First UK trial of hydrogen blended gas hailed a success

- HyDeploy, the first project in the UK to blend hydrogen into a natural gas network, hailed a success in a report published today.
- Customers used hydrogen blended gas safely in their homes and without the need to make any changes to their existing appliances.
- 100 homes and 30 university building on a private gas network at Keele University received the blended gas for a period of 18 months which ended in spring 2021.
- The trial paves the way for larger demonstrations on a public gas network.

The results of the first phase of a ground-breaking green energy project, that could help Britain dramatically cut its carbon emissions and open the door to a low-carbon hydrogen economy, have been published today.

Hydrogen produces no carbon dioxide when used, making it a viable alternative for heating homes and businesses to achieve the Government's target of Net Zero carbon emissions by 2050, unlike natural gas, which is responsible for over 30% of carbon emissions.

Steve Fraser, Chief Executive of Cadent said:

"I would like to thank the customers at Keele University for their willingness to take part in this trial. HyDeploy is a ground-breaking collaboration and has demonstrated very clearly that consumers can

safely receive up to 20% hydrogen blended with natural gas, without the need to make any changes to their existing appliances.

"With 8 in 10 of our homes in the UK heated by natural gas – it is an energy we are familiar with. Adopting hydrogen blending across the gas networks would save carbon emissions equivalent to removing 2.5m cars from our roads – a huge step towards Net Zero.

"Importantly customers experienced no disruption and felt positively towards using hydrogen blends and the trial. Blending hydrogen into the natural gas network is a critical stepping-stone in helping the UK reach Net Zero by 2050."

Gas safety checks were carried out in the homes and buildings in the trial area. Laboratory tests were carried out on a range of gas appliances, as well as extensive research on the effect of hydrogen on the different materials found in the gas network and the appliances.

Keele resident Rob Meredith said:

"I was excited to be a part of this trial. I found that using hydrogen blended had no impact on any of my gas appliances, and I carried on cooking and using my heating like normal."

Professor Trevor McMillan, Vice Chancellor of Keele University said:

"We're delighted that Keele University has been able to play a crucial role in blending hydrogen into the natural gas network.

"HyDeploy has been a perfect fit for Keele University's sustainability ambitions as an institution we are proud to have been able to use our campus and involve our staff and residents in this landmark project."

The success of the trial at Keele University has paved the way for a larger pilot project at Winlaton, near Gateshead where 668 houses, a school and some small businesses have been receiving hydrogen blended gas on a network operated by Northern Gas Networks (NGN) since early August 2021.

Mark Horsley, CEO at NGN said:

”The results delivered by the Keele project gave the Health and Safety Executive the confidence to approve the first blending of hydrogen with natural gas on the public gas network. We’re delighted that our customers in Winlaton are now using their gas as normal whilst playing a vital role in the decarbonisation of the gas network.

“This next phase of HyDeploy will provide more vital evidence about the possibilities of blending hydrogen into the gas network across the UK, as an important stepping-stone to decarbonising heat.”

ENDS

HyDeploy Keele - YouTube

Report: https://www.dropbox.com/s/pbd0j0tvz98o5f8/21063_HyDeploy_Carbon_Savings_Report1.pdf?dl=0

Summary: https://www.dropbox.com/s/eei34h6oftsoeo6/21063_2PP_HyDeploy_Carbon_Savings_Handout.pdf?dl=0

Fast facts

- Heating homes and industry accounts for nearly half of all energy use in the UK and one third of the country’s carbon emissions.
- If hydrogen were blended with natural gas across the UK at a similar level to HyDeploy, it could save around 6 million tonnes of carbon dioxide emissions every year, the equivalent of taking 2.5 million cars off the road – without any disruption to households.
- Hydrogen was a major component in ‘town gas’, gas created from coal and used widely throughout Britain before the discovery of North Sea gas in the 1960s. Up to 60% of the gas (by volume) being used by consumers was hydrogen.
- Across Europe, permitted levels of hydrogen in the gas supply vary, from 0.1% currently in the UK to up to 12% in parts of the Netherlands.

Notes to Editors

HyDeploy is being delivered by the HyDeploy consortium, led by Cadent. The partners include Northern Gas Networks, Progressive Energy Ltd, Keele University, HSE – Science Division and ITM Power.

Keele University was viewed as the perfect location, owning and operating its own private gas network, which could be safely isolated from the wider UK gas network

The hydrogen was produced by an electrolyser. The electrolyser, produced by the UK based hydrogen energy solutions provider ITM Power, used an electrical current to split water molecules into hydrogen and oxygen.

Hydrogen is vital to tackling climate change - HyDeploy