

ENTSOG Initial Proposals for Addressing Hydrogen Regulation in the Revision of the 3rd Energy Gas Package

ENTSOG believes that the Gas Directive and Regulation should be amended to achieve the following objectives: ramp-up of a liquid hydrogen market, maximize synergies between gas and hydrogen (in particular, repurposing or retrofitting gas infrastructure opportunities), contribute to the EU decarbonisation goals while keeping an integrated gas market and encourage investment in renewable and low carbon gases.

The following is a short overview of the key proposals ENTSOG would like to discuss with the Commission.

1. Application of the Internal Energy Market (IEM) rules to the future hydrogen market

The IEM, and notably the rules in relation to natural gas, have served EU citizens and industry well by establishing a liquid, competitive and secure gas market across the EU. Its provisions should serve as the foundations for the emerging hydrogen network and market. Applying similar principles from the Gas Directive, such as those concerning unbundling and non-discriminatory Third-Party Access (TPA), clearly makes sense because the future hydrogen network is anticipated to share the same basic attributes as the gas network, i.e. a natural monopoly, used by multiple types of producers and consumers, with the purpose of transporting a commodity, and thereby facilitating its trade in the most efficient manner.

Incorporating the rules for hydrogen in the gas legislation would be the most efficient way of ensuring regulatory alignment between these two closely related energy vectors. Furthermore, including the relevant regulatory arrangements for the hydrogen market and hydrogen infrastructure within the gas legislation will support the system integration between gas and hydrogen – in particular regarding the repurposing of gas infrastructure (to transport hydrogen only) and the retrofitting of gas infrastructure (to transport hydrogen blended with natural gas), where network development and cost allocation issues will be easier to handle within one regulation.

Incorporating the rules for hydrogen in the gas legislation would also help to avoid, from the outset, some of the regulatory barriers and restrictions on operational arrangements that have thus far limited the ability to ensure effective system integration between electricity and gas.

In any event, it is evident that the hydrogen market and infrastructure of today is at a different stage of development compared to the natural gas market in 2009/10, when the 3rd Energy Package was developed. As such, even though ENTSOG is of the opinion that similar market principles shall be applied as between gas and hydrogen, we recognise the need to establish a framework for hydrogen which is tailored to the specific stage of development of the Hydrogen market. This may imply some variations from the gas regulation, at least for a transitional period.

Finally, it is also suggested that the revised gas regulation should not seek to cover all the required technical details for hydrogen and these should, instead, be dealt with in Network Codes (as for the regulation, the detailed rules that apply to hydrogen should be tailored to each stage of development of the hydrogen market). The Commission should be empowered to amend/develop the relevant Network Codes through delegated acts.

2. Role of gas TSOs

The EU gas/hydrogen legislation should explicitly recognise that gas transmission system operators can be certified as owners and operators of hydrogen networks.

Authorising gas TSOs to carry out activities related to the development, integration and operation of hydrogen infrastructure, including the core hydrogen network, would facilitate an efficient way forward due to the experience of TSOs in planning, financing, constructing, operating and maintaining gas infrastructure. Furthermore, since parts of the existing gas grids (owned and operated by the gas TSOs) will be retrofitted and repurposed to transport hydrogen, this would also be more easily facilitated by allowing TSOs to own and operate both gas and hydrogen networks. It should also result in a more efficient operation of the future hydrogen network and enable existing, well-proven arrangements concerning safety and security of supply cooperation to be more easily mirrored to the hydrogen market.

As highlighted in point 1 above, the TSOs will have similar obligations for gas and hydrogen transmission systems to ensure open and non-discriminatory TPA.

In addition to the historic roles undertaken by gas TSOs, new roles and services inherently linked to gas grid management (such as gas quality management and conversion services) will need to be established to complement and support the development and operation of increasingly integrated gas and hydrogen pipeline systems. In this regard, we believe gas TSOs can use their technical expertise to play a key role in contributing to hydrogen development across the EU.

The infrastructure operators should facilitate the development and operation of the technical and commercial framework (e.g. via network codes) and ensure transparent, fair and non-discriminatory access to the infrastructure.

3. Financing the development of the hydrogen networks

To ensure the cost-effective and timely development of the hydrogen network, it will need to be designed and constructed to meet the longer-term forecast of hydrogen demand in terms of sizing/dimensioning, location and timing. As such, this clearly has significant consequences for the financing and development of the hydrogen network since, in the earlier stages of the market development, the specific network charges will either be prohibitively high or the transportation revenues derived from initial levels of hydrogen demand will not be sufficient to finance the required infrastructure.

It is therefore essential that arrangements should be established to address this issue and thereby better ensure the recovery of investment cost in the hydrogen network. One solution would be to partly (or potentially fully) mutualise the hydrogen network costs with the gas network costs. The mutualisation of costs between the hydrogen and gas grids would contribute to a more affordable energy transition by spreading the costs across a larger number of consumers. A mutualisation of costs between hydrogen and gas networks could be appropriate since the underlying climate protection targets of the energy transition represent a higher ambition to the good of all citizens. The additional financial burden for today's gas consumers during the ramp-up of the hydrogen market will ultimately be offset when the number of gas consumers decreases, and the remaining costs of the gas system are partially covered by the then developed hydrogen system.

The mutualisation of costs between gas and hydrogen networks can be complemented by more general funding mechanisms, such as those included in the EU Recovery Plan and TEN-E legislation.

Although it is recognised that the details of any funding arrangements are a matter for each Member State to determine on the basis of specific national circumstances (e.g. gas market size, costs associated with the required hydrogen infrastructure, transit or final destination countries, etc), the revised Gas Package should provide a clear regulatory framework that enables such financing mechanisms.

4. Possible exemption for hydrogen network infrastructure

Similar principles from the Gas Directive should apply to the hydrogen networks in order to ensure the development of a competitive market and prevent the formation of less-

competitive market structures. However, certain hydrogen network infrastructure should be able to seek exemption from these principles where, for example, they could be classified either as direct lines or closed distribution systems in line with the meaning contained in the Gas Directive. It should be made clear, however, that such exemptions should cease to apply as soon as the relevant criteria are no longer met.

5. Recognition of cost for repurposing gas pipelines

The majority of the future hydrogen network will be comprised of repurposed gas pipelines. As such, a repurposing clause and a link with TEN-E should be established to say that repurposing costs should be recognised by the NRAs and that the switch from natural gas to hydrogen should be planned in a transparent way. Similarly, as highlighted in point 6 below, costs of retrofitting the network to accommodate hydrogen/gas blends should also be appropriately recognised by the NRAs.

Following the position laid out in the revision of the TEN-E Regulation, the planning of hydrogen infrastructure will be integrated into the ENTSOG TYNDP for gas. However, the TEN-E scope deals only with infrastructure that has a cross-border impact. Therefore, the transparent and non-discriminatory processes that are currently in place for planning at the national level for gas infrastructure should also be applied for repurposing, retrofitting and/or building new hydrogen infrastructure. The European gas legislation should give some guidelines/principles in this regard.

6. Treatment of hydrogen injected into the gas network (blending)

Blending of hydrogen into natural gas and biomethane will be one of the ways to realise the decarbonisation of the gas infrastructure – contributing to the overall decarbonisation of the EU economy. In cases where hydrogen production does not in itself economically fully justify dedicated hydrogen infrastructure (e.g. in the initial stages of market development), blending of hydrogen may be an attractive solution, at least for a transitional period. The role of blending will vary between regions and may be more suitable for some consumption sectors and less for others. TSOs pipelines and operational system can be retrofitted to accommodate hydrogen blended in the natural gas flows. The costs involved in such adaptations need assessment and should be able to be fully recovered by the TSOs.

When blending hydrogen in the gas network, some specific issues may arise which would need dedicated provisions. For example, cross border flows will need to be ensured to further enhance the competitiveness of the gas market and TSOs will need to provide services to maintain adjacent gas systems' interoperability.

7. Sandbox

A regulatory sandbox framework approach at EU level would promote innovation, scaling up, system adaptation and optimisation for technologies at an early stage of development. This can play an important role in encouraging R&D activities and innovative projects.

Such an approach can provide a boost to test and roll-out the required new technologies, prove their benefits in practice, and evaluate their contributions to the energy decarbonisation pathways. It would allow R&D activities and innovative projects to be handled under more flexible terms regarding general rules such as state aid, funding access criteria, cost socialisation via regulated assets and based on specific regulatory oversight. It is important to make sure that Member States introduce and apply the regulatory sandboxes in a harmonized way consistent with the functioning of the internal EU gas market.

Therefore, the revised gas legislation should allow for the implementation of such arrangements and also provide for gas TSOs, amongst others, to participate.

8. Incentivisation of renewable and low carbon hydrogen production

The introduction of incentives for renewable and low-carbon hydrogen production will be essential to realise the EU's decarbonisation goal. A scheme such as Carbon Contract for Difference (CCfD) could incentivise industries to invest in decarbonisation technologies and could be especially helpful for sectors that are facing particular challenges to decarbonise. Different sectors will take different decarbonisation pathways, through choice or necessity. Any incentives should be based on technology neutrality and eligibility should apply to a range of technologies and energy vectors.

TSOs and DSOs can potentially play important roles in setting up the framework, the data flows or any other services required for such incentive system. In general, ENTSOG finds that production, commercial handling and risk/reward structures for hydrogen shall be based on market mechanisms.