

Synergrid contribution in response to the European Commission's consultation on the proposal for a 'Hydrogen and Gas Market Decarbonisation package':

- **Directive on common rules for the internal markets in renewable and natural gases and in hydrogen – deadline 12.04.2022**
 - **Regulation on the internal markets for renewable and natural gases and for hydrogen – deadline 13.04.2022**
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1. Introduction

Synergrid is focusing in its response mainly on the:

- Directive on common rules for the internal markets in renewable and natural gases and in hydrogen.
- Regulation on the internal markets for renewable and natural gases and for hydrogen.

Our paper and response starts with a **general position on the proposed EU legislation**, followed by the **main attention points in the new proposed legislation**. The **energy landscape** scheme promoted by the Belgian TSOs and DSOs can be found in **Annex I**.

2. General position

We welcome the European Commission proposal for the "Hydrogen and Gas Market Decarbonisation package", which aims, among others, at elaborating a regulatory framework for the development of transmission infrastructures for hydrogen and will allow to further expand the hydrogen market in line with the European hydrogen ambitions.

Especially for the **transmission** of hydrogen through pipelines Synergrid agrees with the proposed objectives. Belgium wants to be a frontrunner in the development of the hydrogen economy and aims to position itself as an import and transit hub for hydrogen.

The framework is crucial to ensure the necessary investments on the short term for the development of the 'open access' hydrogen transmission infrastructure.

An elementary basic principle is the designation of a hydrogen transmission network operator in Belgium with an unbundling between the transmission activity on the one hand and the production and supply activities on the other hand.

Here we can point out the existing unbundling models for the transmission of natural gas and electricity. These will allow to develop a liquid and competitive hydrogen market by granting the management and development of a hydrogen transmission network to an independent and neutral player.

Indeed, to allow for a competitive market for the production and supply of hydrogen it is important that the transmission network is unbundled and that the network is accessible in a transparent and non-discriminatory manner for all involved market parties. This also allows end-users to benefit from transparent access rules and tariffs. The transmission network also connects them to the import markets and allows for Belgium to show itself as the transit hub by building on the existing natural gas model.

Belgium disposes of a very large existing gas infrastructure, of which large parts can be repurposed in a cost-efficient way to transport hydrogen depending on the market needs.

Hence, it is very important to indicate that the Hydrogen and Gas Market Decarbonisation package recognises the synergies between the hydrogen network and the natural gas network (repurposing of existing natural gas pipelines) are possible and contribute to the reduction of the social cost for the development of the hydrogen network.

The Hydrogen and Gas Market Decarbonisation package lacks clarity on the **distribution** of hydrogen. Clarification on the role of the DSO is required (other than HNO which applies to all transport of hydrogen without distinction between transmission and distribution level) in order to stimulate DSOs to maximize synergies and to enable their role to the integration of renewable and low carbon gases into the system.

Synergrid would like to stress also the close collaboration between the transmission and the distribution level and not only for hydrogen, but also for the other gases mentioned in the package. To increase efficiencies in the gas distribution networks and to ensure close cooperation with TSOs and ENTSOG, we support the proposal of the Commission to establish an EU DSO entity which besides electricity should also include (natural) gas & hydrogen distribution system operators.

The distribution grids offer a flexible decarbonisation path for grid users, because they are perfectly placed to distribute and manage different blends of gasses in line with consumer needs at distribution level. Many industrial and commercial grid users are already connected to the gas distribution grids which means that the DSOs will bring large volumes of hydrogen to grid users. The distribution grids will also need to facilitate a competitive hydrogen market. A close cooperation between distribution and transmission, as existing for natural gas, remains crucial.

Hence, the importance we attach to a forward-looking system-wide (Belgian) energy landscape.

One could imagine a scheme (see Annex I to the current paper) for the energy landscape of tomorrow in which the (distribution) system operators integrate their activities in a global vision gas-hydrogen-electricity and heat with an interaction between the TSOs and the DSOs:

- For each of the 3 energy vectors (methane, hydrogen, electricity) there is a clear vertical coupling between transmission and distribution through e.g. different pressure levels for gas and hydrogen and different voltage levels for electricity, each with their own specific connections.
- We see a clear transmission function for hydrogen and on a lower pressure level a distribution function, however we cannot comment yet on what exactly is going to be developed regarding the use of hydrogen in the residential and commercial end-users sector, connected to low pressure networks.
- But, we do not want to prohibit in any way the possible developments on this level and thus want to keep all possible future scenarios open.

Furthermore, we would like to indicate the importance of the levers between the energy vectors, like e.g. the link between hydrogen and gas network through blending, the injection of biomethane in the natural gas grids, the production of hydrogen from methane, the link between electricity and hydrogen through the electrolyses process, flexibility services and further the link between electricity and natural gas through the production of synthetic methane etc.

All these synergies are important to create an optimal energy landscape in which we try to find a balance through cooperation and which are necessary in the transition phase to more and more decarbonized energy networks enabling a climate-neutral economy.

Finally, we need a legislation which keeps coherence between the different EU regulations and/or directives, such as the considered criteria in the Taxonomy Regulation¹.

3. Main attention points

From a transmission perspective

Regarding **Transmission level** the main attention points have been structured around three main themes, market structuring, market organisation and operational and technical matters.

Market structuring

Unbundling:

We welcome the introduction of vertical unbundling (needed for development of competitive hydrogen market and to clarify market fundamentals from the outset) however we believe that all three available unbundling models should be available for hydrogen.

Given the emerging character of the hydrogen market, some flexibility must be foreseen for the ownership unbundling (OU) model. More in particular,

- On the ownership condition: HNO should be allowed:
 - (1) to own indirectly assets via joint-ventures with other investors provided those joint-ventures are under exclusive control of HNO and
 - (2) to lease some existing Gas/Hydrogen assets at time of entry into force of the regulation.
- On hydrogen production: to avoid discrimination compared to ITO (Independent Transmission Operator) HNOs, on the level of the group to which OU HNOs belong, it must be authorized to engage in power-to-gas activities under a tolling model.

We agree on the introduction of horizontal unbundling provided it does not prevent the potential synergies between TSO and HNO and of efficient repurposing of existing natural gas assets – for example the sourcing of personnel and rendering of services between the TSO and the HNO, or the other way around (including joint procurement schemes or the set-up of joint ventures for carrying out shared tasks).

We also propose to restrict the geographically confined hydrogen networks to ‘direct lines’.

¹ Taxonomy Regulation: Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088. See place reserved in Annex 1 – file 4.14. : ‘repurposing of assets’.

ENNOH – European Network of Network Operators for Hydrogen.

We welcome the recognition of hydrogen under the gas market design following its underlying principles. As to the creation of ENNOH, we underline the importance of “energy system integration” and hence the need to make an integration of ENTSOG and ENNOH possible, to maximize efficiencies giving the synergies between (natural) gas and hydrogen in particular.

Market organisation

Definition of hydrogen:

The proposed application of hydrogen should be extended to possible derivatives of hydrogen (including hydrogen or hydrogen-based fuels whose energy content is partially derived from renewable and non-renewable sources).

LNG terminals and storages:

LNG terminal operators (LSOs) as well as Storage System Operators (SSOs) are committed to further enhance the transparency as proposed in the Commission’s proposal.

The currently proposed definition of “hydrogen terminal” only includes liquid hydrogen and liquid ammonia. We recommend to extend the definition so that it also includes the hydrogen derivatives such as methanol and LOHC (liquid organic hydrogen carriers/compounds).

Third Party Access (TPA)

The TPA for transmission to allow for a transitional period until end 2030 provides for sufficient flexibility and should be maintained to provide visibility to the market.

The tariff design for hydrogen should be flexible enough to allow dedicated tariffs on the connecting pipelines between clusters awaiting the implementation of a full entry/exit model for hydrogen as soon as the market allows it.

Network financing / tariff setting

The feasibility of the proposed tariff discounts on the level of renewable and low carbon gases for natural gas (pertaining to both storage as well as the 100% on the regulated tariff from TSOs at all IPs) based on an ex-post sustainability check and ITC mechanism should be clarified.

The feasibility to no longer charge tariffs for access to hydrogen networks at interconnection points between Member States (including the related ITC mechanism) should be duly clarified.

We welcome the acknowledgement by the Commission that cross-subsidies/cost mutualization can bring societal benefits during earlier phases of network development.

Network planning

We welcome the Commission’s views regarding network development planning, in particular the enhanced coordinated national approach regarding a joint scenario framework developed between the relevant infrastructure operators (of at least gas and electricity).

To make this process as smooth as possible:

- Access to information from relevant infrastructure operators and information sharing between all TSOs (and HNOs) within a MS is key to develop their respective national plans.
- Gas and electricity TSOs (and HNOs) should take into account the jointly developed scenarios from the Union-wide TYNDP process.

- Assessment of needs across gas and electricity systems (and/or hydrogen systems) should focus on specific needs with important cross-sector impact, and shall provide indicative information on suitable location and size of assets such as power to gas (electrolysers). It should involve all relevant parties including at least the relevant TSOs, while minimizing possible additional complexity.

Both from a synergy as well as system integration point of view, we prefer to have the non-binding “Union-wide” ten-year network development plan for hydrogen integrated within ENTSOG.

From an overall perspective regarding the cooperation between DSOs and TSOs, we support a close coordination on the level of maintenance, system development, new connections and the operation of the system to ensure system integrity and with a view to maximise capacity as proposed by the Commission.

Low carbon fuels (LCF)

We welcome the long-awaited Commission proposal on low carbon fuels as it will facilitate the penetration of renewable and low-carbon gases into the energy system.

The Commission should integrate a precise methodology for assessing the GHG savings from LCF (foreseen via delegated acts) by the latest at the time of adopting the recast Gas Regulation & Directive.

We underline the importance for establishing a framework for certification scheme for LCFs comparable to renewable based upon the following principles:

- Guarantees of origin (GOs) and sustainability certifications (via “Union Database”) should be integrated for all energy carriers to prevent double counting of the climate value and simplify the usage of different certificates;
- European interconnected gas system should be recognized as a ‘single logistical facility’ for the purpose of mass balance by consignment, and
- GOs should be recognized as a tool to prove renewable and low carbon origin for target compliance.

Security of supply

For Member States not having in place the required bilateral agreement on the level of the “solidarity mechanism”, the Commission asks to adopt a default template which contains no price cap. On the level of the Member State, there is an option to oblige TSO(s) to purchase strategic stocks. Procedures should be clarified (in particular in relation to TSO’s financial capabilities) as well as it should be enlarged to other entities designated by the Member States.

Operational and technical matters

Gas Quality

We support the Commission’s approach aiming at a better gas quality harmonization on interconnection points (IPs) while maintaining Member States’ flexibility regarding the application of gas quality standards in their domestic systems.

On the level of hydrogen blending, while we welcome the Commission’s support, we believe that more time is required to increase the hydrogen blend from 2% to a higher percentage. Moreover, any minimum blending cap at IPs should be considered like any other gas quality specifications (it should not prevail on other gas quality specifications).

To avoid issues arising from different hydrogen specifications between entry IPs where the minimum cap shall apply and non-EU exit IPs potentially applying lower hydrogen specifications,

applicable hydrogen specification at non-EU exit IPs should be added to the list of possible exemptions for the minimum hydrogen blending cap at IPs.

The “operational limitations” in relation to the firm connection of production facilities for renewable and/or low carbon gases should be clarified. They should at least include the proposed minimum blending cap of hydrogen at IPs and the requirements of the Wobbe Index classification system.

Permitting / Land use

We welcome that the authorizations under national law for the construction and operation of natural gas pipelines and other network assets used for the transport of natural gas and that existing contractual land-use rights for the construction and operation of natural gas pipelines and other network assets, shall apply also to pipelines and network assets for the transport of hydrogen. This provision should however not be restricted to pipelines but also cover for storage and LNG terminals.

From a distribution perspective

Regarding **Distribution level** the main themes for attention are:

Gas definitions & quality

The natural gas **definition** is not clear on hydrogen blending with natural gas and if e.g. synthetic methane is included. Changes should be made accordingly.

For distribution, the intention should be that the Directive allows for a gradual transition from natural gas DSO to blended DSO and further to pure hydrogen DSO.

Furthermore, the Directive foresees that the regulatory authorities can decide whether DSOs become responsible for the **gas quality** management in their grids. DSOs see indeed their possible role in gas quality for the injection of renewable gas in the distribution network (biomethane injection, and possible direct injection of hydrogen). Gas quality management by the DSO demands however an investigation regarding the impact on investments, exploitation limits, etc. and further clarification is needed (e.g. gas quality parameters, injection of hydrogen on DSO-level).

Hydrogen

Distribution is not clearly addressed in the articles dedicated to hydrogen.

We would like to indicate that DSOs will also be key to reach the energy transition and should be integrated in the global hydrogen scheme.

Distribution grids provide a flexible decarbonisation pathway for customers as they are well-positioned to distribute and manage different blends of gaseous green molecules.

There seems uncertainty related to blending of hydrogen at residential level, which the Commission does not oppose to but does not address either.

Local gas networks are flexible and can distribute and manage varying blends of molecules, depending on the local mix of supply and demand. They connect large portions of end-users and provide decarbonisation options for a lot of consumers, businesses and industries and at the same time give local producers of hydrogen and biomethane a cost effective route to the market. They can offer rapid decarbonisation with no changes for many consumers through blending of hydrogen and ‘green’ methane. It is further important to leave a maximum flexibility in the

percentage of blending of hydrogen and other gases in the natural gas grids at the distribution level.

A lot of industrial gas end-users are connected to the distribution grids, and are crucial to bring the European hydrogen economy to life by exchanging considerable volumes of hydrogen between local producers and customers. The distribution grids will facilitate a competitive hydrogen market. Today's gas infrastructure, with some local changes, can meet peak demand for hydrogen and 'green' methane for end-users, becoming a pillar of sector integration. To include distribution properly in the hydrogen landscape a review and changes are needed of the whole text of both the Gas Directive and the Gas Regulation.

Regarding the DSOs, we think they should have only one grid for natural gas and natural gas mixed with other gases, such as biomethane, synthetic methane, ... and also hydrogen. The transition from a natural gas DSO to hydrogen DSO should be possible. DSOs should be designated as hydrogen distributor by pipelines. Having two separate grids on DSO-level is not justifiable for economic, management (of grid and land use) reasons.

Smart metering

The Directive requires without cost-benefit analysis the use of smart meters for hydrogen. We do not think this distinction regarding smart metering systems is needed between natural gas and hydrogen. We recommend that for hydrogen, the same scheme as for natural gas is followed. At the moment the market is missing pure hydrogen smart MID-compliant meters (Measuring Instruments Directive 2014/32/EU).

Alternative grids – energy communities

The articles on Citizen Energy Communities (CECs) are a copy/paste from the articles in the Electricity Directive.

CEC schemes for gas do not seem to have the same value as for electricity at least in the short term. When decentralised, the scale of production seems more important for gas, hence production facilities are more likely to be connected at higher pressure levels and not to the residential grids. Possible inefficiencies due to the emergence of parallel networks (as customers which are dropped to a supplier of last resort will need to be connected to the public DSO's network) need to be avoided.

At a minimum, the transposition of the CECs for gas into national law should be made optional.

If, at some point in the future, they become relevant, the DSO should perform the same roles as for electricity communities: facilitate the market by providing raw and corrected data volumes for the exchanged energy, keep the role of network operator, ...

Concerning the Renewable energy communities (REC – according to the Renewables Directive) we recognise they could make sense for local hydrogen production and consumption (but with a possible blending issue). However for biomethane this could possibly work.

Network development & infrastructure

In the creation of network development plans the use of common scenarios between the different energy carriers is key. These depend on many factors that can be influenced, in Belgium also by regional (= subnational) commitments or incentives.

In network development, hydrogen should also be taken into account at distribution level.

EU DSO Entity

We support the Commission in only having one EU DSO entity for (natural) gas and electricity, but it should also include hydrogen distribution.

This seems logical because of the obvious synergies, the importance of sector coupling and the anticipation of future models.

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About Synergrid :

Synergrid, the Belgian Federation of Electricity and Gas System Operators, is committed to safeguard the common interests of its members, the Belgian Transmission System Operators (TSOs: Elia, Fluxys) and Distribution System Operators (DSOs : Aieg, Aiesh, Fluvius, Ores, Resa, REW, Sibelga).

In this context, Synergrid :

- organises and facilitates contacts between the various electricity and gas TSOs and DSOs in Belgium in order to improve service efficiency, formulate common positions and enhance service to network users;
- represents the TSOs and DSOs in their relations with the authorities, advisory bodies or other instances, authorities or organisations at all levels ;
- defends the interests of electricity and gas TSOs and DSOs;
- develops technical, environmental and safety standards and prescriptions in relation to the TSOs and DSOs
- is the reference adviser to TSOs and DSOs on social relations and act as their spokesperson in social concertation bodies at national level;
- collects data on flows and consumption of electricity and gas in Belgium and provides statistics on these figures

Annex I : Energy Landscape – non-exhaustive scheme

