial processes – such as steel, glass and cement.

Tetronics' resource recovery process generates an inert, robust and fully vitrified by-product, Plasmarok®, that has a wide range of commercial applications, particularly in construction.

Tetronics' capabilities encompass everything from initial modelling/feasibility assessment, testing of process material at its own pilot facilities, through to design, supply, site installation/commissioning and ongoing support of full commercial plants.

Tetronics' 95 reference sites are helping its multi-national clients meet the Net Zero agenda and the company has a strong pipeline of future projects in the relevant disciplines: CO₂ reduction; sustainable energy supply; alternative fuels; process electrification; energy and critical mineral security.

www.tetronics.com

The Department for Business, Energy & Industrial Strategy (BEIS)

This funding has been made available from BEIS' £1 billion Net Zero Innovation Portfolio, which aims to support innovation in the supply of hydrogen. This competition looks to provide funding for projects that can help develop a wide range of innovative low-carbon hydrogen supply solutions.

The Low Carbon Hydrogen Supply 2 Competition

The Low Carbon Hydrogen Supply 2 Competition forms part of BEIS' £1 billion Net Zero Innovation Portfolio, which aims to accelerate the commercialisation of innovative clean energy technologies and processes through the 2020s and 2030s. Low carbon hydrogen will be critical for meeting the UK's legally binding commitment to achieve net zero by 2050. The Low Carbon Hydrogen Supply 2 (HYS2) competition is to support the development of innovative solutions for the supply of hydrogen.

Hydrogen supply solutions include hydrogen production, storage, transport and technologies that could enable a wider hydrogen economy. The competition aims to catalyse innovation in the supply of hydrogen; reducing costs, bringing new solutions to market, and ensuring that the UK continues to develop world leading technologies for a hydrogen economy.

www.beis.gov.uk

www.gov.uk/government/publications/low-carbon-hydrogen-supply-2-competition