The Hydrogen Energy Association's response to the Department for Transport's (DfT) call for evidence entitled 'RTFO statutory review and future of the scheme.'

24th January 2025

Opening remarks

This submission from the Hydrogen Energy Association (Formerly the UK Hydrogen and Fuel Cell Association) is in response to DfT's call for evidence: 'RTFO statutory review and future of the scheme'. The Hydrogen Energy Association (HEA) is the leading pan-UK trade body in the hydrogen energy sector, with a mission to support the growth of our members and the sector, and to ensure that the right policy framework is in place. Our 110 plus member companies represent over 200,000 employees globally, with combined revenues over £400 billion, and cover the entire value chain from raw material sourcing, to supply chain and components, financing, professional services, B2B and consumer facing solutions.

With over 15 years of experience, the HEA is a leader in advocating for and accelerating the transition to Net Zero in the UK through the deployment of hydrogen & fuel cell solutions. We promote and represent our members' interests across the hydrogen space, and campaign for the best policy outcomes for the industry across the full range of applications and opportunities.

Summary

Hydrogen is the only zero carbon fuel available today, and can help deliver net zero across a range of modes. We will not be able to decarbonise our transport sector without it. Hydrogen also has a number of practical benefits in applications such as heavy-duty transport, where electrification will not meet user needs. These include the ability to cope with heavy duty cycles (e.g. in construction sites or hilly terrain), avoided loss of payload space (as would occur with electric vehicles), minimal downtime for refuelling and range (e.g. up to 500 miles for buses). Hydrogen's role should be encouraged within the RTFO to reflect these benefits.

Our recommendations for the RTFO are described in detail below. The two main topics that we would like to highlight are ***the definition of hydrogen that meets that requirement for inclusion in the RTFO*** and ***the inclusion of hydrogen alongside other fuels within the 'development' fuel category***.

The HEA is supportive of the classification of hydrogen as a development fuel. However, as noted in the Call for Evidence, the current operating parameters of the RTFO are insufficient to deliver on its objectives. We recommend that hydrogen be considered in a separate category to the other development fuels, with a broader definition of eligible low carbon production pathways.

Against the backdrop of wider efforts to reach net zero, which will see a **significant shortfall in the overall availability of low carbon fuels**, the current definition of hydrogen under the development fuel category is restrictive. It does not fully take advantage of **all the possible sustainable pathways towards hydrogen production and delivery as a fuel**. Furthermore, the incentives that are in place for development fuels **do not fully cover the total costs of effectively delivering hydrogen as a sustainable fuel at scale** – including capital costs associated with both vehicles and infrastructure.

To address these issues, we propose two adaptations that will incentivise and allow the delivery of sustainable hydrogen fuel at scale. These are as follows:

- Widen the definition of allowable hydrogen that within the RTFO
- Develop a separate subcategory for hydrogen as a development fuel, with greater incentives that take into account the investment costs of hydrogen production and delivery as a fuel

More broadly, we recommend a more strategic approach to the decarbonisation of transport in the round that recognises the trajectories for the range of modes and, particularly for hydrogen, links across to the full value chain. This will ensure that future mechanisms are fit for purpose not only for the short term, but also in line with longer term trends and developments

Q1. Are the current RTFO main obligation targets set at the right level? Consider both the current trajectory between now and 2032 and how they could be adjusted after 2032.

Hydrogen is the only zero carbon fuel available today, and can help deliver net zero across a range of modes. We will not be able to decarbonise our transport sector without it. Hydrogen also has a number of practical benefits in applications such as heavy-duty transport, where electrification will not meet user needs. These include the ability to cope with heavy duty cycles (e.g. in construction sites or hilly terrain), avoided loss of payload space (as would occur with electric vehicles), minimal downtime for refuelling and range (e.g. up to 500 miles for buses). Hydrogen's role should be encouraged within the RTFO to reflect these benefits.

Hydrogen is categorised in the RTFO as a development fuel with a tight definition of production. Our comments here relate to hydrogen's role in helping deliver the overall objectives of the RTFO, and wider trends that are driving this.

The RTFO was originally conceived to support the development of biofuels, with other fuels which could help deliver decarbonisation incorporated alongside. Looking ahead, the growth of competing mechanisms as such SAF will mean the availability of biofuels is expected to decline during the time period up to 2032.

Consequently, attention should now be given to the definition and incentives associated with development fuels such as hydrogen to ensure that the RTFO supports the production of these fuels in sufficient amount to bridge the expected gap relating to limited availability of biofuels. Our recommendations to address this cover 1) **Broadening the definition of the production of hydrogen to allow a wider set of production pathways** and 2) **Including hydrogen in a distinct subcategory for development fuels with associated incentives in place.** See Question 13 for more details.

Overall, due to the expected limited availability of biofuels to support the RTFO, a primary focus going forward should be on supporting the growth of developments fuels and creating bespoke subcategories that consider the specific needs for each in order to contribute effectively towards RTFO targets.

Q2. Do you have any evidence on the anticipated availability and cost of eligible fuels and feedstocks given likely increases in competition across modes and internationally?

A recent report[1] states that current UK biofuel production is limited, with only 12% of renewable fuels supplied domestically as of 2020. With substantial growth in the demand for biofuels expected as a result of the development of the SAF market, this situation will be exacerbated, with an increasing mismatch between domestic biofuel production and demand, and an increasing need to rely on imported biofuels or production from new domestic facilities, putting greater pressure on land use. As a consequence, the available of locally produced biofuels to support road transport will be severely curtailed, leading to a greater need for development fuels such as hydrogen to bridge the gap.

Q13. Do you have any evidence on why there has been a lack of supply of development fuels or how the obligation has stimulated the production of development fuels?

It will not be possible to decarbonise our transport system without hydrogen. In heavy transport, in particular, hydrogen delivers greater range, faster refuelling, higher payload and better functionality in challenging environments than electrification. The UK is lagging behind peer nations in accelerating roll-out, with the UK approach being patchy and non-strategic.

Under current RTFO provisions, hydrogen is not suitably incentivised to support production at a scale to meet the needs of the RTFO. There are two main reasons for this:

- A restrictive definition of the hydrogen that can contribute to the RTFO; and
- Hydrogen being treated with the same support mechanisms as other development fuels when it has specific requirements in order to fully contribute.

The supply of hydrogen into the RTFO can be incentivised in three main ways:

- **Broadening the definition of the production of hydrogen to allow a wider set of production pathways**. The DESNZ definition of 'green hydrogen' could be considered as a starting point here, although this definition in itself could benefit from some further updating to allow a wider range of fuels compliant with the Low Carbon Hydrogen Standard. Alternatively, a definition of hydrogen production that takes into account the GHG reduction potential could be considered. Both of these approaches will allow a wider range of production pathways, and therefore greater quantities, of hydrogen to participate in and contribute towards the RTFO.

- **Including hydrogen in a distinct subcategory within development fuels**, separating it from the other development fuel categories such as advanced drop-in fuels. At present, as noted in the Call for Evidence, the level of the development fuel incentive is proving insufficient to encourage the participation of certain fuels in the RTFO. The target covers a range of fuels with high variation in costs. Measures that will help to bring down the costs of hydrogen in the short term will be key to delivering overall RTFO targets. A higher level of incentive, to be reviewed periodically, will help to overcome several considerations, notably, the additional capital costs associated with the use of hydrogen as a vehicle fuel, such as fuelling infrastructure and the vehicles themselves.

- **Considering the introduction of revenue certainty options**, such as a mandated floor price or auto-ratchet (where targets are increased targets if certain targets criteria are met). These

[1] Sustainable-Aviation-SAF-Roadmap-Final.pdf

types of mechanisms have been consulted on as part of the development of support for SAF[2]. They will help to increase bankability and reduce uncertainty.

See also our answer to Question 16 and the need for a more holistic approach both to the range of transport modes to be decarbonised, and how different levers can work together to accelerate the roll-out of hydrogen fuelled transport.

Q14. Do you expect development fuel supply to increase relative to the obligation in the short and medium term such that levels of buy-out are minimised?

No. Without adaptation of the RTFO as recommended above, hydrogen will continue to play only a limited role. This, combined with increasingly competitive forces on the availability of other RTFO fuels, particularly biofuels, put the entire obligation at risk.

Q16. Are eligible fuels defined appropriately to meet the development fuel obligation goals? Should a broader or narrower range of fuels, feedstocks and production processes be considered?

Eligible fuels are not defined appropriately to meet the development fuel obligation goals. A broader range of fuels, feedstocks and production processes needs to be considered.

Under current arrangements, only hydrogen classified as a Renewable Fuel of Low Carbon Origin (RFNBO) is eligible. Not only does this limit the amount of low carbon hydrogen that can contribute to the obligation, it is also at odds with other aspects of the government's approach, notably that to hydrogen production. Here, the contribution to decarbonisation is a major consideration, with the Low Carbon Hydrogen Standard[3] helping to define eligibility. Our recommendations here are two-fold:

- Enable to a wider range of hydrogen production pathways to participate in the RTFO in line with its overall objectives
- Work towards a better alignment with the approach to hydrogen production to deliver greater consistency across the system.

Even in the context of hydrogen as an RFNBO, there are challenges that limit its use. There is an assumption of a direct relationship between electricity generator and supplier where, in reality, most are via licensed suppliers. RTFO compliance necessitates additional contracts, adding to administrative burdens and cost. Similarly, there is a requirement for additionality of the renewable electricity source, whilst under hydrogen business model for hydrogen production this is not a 'hard' requirement but favoured via the scoring criteria. This is a further barrier to the supply of RTFO compliant hydrogen.

We are supportive of the introduction of a GHG-based reward mechanism – see Question 17 below – linked to classifying hydrogen as a distinct subset of development fuels – see Question 13.

Overall, a more holistic and considered approach across not only the range of transport modes to be decarbonised, but also embracing the rest of the hydrogen value chain, will benefit the whole sector and allow a more efficient delivery of decarbonisation objectives. This should include timescales and

[2] https://assets.publishing.service.gov.uk/media/667c2dc5c7f64e234209007b/dft-saf-rcm-consultation.pdf
[3] https://www.gov.uk/government/publications/uk-low-carbon-hydrogen-standard-emissions-reporting-and-sustainability-criteria

eligibility criteria. A comprehensive strategy for transport decarbonisation, including the RTFO and linked to wider developments, is needed. This should encompass:

- Development of a hydrogen for transport strategy – recognising the complexities, scale of action needed and link across to other areas of the hydrogen economy
- The setting of specific, quantifiable targets that drive forward hydrogen for transport (as peer nations have done), combined with strong compliance incentives (e.g. fines for non-compliance),
- A commitment to ensuring that at least 20% of the government's 40,000 strong fleet of vehicles transition to hydrogen by 2030
- CAPEX and OPEX funding across all aspects of hydrogen as a transport fuel – vehicles, hydrogen refuelling infrastructure etc.
- Defining Hydrogen combustion as a zero-emission transport option.

Q17. If the development fuel obligation was to switch to a GHG-based reward mechanism, how could this impact supply of development fuels, including investment in production?

As a transport fuel, low carbon hydrogen benefits from both zero tail-pipe emissions and the potential to contribute significantly to net zero targets.

A GHG-reward based mechanism is well aligned with the objectives of the RTFO and would have an important role in stimulating the supply of development fuels and investment in production. We recommend linking incentives to 'well-to-wheel' or equivalent emissions. To ensure that hydrogen delivers on its full potential in the RTFO, a GHG-based mechanism should augment its classification as a distinct sub-category within development fuels – see Question 13.