

CALL FOR EVIDENCE FOR AN INITIATIVE (without an impact assessment)

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| TITLE OF THE INITIATIVE | REPowering the EU with Hydrogen Valleys (roadmap) |
| LEAD DG – RESPONSIBLE UNIT | DG Research and Innovation, Unit C.1 Clean Energy Transition |
| LIKELY TYPE OF INITIATIVE | Staff working document |
| INDICATIVE TIMING | Q4 2023 |
| ADDITIONAL INFORMATION | - |

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A. Political context, problem definition and subsidiarity check

Political context

The European Green Deal and the EU's hydrogen strategy identified clean hydrogen as a key enabler to accelerate the phasing-out of fossil fuels and ensure people's economic and social welfare. REPowerEU underscores this with ambitious targets to double the EU's previous renewable hydrogen target to 10 million tonnes of annual domestic production, plus an additional 10 million tonnes of annual imports by 2030. Hydrogen Valleys (H2Vs) are key to achieving these targets by bringing together, in a specific place, multiple steps in the hydrogen value chain, from production, storage, and distribution to various users such as the transport sector, industry and energy end users.

Problem the initiative aims to tackle

To accelerate the roll-out of H2Vs in the EU, substantial investment in research and innovation is needed, as well as joint public and private action. Against this background, the Commission will present a roadmap to double the number of H2Vs.

The key barriers to accelerating development and roll-out of H2Vs are:

- lack of hydrogen production in the EU;
- cost-effectiveness of clean-hydrogen production technologies;
- insufficient renewable energy production;
- insufficient uptake of innovative clean-hydrogen technologies;
- scaling up production;
- matching supply and end-use applications;
- access to finance for research, innovation and commercialisation;
- unclear regulatory framework;
- long permitting procedures;
- lack of standards and codes;
- finding the right and committed coalition partners;
- finding sufficiently skilled people;
- lack of interconnection of H2Vs;
- lack of public acceptance;
- access to international best practices and state-of-the-art technologies; and
- insufficient development of the global clean-hydrogen economy.

Basis for EU action

The legal basis for this initiative is Article 194(2) of the Treaty on the Functioning of the European Union. Therefore, it is an initiative in the area of energy, which is a shared competence between the EU and Member States. The Hydrogen Valley roadmap will properly take into account the principle of subsidiarity.

B. What does the initiative aim to achieve and how?

The roadmap will outline the measures (including priority ones) needed to reach the REPowerEU objective of doubling the number of H2Vs in the EU by 2025, and support the implementation of the Net-Zero Industry Act. Measures will be structured around five building blocks as set out below.

1: Research and innovation

- a) Stimulate the use of research results in the demonstration of H2Vs to create cost efficiencies and improve measures for safety and environment
- b) Develop innovative hydrogen technologies needed to scale up
- c) Develop a common research and innovation agenda with Member States for the connection of H2Vs in the EU
- d) Present state-of-the-art pre-normative research results to standardisation bodies

2: Regulatory framework

- a) Expand the Clean Hydrogen Observatory to build a knowledge base on H2Vs by including best practices on acquiring national/regional funding and on current regulatory conditions and permitting
- b) Consult stakeholders to map the need for regulatory sandboxes with relevance to H2Vs
- c) Provide input for standards on hydrogen

3: Fostering cooperation and synergies, and raising funding

- a) Expand geographical coverage of the European Hydrogen Valleys S3 Partnership
- b) Call regional authorities to action, for example by developing memoranda of understanding
- c) Work with the Committee of the Regions and the European Research Area Forum sub-group 'Access to Excellence' to enable synergies
- d) Develop links with the Regional Innovation Valleys initiative
- e) Strengthen support to technical assistance initiatives such as project-development assistance of the Clean Hydrogen Partnership, ELENA by European Investment Bank, or the LIFE Programme
- f) Provide guidance on accessing EU and national/regional roll-out and investment programmes
- g) Work with Member States to align conditions for funding H2Vs
- h) Work with the InnoEnergy Hydrogen Acceleration Centre of the European Institute of Innovation and Technology to attract investment
- i) Award Seals of Excellence to support national funding of H2Vs

4: Education, training and skills

- a) Through the Clean Hydrogen Partnership, support the launch of a hydrogen academy and link it with other initiatives such as the GreenSkillsforH2 Erasmus+ project, and with the European Social Fund Plus
- b) Expand the H2V Platform to stimulate knowledge exchange, matchmaking and awareness-raising

5: Developing H2Vs globally

- a) Spearhead global development of H2Vs by strengthening cooperation in the Clean Hydrogen Mission under Mission Innovation¹

¹ <https://explore.mission-innovation.net/mission/clean-hydrogen/>

- b) Support development of H2Vs in the Mediterranean, including North Africa and Middle East, through measures such as project-development assistance, in synergy with research and innovation cooperation initiatives for the Euro-Mediterranean region set up by the EU and the Union for the Mediterranean
- c) Set up the hydrogen exchange programme to support global development of H2Vs
- d) Support the setting-up of H2Vs in Ukraine

Likely impacts

Impacts of boosting H2Vs: (i) kick-start of regional hydrogen economies; (ii) system integration and efficiency; (iii) improved security and resilience; (iv) market creation; (v) improved public perception of hydrogen ecosystems; (vi) tested regulatory requirements; (vii) improved knowledge of the socio-economic and environmental impacts; (viii) creation of new jobs and reskilling of workers; (ix) leveraged investment by public authorities; (x) increased interregional collaboration.

Future monitoring

The Mission Innovation H2V Platform (supported by the EU) will monitor the roll-out of H2Vs in the EU and globally². H2Vs will be regularly asked to give an update on their status and provide data on their projects. The stakeholder community will be updated through a yearly monitoring report, presented at the annual European Hydrogen Week.

C. Better regulation

Impact assessment

This initiative will not result in any legislative proposal. There is therefore no need for conducting an impact assessment.

Consultation strategy

The Commission has organised three workshops in 2023 to collect information for this call for evidence. Stakeholders are invited to express their views on this initiative by sending their feedback to this Call for Evidence.

² <https://h2v.eu/>