

The EU Hydrogen and Decarbonized Gas Package Drafts: First Homework is done

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The European Union has set the goal to be the first climate neutral continent by 2050.¹ To accomplish this, greenhouse gas emission shall be reduced at least 55 % by 2030. Therefore, a systemic change towards low-carbon and renewable gases is required. An important part of this systemic change is the EU hydrogen strategy², which consists of three phases.

During the first phase, which is to last from 2020 to 2024, the strategic objective is to produce 1 million tons of renewable hydrogen by 2024. Due to the **absence of a regulatory framework at EU level** concerning hydrogen as an independent energy carrier, **barriers for the development of a cost-effective, cross-border hydrogen infrastructure** and a **competitive hydrogen market** exist and consequently the production and consumption of hydrogen is limited. Hence the policy focus during the first phase is set on establishing a regulatory framework. To achieve this, the European Commission published two proposals concerning the internal markets for renewable and natural gases and for hydrogen on 15 December 2021: a Regulation, recasting the Regulation No 715/2009 and a Directive, recasting the Directive 2009/73/EC. The main purpose of these initiatives is *"to facilitate the penetration of renewable and low-carbon gases into the energy system, enabling a shift from natural gas and to allow for these new gases to play their needed role towards the goal of EU climate neutrality in 2050"*.³

To realise this, the markets and infrastructure accesses shall be designed based on the general principles laid out in Article 3 of the proposed Regulation. Examples of these general principles are: market prices shall be formed by demand and supply, network users shall book entry and exit capacity independently, gas shall be transported through the entry-exit system and undertakings shall exchange gas at virtual trading points, tariffs charged at the entry and exit points shall contribute to market integration, the rules applicable to the market shall enable the decarbonisation of natural gas and hydrogen systems as well as the integration of

¹ Proposal for a Directive of the European Parliament and of the Council on common rules for the internal markets in renewable and natural gases and in hydrogen, p. 1.

² https://ec.europa.eu/energy/sites/ener/files/hydrogen_strategy.pdf (last access 03.01.2022).

³ Proposal for a Directive of the European Parliament and of the Council on common rules for the internal markets in renewable and natural gases and in hydrogen, p. 2.

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gas from renewable energy sources, barriers to cross-border gas flows shall be removed and regional cooperation and integration facilitated.

The proposals of the European Commission consist of extensive new regulations. Which can be divided into the following main points:

Hydrogen infrastructure / markets

The proposals aim to create a **competitive, consumer-centered, flexible, and non-discriminatory hydrogen market** within the European Union. Therefore, infrastructure must be built. Main objective of the proposed Directive concerning hydrogen is to establish a Union-wide **interconnected hydrogen system** and lay down common rules for the transport, supply and storage of hydrogen using the hydrogen system, as stated in Article 1 paragraph 3 of the proposal. On the other hand, subject matter of the proposed Regulation is, to set out rules for access conditions to hydrogen and to facilitate the emergence of a well-functioning and transparent wholesale market with a high level of security of supply, Article 1 of the proposal.

A Hydrogen system is "a system of infrastructure, including hydrogen networks, hydrogen storage, and hydrogen terminals, which contains hydrogen of a high grade of purity" as defined in Article 2 (5) of the proposed Directive. In order to operate the system, different actors are needed. In particular, hydrogen network operators, hydrogen terminal operators, hydrogen storage facility operators and network users, which for example could be wholesale customers or household customers. According to Article 2 (22) of the proposed Directive a hydrogen network operator is "a natural or legal person who carries out the function of hydrogen transport and is responsible for operating, ensuring the maintenance of, and, if necessary, developing the hydrogen network in a given area and, where applicable, its interconnections with other hydrogen networks, and for ensuring the long-term ability of the system to meet reasonable demands for the transport of hydrogen". In hydrogen terminals liquid hydrogen or ammonia is transformed into gaseous hydrogen which shall be injected into the hydrogen network whereas storage facilities are used for the stocking of hydrogen.

To create this internal market, the proposals establish several regulations, some of which are outlined in the following:

According to Article 52 of the proposed Directive, hydrogen network operators shall submit an overview in cooperation with hydrogen storage and terminal operators of the to be developed infrastructure, which includes capacity needs and information on which natural gas pipelines could be repurposed. Undue delays in the repurposing process are to be avoided by grandfathering of authorisations, that have already been granted under national law for the construction and operation of existing network components. A different approach shall only apply, if required due

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to technical safety regulations. Hydrogen network operators shall also build cross-border capacity for the transportation of hydrogen to enable market integration. Article 56 of the proposed Directive determines the **unbundling of hydrogen network owners and hydrogen storage facility operators** in order to develop a competitive hydrogen market.

According to Article 48 of the proposed Regulation, hydrogen network operators shall publish detailed information on their services, conditions and the hydrogen quality as well as relevant technical information, to make it as easy and effective as possible for network users to access the network. Therefore, the information must be published "in a meaningful, quantifiably clear and easily accessible manner and on a non-discriminatory basis". Furthermore, the quality of hydrogen needs to be monitored to prevent restrictions to cross-border flows of hydrogen. To achieve that, hydrogen network operators shall cooperate and inform the regulatory authorities if necessary (Article 39 of the proposed Regulation). Because blending hydrogen into the natural gas system is less efficient than using pure hydrogen, the proposed Regulation sets a Union-wide cap of 5% in Article 20 at cross-border interconnection points to limit the risk of market segmentation.

Renewable and low-carbon gases in the existing gas infrastructure

Currently, renewable and low-carbon gases only have a small share in the energy mix of the European Union. To change this, the proposals aim to promote a **systemic change towards low-carbon and renewable gases**. Therefore, access to the wholesale market is of high importance. That could be reached i.a. by facilitating the network access for low-carbon and renewable gases. Therefore, for example Article 16 of the proposed Regulation provides discounts for renewable and low carbon gases at entry points. Another problem in this context is that producers of renewable and low-carbon gases are connected to the distribution grid but cannot participate in the wholesale market because they are not part of the entry-exit system. Therefore, a definition of the entry-exit system is needed, which shall ensure that all producers connected to the distribution system are also part of the entry-exit system.

Empowerment and protection of consumers

Chapter III of the proposal for a revised gas markets and hydrogen Directive establishes rules on the empowerment and protection of consumers. This is important to drive forward the energy transition at all levels. Currently there is no common EU terminology or certification system for low carbon fuels and gases, which makes it difficult for consumers to make sustainable energy choices.⁴

⁴ Proposal for a Directive of the European Parliament and of the Council on common rules for the internal markets in renewable and natural gases and in hydrogen, p. 2.

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To increase the involvement of customers, the proposed directive lays out rules, which facilitate market participation. The proposal focuses in particular on access to relevant information, as services provided, service quality, applicable tariffs, renewal and termination of the contract, consumer rights, contractual modifications and transparent information on applicable prices and tariffs as well as standard terms and conditions.

All final customers shall be entitled to have gases provided by a supplier, regardless of the supplier's Member State of registration and the right to switch suppliers or market participants within a maximum of three weeks (by 2026 within 24 hours).

Member States are furthermore required to protect vulnerable and energy poor customers.

Security of supply and storage / gas prices

Another principle, which according to Article 3 of the proposed Regulation is applied to the gas market is **security of supply and storage**. This is highly relevant in context of energy price increases. Therefore, several Regulations take the security of supply into account. E.g., according to Article 46 of the proposed Directive "each hydrogen network operator shall build sufficient cross-border capacity to integrate European hydrogen infrastructure accommodating all economically reasonable and technically feasible demands for capacity and taking into account security of hydrogen supply".

Although hydrogen does not fall under the definition of "gas" in Article 2 of Regulation (EU) 2017/1938, the amendments to Regulation (EU) 2017/1938 should be highlighted in this context due to their high relevance for securing supply and storage of gas. The new Articles 7a-7e establish a security system composed of the following parameters: efficient and joint use of infrastructures and gas storage, common and national risk assessments and a joint procurement for strategic stocks.

ENNOH

The proposed Regulation also provides for the establishment of the **European Network of Network Operators for Hydrogen (ENNOH)**. According to Article 40 of the proposed Regulation "Hydrogen network operators shall cooperate at Union level [...] in order to promote the development and functioning of the internal market in hydrogen and cross-border trade and to ensure the optimal management, coordinated operation and sound technical evolution of the European hydrogen network". In this context attention should be paid particularly on the objectives for climate and energy, i.a. hydrogen produced from renewable sources and increases in energy efficiency.

The proposals are currently open for feedback until 4 March 2022.

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