

Europe's hydrogen market needs a common understanding of "low-carbon" production

Hydrogen can help the EU reach carbon neutrality, yet considerable investments are needed so that it can gradually replace fossil fuels. To kick-start the hydrogen sector, concerted efforts of producers, network operators and consumers are essential, and the market is a place where all their interests meet. It is therefore clear that a market in hydrogen needs to be established. This process, however, faces challenges of its own, as the underlying legislative framework remains incomplete.

Hydrogen market participants need to feel reassured that they have access to a secure supply to meet their physical demand and commercial commitments. In addition to existing fossil-free hydrogen production methods, access to fossil fuel-derived hydrogen will be needed at least in the medium term. To stay consistent with the decarbonisation goals, however, such hydrogen must be certified as low-carbon, i.e. leading to much smaller greenhouse gas (GHG) emissions than outright consumption of the fossil fuel. This paper explains how production of low-carbon hydrogen should be evidenced to underpin the necessary investment and complement the existing framework for renewable hydrogen certification, leading to development of a hydrogen market.

Key messages

1. Common approach to evidencing low-carbon hydrogen production based on the 70% GHG emissions reduction threshold will better facilitate the development of a wholesale market;
2. A technology-neutral approach to low-carbon hydrogen production will contribute to developing a wholesale market, thereby speeding up decarbonisation of the EU economy;
3. To support credibility of low-carbon hydrogen certification, it should primarily evidence actual GHG emissions related to production at a given facility.

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Basic principles

Hydrogen sector's build-up and functioning will likely resemble the tried-and-tested model for the gas market, with the commodity on a wholesale level being treated as homogenous. Low-carbon hydrogen should be viewed as an important building block of that market, as its production is controllable and offers the flexibility that the market needs.

Differences in GHG intensity of different batches of hydrogen fed into the network need to be recorded separately – certification of sustainability is common practice for different liquid and gaseous fuels already today. In order to ensure consistency, low-carbon hydrogen should also be certified, whereby:

- the GHG emissions reduction is documented in a standardised and common way, which is easy to understand by all market participants, particularly consumers;
 - evidencing GHG emissions reduction for low-carbon hydrogen production for cross-border transactions is credible and consistent with the methodology already established for biomethane and renewable hydrogen;
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 - as a facilitator of consumer choice, low-carbon hydrogen certificates need to be universally recognised across the EU to allow their tradability and unlock the scale effects offered by an internal EU market for hydrogen.

May the best technology win.

Energy Traders Europe emphasise the need to arrive at a common, EU-wide approach to defining and certifying low-carbon hydrogen. The recast Gas Directive defines low-carbon hydrogen as fuel derived from non-renewable energy that meets the 70% GHG emissions reduction threshold – **this should serve as the sole benchmark for achieving the low-carbon status.**

Different technologies allow producing low-carbon hydrogen and these include capturing and using/storing the fuel production-related emissions. To encourage commercial investment in low-carbon hydrogen, the Delegated Act supplementing the new Gas Directive need to **make it clear from the outset that different hydrogen production**

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pathways are eligible, provided that they meet the 70% GHG reduction threshold. Such technology-neutral approach will speed up the decarbonisation process through enhanced competition, building on existing sources of energy and reducing their impact on the environment. **To underpin this technology-neutral approach, flexible regulatory conditions are needed for the energy sourcing to produce low-carbon hydrogen.**

Consistency is also key – just like for biomethane and renewable hydrogen, calculation of emissions relating to low-carbon hydrogen needs to factor in also the GHG emissions related to the supply of production inputs (e.g. transport of natural gas or non-renewable electricity). The methodology also needs to respect the established procedures verifying methane and other GHG emissions mitigation techniques. Collectively, this will enable consumers to use a combination of energy carriers to reach their decarbonisation targets.

Certificates should primarily evidence project-specific contribution to decarbonisation.

Since **certificates** are to facilitate consumer choice, they **should evidence each facility's contribution to GHG emission reduction to the extent possible.** In other words, it should be up to an individual project to prove that it meets the 70% GHG reduction threshold. Consequently, resorting to default values of emissions attributed to certain technologies should be viewed as a second-best procedure, applicable only when precise measurement of emissions would be economically or technically unfeasible, and maintaining an incentive to perform better than the default value assigned. Such approach is consistent with the one applicable to biomethane and allows smaller projects to contribute to the decarbonisation efforts.