Basic information

2020/2242(INI) INI - Own-initiative procedure	Procedure completed
A European Strategy for Hydrogen **Subject** 3.60.05 Alternative and renewable energies	

Key players

European Parliament

Committee responsible	Rapporteur	Appointed
ITRE Industry, Research and Energy	GEIER Jens (S&D)	12/08/2020
	Shadow rapporteur NIEBLER Angelika (EPP) GROOTHUIS Bart (Renew) CARÊME Damien (Greens/EFA) KRASNODĘBSKI Zdzisław (ECR) MARIANI Thierry (ID) BOMPARD Manuel (GUE/NGL)	

Committee for opinion	Rapporteur for opinion	Appointed
ENVI Environment, Public Health and Food Safety (Associated committee)	BENTELE Hildegard (EPP)	01/10/2020
TRAN Transport and Tourism (Associated committee)	MAYER Georg (ID)	03/11/2020

European Commission

Commission DG	Commissioner
Energy	SIMSON Kadri

Key events

Date	Event	Reference	Summary

26/11/2020	Committee referral announced in Parliament		
26/11/2020	Referral to associated committees announced in Parliament		
18/03/2021	Vote in committee		
08/04/2021	Committee report tabled for plenary	A9-0116/2021	Summary
17/05/2021	Debate in Parliament		
19/05/2021	Decision by Parliament	T9-0241/2021	Summary

Technical information	
Procedure reference	2020/2242(INI)
Procedure type	INI - Own-initiative procedure
Procedure subtype	Strategic initiative
Legal basis	Rules of Procedure EP 57_o Rules of Procedure EP 55
Stage reached in procedure	Procedure completed
Committee dossier	ITRE/9/04093

Documentation gateway

European Parliament

Document type	Committee	Reference	Date	Summary
Committee draft report		PE658.772	19/11/2020	
Amendments tabled in committee		PE662.057	11/12/2020	
Amendments tabled in committee		PE662.101	11/12/2020	
Committee opinion	ENVI	PE658.815	05/02/2021	
Committee opinion	TRAN	PE660.164	25/02/2021	
Committee report tabled for plenary, single reading		A9-0116/2021	08/04/2021	Summary
Text adopted by Parliament, single reading		T9-0241/2021	19/05/2021	Summary

European Commission

Document type	Reference	Date	Summary
Commission response to text adopted in plenary	SP(2021)538	09/11/2021	

A European Strategy for Hydrogen

2020/2242(INI) - 08/04/2021 - Committee report tabled for plenary, single reading

The Committee on Industry, Research and Energy adopted the own-initiative report by Jens GEIER (S&D, DE) on a European Strategy for Hydrogen.

As hydrogen produced through electrolysis with electricity from renewable energy sources is a clean alternative to fossil fuels and can be used for various purposes, including feedstock for industrial processes, fuel cells and energy storage, it can make a valuable contribution to the achievement of a just transition towards a clean energy system. It can help to decarbonise hard-to-decarbonise sectors in which direct electrification is not yet possible or cost-efficient. However, hydrogen represents only a small part of the European energy mix and 95% of our hydrogen production is currently based on fossil fuels.

The EU needs to develop a sustainable hydrogen economy that aims at making clean hydrogen competitive as soon as possible.

EU hydrogen strategy

Members 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. They 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.

Members welcomed the hydrogen strategy for a climate-neutral Europe proposed by the Commission, including the future revision of the Renewable Energy Directive, as well as the growing number of Member State strategies and investment plans for hydrogen.

The report stressed that hydrogen produced from renewable sources is key to the EU's energy transition, as only renewable hydrogen can sustainably contribute to achieving climate neutrality in the long term and avoid lock-in effects and stranded assets.

Hydrogen classification and standards

Members consider that a common legal classification of the different types of hydrogen is of utmost importance. The Commission's proposed classification seems to be a good solution according to the report. However, different names for the same type of hydrogen, such as 'renewable' and 'clean' hydrogen, should be avoided.

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.

Citizen engagement

Members stressed that citizen engagement will play an important role in the implementation of a fair, successful, participative and inclusive energy transition.

Moreover, in order to have a properly functioning EU hydrogen market, people with specialised skills are needed, especially with regard to safety. 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 report 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.

Members noted that there are obstacles in some of the current regulatory frameworks to the use of hydrogen. Therefore, they encouraged the Commission and the Member States to adapt those regulatory frameworks in order to stimulate hydrogen demand and to eliminate disincentives such as legal uncertainties.

Recalling that the transport sector is responsible for a quarter of CO2 emissions in the EU and is the only sector where emissions have not been reduced compared to the 1990 baseline, the report underlined the potential of hydrogen to be one of the instruments used to reduce CO2 emissions in transport modes, in particular where full electrification is more difficult or not yet possible. The deployment of refuelling infrastructure is necessary to boost hydrogen use in the transport sector. In this regard, Members stressed the importance of revising the TEN-T (trans-European transport network) Regulation and the Alternative Fuels Infrastructure Directive to ensure the availability of publicly accessible hydrogen refuelling stations across the EU by including concrete objectives to integrate hydrogen infrastructure in transport systems.

A European Strategy for Hydrogen

2020/2242(INI) - 19/05/2021 - Text adopted by Parliament, single reading

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 CO_2 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.