



HM Treasury



HM Revenue
& Customs

Climate Change Levy (CCL):
treatment of electrolytic
hydrogen in CCL and the
changing energy landscape

Consultation Response

November 2025

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Chapter 1

Introduction

1.1 It is important for the UK's tax system to remain agile and up to date with changing contexts – including the energy landscape. Since 2001, Climate Change Levy (CCL) has encouraged businesses and the public sector to be energy efficient by placing a tax on the supply of energy. However, the wider energy landscape has changed significantly since CCL was introduced and will continue to develop in the future.

1.2 At Spring Statement 2025, the government committed to remove CCL costs from electricity used in electrolysis to produce hydrogen to support low carbon hydrogen production. To ensure CCL remains up to date with this changing energy landscape more broadly, the government will also conduct a wider review of CCL.

1.3 The government launched a consultation to inform the best legislative route to deliver on the commitment on hydrogen and seek views to inform the scope of the wider review. This document summarises the responses to the consultation and provides detail on the government's intended policy to deliver on this commitment, as announced at Budget 2025.

Policy Updates and Budget 2025 Announcement

1.4 The Spring Statement commitment on hydrogen aimed to reduce production costs and support the growth of the low carbon hydrogen sector. Low carbon hydrogen is essential to achieving the government's Clean Energy Superpower and Growth Missions and has a critical role to play in the UK's clean energy transition. Following the first Hydrogen Allocation Round (HAR1), on 7 April 2025 the government announced a shortlist of 27 projects across England, Scotland, and Wales that would be invited to the next stage of the second Hydrogen Allocation Round (HAR2). The government aims to launch the third Hydrogen Allocation Round (HAR3) by 2026 and the fourth Hydrogen Allocation Round (HAR4) from 2028.

1.5 Following consultation, at Budget 2025 the government announced that electricity used in electrolysis to produce hydrogen and natural gas as a source of CO₂ to produce sodium bicarbonate will be exempted from CCL liability by adding these processes to the CCL non-fuel use exemption via an affirmative SI. Subject to parliamentary approval, the government aims for this legislation to be in force by Spring 2026.

1.6 These amendments will deliver on the Spring Statement 2025 commitment and ensure the non-fuel use exemption is up to date.

1.7 We will continue to consider whether further changes to CCL may be needed as part of the wider review.

The consultation

1.8 The consultation ‘Climate Change Levy (CCL): treatment of electrolytic hydrogen in CCL and the changing energy context’ was launched on 26 March 2025 and closed on 7 May 2025. This sought views on the best mechanism to achieve the commitment to an exemption, with the aim of avoiding any unintended consequences.

1.9 The consultation set out three routes to deliver on the commitment, each with different legislative timelines and scope:

1. **Option A** proposed adding ‘electricity used in electrolysis to produce hydrogen’ to the non-fuel use exemption.
2. **Option B** suggested exempting inputs to hydrogen production from CCL and this could have different configurations – i.e., cover all kinds of production, or limited to low carbon inputs. This would likely require primary legislation.
3. **Option C** would make the supply of hydrogen a taxable commodity. CCL’s anti-double taxation provisions mean all inputs to hydrogen production would be exempt. This would resolve the current uncertainty on how the supply of hydrogen will be taxed in future. This would require more significant primary legislation and IT changes.

1.10 The consultation received 49 written responses, predominantly from hydrogen producers, but also trade associations, tax advisors, energy storage companies, power generators, and fuel suppliers. During the consultation period, government officials held 11 meetings with around 60 different stakeholders – from trade associations, hydrogen producers and users, and academics.

1.11 The below table illustrates the indicative language used to describe the proportion of respondents that answered a question or gave a specific view. For example, if 75% of respondents answered a question, the phrase “majority of respondents” would be used.

81-100%	Most respondents
61-80%	A majority of respondents
53-60%	Just over half of respondents
48-52%	Around half of respondents

41-47%	Just under half of respondents
21-40%	A small proportion of respondents
1-20%	A minority of respondents

1.12 When coming to a decision, as well as meeting the core objective of removing CCL costs from electricity used in electrolysis to produce hydrogen, the government has considered various objectives, including but not limited to:

- Ensuring investments into the hydrogen sector are not deterred as a result of CCL, meaning the speed of delivery is important.
- Ensuring that any exemption aligns with CCL's objectives.
- Ensuring that changes have a proportionate fiscal impact to protect government revenue which is used to fund vital public services.
- Ensuring that any change helps to simplify how hydrogen producers and users interact with the tax system, and provides longer-term certainty.

Chapter 2

Government decisions and response to the consultation

2.1 The government is grateful to all stakeholders who took the time to respond to this consultation and who met with government officials during the consultation period. The government welcomes continued engagement from stakeholders on both CCL's treatment of electrolytic hydrogen and the wider review, as the government works to shape a tax system that is agile and up to date with changing landscapes.

2.2 To meet the commitment of removing CCL costs from electricity used in electrolysis to produce hydrogen, **the government will proceed with Option A in the consultation and add electricity used in electrolysis to produce hydrogen to CCL's non-fuel use exemption.**

2.3 To implement this, the government intends to lay an affirmative statutory instrument which, subject to parliamentary approval, will come into force by Spring 2026. This will add electricity used in electrolysis to produce hydrogen to the list of processes eligible for the non-fuel use exemption set out in the Climate Change Levy (Fuel Use and Recycling Processes) Regulations 2005 (SI 2005/1715).

2.4 Views and suggestions such as alternative wording to implement this option were helpful and carefully considered. However, the government has decided to proceed with the wording proposed in consultation – 'electricity used in electrolysis to produce hydrogen' – as alternatives put forward risked being inconsistent with the non-fuel rationale of the exemption.

2.5 CCL aims to incentivise energy efficiency, which has a variety of benefits – from eliminating energy waste to helping security of supply. There are a number of reliefs and exemptions which support CCL's behavioural aims, as well as other government objectives, for example to help business competitiveness.

2.6 The non-fuel use exemption is designed only to exempt non-fuel uses, as such use is outside the scope of what CCL intends to tax (i.e., use of taxable commodities as fuel). Therefore, only electricity used in the electrolysis itself will be eligible to the relief, as this is consistent with the rationale of the non-fuel exemption, and the approach taken

for other processes already included in the exemption. Approaches applied in other CCL reliefs, for example ancillary processes included in the mineralogical and metallurgical exemption, are not appropriate to replicate for the non-fuel use exemption because of the rationale of the non-fuel use relief. Further guidance and communications will be provided to cover this and other detailed points raised by respondents during the consultation.

2.7 This approach ensures timely support for HAR1 projects and should aid projects currently in negotiations for HAR2 funding, which many respondents agreed was important.

2.8 This approach will also be in line with how CCL already relieves natural gas used as a feedstock in hydrogen production and have a proportionate fiscal impact, to protect government revenue which is used to fund vital public services.

2.9 Outside of this change, the government recognises interest from the hydrogen sector in a broader relief. Therefore, the government is also committing to consider CCL's broader treatment of the production and supply of hydrogen as part of the CCL wider review.

2.10 Responses to questions on the wider review highlighted stakeholder views on areas of CCL beyond hydrogen where changes could be considered to reflect the evolving energy landscape. Issues included the role of CCL alongside other energy and decarbonisation policies, where encouragement to switch to lower carbon alternatives may result in more energy use than the counterfactual (such as natural gas), as well as clarity and more guidance on CCL's treatment of newer technologies, for example, battery storage.

2.11 Stakeholders also provided views on other processes they felt should be added to the non-fuel use exemption. Having reviewed these responses, the government will exempt natural gas used as a source of CO₂ in the production of sodium bicarbonate, as this process was found to be eligible for the non-fuel use exemption as a 'mixed use' (meaning it is partially used as fuel, and partially not). This will be legislated for via the same affirmative SI as electrolysis to produce hydrogen.

2.12 Draft legislation to add both processes to the non-fuel use exemption will not be published for comment but will still be subject to parliamentary scrutiny. This will help ensure the regulations come into force in a timely manner to support HAR projects. The government will proceed with exempting electricity used in electrolysis to produce hydrogen as consulted on earlier this year.

2.13 The government remains committed to the wider review beyond these changes and will update on next steps in due course. Views and evidence provided through this consultation will inform the scope and direction of this work.

Chapter 3

Summary of Responses

About electrolytic hydrogen production

3.1 Questions 4 to 21 of the consultation sought views on the best mechanism for achieving the government's commitment to remove CCL costs on electricity used in electrolysis to produce hydrogen. Options A to C were presented, and stakeholders were also encouraged to suggest alternative routes.

Question 4. There are different types of electrolysis which can be used to produce hydrogen (e.g., alkaline electrolyzers, solid oxide electrolyzers). Can electricity used in electrolysis be described as either purely non-fuel use, or any fuel use incidental in all cases?

3.2 Just under half of respondents answered this question. A majority of respondents identified various electrolyser types, such as alkaline, Proton Exchange Membrane (PEM), and Solid Oxide Electrolysis Cell (SOEC). They agreed that in all cases electricity used in electrolysis can be described as purely non-fuel use.

3.3 Two stakeholders called for other electrolysis processes, for example Thermal Plasma Electrolysis (TPE), to also be covered by the exemption. Other responses sought clarity relating to the definitions of non-fuel use and incidental fuel use. For example, they questioned whether compression and heating/cooling should be deemed incidental, or if purification and compression of hydrogen should also be considered non-fuel use, as they are intrinsic to the electrolysis process.

3.4 A minority of respondents noted the importance of the same tax treatment across electrolyzers, and that the treatment of different hydrogen production methods should be the same regardless of technology and whether the process is non-fuel use or not.

Question 5. Is there any difference in the amount of electricity needed to produce a hydrogen yield in comparison to different types of electrolysis?

3.5 Around half of respondents answered this question. Of these, most said there is a difference. A majority noted that efficiency varies across different kinds of electrolyzers. Producers will need to strike a balance between cost effectiveness and higher performance, as well as

consider broader commercial factors such as total cost, scale of operation, and local conditions.

3.6 Four stakeholders noted that alkaline electrolyzers have higher reliability than PEM electrolyzers, and that PEM electrolyzers have higher capital expenditure costs but are more efficient. Two respondents said SOEC and High-Temperature Steam Electrolysis (HTSE) are more efficient, but are still nascent technologies. One respondent felt if only electricity used in the electrolyser stack is exempt, this would create an advantage for PEM electrolyzers in contrast to atmospheric alkaline electrolyzers.

Question 6. What energy uses are involved in the production of hydrogen by electrolysis other than for the electrolysis itself? How significant are these uses (e.g., in proportion to the electricity used for the electrolysis and to the hydrogen yield)?

3.7 Just over half of respondents answered this question. Around a quarter of these said most of the electricity is used in the electrolysis process itself. A majority noted other energy uses needed in production, for example Balance of Plant equipment, pumps and compressors. Views were mixed on what proportion of energy usage these other processes make up, and varied between 5% to 20%.

3.8 Three stakeholders said there would be difficulties in metering the electricity consumption across different parts of the process, whereas other hydrogen producers said they would be able to separately track the electricity loads for the electrolysis process itself.

3.9 Separately, three responses pointed out that taxable commodities used in handling and factory services of on-site facilities are included in CCL's mineralogical and metallurgical exemption, and that any exemption for hydrogen production should align with this approach.

Question 7. How do you envisage hydrogen production will develop in terms of technology and scale over the next 10 years?

3.10 The majority of respondents answered this question and generally agreed that hydrogen production will significantly develop in the next 10 years. Of those who answered, a small proportion pointed to the importance of government policy mechanisms and interventions in encouraging the steady growth of production.

3.11 A small proportion of respondents felt transmission and storage will limit the production of hydrogen and that it is important to develop these for scale of production as well as the overall hydrogen economy. Respondents also noted different kinds of production will have different transmission and storage requirements.

3.12 A minority mentioned other barriers to development, such as planning or permit processes. A minority pointed out that there is a role for hydrogen in power generation to deal with intermittency of renewable generation.

3.13 Many respondents explained the importance of levelling the playing field between different production routes.

3.14 Views on how different technologies would develop included:

- Alkaline, PEM, and steam methane reformation CCUS (carbon capture, usage and storage) likely becoming the most prominent low-carbon production technologies.
- Other technologies like pyrolysis or SOEC could become more operational but likely will not reach meaningful scale until the 2030s.
- One respondent felt SOEC will become a main production technique due to its hydrogen yield and process optimisation.
- Two respondents said that CCUS enabled hydrogen will retain a cost advantage over electrolytic hydrogen due to the scale and feedstock costs. Conversely, one noted that an exemption for electrolysis would disadvantage CCUS-enabled production.

Option A – Add hydrogen electrolysis to the non-fuel use exemption

3.15 This part of the consultation sought views on 'Option A' to remove CCL costs on electricity used in electrolysis to produce hydrogen by adding to CCL's existing non-fuel use exemption.

Question 8. 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?

3.16 A majority of consultation respondents answered the 'yes/no' part of this question, with most agreeing this option would deliver on the government's commitment and be in line with wider objectives.

3.17 Various hydrogen producers and trade bodies expressed support for this option in the short-term, on the basis that it can be introduced quickly and be in place in time for early HAR projects. Three respondents noted this option is the simplest and so would meet simplification aims.

3.18 A minority of respondents went on to say in the long term, option B would be the better option, as a broader and therefore more inclusive and future-proof solution.

3.19 However, respondents also saw potential drawbacks with option A as it does not accommodate low carbon hydrogen production

methods outside electrolysis, electricity use in CCUS required for 'blue' hydrogen, or ancillary processes that support electrolysis. Several argued that ancillary processes for electrolysis are critical uses of electricity that should be included in an exemption, for example as 'incidental' use. Some respondents also felt Option A does not align with the technology agnostic approach adopted elsewhere in government hydrogen policy.

3.20 There were other mixed, individual comments. For example, one respondent did not believe this option would achieve the wider objective of encouraging off-takers to switch to low carbon hydrogen, while another thought it would provide regulatory certainty and so increase investor and developer confidence.

Question 9. 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?

3.21 Just over half of all respondents answered the 'yes/no' part of this question. Of these, most agreed the proposed framing of an exemption for electricity used for electrolysis to produce hydrogen. A minority did not agree.

3.22 Stakeholders had fewer comments on this question compared to question 8, and comments made generally echoed points made under different questions. This included concern that the framing excludes things such as other low carbon hydrogen production methods. Suggestions to remedy this included rephrasing as 'any commodity used to produce hydrogen', or focusing wording around the purpose of the electricity rather than being prescriptive on the technology used.

3.23 Stakeholders recognised the restrictive nature of this option, but thought it a worthwhile trade-off for the speed with which it could be implemented. However, they also felt the narrowness may mean the issue will need to be revisited relatively quickly as new technology comes to market.

3.24 Other comments included one hydrogen producer's view that hydrogen production that captures and uses the oxygen also produced would be a more efficient use of electricity, but the proposed exemption framing might not encourage this.

Question 10. Would there be any unintended consequences? If so, could you provide evidence of their scale?

3.25 Around half of all respondents commented on this question. A minority did not see any unintended consequences, or none beyond the limits of the exemption as set out in consultation. However, various

stakeholders flagged risks of distortion between different hydrogen production methods, with one noting potential inconsistency with the Hydrogen Production Business Model (HPBM). Respondents also felt there was a risk of distortion between different decarbonisation methods, for example electricity used in CCUS, biofuels and direct air capture.

3.26 Other comments included a trade body asking about what is being done to support industrial decarbonisation by electrification. One hydrogen producer made specific observations on unintended consequences, including inadvertently incentivising pressurised electrolyser over other technology, as this requires less compression because pressure is auto-generated in the chemical reaction.

Option B - Relieve input fuel to hydrogen production

3.27 This section sought views on an approach which exempts CCL taxable commodities used as inputs to the production process of hydrogen. This option potentially could be tailored in different ways, for example, to restrict it to electricity used in electrolysis to produce hydrogen (as in Option A), or to also cover other production methods, or to make it contingent on low carbon inputs.

Question 11. Would this deliver on the government's commitment to remove CCL costs from electricity used in hydrogen electrolysis and be in line with wider objectives?

3.28 A majority of respondents answered the 'yes/no' part of this question. Of these, most respondents agreed Option B would deliver on the government's commitment.

3.29 Just over half of respondents commented on this question. A mix of stakeholders felt this option was beneficial for covering multiple hydrogen production methods, creating a level playing field, and more likely future-proof as well. Respondents also saw this option as more aligned with government's technology-agnostic approach to low carbon hydrogen production.

3.30 A minority felt now was the time to consider such a broader approach, rather than later. A similar number of respondents also liked that this option could potentially include ancillary processes for electrolytic hydrogen production.

3.31 A minority of respondents caveated their support for this option, for example by suggesting the relief is limited to inputs to specific, low carbon hydrogen production methods. Others felt the relief should not be limited to low carbon inputs, as this does not align with LCHS (Low Carbon Hydrogen Standard).

3.32 Other comments included a chemical producer wanting to see this option include chemical production processes that produce hydrogen as a secondary product.

3.33 A small proportion of respondents liked this option but were wary it may not be introduced before the first HAR projects come online. Similar points were echoed in question 12 answers. Stakeholders felt introducing Option A quickly would be best, and then developing Option B to slower timetable.

Question 12. 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?

3.34 Around half of stakeholders responded to this question. Views were mixed; just over half of respondents who answered this question thought there would be unforeseen consequences with this option. Just under half did not think there would be unforeseen consequences, but this includes caveated responses.

3.35 Respondents generally gave views on how broad or not this option might be, or on clarity of definitions and eligibility.

3.36 Comments made on broadness were varied and included:

- The broader the energy inputs that are included in the relief, the greater the risk something becomes eligible for relief that does not fit with the original aim.
- One hydrogen producer felt only low carbon hydrogen production should benefit from the exemption. They provided numerous suggestions for framing the relief on this basis.
- Another hydrogen producer wanted to see other production methods included (particularly electrolysis of hydrocarbon gases), while another did not want co-production of oxygen and use of waste heat to affect the exemption.

3.37 On clarity on definitions and eligibility, comments fell into two categories:

- The definition of hydrogen production. For example, whether this would include wider hydrogen production or be restricted to electrolytic hydrogen production, and/or chemical processes that produce significant amounts of hydrogen as a by-product.
- Clear boundaries of where the relief starts and ends. For example, whether electricity used outside electrolysis itself is included. A minority felt it could be complex to define eligible and non-eligible uses, particularly on sites where energy serves multiple purposes.

3.38 In engagement, a minority cautioned the tax relief design should factor:

- Different operational models: hydrogen producers may supply hydrogen to multiple off-takers across sectors such as transport, power, and industry.
- Interactions with the Renewable Transport Fuel Obligation.

Question 13. Do you have suggestions for providing a wider exemption for specific inputs used to produce hydrogen or for inputs to specific hydrogen production processes.

3.39 A small proportion of respondents commented on this question. These comments included suggestions made to other questions in this section. On this specific question, a mix of hydrogen producers and trade bodies suggested a technology-neutral exemption, covering all low carbon hydrogen production. Respondents thought the LCHS could define what is considered 'low carbon', and that this standard is already the common factor across UK projects. As with earlier questions, respondents cautioned against framing a relief around 'low-carbon inputs' and recommended framing around 'outputs' instead.

3.40 Responses to this question included comments concentrating on electricity. These echoed points made in earlier questions, for example to include ancillary processes to electrolysis in the relief.

3.41 Other suggestions included charging CCL on high emission hydrogen production methods, and not providing CCL relief for hydrogen blended into the grid.

Question 14. 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?

3.42 Just over half of stakeholders responded to this question. A majority of these said that this would cause concerns about the ability to always be under the low carbon threshold, or a narrower exemption would create problems for investments or return expectations.

3.43 Comments made were very mixed, but one main theme was respondents either suggesting linking the relief to the LCHS or conversely cautioning against this.

3.44 Those in favour of linking to the LCHS felt it would be a consistent and simpler approach that ensures carbon intense methods of production are not incentivised. It would also avoid needing to develop a separate, potentially complex approach.

3.45 There were also alternative suggestions to limit the relief to low carbon hydrogen production, with one respondent providing a list of technology to include.

3.46 Those against linking the relief to LCHS gave various reasons:

- Potential to add complexity to CCL.
- Unnecessary as HAR and/or Low Carbon Hydrogen Agreement projects must be low carbon anyway.
- Concerns that the government may not add new technology to the LCHS in a timely manner.
- Two respondents felt the loss of funding for non-compliance with the LCHS was already sufficient to ensure hydrogen was low carbon, and so further compliance criteria and administrative burdens via CCL are not necessary.

3.47 Other comments were concerned with a relief from CCL being too narrowly defined. Respondents particularly felt a 'low carbon inputs' approach could be complicated and add uncertainty to hydrogen investments. One explained the LCHS already sets a carbon threshold, in which the inputs themselves may not be low carbon.

3.48 Two off-takers of hydrogen said switching to hydrogen is already complex and any uncertainty on whether hydrogen is low carbon is problematic. Adding uncertainty of a CCL cost element would make this worse and weakens the investment case for investing in long-life asset equipment to take hydrogen. One said a potentially changing carbon threshold does not provide certainty.

3.49 There were other comments regarding grid electricity. These felt linking the relief to a low carbon concept would discourage electrolyzers using electricity from the grid, including when grid electricity is cheap or needed due to an absence of on-site renewable electricity. One respondent noted it is not always possible to evidence grid-sourced electricity is low carbon.

Option C - Make hydrogen supply a taxable commodity

3.50 This option proposed extending CCL to supplies of hydrogen used as energy by businesses and the public sector. Since an underpinning principle of CCL is that double taxation should be avoided, this would mean all inputs to produce hydrogen would be relieved. The option would also address the lack of clarity and certainty around whether supplies of hydrogen are liable to the CCLs gas rate.

Question 15. 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?

3.51 A majority of respondents answered this question. Of these, a majority responded that Option C would not deliver on the government's commitment to remove CCL costs from electricity used in hydrogen electrolysis. Reasons for this view included:

- It could pass the cost on through the supply chain, e.g. to off-takers, rather than reducing it.
- It could risk disincentivising investment, and could risk the long-term competitiveness of hydrogen and commercial viability of hydrogen projects.
- It would take too long to implement, which would impact HAR1 and HAR2 projects.
- It could reduce the business case for off-takers fuel-switching to hydrogen.

3.52 A small proportion of respondents stated that they felt it would deliver on the government's commitment, with reasons including that it was the best and most consistent approach to the future of CCL and hydrogen. However, these comments also included caveats such as:

- While it would meet the objective of removing CCL costs from the electricity, it could be detrimental to the competitiveness of hydrogen.
- It did not align to wider government objectives, such as net zero.
- It should only be considered in the longer term, once the sector is more established.

3.53 Respondents thought that if hydrogen were made a taxable commodity, then a number of exemptions should be considered, which is discussed in question 17 below. Respondents noted the risk of hydrogen becoming a taxable commodity under natural gas once it is supplied by utilities, but felt there were better routes to tackle the issue, such as Option B.

Question 16. Do you agree that now is an appropriate time to consider the role of CCL in the hydrogen economy more broadly?

3.54 Of those who answered this question, a majority agreed that now is an appropriate time to consider the role of CCL. Respondents acknowledged how the energy landscape has changed since CCL's

introduction, and does not necessarily reflect the current state of the energy sector. Reasons for agreeing include:

- Ensuring hydrogen does not accidentally become liable to CCL, without a full assessment of impacts.
- Preventing CCL from disincentivising investment in the sector.
- Reassessing whether energy efficiency is the right objective of an energy tax at this point, given the focus on net zero.

3.55 Respondents felt broader consideration should not be carried out to the detriment of introducing exemptions for electrolysis in a timely manner.

3.56 A small proportion of respondents disagreed with the question, giving similar reasons as covered in question 15 responses. There were also views that energy efficiency is already incentivised for hydrogen as it is linked to high gas prices, so adding CCL to this would not further incentivise efficiency.

Question 17. If hydrogen is made a taxable commodity for CCL purposes, what exemptions from CCL might be introduced?

3.57 Around half of respondents shared views on this question. Comments to this question included:

- Reiterating the view that hydrogen should not be made a taxable commodity, but suggesting that all existing exemptions under CCL should be extended to hydrogen were it to become taxable. In particular, this included the mineralogical and metallurgical processes and non-fuel use exemptions.
- Suggesting exemptions for wider sectors are needed, such as hydrogen-to-power and manufacturing.
- View that Climate Change Agreements (CCAs) should be revised to capture hydrogen use, as currently they would not cover that use.

Question 18. Should separate rules be considered on the taxation of hydrogen and natural gas blends? Please explain the reasoning for your answer, using evidence to substantiate your view where possible.

3.58 Just over half of respondents provided views on this question. Responses often did not indicate whether they were discussing on-site or grid blending.

3.59 A minority of respondents said that blends of hydrogen and natural gas should be taxed the same as pure natural gas, either because it was too burdensome to track the proportions of the blend, or because they believed blending should not be incentivised.

Respondents noted that the Gas Act 1986 includes hydrogen in its definition of 'gas', raising questions about how differentiation could be implemented.

3.60 By comparison, around half of respondents felt blends should be taxed using specific rules. Suggested approaches included the rate of tax reflecting the composition of the blend, or a lower tax rate for hydrogen passed through in blending to incentivise using hydrogen over natural gas. A minority thought either simple rules or standardised calculations should be used as tracking specific levels of blending would be too complex or administratively burdensome.

3.61 A minority used this question to reiterate their view that hydrogen should not be made a taxable commodity, though did not address how this might be achieved in a scenario where a supply of hydrogen or hydrogen blend meets the CCL gas definition.

Summary of options

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

3.62 A majority of respondents provided views on this question, and these were split between preference for Option A, a combination of Options A and B, and Option B only. One respondent indicated a preference for Option B on the condition that hydrogen as a byproduct is included in the framework, or Option A if it is not. No responses preferred Option C alone.

3.63 Of those who preferred Option A, the majority cited the speed at which this option could be introduced as the reason for their preference. One respondent caveated their preference for Option A only if emerging technologies, like electro-thermal energy storage, are included.

3.64 For those who preferred Option B, comments included that Option A does not cover wider green hydrogen projects, or that Option B provides future-proofing for innovations in the sector. Two stakeholders preferred Option B as it would lead to the greatest savings of CCL in the production process.

3.65 Respondents who preferred a combination of Options A and B chose this due to the combination of a quick solution (Option A) with a future comprehensive option covering other hydrogen production methods (Option B).

Question 20. If you have a preference for Options A or B, do you think government should continue working on the CCL position for the supply of hydrogen longer term?

3.66 Just over half of respondents provided views in response to this question. Of these, a majority agreed that the government should continue working on CCL's treatment of hydrogen longer term, but a small proportion caveated their agreement with certain conditions. A minority did not agree.

3.67 Reasons respondents gave for agreeing included:

- Tax law would need to change in response to industry developments.
- Hydrogen will become increasingly important to decarbonisation, and clarity of tax treatment will support these goals.

3.68 Caveats given with supportive responses included that work on the CCL position should happen:

- At a much later time, for example in the next 5–15 years, after the hydrogen sector has become more established, or after the full publication of the UK industrial strategy.
- Only if emerging technologies are exempted.
- Only if supplies of hydrogen are exempt or out of scope of CCL.

3.69 Reasons respondents provided for not agreeing included:

- Option B would be sufficient long term.
- Costs are already high enough, and changing the CCL position for supply of hydrogen risks undermining investor confidence.

Question 21. Are there any other options you think should be considered?

3.70 Just under half of respondents provided views on this question. Of these, a small proportion said no, they did not think there were other options to be considered. Others suggested alternative options, such as:

- Any exemption factoring in end use of hydrogen. Blending hydrogen into the network should attract full CCL.
- Exemptions for clusters of hydrogen producers and consumers, where all processes are optimised to minimise inefficiency.
- Removing CCL from electricity completely.

- Introducing an exemption for the production of hydrogen and green ammonia akin to the exemption for commodities used in mineralogical or metallurgical processes.

Ensuring CCL remains up to date in the UK's changing energy context

3.71 Questions 22-25 of the consultation sought views on other areas where CCL may need to be reviewed to ensure the tax remains aligned with the changing energy landscape. This will help inform the scope of the wider CCL review that the government committed to at Spring Statement 2025.

Question 22 - Do you feel that CCL's energy efficiency objectives are supportive of wider government objectives, such as net zero and clean power?

3.72 Just over half of respondents answered this question. A small proportion of respondents who responded answered 'yes', and the same proportion answered 'no'. A minority of respondents said 'yes and no'.

3.73 Just under half of respondents said CCL provides a limited incentive for decarbonisation and that there is a contradiction within CCL. These stakeholders felt that CCL is seen as a levy on emissions but is designed to tax consumption. These respondents felt it was an appropriate time for CCL to focus on driving decarbonisation rather than just energy efficiency. They pointed to changes in the electricity grid mix since CCL was introduced, and the government's broader efforts to make electrification an attractive route to decarbonisation.

3.74 A minority of those that responded pointed to other climate policies, stating that CCL and the Emissions Trading System (ETS) risk leading to decarbonisation through deindustrialisation rather than meeting climate goals. Additionally, a couple felt CCL would not be needed with an effective ETS and Carbon Border Adjustment Mechanism (CBAM).

3.75 A minority of respondents provided suggestions for CCL's future trajectory, for example, removing CCL on electricity in the short term, but then re-implementing it to incentivise replacement of end-of-life equipment. The same respondents also noted that the cost of gas and electricity is enough of an incentive to improve efficiencies.

3.76 That said, a small proportion of those who responded noted that as a tax on energy, it should encourage a reduction in energy consumption. One noted that CCL could be a great tool for encouraging electrification and adoption of clean energy, pointing to the Spring Statement 2025 commitment to remove costs from electricity used in electrolysis to produce hydrogen as a good step.

Question 23 - Do you feel CCL creates any barriers to developments in the energy landscape in the next 5-10 years which means CCL may need to be reviewed to support them instead?

3.77 Just under half of respondents answered this question. Of those who responded, the majority said 'yes', and a minority said 'no' or 'not sure'.

3.78 A minority of those that responded said a review should look at whether CCL on zero or very low emissions intensive electricity can be justified in the clean power context, whilst noting that removing policy costs on electricity should not mean moving tax costs onto gas instead.

3.79 A minority of respondents noted that CCL increases energy costs and creates a barrier to energy affordability.

3.80 One respondent agreed that now is the right time to review CCL.

3.81 A trade body stated that uncertainty on CCL has slowed down the HAR process.

Question 24 - Do you think there are opportunities for CCL to further incentivise energy efficiency?

3.82 Just under half of respondents answered this question. Around half of those who responded noted that CCL could be used to incentivise fuel switching and reduce carbon emissions, pointing out that they felt energy costs are a barrier to growth.

3.83 A small proportion of those that responded said that CCL only adds to administrative burdens and costs for businesses.

3.84 A minority of respondents noted that the Combined Heat and Power Quality Assurance (CHPQA) reliefs should be maintained as they are the only support left for CHP.

3.85 A minority said CCL revenues should be recycled fully to businesses via a fund promoting energy efficiency.

Question 25 - Beyond hydrogen, have you identified any other potential CCL issues, including but not limited to developments in low carbon fuels or production processes that have not been accounted for within CCL?

3.86 The majority of respondents answered this question. Overall, there was consensus among respondents that there are issues regarding CCL that should be addressed. These issues focused on the application of CCL to new technologies and fuels, for example:

- A small proportion called for clarity on how CCL applies at the point of battery charging, the tax treatment of Battery Energy Storage Solutions, and CCL's treatment of Vehicle to Grid (V2G).

- Just under 20% of those who responded called for the introduction of CCL reliefs for the supply of biomethane and other low-carbon fuels, as well as exemptions for inputs to production of biomethane.
- A minority called for exemptions for inputs to the production of Sustainable Aviation Fuel, synthetic gas/fuel, and for industrial gases (such as oxygen, nitrogen, and argon), and electro-thermal energy storage systems.
- Just over 10% of those who responded asked for exemptions on the energy used in carbon capture for use in cement and lime, as well as natural gas used in combustion for carbon capture for use in chemical production.
- One respondent called for CCL to be removed from bioLPG and renewable dimethyl ether (rDME).
- A couple sought clearer guidance on CCL's treatment of hydrogen derived fuels, such as ammonia and methanol production.

3.87 A minority called for other processes to be added to the non-fuel use exemption, such as:

- Electricity and other taxable commodities used in Direct Air Capture (DAC) operations and synthetic gas/fuel production.
- Natural gas used in the production of sodium bicarbonate from captured CO₂.

3.88 Other respondents raised additional challenges with CCL. For example, a lack of clarity on the definition of 'utility', the administrative burden of manual submissions for exemptions, and the potential unequal treatment between licensed and non-licensed utilities.

Annexes

Annex A – list of stakeholders consulted

3.89 The government is grateful to the 2 individuals and following organisations who responded to the consultation.

- 2EA
- ADE
- Air Products
- AMP Clean Energy
- Bp
- British Plastics Federation
- Calor Gas
- Carlton Power
- Ceramics UK
- Centrica Plc.
- Chemicals Industry Association
- Clarke Energy
- De Courcy Alexander Ltd
- E.ON UK plc
- EET Hydrogen
- ENGIE UK
- Energy Intensive Users Group
- Energy UK
- Ernst and Young
- Exergy3
- Fuels Industry UK

- Green Cat Hydrogen
- HiiROC Ltd
- Hydrogen UK
- Hynamics, EDF subsidiary
- INEOS Acetyls
- ITM Power
- Liquid Gas UK
- Morgen Energy
- Power2X BV
- Progressive Energy
- Renewable Energy Systems (RES)
- RenewableUK
- RWE
- Schroders Greencoat
- ScottishPower
- SGN
- Sizewell C
- SSE Thermal (SSET)
- Statera Energy
- Statkraft
- Storegga
- Sustainable innovation consultancy
- Tarmac
- Tata Chemicals Europe Limited (TCEL) & British Salt Limited (BSL)
- The Mineral Products Association
- Valero3

Annex B – glossary

- BioLPG – Bio liquid petroleum gas
- CCA – Climate Change Agreement
- CBAM – Carbon Border Adjustment Mechanism
- CCL - Climate Change Levy
- CCUS - Carbon capture, usage and storage
- CHP – Combined Heat and Power
- CHPQA - Combined Heat and Power Quality Assurance
- DAC - Direct Air Capture
- ETS - Emissions Trading System
- HAR1 (and HAR2,3 etc) - Hydrogen Allocation Round 1, etc
- HPBM - Hydrogen Production Business Model
- HTSE - High-Temperature Steam Electrolysis
- LCHS - Low Carbon Hydrogen Standard
- PEM - Proton Exchange Membrane
- rDME - renewable dimethyl ether
- SOEC - Solid Oxide Electrolysis Cell
- TPE - Thermal Plasma Electrolysis
- V2G - Vehicle to Grid

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