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EQTEC plc

("EQTEC", the "Company" or the "Group")

Successful results of steam oxygen gasification tests with mixed waste feedstock for advanced biofuel applications through EQTEC technology

EQTEC plc (AIM:EQT), a global technology innovator powering distributed, decarbonised, new energy infrastructure through its waste-to-value solutions for hydrogen, biofuels, and energy generation is pleased to announce the successful outcomes of recent tests for complex feedstock conversion for advanced biofuels such as renewable natural gas (RNG), hydrogen or transport fuels such as sustainable aviation fuel (SAF) (the "**Tests**"). The Tests, carried out at the Company's R&D facilities at the Laboratoire d'Études et de Recherche sur le Matériau Bois (LERMAB) at the Université de Lorraine in Épinal, France indicate that EQTEC's patented and proprietary technology for steam-oxygen gasification can successfully and efficiently convert non-recyclable waste including plastics into synthesis gas (syngas) for advanced applications such as liquid fuels.

The Tests were commissioned by CompactWTL Limited ("**CompactWTL**" or the "**JV**"), the joint venture between the Company and gas-to-liquid technology provider CompactGTL Limited ("**CompactGTL**") as part of the development work the JV is pursuing to establish a market-ready waste-to-liquid fuels solution ready for market.

The three, key conclusions from the Tests were (1) that EQTEC's technology successfully processes complex waste feedstock even with the presence of troublesome pollutants; (2) that EQTEC's steam-oxygen gasification process produces a high-quality syngas usable for advanced biofuels; and (3) that EQTEC's proprietary kinetic model used during design phases of project work is accurate for complex feedstocks and syngas for advanced applications.

More specifically:

(1) **Feedstock.** The feedstock utilised for the Tests was a mixture of waste wood and refuse-derived fuel (RDF) the latter of which contained contaminated wood, municipal solid waste of paper and plastics, as well as a number of non-reactive materials such as glass, ceramic, metals, stones and polymers with flame-retardant compounds. The EQTEC process effectively and efficiently transformed the reactive substances in the feedstock, with removal of the non-reactive materials. EQTEC's process designs typically include a continuous extraction system that removes such substances prior to the gasification stage for an optimal reaction in the gasifier and efficiency throughout the syngas production process.

(2) **High-quality syngas through steam-oxygen gasification.** The testing was successful, with stable fluidisation and a stable gasification temperature over 60 hours of operation. The process demonstrated a highly efficient oxygen distribution, efficient feedstock conversion and low levels of nitrogen production, all of which evidence efficiency and optimal syngas production with very limited syngas pollutants. Additionally, when changes to parameters were introduced, the system responded rapidly, indicating good control over process variations. The syngas produced included much higher hydrogen and carbon monoxide concentrations relative to those for air-blown gasification, which can be upgraded through water-gas shift for methanation to RNG, hydrogen separation or gas-to-liquids processing for liquid fuels.

(3) **Kinetic model accuracy.** EQTEC's proprietary kinetic model, used by EQTEC engineers for design of client-specific syngas process configurations, predicts syngas composition and other key outputs of the process based on feedstock composition and other variables input to the process. The output data of the Tests indicate that EQTEC's kinetic model accurately predicted the proportions of various chemical elements in the syngas within margins of 0.1% - 2.5%, despite the complexity and variability of the input feedstock. The data gathered will allow EQTEC to further fine-tune its proprietary process capabilities and apply the new knowledge to further improvements in the pilot plant and industrial plant designs.

The results of the Tests support other steps taken by the Company toward applying its capabilities to advanced fuel

applications. The Company announced on 31 October 2022 the upgrade of its installation at LERMAB to support steam-oxygen gasification, one of only a very few end-to-end process installations of its type and one which the Company has used repeatedly since the upgrade to prepare for deployment of commercial-scale facilities for advanced biofuels. To drive commercial progress into the liquid fuels sector, the Company announced on 16 January 2024 a joint venture with gas-to-liquids technology company Compact GTL.

Dr Yoel Alemán, CTO of EQTEC, commented:

"The Tests represent another important milestone for EQTEC in our technology innovation roadmap. The development of a steam-oxygen gasification process is the key for the application of the syngas produced through EQTEC's technology to generate different high-value, in-demand commodities such as hydrogen, methane or other biofuels, from a wide range of waste feedstocks including RDF, plastics and others. As the demand increases for highly efficient and clean conversion facilities for hydrogen, RNG and advanced biofuels, and as Industrial clients, Utility companies and Waste Managers look for scalable, local-to-local solutions, EQTEC's capabilities with steam-oxygen gasification will allow us to offer a range of solutions that fit a variety of business models."

Anar Asgarov, CEO of CompactGTL, commented:

"We are very pleased with the progress the joint venture is making in developing the pilot plant. The successful test results are a strong validation of the accuracy of EQTEC's simulation model, reinforcing our confidence in the technology's ability to convert complex waste into valuable biofuels. CompactGTL has already made significant investments into the joint venture, and we are actively progressing discussions with infrastructure investors to finance the reference plant. These outcomes are an encouraging step forward in our collaborative efforts to bring a commercially viable waste-to-liquid fuels solution to market."

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About CompactWTL

CompactWTL Limited is a 50/50 joint venture owned by the Company and CompactGTL (together, the "**Partners**"). The "WTL" stands for "waste-to-liquids" and indicates the intent of the Partners to develop an integrated, end-to-end waste-to-liquid fuel solution based on EQTEC syngas technology and CompactGTL gas-to-liquid conversion technology. This solution is expected to significantly de-risk projects seeking reliable, SAF or other liquid fuel capabilities. The Partners intend to apply the solution in support of the ground transport, airline and other industries.

Establishment of the JV represents a next step following work undertaken by the Partners under the collaboration framework agreement announced by the Company on 7 July 2022 (the "**CFA**"). Under the CFA, the Partners agreed to collaborate for the design, development, construction and operation of waste-to-fuel projects and other synthetic fuel and energy infrastructure projects, with an initial focus on small-scale, modular, waste-to-fuel plants.

Since execution of the CFA, the Company and CompactGTL have together pursued funding, identified project opportunities and undertaken joint design and costing to build gas-to-liquids R&D capabilities at EQTEC's syngas pilot plant at the Université de Lorraine's Laboratoire d'Études et de Recherche sur le Matériau Bois (LERMAB) facility in Épinal, France.

CompactWTL has completed feasibility work toward a reference plant for its integrated solution (the "**Reference Plant**"). The Reference Plant is expected to process 150 tonnes per day of refuse-derived fuel from municipal waste (RDF) to produce 160

barrels per day of synthetic crude ("**syncrude**") at 90% annual operational efficiency. If processed, the syncrude would be further refined to produce c. 11,700 litres per day of SAF, c. 8,650 litres per day of diesel and c. 5,000 litres per day of naphtha. The total Capex for building the Reference Plant estimated through the feasibility work is c. £60 million, with roughly a third of that for purchase of EQTEC technology and another third for purchase of CompactGTL technology.

About CompactGTL

CompactGTL ("**CGTL**") is one of the world's leading, small scale, modular gas-to-liquid (GTL) companies. Since its inception in 2006, CGTL has focused its technology development and commercialisation programme on the upstream oil & gas sector, recognising problematic stranded gas as the most compelling market opportunity.

CGTL has focused its development activities on delivering what commercially viable plants need to achieve and has developed a unique, patent protected and proven GTL process utilising Fischer-Tropsch (FT) catalytic conversion. The CGTL small scale GTL technology has been proven to work for the conversion of associated gas into synthetic liquids at the point of production. The technology has powerful oil company endorsement by Petrobras who successfully operated CGTL's Commercial Demonstration Plant for 3 years in Brazil.

CGTL sees a huge new opportunity to transition the company from a focus on primary fossil derived feedstocks to a focus on biogenic feedstocks, such as residual biomass, refuse derived fuels and municipal solid wastes, that can be turned into valuable and sustainable liquid fuels. To achieve this CGTL has partnered with EQTEC and believe that there are significant synergies in the integration of CGTL's FT technology and EQTEC's proven ability to produce high quality synthesis gas from a range of feedstocks.

About EQTEC

As one of the world's most experienced thermochemical conversion technology and engineering companies, EQTEC delivers waste management and new energy solutions through best-in-class innovation and infrastructure engineering and value-added services to owner-operators. EQTEC is one of only a few technology providers directly addressing the challenge of replacing fossil fuels for reliable, baseload energy. EQTEC's proven, proprietary and patented technology is at the centre of clean energy projects, sourcing local waste, championing local businesses, creating local jobs and supporting the transition to localised, decentralised and resilient energy systems.

EQTEC designs, specifies and delivers clean, syngas production solutions in the USA, EU and UK, with highly efficient equipment that is modular and scalable from 1MW to 30MW. EQTEC's versatile solutions process 60 varieties of feedstock, including forestry waste, agricultural waste, industrial waste and municipal waste, all with no hazardous or toxic emissions. EQTEC's solutions produce a pure, high-quality synthesis gas (syngas) that can be used for the widest range of applications, including the generation of electricity and heat, production of renewable natural gas (through methanation) or biofuels (through Fischer-Tropsch, gas-to-liquid processing) and reforming of hydrogen.

EQTEC's technology integration capabilities enable the Group to lead collaborative ecosystems of qualified partners and to build sustainable waste reduction and green energy infrastructure around the world.

The Company is quoted on the London Stock Exchange's Alternative Investment Market (AIM) (ticker: EQT) and the London Stock Exchange has awarded EQTEC the Green Economy Mark, which recognises listed companies with 50% or more of revenues from environmental/green solutions.

Further information on the Company can be found at www.eqtec.com.

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