

ERCST FEEDBACK

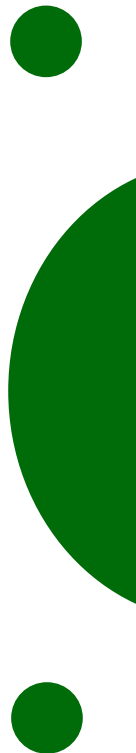
The hydrogen and decarbonized gas market package – focus on hydrogen

Highlights

- **General remarks:** technology neutral and market driven approaches are the first choice, with other policies and measures to be considered only if there are compelling reasons.
- **Definitions:** a complete definition for low-carbon hydrogen is needed as soon as possible to enable investment decisions.
- **Hydrogen as replacement for natural gas:** further explanations are needed to several aspects of the REPower EU Communication. (i.a. assumptions behind the proposed target of 20mt of domestic production and imports of renewable hydrogen by 2030)
- **Financing of hydrogen networks and cross-subsidization:** this requires a very nuanced approach
- **Blending:** 5% blending cap is a balanced compromise between conflicting needs
- **Unbundling:** certain degree of flexibility in approaching unbundling until 2030 is justified
- **Governance:** an independent framework for hydrogen will help to develop the market meeting hydrogen users' needs
- **Incentives:** during the transition the EU should favor an EU ETS driven, technology neutral approach to incentives, where all decarbonized hydrogen types get the same level of support.

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1. General remarks

The proposed hydrogen and decarbonized gas package outlines a vision to decrease emissions in the gas sector. The fundamental view should be that technology neutral market driven approaches are the first choice, with other policies and measures to be considered only if there are compelling reasons. Given the level of state intervention in the economy through the EGD and the Fit for 55 package, any additional intervention should need to be carefully weighted and considered. There is still room for improvement in the package as some questions regarding its implementation, price affordability and impact on businesses and society remain unanswered. Decarbonised hydrogen is a promising approach to decarbonization but not without uncertainties. Fundamental issues need to be still defined and they will determine the success of hydrogen.

One of these issues is the end uses of hydrogen and this will impact the estimates about the future demand for hydrogen¹. For illustration purposes one example is whether hydrogen is to be used beyond the hard to abate sectors, including heating, which is supported only by some Member States. Some see a broader use for hydrogen, some see a more targeted approach. Given such fundamental gaps, it is probably wise to avoid rushing into overregulation at this stage.

In the proposed hydrogen and gas package, the European Commission has coped with uncertainty by designing a flexible regulatory framework with a less regulated set-up for the period before 2030. This is a positive approach as we should not overregulate markets, and this will translate into several more concrete positions. We believe in a market driven approach to decarbonization, and market needs more than one solution on the table.

1. Hydrogen definitions and certification

Definitions represent the foundations of policies, regulations, and incentives. A technology neutral approach where hydrogen production processes are defined according to their carbon footprint rather than by colors or specific technologies is an approach that has merit.

This will allow to expand the hydrogen production volumes which should lead to more affordable prices for users and a quicker development of the market. The EU needs affordable, secure, and decarbonized hydrogen rather than the politically charged and distracting discussion about hydrogen labels.

However, despite a technology neutral approach to low-carbon hydrogen, the definition itself is not complete. In particular, the proposed Directive refers to the 70% emission reductions threshold without specifying neither the scope of emissions covered nor the fossil fuel's

¹ Demand forecasts until 2050 vary considerably: from 300 TWh (Agora Energy, "No regret hydrogen") to over 3000TWh (European Commission Hydrogen Strategy)

comparator the threshold is referring to. The draft Directive indicates that this matter and the measurement methodology will be clarified in a delegated act which will be published by the end of 2024.

Besides the definition of low-carbon hydrogen, we believe the overall hydrogen definition framework is not complete and not consistent with the EU Hydrogen Strategy, especially relating to the definition of renewable hydrogen. One example is hydrogen made of biomass in the process of pyrolysis. This is a zero or even negative emission process for hydrogen production whose by-product is solid carbon which can be utilized in many applications. It is explicitly excluded from the definition of RFNBOs² in RED III and from the definition of low-carbon hydrogen³ in the hydrogen and decarbonized gas package⁴.

The industrial investment cycle for some sectors seen as users of decarbonized hydrogen is on average 15 years and the decarbonization targets put forward by the Commission require immediate investment decisions. A clear and stable regulatory framework is essential to guide those decisions. Therefore, a swift clarification of a definition of low-carbon hydrogen is urgently needed, preferably in the articles of the Directive, considering delays in the publication of other delegated acts within the framework of the RED II.

The EU Energy System Integration strategy⁵ highlighted the need to deploy an EU-wide certification system covering also low-carbon fuels. The objective is to enable Member States to compare them with other decarbonisation options and to be considered in the energy mix as a viable solution. The hydrogen and gas package puts forward a new certification framework for low-carbon fuels, including low-carbon hydrogen, parallel to what is currently foreseen for renewable fuels under the Renewable Energy Directive⁶ and, therefore, based on a mass-balance approach⁷. This will apply not just to domestic production but also to imports of hydrogen.

A certification system for low-carbon hydrogen based on the principles laid down in the Renewable Energy Directive covering both domestic and imported production should be seen in a positive light. This system should specify the precise amount of lifecycle GHG emissions per ton of hydrogen making sure market players can rely on a trustworthy and reliable accounting method. Lack thereof may hamper the development of the market. Therefore, it is important that the measurement methodology for lifecycle GHG emissions is developed quickly.

² Renewable fuels of non-biological origin mean liquid and gaseous fuels the energy content of which is derived from renewable sources **other than biomass** (Art. 1 Red proposal 14.07.2021)

³ Low-carbon hydrogen' means hydrogen the energy content of which is derived **from non-renewable sources**, which meets a greenhouse gas emission reduction threshold of 70%.

⁴ The European Commission hydrogen strategy mentions the production of hydrogen through biomass, page 4.

⁵ European Commission, 2020, An EU Strategy for Energy System Integration.

⁶ Art. 8 of the proposed Directive refers to Art. 30 of the Renewable Energy Directive.

⁷ A mass-balance approach is an accounting principle that matches input with output allowing different fuels to be accounted in pools.

2. Hydrogen as a replacement for natural gas

Synergies between natural gas and hydrogen should be leveraged. However, there are also key differences between those sectors, which should be considered. For instance, while growth of the natural gas market was driven by a genuine demand, the development of the hydrogen economy will be driven by the regulation resulting from the EU decarbonization policies and possibly geopolitical considerations.

The REPowerEU Communication put forward by the European Commission in March, proposes to import 10 mt of renewable hydrogen and produce a further 5 mt domestically⁸. Together with the Fit for 55 ambitions, this will result in 20 mt of renewable hydrogen in 2030.

These quantities differ considerably from what is in the Fit for 55 ambitions. We see merit in having an impact assessment to provide further explanations to a number of issues including:

- Assumptions behind the figure of 20 mt of renewable hydrogen and its potential to replace gas from Russia.
- Assurance that enough renewable electricity will be available in the EU to comply with the targets.
- Assessment of the potential impact of importing 10 mt of renewable hydrogen in the energy system of third countries.
- The merits of renewable hydrogen in decreasing dependency from third countries and in reducing emissions in comparison with other energy carriers, such as electricity or biogas.
- The reasons why the EU would be better off by importing 10 mt of renewable hydrogen, rather than by complementing the domestic production of renewable hydrogen with low-carbon hydrogen made in Europe.
- The reasons why the Commission has taken different approaches regarding the role international markets should play in reducing emissions for hydrogen, and the EU-ETS. While for hydrogen the Commission sees international markets and imports as an important element in meeting the EU renewable hydrogen target, when it comes to domestic emissions reductions, the EU does not envisage the use of international credits after 2020.

3. Financing of hydrogen networks and cross-subsidization

The hydrogen economy will require extraordinary public and private investments; however, resources are limited. Initially hydrogen will develop in clusters and, therefore, the development of an extensive hydrogen dedicated transportation infrastructure, although important, is not an immediate priority. Networks will not develop without a functioning hydrogen market. Therefore, the priority should be on supporting the development of the market with a greater focus on both hydrogen production and demand.

² European Commission 2022, REPowerEU ([See more](#))

We share the approach proposed in the package and acknowledge that the burden of financing hydrogen networks should not fall exclusively on users of hydrogen infrastructure.

When it comes to cross-subsidization and the separation of regulated asset bases (RAB), this is an issue which is specially relevant for gas TSOs and connected with the repurposing of gas pipelines. In general, gas TSOs favour the option of blending RABs for gas and hydrogen as they will be able to spread financing costs across a wider group of users, including users for both natural gas and hydrogen. This will likely facilitate repurposing. The proposed Regulation establishes that if a network operator provides regulated services for gas and hydrogen it will have to do it through separated RABs, meaning network operators will not be able to spread costs across a larger network users, offering more attractive tariffs. However, according to Art. 4 of the proposed Regulation, a member state may allow financial transfers between regulated asset bases. Besides that, the Commission acknowledges in the recitals of the Regulation that *“a limited form of cross-subsidisation would contribute to an investment climate supportive to the EU’s decarbonization objectives during the initial phase of network development”*.

As the role of hydrogen will differ between European countries, cross-subsidies should not be allowed between different Member States. A national approach to cross-subsidies subject to conditions of proportionality, transparency and limited in time should be seen as acceptable.

4. Blending

The proposed Regulation introduces a 5% allowed cap (without setting a blending obligation) for hydrogen blends at cross-border points, which TSOs must accept. The discussion on blending has many angles: political, economic, environmental, technical or administrative, which are very difficult to reconcile. Member States and various players in the hydrogen value chain have diverging views on this issue.

One example is the tension between the fact that blending of gas and hydrogen provides an economic incentive towards decarbonization but it also hampers the direct use of hydrogen in industrial applications which require a very high purity. The 5% blending cap is a balanced compromise between those needs.

5. Unbundling

Unbundling refers to the set of principles which aim to secure competition in transmission and distribution networks which are considered essential facilities. Vertical unbundling relates to the separation of hydrogen production and supply from transport activities. Horizontal unbundling relates to securing competition within the same market segment. As the hydrogen market is in an initial stage of development with limited number of players, its growth requires economic incentives offered by economies of scale and scope. Therefore, we see merit in allowing certain degree of flexibility in approaching unbundling until 2030.

6. Governance

The adoption of an integrated approach to governance benefitting from potential synergies of gas, electricity, and hydrogen networks is an approach that needs to be seen in a positive light. The draft Regulation puts forward the creation of a European Network of Network Operators for Hydrogen (ENNOH) which, among others, will be tasked with the development of network codes, the adoption of ten-year network development plans and coordination with ENTSOG and ENTSO-E. ERCST believes that the establishment of an independent governance framework for hydrogen will help to develop the market, meeting hydrogen users' needs.

7. Incentives

During the transition the EU should favor an EU ETS driven, technology neutral approach to incentives, where all decarbonized hydrogen production pathways get the same level of support. However, it must be acknowledged that the EU ETS price signal gives an incentive to deploy solutions that are already close to the market, including fuel-switching. For this reason, the EU ETS price signal alone will not be sufficient to ramp-up the EU hydrogen economy. Other forms of incentives will be needed (e.g. Carbon Contract for difference). Besides, counting low-carbon hydrogen used in industry and transport towards the renewable hydrogen targets during a transition period is an option that should be considered.