



E.DSO views on the EU Hydrogen and Decarbonised Gas Market Package

- An integrated reliable future energy system -

Synopsis

An **appropriate investment climate** for hydrogen requires the regulatory provisions for hydrogen to be aligned with regulation of gas, decarbonised gas, biomethane and hydrogen blending, while account unbundling to be ensured also between hydrogen operators and DSOs.

Regional development of hydrogen infrastructure shall be provided by the introduction of a **DSO-level for hydrogen** before interlinks build an internal market at a later stage.

The full **potential of sector coupling** can be explored with efficient procedures and fair cost-allocation. Independently of the final structure of the representation of DSOs at European level, Regulators should ensure that the voice of gas and electric DSOs, and their differences across Europe, are duly considered.

E.DSO promotes **technology neutral solutions** in which all solutions compete based on their costs. CO₂ emissions, renewable content, quality and availability of flexibility and criteria for supporting system stability.

I. Introduction

This position paper explores the E.DSO perspective for a sectoral approach when considering the EU hydrogen and decarbonised gas market package.

Following on from the publication of the **Commission Hydrogen Strategy**, and the first set of Fit for 55 publications, on 15 December 2021 the Commission proposed a new set of legislative proposals including the revision of the **Gas Regulation 715/2009¹** and the **Gas Directive 2009/73²**. The hydrogen and decarbonised gas market package is a relevant new piece of the hydrogen regulatory framework, designed to foster the uptake of renewable and low-carbon gases, for instance hydrogen and biomethane.

The first round of Fit for 55 publications addressed fundamental questions covering demand and supply of renewables. However, key regulatory issues covering gas and hydrogen infrastructure

¹COM/2021/804 final

<https://eurlex.europa.eu/legalcontent/EN/TXT/?uri=COM%3A2021%3A804%3AFIN&qid=1639665806476>

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<https://eurlex.europa.eu/legalcontent/EN/TXT/?uri=COM%3A2021%3A803%3AFIN&qid=1639664719844>



and the creation of the right environment for investments in low-carbon hydrogen were not sufficiently addressed.

E.DSO position paper sheds light on important regulatory loopholes touching upon the repurposing of the gas infrastructure to hydrogen, considerations for renewable and low-carbon hydrogen, the EC proposal to include gas DSOs into the newly established EU DSO Entity and ultimately the need for a more integrated sector coupling. E.DSO members advocate for a holistic, forward-looking EU regulatory framework that will promote the positive contribution of DSOs to the Fit for 55 package and its implication on the EU hydrogen economy.

1.1. Fit for 55 (FF55) package and its implications for DSOs

Proposals unveiled by the Commission on 14 July 2021 laid down the foundations of a specific regulatory framework, albeit still incomplete, amongst other to promote investments in renewable hydrogen.

Fit for 55 package is a cornerstone element for the success of the EU's transition to climate neutrality by 2050. Its main goal should be to establish a robust regulatory framework which builds on the potential of all possible sides to contribute to the energy transition to the best of their abilities.

DSOs are the key enablers of the energy transition fostering the integration of renewable energy sources and flexibility services, the deployment of energy efficient solutions and the empowerment of customers. While the FF55 recognizes the role of DSOs, it should do more to equip them with the necessary instruments to facilitate the transition to a decentralized, integrated, and efficient energy system.

1.2. E.DSO assessment of the package

According to the **European Climate Target Plan Impact Assessment**³, emissions shall be reduced by 55 % before 2030 by using carbon pricing, electrification, and energy efficiency as the fundamental pillars.

At the same time, the European Commission gas and hydrogen strategy acknowledges the key role of green gas and hydrogen in achieving the EU 2050 climate neutrality target. The Fit for 55 package includes a combination of measures of different nature, including carbon pricing, rules, and standards. A sensible assessment of the package cannot fail to evaluate whether the package will achieve the right balance between these instruments, and if all these measures together put the EU on track to fulfill the objectives established in the European Commission's decarbonised gas market package.

Considering the role of electrification as one of the key elements of the policy framework to achieve climate neutrality, E.DSO viewpoint in the new context is that electrification shall be prioritised whenever is most efficient, while other solutions must be adopted when electrification cannot deliver (*hard to electrify sectors and storage*).

³ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52020SC0176>



Building on this new approach, E.DSO embraces a holistic approach of sector coupling, in a structured and organised manner, which can operate reliably and economically. Since it is impossible to define what the future will look like, it is preferable that adequate planning requires valid forecasts of future demand for both power and renewables and decarbonised gases, such as hydrogen or new electricity needs as those arising from e-mobility and heat sectors, to create satisfactory storage, flexibility and congestion management conditions for the systemic operational feasibility and optimisation.

1.3. Electrification & sector coupling

A key element for the electrification of the system remains the needs to manage it smartly. In this way, the different distributed resources can optimally contribute to balance and stabilise power grids. To that end, the role of DSOs shall not be undermined since they shall not only ensure the effective participation of market participants connected to the grid, but they shall further facilitate the connection of all and technically feasible production facilities for renewable and low carbon gases. E.DSO considers that grid operators should be aligned with the EC objectives and should support the energy transition with solutions that allow for the decarbonisation of society while ensuring system stability. These solutions should give priority to the incorporation of CO₂-free energy sources.

E.DSO acknowledges that sector coupling can provide innovative solutions to the flexibility short-term and longer-term needs of the electric system, where synergies and complementarities can be exploited across energy sectors, essentially creating a cost and energy efficient system, if integrated smartly. A smart energy sector coupling is thus required, and, if successfully integrated, can contribute to cost-efficient investment decisions in, and use of energy infrastructure.

The integration of sectors enables new storage opportunities at multiple time scales, thus facilitating a higher penetrations of variable renewable energy sources to be integrated into the energy system.

E.DSO considers that electrification is one potential method of decarbonising heating. However, due to the existing housing stock, full electrification could not be possible everywhere in heating. There are several technologies (*biomass, electric heating, heat pumps, solar water heating, hydrogen etc*) some more proven than others. However, no sustainable technology on its own is currently able to meet the entire heat requirement in all Member States in a reasonable manner. While the energy efficiency in the upcoming years will increase, heat demand (*and flexibility and storage requirements*) in buildings will decrease, broadening the options for electricity in this sector.

Outside the home, widespread electrification of heat will require several infrastructure upgrades. Reinforced power grids, more generating technology, and digital infrastructure to make the system smarter and more efficient will all be needed.

1.4. Technology neutrality principle

A technology neutral approach in achieving decarbonisation objectives should aim at providing a description of the result to be achieved without specifying or regulating the technology to be employed.



Establishing the right boundaries for the application of the technology neutrality principle in the EU has become extremely difficult and its application has often been overwhelmed by demands and priorities that influence the use of specific technologies.

E.DSO considers that it is essential to ensure that the European energy is fully integrated, interconnected, and digitalised, while respecting technological neutrality. DSOs are and must remain **technology agnostic** when considering what could facilitate the coupling of the electricity and gas sectors, favoring the most cost-efficient solution to the energy transition. To make it happen, the digitalisation of the energy infrastructures is a clear enabler of sector coupling in energy systems.

The incorporation of the technological neutrality principle in climate policy does not prove easier at a Member States level either. In fact, the strategies and roadmaps put forward by different Member States (Austria, Germany, Spain etc.) does not seem to be a unitary approach to this issue.

E.DSO would like to highlight that adopting a technology neutral approach is key for the successful deployment of a green economy.

II. Voicing the DSOs concerns

E.DSO has identified the development different aspects in the design of a hydrogen economy. The setting of such aspects will have implications for DSOs. The rapid and large-scale electrification based on renewables as well as demand reduction and efficiency measures needed to meet the EU's climate and energy targets and the **Paris Agreement** have significant implications for gas DSOs.

A large part of gas distribution networks will have to be repurposed or decommissioned in the long-term to make way for an ever more growing electrified energy system powered by renewables, leaving distribution grids providing hydrogen or other sustainable solutions.

2.1. Unbundling

The package addresses the issue of *horizontal and vertical unbundling* making use of the different available models and providing some level of flexibility to market players for instance until 2030.

- **Vertical unbundling (Art 62 Directive):** The Directive proposes that Member States shall ensure that by 31 December 2024, hydrogen network operators are unbundled in accordance with the unbundling rules for gas Transmission System Operators (TSOs). There is however some level of flexibility. If the hydrogen network belongs to a vertically integrated company, Member States may choose between an ownership unbundling model but also have the option to choose an independent system operator model (ISO) or an independent transmission system operator model (ITO). The ITO model will however not be eligible after 2030.
- **Horizontal unbundling (Art 63 Directive):** The Directive proposes that where a hydrogen network operator is part of an undertaking active in transmission or distribution of natural gas or electricity, it shall be independent at least in terms of its legal form.



- Network planning and the creation of ENNOH: Using a similar approach to the functioning and coordination of transmission systems in the gas and electricity sectors, the Commission has proposed the creation of a European Network of Network Operators for Hydrogen (ENNOH) (**Art. 40 Regulation**). ENNOH will take over from the European Commission temporary platform created to take care of early work on scoping and developing issues relevant for the building up of the hydrogen network. ENNOH will work in close cooperation with ENTSOE and ENTSG and will be tasked.

E.DSO evaluate the role of DSOs in future hydrogen regulation and infrastructure planning through the proposed EU hydrogen network (ENNOH) positioned at the level of ENTSO-E and ENTSO-G, without distinguishing between DSO and TSO. E.DSO viewpoint is that there should be a distinction between TSO and DSO for hydrogen. It seems that the intention of the Commission is not to regulate hydrogen from the distribution side since it is considered there is no need to do so, and more efficient regulation can be applied.

The Commission foresees in its proposal ITO-unbundling as applied to TSOs and full ownership unbundling from 2030 on, and at the same time horizontal (legal) unbundling between system operators.

E.DSO members commonly agreed that a joint/combined distribution network operation shall not be mandatory but shall however be allowed. This approach does however not imply that E.DSO considers the combined network operation as more efficient.

Regarding the horizontal unbundling, E.DSO members that run other DSO businesses than electricity, are of the view that hydrogen shall be included in the framework of the gas regulation, while optionally keeping the proposed unbundling requirements between gas and hydrogen operation.

2.2. EU DSO Entity

The Regulation updates the roles of the EU DSO Entity to reflect this and extends its tasks to the coordinated development of gas networks.

E.DSO members are of the view that gas and electricity DSOs should remain separated. However, considering the sector coupling approach, we believe that it is important for the regulator to consider the voice of gas and electricity DSOs be it with a unified entity or with multiple institutions.