

EN

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Answer given by Ms Gabriel
on behalf of the European Commission
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The Commission is well aware of safety challenges of upscaling hydrogen technologies. Several actions, including studies¹ and research activities², are taken at EU and international level to assess risk and safety in hydrogen production, storage and transportation. Safety standards are regularly produced and updated by European Standardisation Bodies³.

Used in industry since more than a century, hydrogen is a mature technology. Recent challenges arise due to envisaged growing deployment of hydrogen machines/equipment/applications, hence the need to produce higher quantities, handle, store, and transport them across long distance. Studies⁴ agree on safety aspects still requiring attention for handling big quantities of liquefied hydrogen or hydrogen-derivative⁵, compressed or liquefied hydrogen big quantities storage in ports, on-board storage/use of hydrogen for waterborne/airborne transportation.

At EU level, the Fuel Cell and Hydrogen Joint Undertaking supported several safety research projects and launched in 2017 the European Hydrogen Safety (EHSP) Panel initiative⁶ to ensure hydrogen safety is managed adequately. In Horizon Europe, the upcoming European Partnership on Clean Hydrogen (regulation under discussion) should continue to address safety of hydrogen production, storage and transportation, including codes and standards.

At the international level, the Commission is an active member of the International Partnership for Hydrogen and Fuel Cells in the Economy, which has just terminated a Compendium of Regulatory Gaps. The Joint Research Centre participates in the Working Group on Regulations, Codes, Standards, and Safety.

Safety aspects of nuclear energy and hydrogen production processes and infrastructures are very different and they cannot be fully compared.

¹ The project HyLaw has collected the available set of permitting rules allowing safe installation and operation of hydrogen machines. All HyLaW documents are available here: Info Centre | HyLAW Online Database Similar state-of-the art and gaps analysis are also ongoing at international level, e.g. [HySafe – International Association for Hydrogen Safety](#)) organises every two years a Research Priority Workshops on state of the art and gaps on hydrogen safety, completed by the bi-annual International Conference on Hydrogen Safety.

² Examples of Fuel Cells and Hydrogen Joint Undertaking funded projects on safety include HySEA, PRESLHY, HyTunnel-CS, HYRESPONSE, HyResponder. Safety of electrolyzers was addressed in a dedicated Joint Undertaking workshop in November 2020.

³ CEN/CENELEC Joint Technical Committee 6 on ‘hydrogen in the energy systems’. From standardisation point of view, a state of the art and gap analysis was performed by the European Standardisation Committee CEN and by the JRC in 20163, and updated in 2019.

⁴ [Review of hydrogen safety during storage, transmission, and applications processes - ScienceDirect](#)

⁵ Such as ammonia, methanol, others.

⁶ EHSP provides stakeholders expert judgment on hydrogen safety, including advice, reviews and accident investigations - <https://www.fch.europa.eu/page/european-hydrogen-safety-panel>