



Denmark's position paper on supporting the development of a well-functioning European market for green hydrogen

Denmark's main priorities to support the development of a well-functioning European market for green hydrogen and derivatives

A well-functioning European market for green hydrogen and derivatives guided by the following overarching principles:

- The development of a European market for green hydrogen and derivatives should prioritise cost-effectiveness and targeted use cases.
- In the initial stages of market development, the EU should focus on implementing measures and potentially introducing new well-grounded initiatives firmly based on strong principles and evidence to complement ongoing efforts.

Supported by four main pillars:

- Robust and reliable certification schemes enabling consumers to differentiate clearly between gases and upholding the integrity of the RFNBO targets set out in the Renewable Energy Directive, ReFuelEU Aviation and FuelEU Maritime.
- Close alignment between the planning of electricity grids and hydrogen infrastructure to ensure the most cost-efficient decarbonisation solutions.
- Ambitious and transparent RFNBO targets to foster and incentivise the uptake of green hydrogen and derivatives in hard-to-abate sectors.
- Predictable and streamlined funding opportunities to support the realisation of announced projects as well as the political ambitions of the EU.

The next European mandate is well-positioned to advance the development of a European market for green hydrogen and derivatives. Building on the ambitious Fit-for-55 package and the legislative measures introduced to establish an adequate policy framework, the mandate should zero in on addressing remaining needs to support and facilitate timely market development. With a suitable policy framework emphasising targeted use cases and strategic initiatives, green hydrogen and derivatives hold the potential to bolster a resilient, efficient and adaptable European energy system. However, achieving this requires new initiatives to complement ongoing efforts and address issues such as transparent and reliable certification schemes for hydrogen, improved infrastructure coordination and planning, as well as enhancing production and boosting demand.

Implementing and bolstering the regulatory framework in a feasible and cost-effective way

The Hydrogen and Decarbonised Gas Market Package will enable the uptake of renewable hydrogen in the EU by establishing a market design, including rules on hydrogen infrastructure, access to hydrogen markets and market integrity. Facilitating the uptake of green hydrogen is, however, highly dependent on reliable certification schemes, enabling consumers to differentiate between gases, ensuring that hydrogen and derived fuels contribute with significant, robust and traceable emission reductions compared to the fossil reference. The overarching approach should be to avoid low-carbon hydrogen to be unduly counted towards the targets in the Renewable Energy Directive, FuelEU Maritime and ReFuelEU Aviation. To this end, the forthcoming delegated act under the Hydrogen and Decarbonised Gas Markets Package defining low-carbon hydrogen should be based on a credible fossil fuel comparator and a robust traceability and transparency mechanism. This requires, among other things, a full life cycle emissions assessment to measure the footprint of low-carbon hydrogen.



Rolling out an integrated and cost-efficient European hydrogen infrastructure

The substantial decarbonisation of the European energy system necessitates a transformation of the existing gas market structure with a more prominent role for renewable fuels and gases. Infrastructure connecting supply and demand is at the core of the new gas market structure and will play a key role in developing a European market for green hydrogen and derivatives. Developing a well-functioning and cost-effective market hinges on cooperation in establishing hydrogen networks, thereby enhancing project economics. Such a cooperative approach should be endorsed and reinforced within the newly established governance structure in the form of the European Network of Network Operators for Hydrogen (ENNOH). Furthermore, ENNOH has a vital role in aligning the planning and implementation of hydrogen networks and the development of electricity grids to ensure the most cost-efficient decarbonisation solutions. To this end, ENNOH must cooperate closely with the European Network of Transmission System Operators for Electricity (ENTSO-E) and the European Network of Transmission System Operators for Gas (ENTSO-G) to foster efficient energy system integration. Additionally, establishing an interconnected and cost-efficient hydrogen infrastructure across Europe requires providing appropriate incentives for investments, benefiting both producing and off-taking countries. However, particularly in the early market stages, producing countries face the highest risks, exacerbated by dependencies between the renewable electricity built out and the green hydrogen production, often occurring within the same country. Addressing these risks could be a crucial step towards facilitating the implementation of essential infrastructure and scaling up the EU production capacity.

Boosting targeted demand and scaling up production of green hydrogen and derivatives

The Fit-For-55 package sets short- and long-term targets for the use of renewable fuels of non-biological origin (RFNBO). While the revised Renewable Energy Directive introduces sub-targets for the utilisation of renewable hydrogen and derivatives in industry and transport, sector-specific targets and blending requirements follow from the central legislative acts FuelEU Maritime and ReFuelEU Aviation. As guiding principles, these targets must be firmly grounded, considering the market maturity and the need to mitigate risks and uncertainties during the initial stages of the market development. The forthcoming evaluation of FuelEU Maritime and ReFuelEU Aviation anticipated in 2027 should uphold these principles while ensuring that an ambitious approach is maintained. Looking towards 2040, there is a broader call for a simpler target structure for RFNBOs to support Member State compliance and foster simplicity for market actors. A simpler target structure is vital to send clear signals about the direction of the EU energy sector decarbonisation. Achieving the targets outlined in the Fit-for-55 package also requires ramping up the production capacity and fostering a comprehensive approach to the entire value chain. Ensuring an efficient allocation of biogenic and atmospheric CO₂ resources is crucial, especially considering that under EU regulation starting from 2041, these will be the only eligible CO₂ sources for the production of RFNBOs. Over the coming years, the EU must tackle regulatory and economic barriers to establish a transparent and unified European CO₂ market enabling the trading of CO₂ as a commodity for utilisation and storage purposes. This includes the timely development of certification methodologies for CCU activities to support first-movers planning for operation before the finalisation of the certification methodologies for BEECS and DACCS.

Improving the transparency and predictability of funding options for renewables

The cost of green hydrogen is a major barrier to its widespread adoption and deployment. To accelerate the green transition in Europe, a dedicated focus on supporting predictable funding opportunities is needed. Currently, funding opportunities for green projects, including hydrogen, are spread across various schemes, each with individual dynamics regarding scope, timelines, and different possibilities for funding accumulation. Furthermore, funding calls often appear unpredictable resulting in difficulties in aligning project development with upcoming calls. As a result, the funding landscape appears complex and it is administratively burdensome to prepare applications. This points to a general need to streamline the EU funding landscape. Funding calls, as well as the terms and conditions for participation, should be announced in due time to ensure that the funding is fit for purpose and eligible to support the realisation of announced projects as well as the political ambitions of the EU. The Hydrogen Funding Compass originally developed by the Commission to foster simplicity and transparency could be put into action to serve this purpose, if it was to be redesigned with simpler gateways to funding for the different sector scopes, i.e. production, offtake, equipment manufacturers and infrastructure. Moreover, project developers must be acquainted with and capable of forecasting potential funding schemes for the upcoming years. By establishing a comprehensive understanding of forthcoming funding opportunities, developers can seek support once projects have reached an adequate level of maturity.

