Hydrogen Economic Regulatory Framework: Developing an effective market framework for 100% hydrogen pipeline network

4 September 2025

Submitted via citizen space

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.

Energy UK agrees that the core activities identified below will form a framework for maintaining the physical balance of a hydrogen pipeline system / simple network.

- Sharing data
- Changing gas flows
- Maintaining system resilience - but only for own customers
- Emergencies

Further work will be required to detail the responsibilities of the parties involved over which timescales, allocation of costs and incentives to undertake appropriate actions. Sharing data on the status of the system will need detailed consideration especially where multiple parties have responsibility for balancing, this will require data on the current status but also forecasts for the rest of the balancing period and beyond.
We agree resilience will be key to early systems, with storage, where present, having a central role. However, absent a mechanism to trade hydrogen producers will be limited to only supporting their own customers, due to limitations in the hydrogen production business model (HPBM).

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, maintaining the current gas licence structures provides familiarity for those involved with the natural gas market arrangements and may avoid the need to define new licence arrangements.
We note that current gas shippers do not have an obligation to balance, rather an incentive to do so through cashout risk exposure.

Much work will need to be carried out on all aspects of the balancing regime. In addition to those outlined above this will likely include, incentives to balance, the balancing period, cost sharing, timing of actions by shippers and of the system operator.

If there were to be a single party responsible for balancing it may be simpler in early networks, but a new licence would be necessary. It would require extensive contracting with all parties by the systems operator, to enable instructions to change flows and lack of incentives on producers to balance supply and demand could be problematic or may need to be structured in a different way. Given there will be a limited number of providers of balancing services in early networks the pricing of balancing services will need detailed consideration.
The transition from normal operational balancing to emergency instructions will need to be explored in either framework.

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.

Benefits may include:

- Lower costs if more parties can contribute to balancing
- Easier transition to a more market based approach to balancing by establishing the principles at the outset.
- Lower costs if parties with a shipper licence do not need to obtain a separate one for hydrogen. Clarification of this would be useful

Costs may include:

- Systems to interface with system operator, for data sharing, nominations billing etc
- Producers / offtakers will need to obtain a shipper licence unless a related company already has one.
- New licence holders will need to familiarise themselves with their licence responsibilities, the current shipper licence is around 100 pages.
- Establishing a shipper lite licence for hydrogen (if needed) would incur costs
- Ofgem costs in issuing licences
- Overall balancing costs may be higher than otherwise as shippers linked to producers will not be allowed to trade hydrogen to support another producer's customers or optimise use of storage.

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.

Producers are required to hold a shipper licence in order to transport gas under the Gas Act and will have direct knowledge of its own production and offtake, they are also likely to have contracts with storage. So, the shippers associated with producers

will be best placed to have primary balancing responsibilities for its own portfolio and provide balancing services to the system operator. This approach is reasonable where larger companies are involved in hydrogen production at scale, but may be a barrier to smaller companies or small scale hydrogen production connecting to an early network given the cost of applying for a shipper licence and expertise required to meet shipper obligations.
As it stands we believe the LCHA precludes sale of hydrogen to a party that then sells to an offtaker, this seems to limit a shipper assisting another portfolio to balance except perhaps if the trade is undertaken by the system operator. It would also seem to limit a shipper from offering shipping services to more than one producer.

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.
Energy UK agrees that offtakers should be allowed to be shippers so that they can manage their own direct use and storage inventory. Such parties would also be able to provide balancing services to the system operator.

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.

See response to Qn3
In addition, producers and offtakers will need to secure storage rights (space and injection and withdrawal capacity) to fulfil this primary balancing role and they will need to be able to recover the costs of this in some way, potentially via amendment to the HPBM, Noting that the costs of storage services and how they are allocated is currently unknown.
Subject to this the overall system costs to balance are likely to be lower where producers are incentivised to self balance than in a framework where the system operator undertakes all balancing under contracts.
However further cost benefit and optimisation across portfolios will not be possible.

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.

Yes

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.

The system operator will need to anticipate when action may be necessary to ensure the safe operation of the network. It will need information on flows and pressures at entry and exit points and forecast flows to determine the pressures in the coming hours. It will also need timely notifications for any changes to flows at entry / exit and to/ from storage. It will need to judge whether use of linepack is sufficient to manage any forecast supply / demand mismatch. If not, it will need to take balancing actions, how these are instructed and with what lead time will require further development along with cost allocation.
The steps prior to an emergency and emergency steps will need to be explored to consider if they are fit for purpose in a hydrogen network.

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, this is the logical choice for early networks, but the framework should not rule out a separate system operator in the future as networks are linked there could be merit in a more holistic view of operations across the wider network.

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, Energy UK agrees that parties supplying hydrogen to premises should be exempt from holding a supply licence, for early hydrogen networks since it would create a disproportionate regulatory burden and the offtakers on the early networks will be capable of engaging directly with the producers.
This position should be kept under review, with the decision point for a review being set out in advance so potentially affected parties are aware of the trigger for a review.

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.

There will be cost savings to the producers not requiring a licence. These arise from avoiding application costs and ongoing compliance costs, including resources required to respond to requests for information (RFIs) and the risk of fines.
It may be appropriate to consider a licence lite in the future tailored to the needs of the hydrogen market at that time.

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, there is regulation of storage through the Gas Act and certain provisions in the Low Carbon Hydrogen Agreement (LCHA).
With respect to transportation the consultation proposes that transportation of hydrogen through pipes or a pipeline systems will be licenced. Whilst we note the definition of hydrogen networks on page 9 we seek a clarification, since the Gas Act does not require a transporter licence where customers being supplied have an annual quantity greater than 75,000 therms per annum. This suggests that 1 2 1 or 1 to few pipelines serving such customers will not need a licence which we consider to be appropriate. It is therefore not clear what the trigger is for requiring a licence, will this be linked to transpert business model support in some way?

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.
Yes, where a network is licenced.
Consistent arrangements as defined in a network code will make it easier establish arrangements across extended networks if they are connected at some point in the future.

14.Do you agree that a new hydrogen network code should be developed? Please explain your answer and provide any supporting evidence.
Yes a hydrogen code should be established which applies to all licenced networks to facilitate future connection of networks. It will also provide clarity on the rules that would apply to any early 121 pipelines that may wish to connect to an established network.
A new code for hydrogen would be appropriate since the existing gas network code is very complex and too detailed for early hydrogen networks.

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.
Yes, it is appropriate for government to have a central role in initial development of the code to ensure alignment with policy, including as it evolves. We would also expect a reduced role as the hydrogen economy develops.
Involvement of stakeholders and an open and transparent process supporting collaborative development will deliver the best outcomes.

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 development process should be open to all parties with an interest in the hydrogen economy, with government able to hear and rule on issues where there are divergent views to avoid bias.

Once established we would expect a greater role for Ofgem in code development, modification processes and appointment of a code manager. This would provide a degree of independence from government and potentially greater certainty in the event of a change of government.

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

The current gas code is between shippers and transporters, this would seem appropriate for a hydrogen code.

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.

This would seem to be a reasonable starting point, but greater definition of what this means in practice at working level would be helpful. It may be that this focusses on activities, such as; nominations, balancing, cost allocation, information provision, emergency arrangements.

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.

For producers and offtakers it will be important to understand the key commercial and operational risks and responsibilities during project development with these being set out in more detail in a code. The code should be finalised or near to final at the time of an investment decision.

This includes cashout risk, balancing responsibilities and being able to flow, in or out of the system at the choice of the producer / offtaker. The ability to amend nominations and any restrictions on this will be important.

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

It is a challenge to identify specific areas as the topics tend to become interconnected, but the main focus should be on those elements which have commercial impacts and can impact investment decisions as in question 19. It will

also be vital that impacted business models are aligned and consistent with the code framework.

- Balancing responsibilities including information provision
- Cashout charges
- SO role (when/if it can direct flows pre-emergency)
- Network and balancing cost allocation
- Capacity allocation
- Nominations and renomination rules / restrictions
- Emergency arrangements