

Name and number of the action in the ERA Policy Agenda

Building an R&I ERA on Hydrogen (Action 11 – part 1)

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• **Description**

What does the action consist of? Explanation of the problems being addressed, the means used, the objectives to be achieved. Are certain actions already ongoing? Interplay with other actions or policies (EU or national).

The Council conclusions of 1 December 2020 invites the Commission and interested Member States to carry out an agenda process for a green Hydrogen R&I ERA pilot action.

In this context, Germany together with other Member States has initiated a bottom-up agenda process towards joint R&I activities, to prepare a Strategic Research and Innovation Agenda. The Commission is actively participating in this process, including by providing input to the SRIA.

The 'Agenda Process on the ERA pilot on Green Hydrogen' was built around three thematic workshops throughout 2021 to identify urgent research and innovation questions for Green Hydrogen competitiveness, and was published on 18 March 2022.

DG R&I will support this green Hydrogen ERA pilot with a portfolio of actions at EU level, in synergy with and complementing MS actions in the SRIA, as well as in alignment with the Hydrogen strategy for a climate-neutral Europe (COM(2020) 301, Brussels 8,7.2020) and with the Commission staff working document (2022) 15 final on R&I to support the implementation of the Hydrogen Strategy.

Future actions:

For implementing the SRIA:

A detailed roadmap of actionable activities will follow, based on the outcome of the conference on "Green Hydrogen for a Sustainable European Future" organised by Germany with the support of ERA countries participating to this action that will take place on 16 and 17 May in Berlin, to identify a number of concrete actions and activities for 2022-2023-2024, implementing the SRIA

Complemented at the EU level by:

- Develop a common data sharing area for Hydrogen technologies, market statistics, socio-economic indicators, policy, regulations and financial support, together with a common knowledge area, built on the existing TRUST database and the Hydrogen Observatory of the Fuel Cells and Hydrogen partnership (FCH 2 JU). The Observatory will be further developed along the model of the EUON, which is progressively serving, in addition to researchers and technicians, media and citizens – this activity will be done in synergy with the Clean Hydrogen Joint Undertaking;
- Streamline a mapping of industry's needs for skills or re-skilling/upskilling linked to new Hydrogen technologies, with a potential dedicated workshop in 2022, building on the work of the two private stakeholders of the Joint Undertaking (Hydrogen Europe and Hydrogen Europe Research) under the Pact for skills, to be launched before summer 2022.;
- Design potential Open Innovation Test Beds, providing services of testing and piloting within industrial environment including assessment of

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	<p>sustainability and regulatory compliance. It aims at filling the gaps for offering a European common area for testing and piloting towards market especially targeting services for SMEs, which cannot offer investing in such infrastructures.</p> <ul style="list-style-type: none"> - Develop further the concept of hydrogen valleys across of the EU and link with the same approach on hydrogen Valleys within Mission Innovation 2 – mission on clean hydrogen, aiming at setting up 100 Hydrogen Valleys worldwide.
<ul style="list-style-type: none"> • Actors 	<p><i>Who should implement the action? Member States, Commission, Associated Countries, other 3rd countries, stakeholders, etc.</i></p> <p><i>Please note whether half of Member States are already expected to be involved (para. 10 of Council conclusions)</i></p> <p>Members of the ERA Forum and the European Commission</p> <p>There is a well-coordinated collaboration with a consortium of member states (see below). Hydrogen stakeholders (both on industry and on R&I) and RTOs are involved.</p> <p>Member States that are currently involved in this Agenda Process are AT, BG, CH, CZ, DE, EE, EL, ES, FIN, ISL, ISR, IT, LV, PT, RO, SI and SK.</p> <p>Actions will be designed and implemented by ERA participants and the Commission.</p>
<ul style="list-style-type: none"> • Timing and milestones 	<p><i>As far as a calendar can be established already at this stage.</i></p> <p>The following deliverables have been identified</p> <p>Already issued:</p> <ul style="list-style-type: none"> - Commission Staff Working Document (Q1 2022) and a related factsheet on support of R&I to implement the Hydrogen Strategy - Publication of the SRIA of the ERA Pilot (March 2022) <p>Next steps:</p> <ul style="list-style-type: none"> - Hydrogen SRIA Conference in May 2022 in Germany (and liaison with French Presidency and presentation of the SWD) - Hydrogen thematic updates at the R&I days in 2022, 2023 and 2024 including specific EU and EU-MS workshops, to be commonly worked out between task force, MS and EC; this may include contributions to the work of the Clean Hydrogen JU State Representatives Groups - Integration of testbeds into the Horizon Europe work programme 2023/2024 - First deliverables (curricula, training materials) of the Pact for Skills part on hydrogen (2024) - Development of hydrogen valleys into the Work Programme of the Clean Hydrogen Joint undertaking (2021/2022 – done, 2023 to be finalised end of 2022); - Development of the next steps of the EU Clean Hydrogen Observatory (EU CHO) – successive WP of the CH JU - Contribution to the Hydrogen Research and Innovation Day, during Hydrogen Week in 2022 (October)-2023-2024

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	<ul style="list-style-type: none"> - Work towards EU MS Hydrogen national strategies updates and feeding into the EU Hydrogen strategy – KPIs
<ul style="list-style-type: none"> • Funding 	<p><i>Identification of different sources of funding (EU, national, private, etc.) and if possible projected amounts.</i></p> <p>Horizon Europe (cluster 4, 5, EIC, EIT KIC)</p> <p>Private funding through the Clean Hydrogen Partnerships,,</p> <p>Possible regional funding (including using the facility of transfer to HE),</p> <p>Possible national funding thought EU MS hydrogen national strategies and R&I funding programmes</p>
<ul style="list-style-type: none"> • Expected impact 	<p><i>It is important to attempt to identify the expected impacts of the action, even if at an early stage there may be many unknowns.</i></p> <ul style="list-style-type: none"> • Accelerating the development of the hydrogen economy in the EU • Reinforcing cooperation between MS especially for mobilising regions and MS which have a lowly developed hydrogen economy • Increasing the EU capacity for storing and distributing the renewable energy necessary for reaching 2030 and 2050 objectives of the Green Deal • Developing EU and MS knowledge (R&I) and skills on hydrogen and accelerating availability of skilled work force on all hydrogen jobs • Supporting maintaining and further developing the EU industry leadership on hydrogen • Increasing connections with the developing world hydrogen economy, e.g. by the creation of hydrogen valleys
<ul style="list-style-type: none"> • Monitoring 	<p><i>Qualitative and quantitative elements that allow progress in the implementation to be monitored. Once the policy platform is operational, Member States and Commission will be able to use it for this purpose.</i></p> <p>The draft SRIA proposes that MS holding the Presidency should take responsibility for the implementation of the SRIA and organise at least one high-level meeting.</p> <p>For the Commission, the draft SRIA should include KPI and monitoring tools, under the condition that these should be consistent and even harmonised with the existing reporting on hydrogen under the Energy Union and could feed the proposed Clean Hydrogen Observatory proposed in the SWD. Consistency with the SET Plan reporting (SETIS) and with the MI monitoring should also be looked at and ensured.</p>
<ul style="list-style-type: none"> • Communication 	<p><i>What communication actions could be useful to promote the action, and who should to so (Commission, national public authorities, stakeholders, etc.)?</i></p> <ul style="list-style-type: none"> - Publication of SWD and related fact sheet Social Media and Video communication at central and decentralised level EU DG RTD and EU Representations at MS level (Done) - Agenda process conference in Germany (Q2 2022) - Hydrogen week – Q3 2022 - Social Media and video communication at EU MS level

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| <ul style="list-style-type: none">• Additional information | |
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