



Hydrogen Blending into GB Gas Distribution Networks: Consultation Response

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This paper is Transport & Environment's (T&E) response to questions posed by the consultation: [Hydrogen blending into GB gas distribution networks](#).

T&E is Europe's leading clean transport think tank and campaigning group. It was created as a member organisation over 30 years ago and now has staff in 6 countries, with 63 member organisations across 24 countries. It has had a UK office since 2019. T&E is a member of the European Clean Hydrogen Alliance. It also coordinates the International Coalition for Sustainable Aviation, which has observer status at the International Civil Aviation Organisation (ICAO); and is also an active member of the Jet Zero Council's SAF Delivery and commercialisation groups.

T&E recognises that hydrogen will be essential to decarbonise certain sectors, and believes that any long-term national strategy should focus on ensuring that those sectors are well-served by hydrogen production facilities. It is abundantly clear from the academic literature that hydrogen is not suited to being used in the gas grid. There have been [no less than 47 independent studies](#) that suggest it will be more cost-effective to decarbonise the UK heating using heat pumps, rather than hydrogen. Furthermore, [this was reinforced by the National Infrastructure Commission, which recently said that hydrogen had "no public policy case"](#). Putting green hydrogen into the gas grid would also result in the absolutely absurd scenario where electricity is used to create hydrogen, which is then injected into the gas grid, which is funneled to a power station where it is burnt to create electricity. [In 2021, electricity generation required 30% of the UK's total gas demand](#). It would therefore be a waste of political and financial capital to set up any mechanism that pushed hydrogen into the gas grid - even if it was as a taker of last resort.

The UK currently uses (grey) hydrogen [across 30 sites](#), predominantly in the chemical and refinery industries. Hydrogen is used in refineries to strip the sulphur out of petrol, meaning it has less air pollution impacts when burnt. Over time, the amount used in refineries should fall as the amount of fuel products produced falls with lower demand, but the amount used in the chemicals industry should remain (at least) constant. This means that there is an existing demand source for hydrogen that could and would use any low-carbon hydrogen produced. Political and financial capital should be spent ensuring that any near-term future low-carbon hydrogen can be channeled to these demand sources. Government policies should be put in place to ensure that these demand sources switch to low-carbon hydrogen as quickly as possible.

Furthermore, there will be other demand sources for low-carbon hydrogen that appear relatively soon. In transport, the Government is currently finalising the sustainable aviation fuel mandate, which will require jet fuel providers to provide minimum levels of e-kerosene (derived from hydrogen and captured carbon) from 2030 - just seven years away. It also assumes (as part of the [UK Carbon Budget Delivery Plan](#)) that large quantities of low-carbon fuels will be used in UK shipping in 2035: 28% for international shipping, and 42% for domestic shipping. T&E has calculated the renewable electricity needs for these policies alone, and it is huge ([aviation here](#) and [shipping here](#)). Political capital should be spent getting the building blocks in place to achieve these targets, rather than spending time and effort considering dead-end demand uses such as gas grid blending.

Putting in place a taker of last resort would have two distinctive “systemic risk” consequences. Firstly, it could ensure that hydrogen producers do not look for strategic offtakers: and they therefore become too reliant on subsidies and the gas grid. Secondly, demand-side industries that should be investigating hydrogen off-take are dissuaded from doing so, as they may believe that hydrogen is destined for the gas grid regardless of their actions or that they are unable to compete on price.

The Government has so far been unwilling to provide strategic leadership on hydrogen uses. Indeed, it could be argued that any seeming demand-side strategy is being led by industry, instead of scientific evidence. It is abundantly clear that hydrogen does not have a long-term future in the gas grid. It should not be given a short-term future either.

Question 3. Do you have any comments on our views of the strategic role of blending, as described in this chapter? Please provide evidence to support your response.

We disagree with your view that gas grid blending could provide a strategic role. In fact, it is the exact opposite. Hydrogen could be used immediately in sectors that already use it (sectors where there is no alternative). Hydrogen producers, and government policy, should already be considering who the long-term anchor customers are for hydrogen producers.

Question 10. We welcome feedback on the economic analysis presented in this section and corresponding annex. Please provide evidence to support your response.

The economic analysis presented does not present the counterfactuals of what would happen if blending into the gas grid is explicitly ruled out and blending into current grey hydrogen and other near-term future low-carbon demand sources are explicitly ruled in. It also cannot quantify the systemic risks described above that could occur as soon as the decision to allow gas grid blending is announced. Therefore, it does not show the complete picture.

It is clear that the gas network of the future will become a stranded asset, should nothing else change. The Government should recognise this sunk cost fallacy and either come up with a

transparent plan for how to ‘manage down’ the gas network (recognising that when heat pumps are adopted en-masse, it is likely that the poorer end of society will be left maintaining the gas grid upkeep costs), or come up with a creative solution to how it could be repurposed.

Further information

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