



## FOCUS ON HYDROGEN: EU HYDROGEN AND DECARBONISED GAS MARKET PACKAGE – A SNEAK PREVIEW

On 14 December 2021, the European Commission is expected to put forward its long-awaited Hydrogen and Decarbonised Gas Market Package revising the existing Gas Directive and Regulation. This briefing outlines the key provisions concerning the hydrogen midstream sector as reflected in the draft proposals recently leaked. The proposals are still subject to further amendments until their official publication.

### REGULATION OF HYDROGEN GRIDS

In 2019, the EU adopted the "Clean Energy for all Europeans" package to move away from fossil fuels and deliver on its Paris Agreement commitments to reduce greenhouse gas emissions (**GHG**). Further to the EU Green Deal initiative and to progress the 2030 EU target of reducing GHG emissions by at least 55%, the European Commission (the **Commission**) is shortly expected to present the Hydrogen and Decarbonised Gas Market package. This package will revise the Gas Regulation 715/2009 (the **Regulation**) and the Gas Directive 2009/73 (the **Directive**) and create a concrete regulatory framework for the uptake of low carbon gases (e.g. biomethane) and decarbonised gases (e.g. hydrogen).

Based on the leaked information, it appears that the package will establish common rules for the internal market in natural gas, including rules related to the organisation and functioning of the hydrogen sector, access to the market, the criteria and procedures applicable to the granting of authorisations for networks, supply and storage of hydrogen as well as the operation of transmission systems. At the same time, cross-border coordination is reinforced, mirroring the revised Electricity Directive 2019/944 and Regulation 2019/943.

The revised Regulation will be directly applicable to all Member States upon entry into force, whereas the revised Directive will need to be transposed by the Member States into their national legislation within two years after it enters into force.

### EXPANDING SCOPE OF GAS LEGISLATION TO LOW-CARBON GASES AND HYDROGEN

The revised Directive sets out the definitions of the various types of gases that may be injected into and transported through a network, notably defining and

#### Key issues

- **Strong push to regulate and establish the hydrogen backbone with a transition period until 2030.**
- **Low-carbon hydrogen defined as** hydrogen derived from non-renewable sources which meets a GHG emission reduction threshold of 70%.
- **EU-wide certification of low carbon gases**, applicable to both domestically produced and imported gases.
- **Grandfathering** of licences when **repurposing** natural gas pipelines and other network assets.
- **EU-wide blending threshold** of natural gas with hydrogen set at 5% as of 1 October 2025.
- **Separate regulated asset base** for gas and hydrogen. Transfer of assets from one RAB to another generally possible though.
- **Negotiated third party access regime** for hydrogen networks until 31 December 2030.
- **Unbundling** of dedicated hydrogen network operators in accordance with unbundling rules for gas transmission system operators.

adding to its scope of application for the first time low-carbon gases and hydrogen. Low-carbon gases are part of low-carbon fuels (i.e., recycled carbon fuels as per Renewable Energy Directive 2018/1999), low-carbon hydrogen and synthetic gaseous and liquid fuels, the energy content of which is derived from low-carbon hydrogen, which meet the greenhouse gas emission reduction threshold of 70%. This broader scope is crucial to enable a level-playing field for all form of gases and to facilitate the regulation of hydrogen, low-carbon gases and hydrogen grids. It remains to be seen whether this standardisation exercise will minimise the different definitions used in the Member States.

## **GRANDFATHERING OF AUTHORISATIONS**

One of the key elements to construct a hydrogen backbone efficiently and rapidly is the potential to re-purpose the existing gas grid. To this end, similar to the recent [German hydrogen midstream regulation](#), the draft revised Directive provides that in the case of repurposing existing natural gas pipelines and other networks assets for hydrogen transport, construction and operation authorisations which have already been granted will be "grandfathered" (e.g., licences, permissions, concessions or approvals). This will accelerate the project development process, while providing certainty to system operators.

## **UNBUNDLING RULES**

Another key element of the proposal is to avoid conflicts of interest and promote competition throughout the hydrogen value chain. As such, similar to operators in the gas and electricity market, operators of hydrogen networks must be unbundled and certified by the national regulatory authority of a Member State. To this end, Member States should ensure that within three years after the proposed Directive's entry into force, hydrogen network operators are unbundled in accordance with the unbundling rules for gas transmission system operators (**TSOs**). There is, however, some flexibility, and Member States may implement an ownership unbundling model but also have the option to choose an independent system operator (**ISO**) model or an independent transmission system operator (**ITO**) model if the hydrogen network belongs to a vertically integrated company. Under an ISO model, energy supply companies may still formally own gas or electricity transmission networks but must leave the entire operation, maintenance, and investment in the grid to an independent company. Under an ITO model, energy supply companies may still own and operate gas or electricity networks, but must do so through a subsidiary and decisions, in particular regarding the operation, maintenance and expansion of the system must be taken independently of the parent company. It should, however, be noted that Member States may designate an integrated hydrogen network operator unbundled in accordance with the ITO model only until 31 December 2030.

## **THIRD-PARTY ACCESS TO HYDROGEN NETWORKS – ENTRY-EXIT SYSTEM**

The draft revised Directive also provides that access to the hydrogen transmission networks should be subject to a regulated third party access (**TPA**) regime based on published tariffs. This means that grid access conditions must be applied objectively and without discrimination amongst any hydrogen grid users. The tariffs or the methodologies relevant for their calculation must be approved by the national regulatory authority beforehand. However, unlike the TPA regime for natural gas, Member States will have a certain flexibility since they may implement a system of negotiated TPA to hydrogen grids until 31 December 2030 (like the [recent German legislation](#)

which also foresees a negotiated TPA regime). Negotiated TPA essentially differs from regulated TPA since grid access conditions are negotiated between parties in good faith in accordance with objective, transparent and non-discriminatory criteria rather than being predetermined by the national regulatory authority. Equally noteworthy is that the maximum duration for hydrogen capacity contracts is set at 20 years.

The proposed recast Regulation also defines an entry-exit system as the "*aggregation of all transmission and distribution systems or all hydrogen networks to which one specific balancing regime applies*" ensuring the integration of the distribution system level in the balancing zone. The objective here is to create a level playing field for renewable and low-carbon gases connected to either the transmission or distribution level. As of 31 December 2030, hydrogen networks will need to be organised as entry-exit systems. In principle, network users should be able to book firm capacity at the entry and exit points of the same entry-exit system. The organisation of the allocation of capacity between the transmission and the distribution system is left to the Member States. The network users will need to be responsible for balancing.

## **CERTIFICATION OF RENEWABLE AND LOW-CARBON GASES**

The hydrogen value chain market can only become viable if hydrogen and other low-carbon gases are mutually recognised by all market players. The proposed recast Directive introduces a mandatory system of certification for both domestically produced and imported renewable and low-carbon gases to ensure a GHG emissions reduction threshold of at least 70%. To that end, the Commission is empowered to adopt delegated acts to supplement the Directive specifying the methodology for assessing GHG emissions savings from low-carbon fuels based on life-cycle assessment. Certification may be based on national or voluntary international schemes if they are compatible with the methodology set out in the delegated acts. The Commission is expected to adopt a delegated act setting out the methodology to be used to assess whether the electricity used for the production of renewable liquid and gaseous transport fuels of non-biological origin is of renewable origin. In any event, alignment with existing certification exercises such as CertifHy will be required.

## **SEPARATION OF RAB AND CROSS-SUBSIDISATION**

If a network operator provides regulated services for gas, hydrogen and/or electricity, it will need to have separate regulated asset bases (**RAB**). Roughly speaking, the RAB represents the value of the net invested capital for regulatory purposes, calculated on the basis of the rules defined by laws followed by the national regulatory authorities for determining base revenues for the regulated businesses and thus is used as the basis for the network tariffs setting. Requesting separated RABs in this way means that the values for natural gas assets on the one hand and the hydrogen assets on the other hand will not become combined but kept separated.

There has been a long debate as regards the question of common RAB vs. separated RAB. Most of the gas TSOs favour the option of a common RAB since operating gas and hydrogen networks in a joint asset base (common RAB) would likely facilitate repurposing, as network operators would have the option to finance and de-risk networks across users of both natural gas and hydrogen infrastructure. As a consequence, a common RAB approach would enable operators to spread these costs to the larger group of network users and enable them to offer more attractive tariffs to early hydrogen network users neutralising investment risks. However, like the recent [German hydrogen midstream regulation](#), the European Commission decided to opt for

a separated RAB. The separation of RABs aims to prevent network operators that pursue both hydrogen and gas network activities from redistributing the (high) costs for initial hydrogen network users to the remaining users of the natural gas grid. To tackle the high hydrogen grid tariffs that may result from this approach, the draft Directive mentions discounts for grid tariffs on different levels.

However, pursuant to the draft Regulation Member States can allow financial transfers from one RAB to another after having valued them so as to avoid any cross-subsidisation, *i.e.*, subsidising a business or an activity out of the profits of another business or activity. The revenues needed for the financial transfer will be collected in the form of a dedicated charge imposed on users of the RAB who benefit from the financial transfer. In practical terms, this will be of particular relevance in the case of repurposing existing natural gas infrastructure for hydrogen transport.

Although, as mentioned above, cross-subsidisation is generally incompatible with the principle of cost-reflective tariffs, the Commission acknowledges that to further stimulate the financing of the emerging hydrogen market, a limited form of cross-subsidisation would contribute to an "*investment climate supportive to the EU's decarbonisation objectives*" during the initial phase of network development provided that it is proportional, transparent, limited in time and set under regulatory supervision. At the same time, the draft proposal prohibits the co-financing of hydrogen grids by network users of other EU Member States.

## **BLENDING**

The proposed draft Regulation gives flexibility to the Member States as to whether they would allow blending of hydrogen into their national natural gas systems. At the same time, the draft Regulation inserts a harmonised cap on blending in the form of an EU-wide allowed limit at cross-border interconnection points, with a view to prevent market segmentation. An EU-wide blending threshold is set at 5% as of 1 October 2025, while cross-border differences in the level of hydrogen volume blended in the gas system will be considered a cross-border flow restriction.

## **ENNOH AND EU DSO**

Mirroring the functioning and coordination of the gas and electricity transmission systems, the Regulation provides for the establishment of an European Network of Network Operators for Hydrogen (**ENNOH**) following the creation of a temporary platform led by the European Commission which will "*support early work on scoping and developing issues relevant for the building up of the hydrogen network and markets without formal decision-making powers.*" Similar to ENTSOG and ENTSOE, the ENNOH will amongst other things be tasked with developing network codes and adopting and publishing biannually a non-binding ten-year network development plan (**TYNDP**), including a European supply adequacy outlook.

In line with the Commission's strategy for energy system integration, the draft Directive provides for an integrated network planning approach requiring TSOs to submit to the relevant regulatory authority a TYNDP on the basis of existing and forecasted supply and demand after having consulted all the relevant stakeholders. There should be one single network development plan at least per Member State. To that end, infrastructure operators, including LNG terminal operators, storage operators, distribution system operators as well as hydrogen, district heating infrastructure and electricity operators are required to provide and exchange all relevant information to the gas TSOs required for developing the single plan. Furthermore, the draft Directive

foresees reporting obligations in relation to the hydrogen network development according to which hydrogen network operators must submit in regular intervals to the regulatory authority, an overview of the hydrogen infrastructure they intend to develop. Such reporting would include inter alia information on capacity needs (volume and duration), and information on the extent to which repurposed natural gas pipelines will be utilised for hydrogen transportation.

In addition, the Commission proposes the establishment of an EU DSO and acknowledges the important role of the distribution system operators (**DSOs**) in facilitating the integration of renewable and low-carbon gases into the system and ensuring close cooperation with TSOs and the ENTSOG.

## OUTLOOK

Regulatory certainty is an essential prerequisite for encouraging investments in the hydrogen sector and establishing the hydrogen backbone for the efficient use of hydrogen in the coming decades. The draft legislative package is an important step in this regard. Considering the different paces of the hydrogen market ramp-up in the Member States, it remains to be seen whether the remarkable level of flexibility the Member States are granted will ensure the necessary regulatory certainty. In any event, this is only the Commission's draft proposal, and it will certainly undergo further amendments in the course of the ordinary legislative procedure and the negotiations amongst EU institutions in the coming two years. So, there is much more to come...

This publication does not necessarily deal with every important topic or cover every aspect of the topics with which it deals. It is not designed to provide legal or other advice.

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