



**2020/2242(INI)**

25.2.2021

# **OPINION**

of the Committee on Transport and Tourism

for the Committee on Industry, Research and Energy

on a European Strategy for Hydrogen  
(2020/2242(INI))

Rapporteur for opinion: Georg Mayer

(\*) Associated committee – Rule 57 of the Rules of Procedure

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## SUGGESTIONS

The Committee on Transport and Tourism calls on the Committee on Industry, Research and Energy, as the committee responsible, to incorporate the following suggestions into its motion for a resolution:

- having regard to the Agreement adopted at the 21st Conference of the Parties to the United Nations Framework Convention on Climate Change (COP21) in Paris on 12 December 2015 (the Paris Agreement),
  - having regard to the Commission communication of 8 July 2020 entitled ‘A hydrogen strategy for a climate-neutral Europe’ (COM(2020)0301),
  - having regard to the Commission communication of 11 December 2019 entitled ‘Stepping up Europe’s 2030 climate ambition – Investing in a climate-neutral future for the benefit of our people’ (COM(2020)0562),
  - having regard to the Commission communication of 11 December 2019 on the European Green Deal (COM(2019)0640),
  - having regard to the Commission communication of 10 March 2020 entitled ‘A New Industrial Strategy for Europe’ (COM(2020)0102),
  - having regard to Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources<sup>1</sup>,
  - having regard to Directive 2014/94/EU of the European Parliament and of the Council of 22 October 2014 on the deployment of alternative fuels infrastructure<sup>2</sup>,
- A. whereas the transport sector needs to decarbonise by 2050, but this will not be easy, and each mode of transport has its own sector-specific particularities, special challenges and requirements;
- B. whereas transport is responsible for approximately 27 % of the EU’s total greenhouse gas (GHG) emissions, and hydrogen has multiple applications across industry and the electricity and the building sectors, and offers great potential as an alternative fuel for the transport sector, but market-deployed hydrogen possibilities for the various modes of transport are still limited;
- C. whereas battery electric cars have the potential to secure a significant part of the market for private vehicles; whereas heavy transport is a hard to decarbonise sector, where direct electrification is limited owing to low cost efficiency and for technical reasons; whereas batteries pose practical problems in sectors such as those making use of heavy-duty vehicles, trains on non-electrified lines, cargo ships or aircraft, and this will create opportunities for other energy carriers such as hydrogen, as it could store large amounts of energy on board a vehicle or vessel, allow for quick refuelling if necessary and

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<sup>1</sup> OJ L 328, 21.12.2018, p. 82.

<sup>2</sup> OJ L 307, 28.10.2014, p. 1.

produce only water as an exhaust output;

- D. whereas direct electrification from renewable sources is the preferred option to decarbonise transport and reach our climate goals while respecting the principles of ‘energy efficiency first’ and technological neutrality, and whereas hydrogen should primarily be used to help cut emissions in hard-to-decarbonise sectors, such as in heavy land transport, the aviation and maritime sectors;
- E. whereas demand for hydrogen should be stimulated in order to gradually incorporate new applications and make the European Union a standard-setting and world-leading region for hydrogen; whereas an ambitious strategy can secure hydrogen benefits for all Member States by fostering a Hydrogen Union, and can generate up to one million jobs and EUR 150 billion in annual revenue by 2030, while reducing annual CO<sub>2</sub> emissions by roughly 560 megatonnes by 2050;
- F. whereas in 2018, the Commission projected that hydrogen would make up 13 to 14 % of the share of the Union’s energy mix by 2050<sup>3</sup>;
- G. whereas new technologies and innovations need to evolve, and therefore substantial investments are needed in order to upscale production and distribution, which would lead to economies of scale, while the competitiveness of the EU transport sector needs to be safeguarded;
- H. whereas high European safety and classification standards for the production, transportation, storage and utilisation of hydrogen should be drawn up, guaranteed and based on cost-effectiveness and independent scientific research;
- I. whereas in terms of the development of hydrogen infrastructures, low carbon can play a complementary role in reaching the Union’s climate goals;
- J. whereas the availability of additional renewable energy infrastructure is an essential condition for introducing and developing the use of hydrogen in the transport sector;
- K. whereas the Fuel Cells and Hydrogen Joint Undertaking (FCH JU) will have to achieve synergies with the joint undertakings in the transport sector in order to promote adequate integration between hydrogen technology and transport infrastructures and services; whereas the focus should be on building European hydrogen supply chains by means of joint efforts, with the goal of creating an interwoven and fully fledged European hydrogen energy system in order to make Europe less energy-dependent on third country suppliers and to become the world leader on the hydrogen market;

### ***Road***

- 1. Stresses the vast GHG reduction potential in road transport through modal shift, efficiency and direct electrification, especially for passenger cars and buses; notes that for road transport, given the current state of technological developments, the focus should be on an intensified uptake of electric vehicles; points out, however, that since in

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<sup>3</sup> Commission communication of 28 November 2018 entitled ‘A Clean Planet for All: A European strategic long-term vision for a prosperous, modern, competitive and climate neutral economy’ (COM(2018)0773).

the near future not all road transport will be electrifiable, hydrogen applications offer interesting options for those segments of the transport system where CO<sub>2</sub> reduction is difficult to achieve and where large-scale electrification is virtually impossible, such as long-haul heavy-duty road transport; underlines, furthermore, the significant particularity of hydrogen in terms of charging time (fast) and autonomy (comparable to internal combustion vehicles);

2. Stresses the need to maintain and further develop European technological leadership in renewable and low-carbon hydrogen through a competitive and sustainable hydrogen economy; welcomes the launch of mobility laboratories in European cities to promote sustainable public transport experiments based on the use of alternative fuels, and encourages the inclusion of hydrogen in the options to be used to carry out these experiments; notes that the combined effect of all hydrogen road vehicles being too expensive, and the absence of a suitable hydrogen transport infrastructure and distribution network with sufficient refuelling stations, is hampering mass development;
3. Highlights that urban transport offers a particularly interesting testing ground for experiments addressing the major technological challenges of this type of alternative energy in transport, with the availability of recharging points, storage, and fast refuelling opportunities; stresses, in this context, the important role of local and regional public-private partnerships in order to boost the development and uptake of hydrogen;
4. Highlights that the production of hydrogen is not an aim in itself but must deliver emissions reductions; calls for a harmonised EU strategy for the development of infrastructure and the use of hydrogen in heavy-duty vehicles; points out that in order to achieve the market ramp-up needed to provide these sectors with cost-efficient, affordable and climate-neutral alternatives to fossil fuels, a broad application of renewable hydrogen-derived products should be promoted;
5. Stresses that, in line with the ‘energy efficiency first’ principle and the Green Deal, a higher level of ambition in renewable energy and energy efficiency is needed in order to ensure the green transition, while respecting the energy mix of Member States and their respective starting points; recalls that the forthcoming revision of the Alternative Fuels Infrastructure Directive will need to include concrete objectives in terms of the integration of hydrogen infrastructure into transport systems;

### ***Aviation***

6. Stresses the importance of boosting EU companies and monitoring their progress in order to develop a wide range of technologies, including hydrogen, to enable a comprehensive approach towards cleaner aviation from small and medium-sized through to large aircraft;
7. Highlights that direct electrification and the use of batteries for hybrid and/or full electric planes might fit on board small-sized aircraft and rotorcraft, whereas this poses practical problems for long-distance freight and passenger transport, as it is not possible either to charge the batteries sufficiently or to pack the requisite number of batteries on board, making hydrogen one of the most promising options for the decarbonisation of the aviation sector for long-haul flights;

8. Points out the possibility of exploring the integration of electrical and/or hybrid enablers and fuel cells in planes and that, in the short- to mid-term, hydrogen could be used as a basis for synthetic aviation fuel, which could be applied as a ‘drop-in’ fuel in existing aircraft, while in the long term, the direct use of hydrogen could be envisaged, via hydrogen-powered fuel cells or hydrogen-based jet engines, following aircraft engine and system innovations;
9. Calls on the Commission to provide incentives to the sector to use alternative and synthetic fuels, as well as other clean technologies, and, once fully available, possibly introduce a blending mandate into the aviation sector to boost Europe’s technological leadership and its international competitiveness;

### *Maritime and inland waterways*

10. Supports the uptake of hydrogen, hydrogen-based fuels and fuel cells for inland waterways, short-sea and deep-sea shipping purposes where direct electrification is difficult; stresses the strategically essential role of multimodal maritime and inland ports as innovation pools and hubs for the import, production, storage, supply and utilisation of hydrogen, and highlights that solutions based on renewable hydrogen are of particular importance to islands and outermost regions;
11. Recalls the importance of transitional fuels for transport modes where hydrogen does not provide a cost-competitive solution yet; in this regard, stresses the potential of liquefied natural gas (LNG) and compressed natural gas (CNG) as a transitional solution, while avoiding fossil fuel lock-ins and stranded assets;
12. Underlines the need for space and investments in port infrastructure to promote the use of new zero- and low-emission technologies on national coasts and in ports, in order to facilitate the development of the hydrogen economy and to create an industrial value chain for hydrogen along multimodal transport corridors;
13. Encourages the Commission to remove barriers and provide the necessary funding to ensure a level playing field across energy carriers in order to support decarbonisation;
14. Calls on the Commission to come up with an overall risk-based transport safety framework across Europe; highlights, as an example, that the maritime transport and inland navigation safety framework should include standardised bunkering procedures for both ship and shore, storage and ventilation on board, procedures for the safe handling and management of emergency situations and training for the personnel working with hydrogen;
15. Recalls the importance of transitional fuels for transport modes where hydrogen does not provide a cost-competitive solution yet; in this regard, stresses the potential of LNG as a transitional solution to reduce GHG emissions in the inland waterways, as well as the maritime transport sectors, as an increasing number of ships operate on LNG, which emits less CO<sub>2</sub>, NO<sub>x</sub> and particulate matter than conventional marine fuels; highlights, moreover, that in the medium to long term, the vessels currently operating on and the distribution infrastructures used for LNG could be converted to use biogas, and that it will therefore be essential to scale up bio-LNG as a marine fuel; stresses the importance, therefore, of investing in potential zero-emission fuels such as hydrogen, as well as low-

carbon fuels, while respecting the principle of technological neutrality;

### ***Rail***

16. Notes that 46 % of the main line train network is still being served with diesel technology, but that the European rail sector is developing innovative solutions to contribute substantially to the decarbonisation of land transport;
17. Stresses, in this regard, the possibility of using battery-electric and hydrogen fuel-cell trains and retrofitted diesel locomotives in those parts of the train network where direct electrification is too costly or not suitable, or where service frequencies are too low to achieve cost-effectiveness, such as on small regional lines;
18. Points out that the European rail industry is at the forefront of innovation in relation to hydrogen-powered trains; notes that such rolling stock provides an excellent alternative to the costly electrification of small regional lines for both freight and passengers, and stresses that by using clean hydrogen where direct electrification is not possible, rail can be made fully environmentally neutral;

### ***R&I: the development of safety standards***

19. Recalls that there are various EU financing instruments and sources which can support investment in hydrogen such as InvestEU, the new Recovery and Resilience Facility, the European Regional Development Fund (ERDF) and the Cohesion Fund, the new initiative REACT-EU and the forthcoming Connecting Europe Facility (CEF); stresses that the possibilities offered by the Just Transition Mechanism should be further explored to support investment in hydrogen; calls on the Commission to explore synergies between the different EU programmes;
20. Underlines the need to prioritise investments in research and development, as hydrogen solutions in transport are currently still in the early stages of development; stresses that further research and innovation efforts are needed across the entire hydrogen value chain, to look into multimodal solutions, in particular as regards increasing energy efficiency and reducing costs, in order to expand and improve the use of hydrogen; emphasises the need for pre-normative research, including into the safety aspects, in addition to deployment plans and roadmaps, thereby ensuring improved and harmonised standards, security of supply and high levels of sustainability;
21. Welcomes the Commission's intention to revise the State aid framework, including the State aid guidelines for energy and environmental protection, envisaged for 2021;
22. Supports the European Clean Hydrogen Alliance, the Renewable Hydrogen Alliance and the Important Projects of Common European Interest (IPCEIs); recalls that the FCH JU ensures synergetic collaborations with EU joint undertakings and with all stakeholders involved in the development of hydrogen applications;
23. Highlights that, in line with the external dimension of the European Green Deal, the EU and the Member States should actively promote new opportunities for cooperation on clean hydrogen and swiftly develop strategic partnerships with neighbouring and third countries, thereby helping to re-design our global energy partnerships, promote EU

standards and regulations, and safeguard Europe's strategic interests;

24. Highlights the importance of providing support to research following a technology-neutral approach based on life cycle GHG emissions and science-based sustainability criteria, in order to accelerate the transition to the next generation of decarbonised transport systems;
25. Believes that involving industry and equipping workers with adequate knowledge about hydrogen are of the utmost importance; emphasises that the safety dimension must always take priority;
26. Welcomes the European Investment Bank (EIB) Climate Bank Roadmap 2021-2025 and the possibility of combining advisory and technical assistance from the EIB Advisory Hubs and under Horizon Europe; in this context, stresses that special attention should be given to mobilising investment for the deployment of hydrogen in transport;

### ***Recommendations***

27. Notes the importance of coordination in attaining harmonised high safety standards for transport infrastructure, and calls on the Commission to clarify and highlight the synergies between the CEF Energy and the CEF Transport; insists on the creation of synergies between TEN-T and TEN-E, as well as alternative fuels strategies, leading to a phased deployment of hydrogen filling stations suitable for all vehicles and other alternative fuels along transport corridors and at strategic locations, such as at sea and inland ports, airports and train stations, implemented in existing multi-fuel areas, if possible, and accompanied by the requisite essential technical requirements and harmonised standards based on risk assessments;
28. Calls for an integration of the different sources of EU funding, combining direct co-financing under the CEF with the ERDF and the Cohesion Fund, while making full use of the private financing available, to ensure adequate integration between the TEN-T network, the hydrogen infrastructure and the transport systems and services at regional and local levels;
29. Welcomes the Commission's intention to develop hydrogen-refuelling infrastructure in the Sustainable and Smart Mobility Strategy and the review of the Alternative Fuels Infrastructure Directive;
30. Notes that the Hydrogen Strategy does not elaborate on the significant role small and medium-sized enterprises (SMEs) play in the EU's energy and transport value-chains; calls on the Commission to facilitate access to research and finance and to monitor the progress of SMEs by using a suitable set of key performance indicators in order to contribute to evidence-based policy making; underlines that dedicated hydrogen support tools must be accessible to SMEs in the EU;
31. Stresses that the evaluation of the environmental benefits of hydrogen in terms of GHG emissions should be linked to a precise analysis from production to usage; calls on the Commission to gather such data for the different types of hydrogen;
32. Welcomes the Commission's initiative to revise EU energy taxation; calls on the

Commission and the Council to level the playing field across energy carriers in order to facilitate sector integration, while fully respecting, and not interfering with, Member State competences in tax policy;

33. Recalls the 14 % renewable energy target set for fuel suppliers in the Renewable Energy Directive II (RED II); highlights that the application and use of hydrogen in the transport sector contributes to zero-emission solutions; calls on the Commission to clarify the role of hydrogen in RED II as soon as possible, particularly in relation to the issues of certification requirements and the potential application of multipliers, as they constitute the basis for future investments.

## INFORMATION ON ADOPTION IN COMMITTEE ASKED FOR OPINION

<b>Date adopted</b>	25.2.2021
<b>Result of final vote</b>	+: 37 -: 5 0: 6
<b>Members present for the final vote</b>	Magdalena Adamowicz, Andris Ameriks, José Ramón Bauzá Díaz, Izaskun Bilbao Barandica, Marco Campomenosi, Massimo Casanova, Ciarán Cuffe, Jakop G. Dalunde, Andor Deli, Karima Delli, Anna Deparnay-Grunenberg, Ismail Ertug, Gheorghe Falcă, Giuseppe Ferrandino, João Ferreira, Mario Furore, Søren Gade, Isabel García Muñoz, Jens Gieseke, Elsi Katainen, Elena Kountoura, Julie Lechanteux, Bogusław Liberadzki, Peter Lundgren, Benoît Lutgen, Elżbieta Katarzyna Łukacijewska, Marian-Jean Marinescu, Tilly Metz, Giuseppe Milazzo, Cláudia Monteiro de Aguiar, Caroline Nagtegaal, Jan-Christoph Oetjen, Philippe Olivier, Rovana Plumb, Dominique Riquet, Dorien Rookmaker, Massimiliano Salini, Sven Schulze, Vera Tax, Barbara Thaler, István Ujhelyi, Petar Vitanov, Elissavet Vozemberg-Vrionidi, Lucia Vuolo, Roberts Zīle, Kosma Złotowski
<b>Substitutes present for the final vote</b>	Clare Daly, Carlo Fidanza, Marianne Vind

## FINAL VOTE BY ROLL CALL IN COMMITTEE ASKED FOR OPINION

37	+
ECR	Peter Lundgren
ID	Marco Campomenosi, Massimo Casanova, Julie Lechanteux, Philippe Olivier, Lucia Vuolo
NI	Mario Furore, Dorien Rookmaker
PPE	Magdalena Adamowicz, Andor Deli, Gheorghe Falcă, Jens Gieseke, Elzbieta Katarzyna Łukacijewska, Benoît Lutgen, Marian-Jean Marinescu, Giuseppe Milazzo, Cláudia Monteiro de Aguiar, Massimiliano Salini, Sven Schulze, Barbara Thaler, Elissavet Vozemberg-Vrionidi
Renew	José Ramón Bauzá Díaz, Izaskun Bilbao Barandica, Søren Gade, Elsi Katainen, Caroline Nagtegaal, Jan-Christoph Oetjen, Dominique Riquet
S&D	Andris Ameriks, Giuseppe Ferrandino, Isabel García Muñoz, Bogusław Liberadzki, Rovana Plumb, Vera Tax, István Ujhelyi, Marianne Vind, Petar Vitanov

5	-
Verts/ALE	Ciarán Cuffe, Jakop G. Dalunde, Karima Delli, Anna Deparnay-Grunenberg, Tilly Metz

6	0
ECR	Carlo Fidanza, Roberts Zīle, Kosma Złotowski
The Left	Clare Daly, João Ferreira, Elena Kountoura

Key to symbols:

+ : in favour

- : against

0 : abstention