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**Response to: Consultation on a UK low carbon hydrogen certification scheme**

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Düsseldorf-based Uniper is an international energy company with activities in more than 40 countries. With around 7,000 employees, it makes an important contribution to security of supply in Europe. Uniper's core businesses are power generation in Europe, global energy trading, and a broad gas portfolio.

Uniper procures gas – including liquefied natural gas (LNG) – and other energy sources on global markets. The company owns and operates gas storage facilities with a capacity of more than 7 billion cubic meters. Uniper plans for its 22.5 GW of installed power-generating capacity in Europe to be carbon-neutral by 2035.

The company already ranks among Europe's largest operators of hydroelectric plants and intends to further expand solar and wind energy, which are essential for a more sustainable and autonomous future.

Uniper is a reliable partner for communities, municipal utilities, and industrial enterprises for planning and implementing innovative, lower-carbon solutions on their decarbonisation journey. Uniper is a hydrogen pioneer, is active worldwide along the entire hydrogen value chain, and is conducting projects to make hydrogen a mainstay of the energy supply.

In the UK, Uniper owns and operates a flexible generation portfolio of seven power stations and a fast-cycle gas storage facility.

**Consultation Response**

We have set out below our answers to the consultation questions. Our views in summary:

- Both traceability and tradability are critical components of a low carbon hydrogen certification scheme. We need to see rapid expansion of both production and consumption of low carbon hydrogen in order to meet the UK's legally binding climate targets: certification must support this.
- There should be a single UK scheme, as this is likely to be more liquid than smaller, fragmented schemes.



- Interoperability with international schemes will become increasingly important as the hydrogen economy develops. Given the variety of international schemes, this can be facilitated by ensuring complete flexibility for the provision of voluntary information in UK low carbon hydrogen certificates.

### *Our views in full*

**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.**

No. Traceability is critically important, and we support the certification of information on the embodied emissions from the production of hydrogen, but stimulating market growth and incentivising the production of low carbon hydrogen in the early phase of hydrogen market development is of equal importance, particularly in the absence of strong policy to drive demand. The UK certification scheme should look to address both, which would suggest a more flexible approach than is being proposed.

In order for hydrogen certification to be valuable, it will need to be linked with demand-side schemes, such as the UK ETS. It is unlikely that the benefits of avoiding scope 2 or scope 3 emissions alone will be adequate to cover the costs of administering a hydrogen certification scheme. If certificates are required to offset UK ETS obligations they will help to drive value for low carbon hydrogen above the subsidy floor price and reduce the subsidy cost to tax/bill payers. They would also help drive demand for the lowest carbon hydrogen, driving up the value of and therefore support for renewable hydrogen, including electrolytic hydrogen.

We agree that it is important that the scheme be interoperable with international schemes. Given the number and variety of international schemes, this might be facilitated by flexibility in terms of options for providing voluntary information.

**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.**

Yes, we share these principles. There does appear to be one missing, around driving value: to help ensure that hydrogen can play the role it is expected to in meeting the UK's 2050 net zero target, the UK low carbon hydrogen certification scheme should be designed to drive value for low carbon hydrogen.

**3. Do you agree that there should be a single certification scheme covering the UK? a. Please explain your answer**

Yes: a UK-wide scheme is likely to be more liquid than smaller, fragmented schemes.

**4. Do you agree that participation in the scheme should be voluntary initially? a. Please explain your answer.**

Yes. The UK Low Carbon Hydrogen Agreement (LCHA) will initially facilitate direct producer-offtaker contracts with exclusive transport arrangements. Depending on the scheme design, certification may not add value in such arrangements, so producers and offtakers should be free to agree whether or not they want to use certificates.



In the longer term, wide participation will benefit the scheme, and wide participation will happen if the benefits to participants are material. If a mass balance scheme is not flexible enough to facilitate blended or mixed hydrogen, there may be no material benefit for either producers or offtakers of participating in a certification scheme.

**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?**

Yes, where producers are still operating under the previous version of the Low Carbon Hydrogen Standard (LCHS) due to grandfathering provisions in the LCHA. Legacy certificates should not be available to producers outside such LCHA agreements, in order to ensure that the carbon intensity of hydrogen production reduces over time in line with the national standard.

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

Legacy certificates should have limited impact on any certification scheme, as they will only be available to a small number of producers at any given time. Furthermore, legacy certificates will not undermine any scheme designed to drive value for hydrogen with the lowest emissions, as the higher emissions associated with that hydrogen will be reflected in the certificate.

**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.**

Yes. This will help the UK scheme to be interoperable with international schemes, maximise value for participants and increase market liquidity.

**8. Do you agree with our indicative list of mandatory disclosure fields? a. Please explain your answer and suggest any additional mandatory disclosure fields.**

We agree. These fields would provide a comprehensive level of information about the location, time, production, and carbon intensity of the certified hydrogen. We have no additional suggestions.

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

No. We would suggest that government offers complete flexibility for the voluntary provision of additional information, so that producers can match the requirements of different international schemes.

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

None in the near term. In the longer term, once risk-taking intermediaries and exports are supported, we would use the voluntary disclosure field as necessary. We cannot say at this time what other markets we will access nor what information will be required. For this reason, the voluntary disclosure field(s) should be entirely flexible.



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

Multiple tiers. This would help drive demand for and value of lower carbon hydrogen, and make the scheme more accessible to non-experts.

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

The proposed structure of Tier 1 for the highest carbon and Tier 4 for the lowest carbon hydrogen is counterintuitive: if the tiers are to be numbered then Tier 1 should be the lowest carbon, or the 'best'. This may, of course, create problems in future if additional low carbon tiers need to be added, to make the 0-5g CO<sub>2</sub>e / MJ LHV H<sub>2</sub> tier more granular, or to account for negative emissions. It may be easier, therefore, to adopt an A-x labelling system, as currently exists for a wide range of energy-using products, with 'A' being the 0-5g tier. This would allow for A+ ratings, and would be both intuitive and flexible.

**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.**

We do not agree with a Mass Balance chain of custody as described. The UK certification scheme must be robust in terms of traceability, but it must also permit flexibility and support trading to drive market uptake. A custody scheme consistent with the scheme that supported early market development for renewable electricity would allow customers to buy low carbon hydrogen and thus drive production and use, even where it is not physically possible for that customer to use pure low carbon hydrogen, e.g. customers taking gas from a blended gas grid. This could be a more flexible version of mass balance, requiring some link between producer and end user – e.g. end users would have to have access to low carbon hydrogen, including in blended gas, and could not purchase low carbon hydrogen credits if they were not connected to a gas network with low carbon hydrogen in it – but not requiring certificates to be locked to the physical molecules of hydrogen at every step of the chain. The mass balance scheme described in the consultation would be more suited to an established market and/or a market in which it is possible to physically trace the traded good back to its point of origin.

Concerns about the robustness of a more flexible system can be addressed in scheme design, e.g., by requiring certificates to be retired when the certified volume of hydrogen – or blended gas, where hydrogen is blended into the natural gas network – has been consumed.

**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.**

No: the level of consumer confidence will be determined by scheme design, and could be high under either a mass balance or a book and claim chain of custody. We note that while it is important for any scheme to provide consumer confidence this should not be its only function. Certification, as it was in the renewable electricity sector, should be used to drive demand for a low carbon fuel in the absence of – or in addition to – other strong policy drivers, and to grant access to users who cannot yet use it due to inadequate infrastructure. This will drive up the value of the low carbon fuel and therefore production. We need to see rapid expansion of both production and



consumption of low carbon hydrogen in order to meet the UK's legally binding climate targets: certification should support this.

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

The approach should be pragmatic and simple to support the development of the hydrogen economy and provide consumer certainty without imposing disproportionate administrative burden on producers. At least in the near term, when the numbers of producers and volumes of low carbon hydrogen will be low, the scheme could be flexible and allow, but not require, producers to average consignments. This could be reviewed as the market and certification mature.

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

Yes. We are also a trading company: trading a broad range of energy commodities globally, we have a deep understanding of international markets and importantly in trading natural gas. Trading low carbon hydrogen as the international market develops fits with our strategy.

**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 scheme can enable imports by having sufficient flexibility to support alignment with a variety of international certification schemes. The key requirement must be for certification to accurately document the carbon emissions associated with the production of hydrogen – including upstream emissions, as required for UK hydrogen – and all transportation and storage associated with bringing it to the UK.

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

The UK scheme can enable exports by having sufficient flexibility, particularly around the provisions of voluntary information, to enable alignment with international schemes.

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

Whilst it will be important for the emissions associated with midstream activities to be accounted for, the government must avoid making certification so complex it is not practical. Where hydrogen is being injected into a grid, either blended into the national gas grid or injected into future hydrogen pipeline and/or storage infrastructure, the emissions associated with that activity should be applied as a modelled, averaged value.

**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?**

Yes. This is a proportionate requirement that will be adequately robust, particularly where data is collected through automatic metering. Much of the data required to verify the claimed carbon credentials will be being collected anyway, for the LCHA.



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

No.

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

This might depend on the circumstances. For example, for CCUS enabled hydrogen we might prioritise immediacy, because we would want to be able to allocate with continuous delivery. But for electrolytic production, we might prioritise flexibility, which could allow for variability of production, i.e. multiple input sources (renewables and grid). On the other hand, the value of electrolytic production could be in the zero carbon hydrogen (renewable), so averaging may not be beneficial. Producers should therefore be offered flexibility to average consignments if that suits them.

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

Certificates should be immediately retired when the certified MWh of hydrogen – or blended gas, where hydrogen is blended into the natural gas network – is consumed or combusted. This should be a strict requirement, to support a robust chain of custody that will support market growth.

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

No.

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

It depends on the nature of the scheme. A mass balance scheme in which the certificates must track the physical hydrogen and be recorded at every point of movement in the chain requires a huge amount of administration and oversight, which must be backed by government – especially where there is no economic advantage to scheme users. A more flexible scheme, on the other hand, would benefit from government backing to provide confidence that it is robust and scheme participants are not double counting but does not require it. There are many examples of industry-led book and claim certification schemes.

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

Increased credibility: government oversight will mean greater trust in certificates genuinely representing the carbon savings they claim to represent, which will increase their value over time.

**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?**

No.



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

We would sign up to a certification scheme if doing so would drive value and grow the market for hydrogen. We would expect to sign up to a government-led book and claim or flexible mass-balance certification scheme immediately, as such a scheme would help to rapidly grow demand for and confidence in the climate credentials of low carbon hydrogen, which will increase its value. We would expect to sign up to any industry-wide scheme in the fullness of time, as our offtakers would expect it. In the early days of operation, with a small number of directly-connected offtakers, we would not see any value in signing up to a mass-balance certification scheme as described in the consultation.

We do not agree with governments assumption that there would be higher utilisation of a mass balance scheme in the near term. Even if a mass balance scheme is more interoperable with international schemes, which is debateable in the absence of detailed scheme designs, the LCHA does not support hydrogen exports, so this activity is likely to be very limited. We are expecting a decision from government later this year regarding blending hydrogen into national distribution networks: subject to that decision being in favour, it is likely that blending to the gas grid will be supported before exports, and it is not clear how the mass balance scheme described in the consultation would work for blended hydrogen.

**29.If you are a purchaser of hydrogen, do you see the value in a Government-led certification scheme? a. Please give your reasons**

Yes. A government-led scheme can provide the purchaser with increased confidence that the certificate they are purchasing is linked to real emissions reductions that have not been double counted. Furthermore, a government-led scheme is likely to have broad participation and can effectively link to other government schemes and policies, such as the UK ETS.

**30.Would there be any significant costs of participating in the certification scheme that are not captured? a. Please provide details.**

No. We agree that certificate transaction costs will be higher for mass balance, whilst the inherent value of certificates is likely to be lower, and note these higher costs will have to be socialised among scheme users.

**31.Are the assumptions about the time taken for, and the cost of, each activity reasonable? a. Please provide details.**

In the absence of more detail about scheme design and operation, we cannot offer a view.

**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**

Yes, particularly under a flexible chain of custody that permits some operators to claim the low carbon benefits of hydrogen even where they only have access to blended carbon hydrogen.