

Written Evidence Submitted by Powerhouse Energy Group (HNZ0068)

INTRODUCTION

Powerhouse Energy Group's unique technology provides a solution to non-recyclable plastic and produces a clean fuel that can help improve air quality by replacing diesel with hydrogen as a transport fuel. Powerhouse technology aims to be used at a local level providing a closed loop solution within the community for non-recyclable plastic waste, creating abundant local supplies of hydrogen fuel to decarbonize trucks and buses, helping to accelerate the clean energy transition to reach the target of net zero emissions by 2030.

Powerhouse Energy Group's technology is unique, viable now and a UK first.

The company wishes to submit evidence to the inquiry to highlight the range of different hydrogen technologies that can help drive the growth of low carbon hydrogen. As a sustainable hydrogen company, Powerhouse's unique technology produces clean, hydrogen fuel from non-recyclable plastic. Powerhouse's technology is unique and has multiple environmental benefits including providing a solution to unrecyclable plastic.

The Government's focus on hydrogen for domestic heating is welcome, but should be broadened to include an emphasis on how hydrogen can revolutionise and decarbonise transportation in the UK. Decarbonising transportation is a monumental task which should be central to Government policy now in order to enable fuel switching that will drive market demand for hydrogen supply within challenging net zero timescales.

Powerhouse Energy welcomes the Government's announcement of the £240 million Net Zero Hydrogen Fund. We urge Government to look at the wide range of hydrogen production technologies and take into account all types of hydrogen production, including localised hydrogen production from non-recyclable plastic. This will deliver multiple environmental, climate, air quality and public health benefits, whilst also driving market transformation in the transport sector that will be critical to achieving net zero goals.

Various government bodies must adopt strategies that recognise the challenges we are facing. There is support from government for those technology companies working on innovative technologies to create alternative transport fuels from biogenic and waste plastic feedstocks for use in conventional engines both road and air transportation and this must be broadened into hydrogen. The challenge for Powerhouse technology remains that the footprint of the plastics are not being apportioned through the value chain – and this challenge may need addressing.

Powerhouse Energy believe that CCS is an important technology that is essential if we are to decarbonise transport. Government must provide incentives for investments in CCS if this is to be commercially viable.

Powerhouse technology is driving market transformation, creating a reliable, closed loop and local supply of hydrogen to make fuel switching viable. Powerhouse's technology allows hydrogen to be generated and distributed at local waste management sites without the need for an expensive distribution network, hence presenting an easy early adoption route for hydrogen. We find ourselves as one of new technology developers and innovators eager to be a part of a hydrogen adoption for transportation strategy and to facilitate the decarbonisation of the transportation sector. We believe we can drive large scale fuel switching for trucks, buses and in due course trains.

Powerhouse Energy is building the first commercial waste plastic to hydrogen facility located in the North West of England which aims to be operational towards the end of 2021. Technologies that are 'home-grown', such as ours, must be championed by Government, particularly in the lead up to COP26 in Glasgow.

Our technology is transferable to towns and cities across the UK who require a solution for non-recyclable plastic and wish to make an impact on local air quality by encouraging transition to hydrogen fuel for transportation. Communities will be able to solve the problem of non-recyclable plastic whilst producing a clean fuel for use locally.

The waste plastic to landfill volumes are huge, estimated at 6.3 billion tonnes worldwide and, even with substantial reductions in volumes the challenge is a very significant one. Powerhouse is one of a number of chemical regeneration companies whose products and plants will serve as a viable alternative for companies, councils and governments internationally to regenerate unrecyclable plastics that are currently routed to landfill or exported. This technology can have an impact on the world's oceans, rivers and seas by helping to reduce the amount of plastic polluting our environment.

Challenges surrounding the distribution of hydrogen have been addressed with Powerhouse technology. Our technology and business model enables hydrogen to be generated and distributed at local waste management sites without the need for an expensive distribution network, hence presenting an easy early adoption route for hydrogen.

For hydrogen to be made widely available and adopted as a clean fuel for transportation this will require adequate infrastructure for fuelling. Powerhouse Energy will produce clean fuel from non-recyclable plastic at a local level. We envisage a series of closed loop networks located across the UK, reliably supplying locally-produced hydrogen fuel, encouraging people to switch to hydrogen fuel cell vehicles, and enabling fuel-switching across whole fleets of heavy vehicles. Producing hydrogen locally enables multiple benefits including reduced carbon footprint, as well as substantial cost savings related to storage and distribution. There is 4.9 million tonnes of plastic waste generated in the UK each year and with Powerhouse technology there are ample opportunities to create these local networks in order to promote the use of hydrogen fuel for transportation and to encourage the public to adopt hydrogen fuel for their vehicles.

Powerhouse technology is unique in that it produces low carbon hydrogen from non-recyclable plastic. The positive impact this technology can have on our environment is two-fold. Powerhouse technology not only helps improve air quality, by replacing diesel with a clean fuel, but it helps solve the world's problem of unrecyclable plastic and can help clean up our oceans.

Hydrogen fuel for transportation, particularly heavy goods vehicles and buses and trains must be prioritised in the Government's drive for net zero. Transport is now the biggest single source of emissions. Decarbonising through increasing the use of hydrogen fuel will have a very significant impact on the UK's target for net zero emissions.

(January 2021)