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Guidance

Energy Security Bill factsheet: Enabling the Hydrogen Village trial

Updated 1 September 2023

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Heat in buildings is one of the biggest sources of greenhouse gas emissions in the UK, accounting for 22% of total UK emissions. Low carbon hydrogen could be a key option for decarbonising heat in buildings. Hydrogen boilers could offer consumers a heating option that works in a very similar way to natural gas, but without carbon emissions.

Why are we legislating?

The UK is already a world leader in investigating the use of hydrogen for heating, and the Ten Point Plan for a Green Industrial Revolution (2020) set out key milestones for a pioneering programme of trials. We are supporting industry to begin a neighbourhood trial, located in Fife, by 2024, and a large village trial by 2025. The trials will provide crucial evidence to inform decisions on the role of hydrogen in heat decarbonisation in 2026.

As outlined in our consultation response published in April 2022, we are now bringing forward the necessary legislative changes to facilitate the village trial (a grid conversion trial).

How the Bill will achieve this

The Bill will enable the effective and safe delivery of a hydrogen heat grid conversion trial and support protection of consumers in the trial area. It will do this by:

- Extending gas distribution network operators' (GDNs) existing powers of entry to ensure that consumers in the trial area can be safely connected to hydrogen instead of natural gas, and to cover the full range of in-home alterations which may be needed to conduct a hydrogen trial, such as replacing appliances and installing and testing safety valves. It is anticipated that GDNs will only ever use these powers of entry as a last resort to ensure consumer safety, and only once all other attempts to contact property owners and reach an agreement are exhausted;
- Enabling the Secretary of State for Business, Energy and Industrial Strategy (SoS) to make regulations requiring the GDN running the trial to follow specific processes to engage and inform consumers in an appropriate way about the trial; and
- Enabling the SoS to make regulations for the purposes of ensuring that consumers are protected before, during and after the trial.

FAQ

Will gas network engineers be able to force entry into homes in the trial area to connect them to hydrogen?

No one will be forced to use hydrogen. The Gas Distribution Network Operator delivering the trial will offer an attractive consumer offer for participants, as well as

viable alternative options for consumers who do not wish to or cannot participate in the trial, such as electric cookers and heating systems.

GDNs already have powers of entry into properties, and we are only extending these powers in a very limited way specifically for the trial. These powers will only be used as a last resort to ensure homes are kept safe. The existing rules on powers of entry will apply, which require the GDN to obtain a warrant from a Magistrate's court to use them.

Will consumers pay more for hydrogen than natural gas?

Consumers will not pay more to use hydrogen than they would for natural gas and will not be expected to pay for the installation and maintenance of hydrogen-capable appliances, or an alternative heating solution.

Will the hydrogen heating trials be safe?

Safety is fundamental. As with natural gas, measures will be needed to ensure that hydrogen is stored, distributed and used in a safe way. Before any community trial can go ahead the Health and Safety Executive (HSE) will need to be satisfied that it will be run safely.

Background

In July 2021, Ofgem and BEIS published a joint letter inviting the GDNs to submit applications to Ofgem for funding to support the detailed design stage of the village trial.

We ran a consultation (Hydrogen for heat: facilitating a grid conversion to hydrogen heating trial) between August and September 2021. Following supportive responses from stakeholders, the government confirmed its intention to proceed with the proposed legislative amendments required to facilitate hydrogen heating grid conversion trials, alongside measures to strengthen consumer protections for those in the trial area.

Following an assessment period in Spring 2022, Ofgem published on 6 May a decision document announcing that the proposals from Cadent and NGN had been selected to proceed to the next stage of the project. Areas within Whitby, Ellesmere Port and within Redcar, Teesside have been identified as potential areas for a hydrogen heating village trial.

The village trial will convert a large village of around 1,000-2,000 properties to hydrogen for heating instead of natural gas. Led by the gas networks, it will trial the conversion of existing gas network infrastructure in the local area, repurposing it for 100% hydrogen.

This will involve replacing consumers' natural gas appliances with hydrogen-compatible equivalents, making any other adjustments required to properties, and piping hydrogen to premises for the trial period through the existing natural gas network, which will be appropriately modified to ensure it can safely transport hydrogen.

Further information

The following documents are relevant to the measures and can be read at the stated locations:

- [Consultation Response \(https://www.gov.uk/government/consultations/hydrogen-for-heat-facilitating-a-grid-conversion-hydrogen-heating-trial\)](https://www.gov.uk/government/consultations/hydrogen-for-heat-facilitating-a-grid-conversion-hydrogen-heating-trial) (2022)
- [UK Hydrogen Strategy \(https://www.gov.uk/government/publications/uk-hydrogen-strategy\)](https://www.gov.uk/government/publications/uk-hydrogen-strategy) (2021)
- [Heat and Buildings Strategy \(https://www.gov.uk/government/publications/heat-and-buildings-strategy\)](https://www.gov.uk/government/publications/heat-and-buildings-strategy) (2021)
- [The ten point plan for a green industrial revolution \(https://www.gov.uk/government/publications/the-ten-point-plan-for-a-green-industrial-revolution\)](https://www.gov.uk/government/publications/the-ten-point-plan-for-a-green-industrial-revolution) (2020)

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