

CONTENT

To accelerate the development of clean hydrogen, the European Commission on 8 July 2020 adopted a new hydrogen strategy with the communication 'A hydrogen strategy for a climate-neutral Europe'.

With the European Green Deal aim of climate-neutrality by 2050, decarbonising the energy sector, which accounts for 75 % of greenhouse gas (GHG) emissions, is an essential step. Hydrogen is viewed as a key component to deliver decarbonised energy where renewable electricity has its limits and challenges, notably when it comes to storage, heavy-duty transport and energy-intensive industries. Renewable electrification and clean hydrogen provide the synergies needed to deliver an integrated and flexible decarbonised energy system.

Originally the European Commission Work Programme listed only the Strategy for Smart Sector Integration, for Q2 on decarbonising energy. A decision was made, however, to split this into two separate strategies, presented on same day: the Energy Systems Integration Strategy (see separate file) and the Hydrogen Strategy, arguing the key role of hydrogen calls for specific action.

The two strategies combined lay out an investment agenda in line with Next Generation EU to deliver on the Green Deal while supporting the economic recovery following the COVID-19 crisis.

According to the European Commission, reaching a 2030 GHG emissions reduction target of minimum 50 % and towards 55 %, in a cost effective way, depends on fast and large-scale deployment of hydrogen installations, producing clean hydrogen using renewable electricity.

The majority of hydrogen production is today fossil-based as clean or low-carbon hydrogen is not yet cost-competitive. Hydrogen is projected to account for 14 % of Europe's energy mix and meet 24 % of the global energy demand in 2050, from less than two percent in EU today, according to projections from the JRC and Bloomberg.

The aim of the strategy is to create an enabling environment to scale up renewable hydrogen supply and demand for a climate-neutral economy. To do so the strategy outlines a number of key actions and presents three strategic phases in the timeline up to 2050.

The three phases run from first 2020-2024, second phase 2025-2030 and final phase 2030-2050. The European Commission lays

down a roadmap with objectives ensuring the scaling up of renewable hydrogen production, retrofitting of existing hydrogen installations and the gradual planning and establishment of logistical infrastructure starting from local/regional demand centres, through refuelling network into a pan-European transmission grid and large/scale storage facilities.

Alongside the gradual scaling up of renewable hydrogen production, demand-side policies are envisioned to stimulate end-use application across industry and transport especially but also for the use of hydrogen in residential and commercial heating.

The European Commission presents six headings for key actions to realise the ambitions. These include an investment agenda, boosting demand and scale-up, regulatory framework, research and innovation and finally actions at international level. To provide an overview the final pages of the strategy contain a table specifying actions under each heading, including necessary future legislative revisions.

In her SOTEU address of 16 September 2020, Commission President von der Leyen pointed to the role of Next Generation EU to help deliver Hydrogen Valleys to bring life to rural areas. In the strategy, Hydrogen Valleys are seen as geographical clusters, with local supply and demand, delivering clean energy to industry, buildings and local transport.

As an important partner in realising the scaling up of clean hydrogen production and demand in Europe, the European Commission has launched the European Clean Hydrogen Alliance consisting of stakeholders from industry, public authorities and civil society. The Alliance is expected to establish the investment agenda and facilitate the realisation of the actions in the strategy.

The hydrogen strategy has close links with other strategies notably New Industrial Strategy adopted on 10 March 2020 and the Sustainable and Smart Mobility Strategy adopted on 9 December 2020 (see separate files).

In terms of transport, also closely connected with hydrogen, the Parliament, in its resolution on the European Green Deal agreed that all modes of transport will have to contribute to transport decarbonisation, seeing this both as a challenge and as an opportunity. The Parliament has in 2018 through an own-initiative report already called for further action on transport infrastructure for alternative fuels.

In the European Parliament the ITRE committee is taking lead on the hydrogen strategy. On 19 November 2020 ITRE rapporteur Jens Geier put forward his draft report. The final report was adopted in ITRE committee in March 2021. The European Parliament adopted its own-initiative resolution on a European Strategy for Hydrogen on 19 May 2021.

On 11 December the Council adopted conclusions entitled 'Towards a hydrogen market for Europe', calling on the Commission to further elaborate and operationalise the EU hydrogen strategy.

The Committee of the Regions adopted an own-initiative opinion on 1 July 2020 at its 139th plenary session.

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- European Parliament, EPRS, [Energy storage and sector coupling: Towards an integrated, decarbonised energy system](#), Briefing, June 2019

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