



FACTSHEET: FAST-TRACKING THE ADOPTION OF HYDROGEN IN THE ALPINE REGION

Alpine initiatives and the European policy landscape



A hydrogen-powered bus. Source: Auvergne-Rhône-Alpes Energy Environment Agency



Hydrogen can play a key role in the energy and mobility transition of the Alpine region, offering a solution to decarbonise sectors that are hard to electrify, such as industry and heavy transport. While deployment is currently limited, the EU has made hydrogen a priority and its importance will grow in the years ahead.

Regional ecosystems are essential for the development of a hydrogen economy. Only by bringing together the entire hydrogen value chain is it possible to achieve critical mass and scale up. By incorporating hydrogen into their energy, mobility and industrial strategies as well as infrastructure planning, regional authorities can be key enablers. Inspiration can be found from Alpine regions highlighted in this factsheet, which are at the vanguard of the hydrogen economy.

EU Policy, Initiatives and Funding

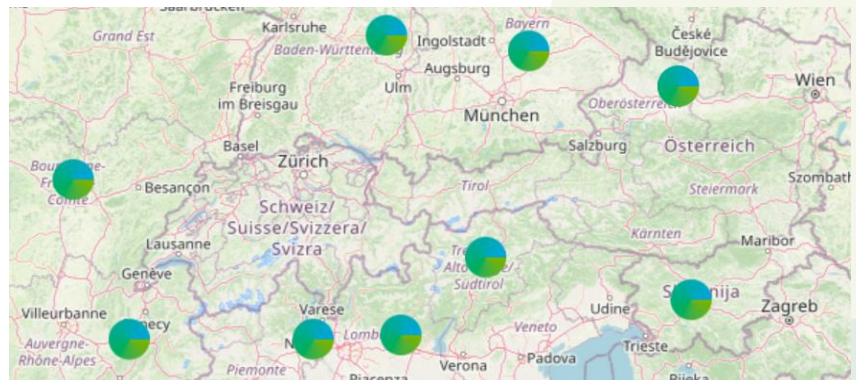
The EU has made hydrogen a priority for the energy transition and published its first [Hydrogen Strategy](#) in 2020. Recognising that production levels remain low, and are dominated by fossil-based hydrogen facilities, the strategy puts forward a roadmap for the upscaling of renewable hydrogen to 2050. Supporting legislation has followed in the form of the revised [Renewable Energy Directive](#), which includes binding targets for the uptake of renewable hydrogen in industry and transport by 2030, and two delegated acts which detail criteria for renewable hydrogen and a scheme to calculate their emissions. Investment support has been provided through [Important Projects of Common European Interest](#) on hydrogen.

In parallel, the EU has launched a range of **initiatives to support research and innovation (R&I) and industrial cooperation**. The [Clean Hydrogen Partnership](#) supports R&I activities in hydrogen technologies in Europe and launches an [annual call for proposals](#) within the Horizon Europe programme. It also manages the [European Hydrogen Observatory](#), which publishes data about Europe's hydrogen facilities and markets. Its 2025 report '[The European hydrogen policy landscape](#)' provides comprehensive information about European and national hydrogen policies and legislation as well as relevant codes and standards.

The [European Clean Hydrogen Alliance](#) aims to foster the deployment of hydrogen technologies by uniting industrial actors and stakeholders. It has launched [6 thematic roundtables](#) in key areas of hydrogen production, transportation and use and published a [hydrogen project pipeline](#). The [Hydrogen Public Funding Compass](#) helps stakeholders find public funding sources for hydrogen projects.

Hydrogen Valleys

'Hydrogen Valleys' aim to boost the deployment of hydrogen at the regional level. The concept recognises the importance of **creating ecosystems that cover the entire hydrogen value chain**: production, storage, distribution and final use. Having originated in Europe, the concept of Hydrogen Valleys has now gained global interest with the [Mission Innovation Hydrogen Valley Platform](#). A number of Hydrogen Valleys in the Alpine Region have received EU funding from the [Clean Hydrogen Partnership](#):



Map of Hydrogen Valleys in the Alpine region
Source: Mission Innovation Hydrogen Valley Platform

- The [North Adriatic Hydrogen Valley](#) mobilises more than €340 million and involves the Slovenian Ministry of Infrastructure, the Croatian Ministry of Economy and Sustainable Development, and the Friuli Venezia Giulia autonomous region.
- [IMAGHyNE](#) will pave the way for the deployment of a large-scale renewable hydrogen economy in the Auvergne-Rhône-Alpes region, fully integrated in the energy system and addressing the needs of high emitting sectors.
- The [HI2-Valley](#) project was launched in 2025 by the Austrian regions of Styria, Upper Austria and Carinthia. New plants will produce more than 10,000 tons of hydrogen per year, mostly for use by heavy industry.
- [TH2ICINO](#) supports the deployment of micro hydrogen economies by developing and demonstrating a full ecosystem at six use cases in Lombardia (Italy).

Boosting Hydrogen in the Alps

The Alpine region is very dynamic and proactive in the development of the hydrogen sector and many regional initiatives are accelerating investments in infrastructure for the production, storage, transport and distribution of hydrogen. A cross-cutting hydrogen focus group has been established within the EUSALP strategy to tackle innovation, energy and mobility aspects of hydrogen. The EUSALP H2 focus group, established by 10 Alpine regions, is determined to reach the goals of the European Hydrogen strategy by 2030. To this end, the focus group explores funding opportunities, connects regional initiatives such as Hydrogen Valleys and drafts an EUSALP hydrogen position paper.

To reduce pollution in sensitive mountain environments, the Alpine region is focusing its efforts on the use of hydrogen for mobility and industry. The Alps are an important transport hub, with a high volume of trucks, trains, and tourist buses, however, today oil-derived fuels still account for 95% of energy consumption in transport. For hydrogen, the EUSALP energy work plan 2023-2025 is pursuing the following objectives:

1. Foster investments in hydrogen infrastructure
2. Develop hydrogen projects at local level
3. Connect the EUSALP hydrogen initiatives with other European initiatives
4. Accelerate the energy transition in the transport sector.

The H2 focus group also aims to develop new hydrogen projects in mountain and urban areas. Two projects are already funded by the Interreg Alpine Space Programme to increase capacities of local public authorities and connect them with private hydrogen developers and companies.

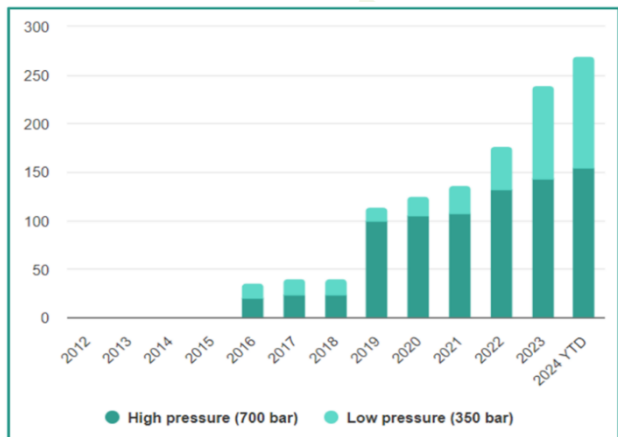
The **AMETHyST project** aspires to increase the capacity of public authorities to roll out green hydrogen solutions and include green hydrogen in local and regional energy strategies and plans. Etienne Vienot from Auvergne-Rhône-Alpes Energy Agency and coordinator of AMETHyST outlines the ambitions of the project: *“We will work with six pilot regions to experiment with green hydrogen eco-systems in mountain areas. There are already many local players that are keen to invest in hydrogen and we will show them how to become frontrunners.”*

AMETHyST partners have created the **‘SkHyline’** platform to share knowledge about the latest green hydrogen initiatives, technologies, and economic models in the Alpine regions. The platform includes an interactive map which shows hydrogen projects from around the Alps. In 2025, public authorities can look out for a **financial evaluation toolkit to assess the financial planning of green hydrogen projects** in Alpine territories and **policy guidelines targeted at regional and local authorities and decision makers**. The guidelines aim to facilitate the inclusion of green hydrogen solutions in energy planning and to foster the emergence of local Alpine green hydrogen ecosystems.

The **H2MA project** works to accelerate the transnational roll-out of green hydrogen mobility infrastructure in the **Alpine region** through the joint development of cooperation mechanisms, strategies and tools. Territorial public authorities and relevant stakeholders can already access the following H2MA tools to plan and pilot zero-emission hydrogen routes across the Alps:

- **Green hydrogen mobility planning** tool offers optimisation and analysis capabilities to support hydrogen mobility planning. It uses a robust algorithm to identify the most efficient locations for hydrogen infrastructure, such as production plants, refuelling stations, and delivery networks, based on current data and projected demand.
- **Alpine Space mobility masterplan** is a comprehensive and cohesive Green Hydrogen Mobility Masterplan for the Alpine Space, that outlines strategic hydrogen routes, refuelling stations, and cross-border collaboration frameworks across Slovenia, Italy, Germany, France, and Austria.

As a next step, the H2MA partners will create an ‘Alpine Collaboration Framework’ to foster long term collaboration between hydrogen stakeholders and ecosystems. It is hoped this will help actors to pool resources and knowledge to unlock financing opportunities.



Total number of hydrogen refuelling points in EU27
Source: European Commission, European Alternative Fuels