The Hydrogen Energy Association's response to Treasury's Consultation on 'Climate Change Levy: electrolytic hydrogen and energy context'

May 2025

Opening remarks

This submission from the Hydrogen Energy Association (Formerly the UK Hydrogen and Fuel Cell Association) is in response to Treasury's Consultation: 'Climate Change Levy: electrolytic hydrogen and energy context'.

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 100 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.

Our response focuses on the three options presented to remove these costs via CCL legislative changes, including our preference and concerns.

Summary

HEA welcomes the removal of CCL costs from electricity used in hydrogen electrolysis.

A key concern for the HEA is that a wider range of low carbon hydrogen production pathways than just electrolytic production is included under this proposed amendment. This should be a consideration for now, not a further future adaption. Subject to our feedback above, and in line with Treasury's advice, we see benefit in taking forward both Options A and B, with as much provision as possible for additional production pathways to be covered.

Q8. Option A – Add hydrogen electrolysis to the non-fuel use exemption: Would this deliver on the government's commitment to remove the CCL costs from electricity used in hydrogen electrolysis and be in line with wider objectives?

Whilst we agree that this option would deliver on the government's commitment, we have concerns regarding its flexibility and applicability. There are a range of other low carbon hydrogen production options beyond electrolysis and CCUS enabled hydrogen that can help us achieve our clean growth, energy security and net zero objectives. Any adaptation to the CCL needs to accommodate these options; this will provide both flexibility and future proofing, making the CCL more fit for purpose and avoiding the need for future amendments. We note and welcome Treasury's advice that additional production technologies could be considered on a case-by-case basis under this Option.

Building on the above point – there are a range of low carbon hydrogen production routes, including water electrolysis, biomass conversion and advanced biological methods that use energy inputs such as electricity, steam, or heat - not for combustion, but to drive chemical or biological transformations. Even in high-temperature systems such as solid oxide electrolysis or biomass pyrolysis, energy is applied to molecular splitting, qualifying these as non-fuel uses under the intent of the Climate Change Levy. Including these pathways in the CCL exemption ensures a technology-neutral approach, supports UK innovation (e.g. Sizewell B's nuclear hydrogen pilot, PEC and biological hydrogen R&D), and aligns with the UK Low Carbon Hydrogen Standard, as well as international best practice from the OECD and EU Energy Taxation Directive. We therefore recommend that all such processes be eligible for CCL relief under Options A or B, provided they meet carbon intensity thresholds. Additionally, we propose extending CCL exemptions to cover Power-to-Liquid sustainable aviation fuels (e-kerosene), where green hydrogen is produced as an intermediate input. These applications are consistent with the policy goal of decarbonising hard-to-abate sectors and ensuring tax consistency across all net-zero-aligned fuels and technologies.

9. Option A – Add hydrogen electrolysis to the non-fuel use exemption: Do you agree with the proposed framing of an exemption for electricity used for electrolysis to produce hydrogen, noting the constraints imposed on what can be done by the powers in the primary legislation?

As per our answer to question 8, we would like to see the Option A extended to cover additional low carbon hydrogen production options provided they meet carbon intensity thresholds.

9. Option A – Add hydrogen electrolysis to the non-fuel use exemption: Would there be any unintended consequences? If so, could you provide evidence of their scale?

As noted above, unless they are included, other low carbon hydrogen production pathways which could contribute significantly to UK objectives could be prevented from reaching their potential. We are keen to see the full range of production options being treated in a balanced way, and encourage Treasury to include all practical options from the outset, while retaining scope to add others as they emerge.

11. Option B – Relieve input fuel to hydrogen production: Would this deliver on the government's commitment to remove the CCL costs from electricity used in hydrogen electrolysis and be in line with wider objectives?

We agree that this option would deliver on the government's commitment, and are encouraged to see reference to accommodation of other production methods. As noted above, this is not an area for future review but something that needs to be built into the amendments to the scheme at this stage. We would like to see an approach similar to that adopted in Europe, whereby all pathways that are compatible with the low carbon hydrogen standard are considered in scope, including in terms of CCL coverage. This would deliver both consistency and certainty. The current piecemeal approach to listed technologies is not helpful for our overall objectives.

We understand that it may not be possible to frame option B to include all production pathways covered by the LCHS, as its future evolution is in the hands of DESNZ and there is, therefore, uncertainty on fiscal evolution that Treasury would not be able to control. We welcome further dialogue between all parties on the best way to resolve this issue.

12. Option B – Relieve input fuel to hydrogen production: Would there be any unforeseen consequences in using this option to deliver on our commitment to remove the CCL costs from electricity used in electrolysis to produce hydrogen?

We note the reference in the consultation to the need to consider the potential fiscal impacts of broadening the range of production methods covered. On this point, it is important to have in mind the role of hydrogen within the whole energy system, the evolution of electricity generation from a largely fossil base to a largely renewables base, and how fiscal policies can stimulate and accelerate decarbonisation. As the Committee on Climate Change notes, upfront investment in

the energy transition is expected to be balanced by net savings in the period out to 2042.[1] Similarly, having Hydrogen available in the power system could achieve lower emissions at a lower cost than a system without hydrogen.

13. Option B – Relieve input fuel to hydrogen production: Do you have suggestions for providing a wider exemption for specific inputs used to produce hydrogen or for inputs to specific hydrogen production processes. If yes, please support any proposal with a case referring to the criteria set out above and provide definitions of the inputs or processes that you think should be exempt.

As per our comments above, the CCL amendment provides a valuable opportunity to balance the tax treatment not only of electrolytic hydrogen, but other low carbon hydrogen production pathways. We would like to see this taken forward now, as alternative solutions, such as thermochemical processes and thermal plasma processes, are already available.

14. Option B – Relieve input fuel to hydrogen production: If the exemption was limited to low carbon inputs or processes, do you have any concerns about the ability to always be under the low carbon threshold, and whether a narrower exemption would create problems for investments or return expectations?

Please note the following comment from Question 1. We understand that it may not be possible to frame option B to include all production pathways covered by the LCHS, as its future evolution is in the hands of DESNZ and there is, therefore, uncertainty on fiscal evolution that Treasury would not be able to control. We welcome further dialogue between all parties on the best way to resolve this issue.

[1] https://www.theccc.org.uk/publication/the-seventh-carbon-budget/#:~:text=We%20estimate%20that%20the%20net,ensure%20our%20advice%20is%20practical.

15 Option C- Make hydrogen supply a taxable commodity: Would this deliver on the government's commitment to remove the CCL costs from electricity used in hydrogen electrolysis and be in line with wider objectives?

We do not believe that this is in line with the government's commitment or wider objectives for two reasons. Firstly, customers without current exemption from the CCL would continue to be disadvantaged as they are now and CCL costs would not be removed. Secondly, lack of clarity on the timescales over which hydrogen would become a taxable commodity for CCL purposes would be an additional element of risk for potential users, and negatively impact their willingness to take up low carbon fuels. The 15-year contracts specified under the Low Carbon Business Model will become much risky if there are uncertainties on evolving costs / tax. We are also concerned regarding the length of time needed to implement Option C.

16. Option C- Make hydrogen supply a taxable commodity: Do you agree that now is an appropriate time to consider the role of CCL in the hydrogen economy more broadly?

No. Hydrogen is an emerging sector and making it a taxable commodity now is at odds with efforts to scale up hydrogen production and use to meet our clean growth, energy security and net zero objectives.

17. Option C- Make hydrogen supply a taxable commodity: If hydrogen is made a taxable commodity for CCL purposes, what exemptions from CCL might be introduced?

We don't agree with the premise – see question 16.

18. Option C- Make hydrogen supply a taxable commodity: Should separate rules be considered on the taxation of hydrogen and natural gas blends? Please explaining the reasoning for your answer, using evidence to substantiate your view where possible.

We don't agree with the premise – see question 16.

19. Out of the three options, which would you prefer the government to pursue and why?

A key concern for the HEA is that a wider range of low carbon hydrogen production pathways than just electrolytic production is included under this proposed amendment. This should be a consideration for now, not a further future adaption. Subject to our feedback above, and in line with Treasury's advice, we see benefit in taking forward both Options A and B, with as much provision as possible for additional production pathways to be covered.

In addition, we wish to make reference to the following aspect that relates to blending of hydrogen into the natural gas grid.

Under the Finance Act 2000, the CCL applies to gas "of a kind supplied by a gas utility" meaning any gaseous fuel delivered through the public network. When hydrogen is blended into natural gas, even if it's green hydrogen, the entire gas mixture is treated as taxable under the CCL at the standard gas rate (currently £7.75/MWh to £8.01/MWh from April 2026).
Blending hydrogen into the gas grid is a near-term decarbonisation measure that enables lower-emission heating and industrial processes while making use of existing infrastructure. In the UK, several trials—including HyDeploy, HyNet North West, and FutureGrid—are exploring the effects of injecting up to 20% hydrogen by volume into the natural gas network. This approach supports early hydrogen production scale-up and helps build public, technical and regulatory readiness for a future low-carbon gas system. However, under the current Climate Change Levy (CCL) rules, the entire blended gas supply is treated as a taxable commodity, regardless of the carbon intensity of the hydrogen used. This means that electricity used to produce green hydrogen is taxed under the CCL, and then the hydrogen itself is taxed again when supplied as part of the gas blend—creating a double taxation effect and a disincentive for projects aligned with the UK Hydrogen Strategy and Net Zero commitments.

To address this misalignment, the CCL framework should be revised to recognise the hydrogen component in blends, particularly where it meets the UK Low Carbon Hydrogen Standard. This could be achieved by exempting the proportion of hydrogen from CCL at the point of injection, using a mechanism akin to the Renewable Energy Guarantee of Origin (REGO) scheme e.g. a Hydrogen Origin Guarantee. Alternatively, electricity used to produce hydrogen for blending should be treated as a non-fuel input, just as natural gas used for blue hydrogen production is

exempt. Without such reform, the CCL may undermine investment in clean heating pilots and send distorted price signals in favour of fossil-based pathways.