A European Strategy for Hydrogen

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The European Parliament adopted by 411 votes to 135, with 149 abstentions, a resolution on a European strategy for hydrogen.

Hydrogen can be used as a raw material or energy source in industrial and chemical processes, in air, sea and road transport by heavy goods vehicles and in heating applications, as well as for energy storage.

However, hydrogen makes up about 2% of the EU's energy mix and 95% of it is produced from fossil fuels. Studies show that renewables could account for up to 100% of the EU's energy mix in 2050, that hydrogen could account for up to 20% in total, between 20% and 50% of energy used for transport and between 5% and 20% of energy used in industry.

A **competitive and sustainable hydrogen economy** could help the EU strengthen its economy, especially after the economic downturn caused by the COVID-19 pandemic.

EU hydrogen strategy

Parliament stressed the need to maintain and further develop EU technological leadership in clean hydrogen through a competitive and sustainable hydrogen economy with an integrated hydrogen market. It emphasised the necessity of an EU hydrogen strategy that covers the whole hydrogen value chain, including the demand and supply sectors, and is aligned with national efforts to ensure that sufficient supplementary renewable electricity generation infrastructure is built for the production of renewable hydrogen and to bring down the costs of renewable hydrogen.

The Commission is invited to take these strategies into account in its future legislative proposals and to align its approach on hydrogen with the new EU industrial strategy.

Hydrogen classification and standards

Parliament initially welcomed the Commission's proposed classification of the different types of hydrogen, while stressing the need to agree quickly on a comprehensive, accurate, uniform and science-based terminology at EU level. The term "renewable hydrogen" would be one way of clarifying the situation.

The Commission is called on to provide, as early as possible in 2021, a regulatory framework for hydrogen that ensures standardisation, certification, guarantees of origin, labelling and tradability across Member States, and to also use the upcoming revision of the EU Emissions Trading System (ETS) to examine what changes are needed to unlock the full potential of hydrogen to contribute to the EU’s climate goals, taking into account the risks of carbon leakage

Ramping up hydrogen production

Parliament considered that the Commission should swiftly propose a coherent, integrated and comprehensive regulatory framework for a hydrogen market. The EU gas market design and the Clean Energy Package could serve as basis and example for the regulation of the hydrogen market.

Parliament welcomed the Commission’s ambitious goals of increasing the capacity of electrolysers and renewable hydrogen production. It stressed the importance of phasing out fossil-based hydrogen as soon as possible, focussing on the cleanest technologies in terms of sustainability and greenhouse gas emissions.

Citizen engagement

Members stressed that citizen engagement will play an important role in the implementation of a fair, successful, participative and inclusive energy transition. Renewable energy communities could be involved in the production of hydrogen.

The Commission should adopt an action plan aimed at guiding Member States to develop and maintain dedicated training programmes for workers, engineers, technicians, and the general public, and to create multi-disciplinary teaching programmes for economists, scientists and students.

Hydrogen infrastructure

There is an urgent need to develop infrastructure for hydrogen production, storage and transport, to incentivise adequate capacity-building, and to develop demand and supply in parallel.

The resolution highlighted the financial benefits of placing hydrogen production facilities close to renewable energy production sites or on the same site as demand facilities. It urged the Commission and the Member States to ensure that any potential future gas infrastructure is compatible with pure hydrogen.

Hydrogen demand

Given that the main lead markets for hydrogen demand are industry, air, maritime and heavy-duty transport, Members believe that, for these sectors, roadmaps for demand development, investment and research needs should be established at EU level.

Parliament shares the Commission's view that demand-side measures and clear incentives for hydrogen applications and use in end-use sectors should be considered for a transitional period to stimulate hydrogen demand in order to promote hydrogen decarbonisation where this is necessary to preserve the competitiveness of end-users.

Recalling that the transport sector is responsible for a quarter of the EU's CO2 emissions, Parliament stressed the need to deploy refuelling infrastructure to stimulate the use of hydrogen in the transport sector. It stressed the need to strengthen legislation to encourage the use of zero-emission fuels and other clean technologies, including renewable hydrogen, and, once these are fully available, to consider their use in heavy-duty vehicles as well as in air and sea transport.

Research, development, innovation and financing

Parliament stressed the importance of research, development and innovation to make renewable hydrogen competitive and affordable. The Commission is invited to stimulate research and innovation for the implementation of large-scale pilot and demonstration projects to ensure technology transfer along the hydrogen value chain.