UKPIA Response to Consultation on a UK Low Carbon H_2 Certification Scheme

Chapter 1 – Fundamental scheme design

1. Do you agree with the design features set out in the introduction?

a. Please explain your answer and suggest any alternative or additional features and how they should be prioritised.

UKPIA **agrees** with the design features set out in the introduction, except for the treatment in the UK Emission Trading Scheme[1] (UK ETS) as discussed in our response to Q2.

Investors need certainty when they invest in major projects, including those generating, transporting, or storing low carbon hydrogen. Allowing the version of the Low Carbon Hydrogen Standard (LCHS)[2] to apply for the duration of the project, or "grandfathering", of certification is important to provide this certainty for investment. The version of the LCHS available at the time would have been the basis for both the equipment design and the investment decision. A failure to allow grandfathering risks these projects being stranded after commissioning without being able to certify the hydrogen they supply, after significant investment has been made in good faith.

We suggest that as the technology develops, then new projects should comply with updated requirements under the LCHS, and this should be reflected in the requirements for certifications. However, for the avoidance of doubt, the retrospective application of new versions of the LCHS to existing projects should not occur.

2. Do you agree with the principles set out in the introduction?

a. Please explain your answer and suggest any alternative or additional principles for the development of the scheme.

UKPIA **does not agree** with the approach taken with regards to the link between the LCH certification scheme and the UK ETS.

At the point of use, the GHG emissions associated with the combustion of LCH will be negligible or even zero. The GHG emissions on combustion would be calculated by operators on the purity of the LCH rather than the upstream emissions; the upstream emissions being part of the LCH producers' own Scope 1[3] UK ETS obligations. Therefore, the consultation statement regarding the fact that LCH certification is not acceptable for the UK Emission Trading Scheme (ETS) may not have any impact for **directly linked** operators consuming or combusting LCH.

Indirectly linked or dispersed sites with no physical connection to low carbon hydrogen sources may benefit in being able to purchase LCH certificates to offset against their UK ETS obligation. This would require a potential book and claim

[1] https://www.gov.uk/government/publications/participating-in-the-uk-ets/participating-in-the-uk-ets
[2] https://www.gov.uk/government/publications/uk-low-carbon-hydrogen-standard-emissions-reporting-and-sustainability-criteria
[3] https://www2.deloitte.com/uk/en/focus/climate-change/zero-in-on-scope-1-2-and-3-emissions.html

approach[4] rather than a mass-balance one, with sufficient verification to ensure the scheme integrity (and in line with the LCHS). It could increase the uptake of the certification scheme, providing an additional value which does not appear to be available in the proposals.

We would be happy to discuss this in more detail with the Department for Energy Security and Net Zero.

3. Do you agree that there should be a single certification scheme covering the UK?

a. Please explain your answer.

UKPIA **agrees** that there should be a single certification scheme for the whole of the UK.

This ensures that there is a level playing field for Low Carbon Hydrogen (LCH) suppliers across the UK and prevents unintended consequences such as market distortions between countries within the UK (including the distribution of LCH between UK countries). It is also simpler for all participants including both suppliers and the administrator managing the certification scheme.

The integration of certification schemes internationally would be beneficial in terms of potential future trade, development of standards and potentially easing administrative requirements for companies working across borders.

4. Do you agree that participation in the scheme should be voluntary initially?

a. Please explain your answer.

UKPIA **agrees** that the participation scheme should be voluntary in the early stages of the scheme. This would allow market demand to drive uptake of the certification scheme, as we outline further in our report "The future of mobility in the UK"[5]

Initially, we could expect that the certification scheme will be of limited uptake as large-scale hydrogen suppliers would supply other major industrial users, including potentially the Natural Gas grid. As discussed, the fact that the UK ETS is based on scope 1 emissions means that it could be of limited application for major industrial users. As we discuss in more detail in our response to Q2, a book and claim approach may be beneficial for indirectly linked sites to be able to reduce their UK ETS emissions and may encourage take up of the scheme.

Given the current low uptake of hydrogen for use in the RTFO due to technology restrictions in the vehicle fleet, we would expect limited interest in customer demand for certified hydrogen through the transport fuel supply chain in the short term.

However, the use of hydrogen is expected to expand in the future (including the use of hydrogen in transport as vehicle technology develops), and we would expect interest in certified hydrogen to increase.

[4] https://www.circularise.com/blogs/four-chain-of-custody-models-explained
[5] https://online.flippingbook.com/view/609189063/

5. If LCHS changes through time, do you think the certification scheme should offer 'legacy' certificates based on compliance with previous versions of the LCHS?

UKPIA **agrees** that the certification scheme should offer "legacy" certificates based on compliance with previous versions of the LCHS.

As discussed in our response to Q1, investors need certainty when they invest in major projects, including those generating, transporting, or storing low carbon hydrogen. The grandfathering of certification is important to provide this certainty for investment. The version of the LCHS available at the time would have been the basis for both the equipment design and the investment decision. A failure to allow grandfathering risks these projects being stranded after commissioning without being able to certify the hydrogen they supply, after significant investment has been made in good faith.

We suggest that as the technology develops, then new projects should comply with updated requirements under the LCHS, and this should be reflected in the requirements for certifications. However, for the avoidance of doubt, grandfathering of projects should continue as previously stated.

6. How do you think 'legacy' certificates would impact the certification scheme and the market for certified hydrogen?

As discussed in our responses to Q1 and Q5, allowing "legacy" certificates provides certainty for investment but new plants should comply with the most up to date requirements as they come on-stream.

Providing "legacy" certificates is also consistent with the approach taken to renewable fuel manufacturing plants in the initial years of the Renewable Transport Fuels Obligation (RTFO) where for GHG reduction compliance requirements were dependant on when the plants were commissioned.

If customers would like the certification of LCH to meet the requirements of updates to the LCHS then they can ask their supplier if they are able to meet these and the certificates may be updated if this can be done.

7. Do you agree that certificates should be issued based on MWhs of hydrogen?

a. If you answered "no" to question 7, please state your concerns and suggest your preferred alternative.

UKPIA **agrees** that certificates should be based on MWh of hydrogen.

The reasons set out in the consultation are clear, and we agree with them. It offers consistency of approach with other international schemes such as the CertifHy[6] and TUV SUD[7], as well as the way in which gas (including natural gas[8]) is supplied and is well understood by industry.

[6] https://www.certifhy.eu/

[7] https://www.tuvsud.com/en-gb/themes/hydrogen/hydrogen-services-that-enable-safety-for-your-ideas/green-hydrogen-certification

[8] https://researchbriefings.files.parliament.uk/documents/CBP-9491/CBP-9491.pdf

Chapter 2 – Information disclosure

8. Do you agree with our indicative list of mandatory disclosure fields?

a. Please explain your answer and suggest any additional mandatory disclosure fields.

UKPIA **does not agree** with the list of mandatory disclosure fields as there are a number that are not relevant, or very hard to implement.

The field covering whether production is supported by government is not relevant to the associated GHG emissions or sustainability and should not be included. It risks potentially dividing the market into government supported and unsupported markets.

It also risks opening arguments from various organisations on whether low carbon hydrogen should be supported by government. Given that government support, particularly in the initial phases is likely to be with a small number of major projects, the data on how government supported hydrogen is used could be collected independently from the certification scheme (e.g., by asking the LCH suppliers).

"Other fields" such as time and date of production may appear to be useful, however it is very difficult to implement and should be voluntary. Hydrogen will be produced continuously from plants, and so a single date and time of production cannot be attributed to a batch of LCH in that way. The hydrogen may be stored (with other batches of certified hydrogen) for a period, complicating the exact time and date a particular batch of LCH moves out of the supply system. Any process for batching under the certification scheme should be aligned with that used in the Low Carbon Hydrogen Business Model[9].

9. Do you have any suggestions for potential voluntary fields that may be of use?

UKPIA **agrees** that potentially aligning voluntary fields with international requirements including CertifHy and TUV SUD would be very useful, enabling producers to use the certificates when exporting to international markets.

It may also be useful to include a general comments field on the label to allow suppliers to include information they feel is relevant.

Voluntary fields should be verified in line with the approach taken in other jurisdictions such as CertifHy and TUV SUD.

10. What markets or schemes would you like to use the voluntary disclosure field to demonstrate compliance with?

UKPIA is unable to comment on this in detail; however, the main export markets are expected to be within the EU[10] (or potentially the US under the Inflation Reduction Act[11]).

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[9] https://www.gov.uk/government/publications/hydrogen-production-business-model

[10] https://energy.ec.europa.eu/topics/energy-systems-integration/hydrogen_en

[11] https://www.mckinsey.com/industries/public-and-social-sector/our-insights/the-inflation-reduction-act-heres-whats-in-it

It is important that the fields are reviewed regularly to ensure compliance with available schemes as certification develops globally. This review process would be expected to be between the government certification body and companies or trade bodies.

11. Would you prefer a single label, or multiple tiers? a. Please explain your answer.

Rather than take a tiered approach, it would be better to state the actual carbon intensity on the certificate. This allows users to make their own evaluation of the carbon savings as well as providing a clear and consistent approach. It is also an approach already used in other low carbon fuel certification schemes such as the ISCC (International Sustainability and Carbon Certification) scheme[12]

However, if a tiered approach is implemented, we would suggest that the four tiers in the illustration may be overly complex, and a reduced number (such as the two in the CertifHy and TUV SUD schemes) would provide sufficient incentive to reduce LCH emissions without causing undue confusion for LCH consumers.

The tiers used in the illustration also raise the question on how LCH with emissions at the boundaries of each tier is treated; for example, would LCH with an emission of 10.1 g CO_2e/MJ LHV H_2 be in Tier 2 or Tier 3? This could be in Tier 2 if rounded to the nearest whole number, or Tier 3 if the exact figure is used. If boundaries are chosen, then clear guidance on this must be provided.

12. If stating a preference for multiple tiers to question 11, do you have any suggestions on how tiers should be structured?

As we discuss in our response to Q11, we would suggest that the 4 tiers in the illustration may be overly complex, and a reduced number (such as the two in the CertifHy and TUV SUD schemes) would provide sufficient incentive to reduce LCH emissions without causing undue confusion for LCH consumers.

Rather than take a tiered approach, it would be better to state the actual carbon intensity on the certificate. This allows users to make their own evaluation of the carbon savings as well as providing a clear and consistent approach. It is also an approach already used in other low carbon fuel certification schemes such as the ISCC (International Sustainability and Carbon Certification) scheme[13].

[12] https://www.iscc-system.org/
[13] https://www.iscc-system.org/

Chapter 3 – Chain of Custody

13. Do you agree with a Mass Balance system of Chain of Custody?

a. Please explain your answer and suggest the alternative you'd recommend if you disagree.

UKPIA **does not agree** that a solely mass balance system is appropriate for the chain of custody.

We suggest that a Hybrid approach be used, using elements of the mass balance and book and claim systems.

Up to the point of certification of the hydrogen (such as a UK based production site and import or export terminal) then a mass balance system should be used for the chain of custody. This is best suited to a physically connected system.

After the point of certification, then a book and claim system may be used for dispersed sites where there is no physical connection. This allows the trading of LCH certificates with sites that may not be capable of receiving LCH itself but may wish to use LCH credits to offset their GHG emissions. However, sites using a book and claim approach would need to use a suitable verification system such as ISAE 3000[14] as well as redeeming the LCH credits against the UK ETS, which would form a retiral mechanism.

14. Do you agree that a Mass Balance system of Chain of Custody would provide the most consumer confidence over the credentials of the hydrogen? a. Please explain your answer.

UKPIA **does not agree** that a Mass Balance system of Chain of Custody would provide the most consumer confidence over the credentials of the hydrogen.

While the "Identity-Preserved" and "Segregation" options would, in theory, provide greater confidence over the credentials of the hydrogen, they are not reflective of the way in which LCH is likely to be supplied through the network, which will be in a flexible manner with both low carbon, and potentially higher carbon hydrogen.

As we indicate in our response to Q13, up to the point of certification of the hydrogen (such as a UK based production site and import or export terminal) then a mass balance system should be used for the chain of custody. This is best suited to a physically connected system. After the point of certification, then a book and claim system may be used for dispersed sites where there is no physical connection. This allows the trading of LCH certificates with sites that may not be capable of receiving LCH itself but may wish to use LCH credits to offset their GHG emissions. However, sites using a book and claim approach would need to use a suitable verification system such as SAE 3000 as well as redeeming the LCH credits against the UK ETS, which would form a retiral mechanism.

We would be happy to discuss this proposal in more detail with the Department for Energy Security and Net Zero.

[14] https://www.iaasb.org/publications/isae-3000-revised-assurance-engagements-other-audits-or-reviews-historical-financial-information

Chapter 4 – Further design considerations

15. Do you have any thoughts on how our consignment approach should be structured?

UKPIA recommends that there is alignment between the LCHS and the LCH certification scheme on the consignment approach. This includes the averaging of two or more consignments, into a maximum of one averaged consignment per month. The averaging should be done on a clear and reasonable basis, for example on a weighted average energy (MWh) basis rather than a time, mass, or volume weighted basis to ensure consistency with the final certification.

This gives flexibility for producers to submit discrete consignments for certificates to be issued quickly or allow averaging and having to wait for at least a month to receive the appropriate certificates.

We are unclear on the justification as to why this approach would be different for the certification scheme giving traceability for consumers of hydrogen than the LCHS itself.

16. Are you planning to import or export hydrogen? If yes, where to/from?

As a trade association, UKPIA is not involved directly in the import or export of hydrogen. However, UKPIA member companies may have plans to import or export hydrogen, but this is a commercial matter for the companies concerned.

Therefore, the certification scheme should be sufficiently flexible to allow import and export of hydrogen. This maximises the economic value of hydrogen to the UK economy while also ensuring UK energy resilience as the economy decarbonises through the transition.

It should also be recognised that there may be market distortions as the international market develops for example the proposed EU Cross Border Adjustment Mechanism[15] (CBAM) covers hydrogen from the start of the scheme.

17. Do you have any suggestions on how the certification scheme can best enable imports of hydrogen, and ensure that imported hydrogen can be certified accurately?

The UK certification scheme should carry out an appropriate "gap analysis" to other certification schemes, such as CertifHy and TUV SUD to confirm if the other requirements meet the UK certification scheme requirements. Where the other schemes meet, or exceed, the UK requirements then the UK scheme should automatically accept certificates from other schemes as being compliant. The hydrogen can then be certified as low carbon in the UK based on the import certification and supplied through the UK system on that basis.

This approach is consistent with the "Meta-Standard"[16] approach used in the early years of the RTFO, where sustainability certification schemes such as ISCC were

[15] https://taxation-customs.ec.europa.eu/green-taxation-0/carbon-border-adjustment-mechanism_en
[16] https://www.fao.org/bioenergy/20534-0db32062fc33e3606922db398e2b8abee.pdf

assessed against the UK Low Carbon Fuel requirements, and accepted if they met or exceeded the UK requirements. As with the RTFO meta-standard, the "gap-analysis" should be reviewed by the government administrator on a regular basis including when changes are announced to the third-party schemes.

18. Do you have any suggestions on how the certification scheme can best support exports of hydrogen from the UK?

As with our response to Q17, a "gap analysis" of the UK certification scheme and those used by other markets such as CertifHy and TUV SUD would be useful for export markets in addition to import opportunities. This would illustrate where initially further voluntary information can be provided, and over time, where additional requirements could potentially be introduced to the LCHS to provide international alignment, subject to reasonable discussion and consultation.

The integration of certification schemes internationally would be beneficial in terms of potential future trade, development of standards and potentially easing administrative requirements for companies working across borders.

19. Are there any additional areas to consider in the midstream beyond those set out above?

UKPIA **agrees** that the areas in the midstream seem that have been identified are a reasonable list of the areas of potential additional GHG emissions.

However, we would ask that, further to our responses to Q17 and Q18, that a gap analysis be carried out with other schemes such as CertifHy and TUV SUD to confirm if these midstream emissions are similarly included. The allow imports and exports to compete on a level playing field, then there needs to be a consistent approach between schemes. The UK should not unilaterally include these emissions if they are excluded from other schemes; bilateral discussions should take place on agreeing a common approach.

One approach to consider is that emissions up to the point of certification (such as a production site and import or export terminal) should be included in the certificate. Downstream emissions such as pipelines, shipping or truck operations would then be excluded; these are covered by other emission reduction schemes such as the UK ETS or IMO. This approach is like that taken for other measures such as the RTFO, where emission associated with low carbon fuels downstream of the final blending operation (such as road haulage to forecourts) are not considered.

Chapter 5 - Delivery and administration

20. Do you agree that monthly self-reporting with light touch verification is the most appropriate reporting method?

a. If answering yes to question 20 please state why. Or if answering no, what would you consider more appropriate?

While UKPIA **agrees** that monthly-self reporting is appropriate, it **does not agree** that light touch verification is appropriate and may not be consistent with the requirements of the RTFO[17] (which the hydrogen certification scheme aims to be compliant with).

In order to ensure confidence in the certification scheme, a reasonable level of verification is required.

The RTFO operates on this basis, where suppliers self-report on a dedicated internet-based system (ROS). The data is then verified by an independent verifier with the verification needing to meet the requirements of ISAE 3000 or an equivalent standard. The DfT Low Carbon Fuel unit also review the data and verification (including cross-checks on volumes with HMRC data) and can ask for further information if required.

This system has worked well for many years, balancing the need for a quick certification scheme with the need for confidence that the renewable fuels supplied in the UK meet minimum requirements. A number of verifiers in the UK have experience carrying out checks against the ISAE 3000 standard.

However, as we indicate in our response to Q17, Q18 and Q19, a gap analysis should be carried out against other standards including CertifHy and TUV SUD, including the verification requirements to ensure that the UK is consistent with the approach taken and hydrogen can be imported and exported without undue burden on companies.

21. Do you think there is anything else that should be assessed during annual audits?

Annual audits with a light touch verification **are not** an appropriate way to provide assurance on low carbon hydrogen and may not be compliant with the requirements of the RTFO.

As we indicate in our response to Q20, a level of verification to ISAE 3000 or equivalent is recommended. This standard includes a requirement to carry out annual audits, and these should be used rather than those indicated in the consultation document. In any event the verification requirements should also be consistent with the requirements of the Low Carbon Hydrogen Standard.

22. Which would you prioritise, immediacy of certificates or the flexibility of averaging consignments across a month?

UKPIA does not have a specific view on this as it depends on the circumstances of individual suppliers.

As we indicate in our response to Q15, there should be flexibility for producers to submit discrete consignments for certificates to be issued quickly or allow averaging

[17] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1137149/RTFO_Compliance_Guidance_2023_Final.pdf

and having to wait for at least a month to receive the appropriate certificates. A one-size fits all approach to this may not suit all LCH suppliers.

23. Do you have any suggestions for the approach to certificate retirement?

As we have previously outlined (for example in our response to Q13 and Q14) a mass balance approach for a directly connected site to the point of certification such as a production site and import or export terminal would be appropriate. For dispersed sites with no physical connection, a book and claim approach with suitable verification would allow these sites to use LCH certificates to meet their UK ETS obligations. The UK ETS effectively "retires" certificates as they are surrendered against a specific obligation.

In any event, we would recommend that the approach chosen needs to be reviewed after implementation to ensure it is operating as intended and no potentially fraudulent activities are taking place.

24. Are you aware of any industry-led hydrogen certification schemes being developed? If yes, please give details.

UKPIA is not aware of any industry-led hydrogen certification schemes being developed.

25. How important is Government backing to provide confidence in the scheme?

UKPIA consider that Government backing of this scheme is critical to providing confidence in the scheme. A government operated scheme fundamentally provides independence and oversight, acting with an independent view to ensure the integrity of LCH certificates. We also agree with the assessment in the consultation document that a government-led scheme can be able to work with other sections within government working on funding hydrogen production, or the DfT Low Carbon Fuels Unit responsible for the RTFO.

This approach is common with other decarbonisation legislation and initiatives such as the UK ETS and the RTFO, which are operated by the government rather than an industry body or a specific company.

26. What would you consider to be the main advantages of Government oversight of a certification scheme?

As we indicate in our response to Q25, a government operated scheme fundamentally provides independence and oversight, acting with an independent view to ensure the integrity of LCH certificates. We also agree with the assessment in the consultation document that a government-led scheme can be able to work with other sections within government working on funding hydrogen production, or the DfT Low Carbon Fuels Unit responsible for the RTFO.

Government oversight of the LCH certification scheme also ensures internal certainty and consistency, as the Department of Energy Security and Net Zero will be the one setting the Low Carbon Hydrogen Standard itself. The same government department

overseeing both minimises the risk of scheme rule interpretation between organisations.

This approach is common with other decarbonisation legislation and initiatives such as the UK ETS and the RTFO, which are operated by the government rather than an industry body or a specific company.

27. Noting that a decision has yet to be taken on whether to go out to external tender, do you have an interest in being considered as a delivery partner for the certification scheme, and if yes, in what role?

UKPIA strongly recommends that the government operate the LCH certification scheme to ensure independence and confidence in the scheme operation.

While we are keen to engage with the UK Government in this area, we do not have an interest in being a delivery partner for the certification scheme.

28. If you are a producer of hydrogen, would you sign up to a Government-led certification scheme?

Although our members are heavily involved in the production of hydrogen, including LCH, UKPIA itself does not produce any hydrogen. However, we could expect that, given the work involved in implementing such as scheme, that companies may choose to wait to see the value and benefits arising from the scheme before committing resources into it.

29. If you are a purchaser of hydrogen, do you see the value in a government-led certification scheme?

a. Please give your reasons.

Although our members may look to purchase hydrogen for their operations, UKPIA itself does not purchase any hydrogen. As such we cannot respond to this question.

30. Would there be any significant costs of participating in the certification scheme that are not captured?

We agree that the de-minimis assessment broadly covers the significant costs that are likely to be required for the certification scheme.

31. Are the assumptions about the time taken for, and the cost of, each activity reasonable?

a. Please provide details.

The de-minimis assessment notes in Page 5 that larger companies will incur higher costs as they will be submitting more certificates, which is not necessarily the case. It is possible that larger volume suppliers would submit the same number of certificates as smaller ones (e.g., monthly aggregated), but these would simply be for a higher number of MWh. Larger companies may have staff who are engaged with similar compliance work such as the RTFO, so not require additional manpower with their associated costs.

This also applies to their customers, who would also be larger in scale so only need a single certificate for a larger number of MWH. So, the reverse may be the case, as larger suppliers may incur a lower unit cost for the certification scheme than smaller ones.

We would be happy to discuss this in more detail with the Department for Energy Security and Net Zero.

32. Do you expect there to be a green premium associated with the certification of hydrogen?

a. If so, please provide details, including indications – if possible – of how large you expect this green premium to be.

The certification of hydrogen is not relevant in the Scope 1 emissions associated with the UK ETS scheme so there will be limited incentive for certification for this purpose. As we discuss in more detail in our response to Q2, a book and claim approach may be beneficial for indirectly linked sites to be able to reduce their UK ETS emissions. Certification can be used for the RTFO but would need further checks and verification under that legislation to ensure compliance (based on the consultation proposals) so may be of limited value.

Taking these into account it is unclear as to how the green premium would be delivered by the LCH scheme; ultimately it would depend on the enhanced premium that businesses would recover from consumers who are willing to pay for more environmentally friendly products. There have been a range of studies in this area, with a range of views[18,19] and it is far from certain that a green premium would exist. It may not be prudent to take this into account in the de-minims assessment to any significant extent.

[18] https://www.edie.net/consumers-less-willing-to-pay-more-for-sustainable-products-during-cost-of-living-crisis/

[19] https://www2.deloitte.com/uk/en/pages/consumer-business/articles/sustainable-consumer.html