



REPowering the EU with **Hydrogen Valleys**

What is a Hydrogen Valley?

A “Hydrogen Valley” is a geographical area where clean hydrogen is produced and locally used by households, local transportation and industrial plants. Hydrogen Valleys are a strong instrument to showcase how the EU hydrogen economy works at local level and includes citizens. Hydrogen Valleys can become interconnected via hydrogen corridors.

Hydrogen Valleys can vary in size and scope thus proving to be very flexible in adapting to local energy needs. Some archetypes can be:

- Local, small-scale and mobility focused;
- Local medium-scale and industry-focused;
- International, large-scale and export focused.

Why are Hydrogen Valleys important for REPowerEU?

- Hydrogen Valleys contribute to the REPowerEU objectives by scaling up green hydrogen production, supply and consequently to meet the growing demand from industry, transport and other sectors.
- Hydrogen Valleys contribute to EU energy independence while accelerating the clean energy transition and pursuing the decarbonisation objectives under European Green Deal.

The concept of Hydrogen Valleys was initiated by the Fuel Cell and Hydrogen Joint Undertaking and it is now extended further given its success and the potential benefits coming from cross-sectorial utilisation of green hydrogen.



Hydrogen Valleys in Europe

23 Hydrogen Valleys spread around 10 EU Member States and the United Kingdom.

Austria

Linz

Denmark

Hobro

France

Rhône-Alpes
Normandy
Bourgogne-Franche-Comté
French Guiana

Germany

Munich
Mannheim
Heide
Hamburg
Oldenburg

Italy

Bolzano

Netherlands

Northern Netherlands
Zuid Holland
Zeeland

Portugal

Sines industrial hub

Romania

Constanza

Slovakia

Kosice

Spain

Island Mallorca
Basque Country
Green Crane

UK

North West England
Orkney Islands

The ambition is to ensure that Hydrogen Valleys will be established in all Member States and to double the number of Hydrogen Valleys.

What is the EU R&I currently doing for Hydrogen Valleys?

- The EU contributes to the Clean Hydrogen Joint Undertaking with **€1 billion** from 2021-2027 from the **Horizon Europe programme**. The Commission has increased the budget with an additional €200 million, following REPowerEU, to **double the number of Hydrogen Valleys in Europe**.
- In order to equip the workforce with the necessary skills, the Commission has recently granted approximately **€4 million under the Erasmus+** program to support a long-term partnership between industry and education in order to develop education and training on hydrogen jobs.
- The Clean Hydrogen Joint Undertaking is also providing **project development assistance** for Hydrogen Valleys and has set up a dedicated **global platform** for Hydrogen Valleys for exchanges of best practices and match-making activities.
- The EU is investing in Hydrogen Valleys through various other funding programmes, including among others **Structural Funds** and the **Connecting Europe Facility**.



- The Commission is co-leading the Mission Innovation mission on Clean Hydrogen, which aims at reducing the costs of hydrogen globally and designing and **deploying at least 100 Hydrogen Valleys world-wide by 2030** to unleash global clean hydrogen.
- Europe is today the leading producer of electrolyzers for clean hydrogen production, following a contribution of EU R&I investment of **€150 million** since 2008. Since then, the **electrolyser capacity** in Europe has been increased with a factor 200, leading to 20 Megawatt per electrolyser today.
- The European Green Deal Call, launched under Horizon 2020, includes a topic with a budget of €60 million to even further **scale up the electrolyser capacities** towards the goal of demonstration and deployment of a 100 MW electrolyser system by 2025.
- The Commission is implementing the **EU Hydrogen Strategy**, adopted in July 2020, aiming to drastically accelerate the development of clean hydrogen.
- To accelerate the EU transition to a hydrogen economy, the Commission issued in January 2022 a [Staff Working Document](#) on hydrogen highlighting the EU R&I support for implementing the **Green Deal hydrogen strategy** and contributing to a roadmap of actions. This includes among others developing and implementing a strategic R&I agenda on Green Hydrogen with the EU Member States.