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By email to hydrogen.regulations@energysecurity.gov.uk

Hydrogen economic regulatory framework consultation

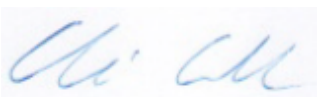
Dear Sir or Madam

Fuels Industry UK represents the seven main oil refining and marketing companies operating in the UK. The Fuels Industry UK member companies – bp, Essar, Esso Petroleum, Phillips 66, Prax Refining, Shell, and Valero – are together responsible for the sourcing and supply of product meeting over 87% of UK inland demand, accounting for over a third of total primary UK energy[1].

The refining and downstream oil sector is vital in supporting UK economic activity. It provides a secure supply of affordable energy for road and rail transport, aviation, and marine applications, as well as for commercial and domestic heating. It also supplies base fluids for use in lubricants, bitumen for use in road surfacing, and graphite for use in electric vehicle batteries and as electrodes in steel and aluminium manufacture.

Our response to the questions posed in the consultation is attached in Appendix A:

Yours sincerely



Chris Gould

[1] Based on the Department of Energy Security and Net Zero Digest of UK Energy Statistics 2024

Appendix A: Fuels Industry UK response

Chapter 2: Balancing hydrogen networks

1. Do you agree with the identified core activities that hydrogen networks will need to undertake to balance their systems? Please explain your answer and provide any supporting evidence, including any additional core activities hydrogen networks may need to undertake to balance their systems.

Yes

This analysis seems to address the key activities that are needed to be undertaken in order to balance hydrogen systems.

We agree that the initial networks are likely to be small and limited to specific industrial complexes such as the HyNet [2] cluster in Northwest England. Such industrial petrochemical complexes often have interconnecting, gaseous, streams and are used to dealing with these issues as part of their routine operation.

In addition, the principles of the natural gas grid would equally apply to hydrogen grids, recognising that the physical properties of hydrogen are different. The consultation does indeed refer to these principles.

We cannot add any additional core activities at this time; however, we would encourage ongoing reviews to be undertaken as the hydrogen networks develop to ensure that the approach to balancing remains robust. This should also include a recognition of the abilities of individual participants to respond; for example, due to restrictions in electrolyser capacity or renewable electricity supply. There may also be restrictions on hydrogen available from storage, for example if hydrogen supply runs out due to extended periods of low wind or sun [3] or if supply maximum is reached.

[2] https://hynet.co.uk/
[3] https://www.gridx.ai/knowledge/what-is-dunkelflaute

2. Do you agree with our assessment that primary and residual balancing licence structures should be maintained for 100% hydrogen pipeline networks? Please explain your answer and provide any supporting evidence.

Yes

This seems to be a pragmatic approach to the operation and builds on experience in the gas distribution centre.

It also addresses some of the risks associated with the core balancing activities that we address in our response to Q1.

We would expect that, at least initially, the hydrogen networks will be small and confined to industrial petrochemical complexes. Therefore, the responsibilities should be fairly minimal, over and above normal operation. However, these may evolve over time as the networks grow and expand.

3. Do you think there will be any costs, savings or other economic and business impacts associated with retaining these licence structures? Please explain your answer and provide any supporting evidence.

Whilst we agree that the dual approach would seem to be the most appropriate at this stage, the fact that initial networks are likely to be small and localised would reduce the need for residual balancing requirements.

This may make the business case for developing residual balancing infrastructure more difficult, at least in the early phases of the network, due to uncertain and low demand scenarios. This factor needs to be considered, and additional government support may be required to facilitate development.

4. Do you agree that producers are likely best placed to hold primary balancing responsibilities for hydrogen networks? Please explain your answer and provide any supporting evidence.

Yes

Producers are likely to be best placed to hold primary balancing responsibilities for the reasons articulated in the consultation document.

However, if the producers cannot supply more hydrogen in order to say boost pipeline pressures due to their own restrictions, then consumers may need to be directed to reduce demand to ensure that the pipeline operates within the safe operating limits required. On other words, off-takers may have responsibilities as well to ensure system operation.

5. Do you agree that other parties, for example hydrogen offtakers, should not be excluded from applying for a licence? Please explain your answer and provide any supporting evidence.

Yes

At this stage in development of hydrogen networks, then there needs to be as much flexibility as possible to encourage reliable, safe and efficient operation of hydrogen networks.

This includes not excluding offtakers from any arrangements. Off-takers may also have a role to play in ensuring effective network operation; for example, in the event that producers cannot supply additional hydrogen then off-takers may need to reduce demand.

6. Do you think there will be any costs, savings or other economic and business impacts from producers or offtakers holding primary balancing responsibilities? Please explain your answer and provide any supporting evidence.

We do not have any comments in response to this question.

Chapter 3: Allocating a System Operator for hydrogen pipeline systems

7. Do you agree that responsibility for the system operation of hydrogen pipeline networks will need to be allocated to an entity through licence? Please explain your answer and provide any supporting evidence.

No

We agree that clear responsibilities need to be established between parties operating in the network. However, given the nascent nature of the sector, and the fact that the initial nature of the hydrogen networks will be small and local, we question whether this needs to be through formal licensing at this time.

We would argue that the need should be considered on a case-by-case basis, rather than a blanket approach. Where there are limited participants, with clear responsibilities established through commercial contracts, there should not be a need for formal licensing. The system operation can be effectively handled through these arrangements, as it already is for example between entities operating within UK petrochemical complexes.

As the industry develops, then there may be a need to establish more formal licensing to meet the needs of multiple participants in due course.

8. In your view, what are the key activities that a hydrogen pipeline System Operator will need to undertake? Please explain your answer and provide any supporting evidence.

We agree that the activities listed in the consultation document are the main ones that need to be undertaken by a responsible hydrogen pipeline system operator.

As we articulate in our response to Q7, given the fact that initial networks will be small and local, we do not see that these need to be undertaken under a formal licensing regime. Commercial contracts such as those already used within UK petrochemical complexes can cover the responsibilities required.

As the networks develop, then there may be a need to establish more formal licensing to meet the needs of multiple participants in due course.

9. Do you agree with the assessment that hydrogen pipeline network owners are best placed to hold responsibility for system operation, under their hydrogen transporter licence? Please explain your answer and provide any supporting evidence.

Yes

We agree that the hydrogen pipeline network owners are best placed to be responsible for system operation.

As we articulate in our response to Q7, given the fact that initial networks will be small and local, we do not see that these need to be undertaken under a formal licensing regime. Commercial contracts such as those already used within UK petrochemical complexes can cover the responsibilities required.

As the networks develop, then there may be a need to establish more formal licensing to meet the needs of multiple participants in due course.

Chapter 4: Supplier licences

10. Do you agree with the assessment that persons supplying hydrogen through pipes to premises should be exempted from supplier licence requirements, but that this arrangement should be kept under review as hydrogen networks develop? Please explain your answer and provide any supporting evidence, including in support of any alternative options, such as a new exemption threshold.

Yes

We agree that the supply of hydrogen through pipes to premises should be exempted from the supplier licence requirements for the reasons articulated in the consultation document.

Broadly, due to the nascent and local nature of the networks, the degree of intervention through licensing should be as flexible and unrestricted as possible, to allow the networks to develop. Appropriate arrangements can be put in place through commercial contracts, such as those that already exist within UK petrochemical networks.

As the networks develop, then there may be a need to establish more formal licensing to meet the needs of multiple participants in due course.

11. Do you expect there to be any costs, savings or other economic and business impacts from the proposed exemption? Please explain your answer and provide any supporting evidence.

We do not have any comments in response to this question.

Chapter 5: Other hydrogen licences

12. Do you consider that any other activities in 100% hydrogen pipeline networks should be regulated under licence, for example the activities of production and/or storage? Please explain your answer and provide any supporting evidence.

No

Broadly, due to the nascent and local nature of the networks, the degree of intervention through licensing should be as flexible and unrestricted as possible, to allow the networks to develop. Appropriate arrangements can be put in place through commercial contracts, such as those that already exist within UK petrochemical complexes.

As the networks develop, then there may be a need to establish more formal licensing to meet the needs of multiple participants in due course.

Chapter 6: Network code

13. Do you agree that a network code will be required for early 100% hydrogen pipeline networks, including those that are funded through the HTBM? Please explain your answer and provide any supporting evidence.

No

Due to the nascent and local nature of hydrogen network codes, arrangements can be made through bilateral agreements due to the limited number of participants involved. This mirrors arrangements already in place at for example UK petrochemical complexes where gases may be supplied to a number of participants.

As the networks develop, then there may be a need to establish a more formal network code to meet the needs of multiple participants in due course. This can look at the arrangements in place as a starting point, recognising that needs and arrangements may be different at different locations.

14. Do you agree that a new hydrogen network code should be developed? Please explain your answer and provide any supporting evidence.

Possibly yes, in due course

Due to the nascent and local nature of hydrogen network codes, arrangements can be made through bilateral agreements due to the limited number of participants involved. This mirrors arrangements already in place at for example UK petrochemical complexes where gases may be supplied to a number of participants.

As the networks develop, then there may be a need to establish a more formal network code to meet the needs of multiple participants in due course. This can look at the arrangements in place as a starting point, recognising that needs and arrangements may be different at different locations.

The needs of a hydrogen network code are likely to be different to those of the uniform network code (UNC) used in natural gas networks for a number of reasons including limited market participants, differing off-taker requirements and technical differences in handling hydrogen. This means that a new hydrogen network code may need to be developed, considering potentially different needs at different locations.

15. Do you agree with the description of the role of UK Government during code development and subsequent modification? Please explain your answer and provide any supporting evidence.

Possibly

The need for a network code needs to be established and may not be useful during the initial phases of hydrogen network development. A “one size fits all” approach may not consider local issues and needs.

The role of government in setting up a universal network code across the UK needs to be carefully considered to avoid creating unnecessary bureaucracy that may hinder hydrogen network development.

16. Which types of stakeholders do you think should be involved in the development of the code? Please explain your answer and provide any supporting evidence

The stakeholders involved in the development code should be the ones identified earlier in the consultation document, i.e.

- Hydrogen producers
- Hydrogen offtakers
- Hydrogen gas transporters
- Hydrogen storage operators

The need for a network code needs to be established and may not be useful during the initial phases of hydrogen network development. A “one size fits all” approach may not consider local issues and needs.

17. Who should be a party to the code? Please explain your answer and provide any supporting evidence.

The stakeholders who should be a party to the code should be the ones identified earlier in the consultation document, i.e.

- Hydrogen producers
- Hydrogen offtakers
- Hydrogen gas transporters
- Hydrogen storage operators

The need for a network code needs to be established and may not be useful during the initial phases of hydrogen network development. A “one size fits all” approach may not consider local issues and needs.

18. Do you agree that the hydrogen network code should be developed using a minimum viable product approach? Please explain your answer and provide any supporting evidence.

Yes

The need for a network code needs to be established and may not be useful during the initial phases of hydrogen network development. A “one size fits all” approach may not consider local issues and needs.

However, in the event that one is introduced then we would encourage as light a touch on regulation as possible to allow flexibility for hydrogen networks to develop.

The minimum viable approach used in the CCUS network code would seem to be the best approach to take and will be understood by industry stakeholders.

19. What is the minimum level of progress in code development that is required at the different stages of project development to enable investment decisions? Please explain your answer and provide any supporting evidence.

Fuels Industry UK is unable to comment on this question

20. Which issues should be prioritised during initial code development? Please explain your answer and provide any supporting evidence.

Fuels Industry UK is unable to comment on this question.

However, we would encourage as much learning as possible to be taken from the development of the CCUS network code.