

GreenSkills4H2 - The European Hydrogen Skills Alliance

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**AUSTRIA, BELGIUM,
BULGARIA, DENMARK,
ESTONIA, FRANCE,
GERMANY, GREECE, IRELAND,
ITALY, NETHERLANDS,
POLAND, ROMANIA, SPAIN**

The GreenSkills4H2 project (see <https://greenskillsforhydrogen.eu/>) aims to design and implement a highly innovative, effective, and sustainable Hydrogen Skills Strategy for Europe that will ensure the skills needs of the rapidly expanding and evolving Hydrogen Value Chain. This blueprint will address the skills need of workers in declining sectors and transition regions to provide them with upskilling and reskilling opportunities that will enable them to access new employment opportunities within the hydrogen sector.

Geographical area

Austria, Belgium, Bulgaria, Denmark, Estonia, France, Germany, Greece, Ireland, Italy, Netherlands, Poland, Romania, Spain

Period of implementation

The project started on 1 July 2022 until 10 June 2026

Scope of the practice

Initial Vocational Education and Training (IVET), Higher VET and Continuing Vocational Education and Training (CVET), apprenticeship

Educational level

Curricula will cover both the Initial VET – IVET – (EQF 3-5) and the higher VET (EQF 6-8), and also the continuing VET (CVET) for the reskilling of workers. The design of the hydrogen curricula will be based on the review of the current vocational systems and programmes in Europe. The design will take into account the different types of VET curricula currently delivered in Europe, developing the curricula structure and its content harmonised with the existing European national education & training systems. For the EQF levels 3-5 (secondary and upper/postsecondary education levels) the IVET/CVET curricula developed will be organised according to the dual principle, alternating between periods of workplace/classroom based learning (with practice-based learning workshops) and work-based learning, which allows the integration of the curricula in most of the European systems that are based on the dual principle

Introduction and context

Stakeholders

GreenSkills4H2 is an alliance of hydrogen sector partners led by Karlsruher Institut für Technologie (KIT), Hydrogen Europe, and Hydrogen Europe Research bringing together key industry and education stakeholders from across the sector. The consortium managing this initiative is led by KIT and has a total of 34 partners from 15 Member States. These partners comprise six work packages (WP) that will jointly coordinate the various activities and tasks to be carried out throughout the life of the project. The consortium consists of the following:

1. Research institutes, including the Institute of Electrochemistry and energy systems, National Research and Development Institute for Cryogenics and Isotopic technologies ICSI RM Valcea, Austrian Institute of Technology (AIT) GMBH;
2. Higher education institutions, including Karlsruher Institut für Technologie (KIT), National University of Ireland Galway, Politecnico di Torino, Università Degli Studi di Perugia, Tallinna Tehnikaülikool N, Danmarks Tekniske Universitet;
3. Regional public bodies, including Region Auvergne Rhone Alpes, Fundacio Para El Desarrollo de las Nuevas Tecnologias del Hidrogeno en Aragon;
4. National Public bodies, including Skillnet Company Limited by Guarantee Ireland;
5. VET, including Weiterbildungs Zentrum Ulm für Innovative Energietechnologie EV, Tartu Kutsehariduskeskus, Adecco Formazione SRL;
6. Small to Medium Sized Enterprises, including Infinergia;
7. Large companies, including Advanced Energy Technologies ae Ereuna and Anaptyxis Ylikon and Proiontonanan Eosimon Pigon Energieas and Synafon Symvouleftiko N Y Piresion, Nuovo Pignone Technologie SRL, SNAM S.P.A;
8. EU-Wide Network, including Hydrogen Europe, Association Francaise pour L'Hydrogene et les Piles a Combustible.

Background:

Hydrogen is a key pillar of the EU's strategy to achieve its 2050 decarbonisation goals, with an estimated 24 % of hydrogen contributing to the total energy demand by 2050, 560Mt CO2 abatement per year, EUR 820 billion annual revenue generation, and a 15 % reduction in local emissions. The rapid development of the European Hydrogen Value Chain over the coming years is expected to generate approximately 1 million highly skilled jobs by 2030, and up to 5.4 million by 2050. This growth presents a significant economic and environmental opportunity for Europe, but it also creates considerable labour market challenges.

Objectives:

The primary objective of this project is to design and implement a highly innovative, effective, and sustainable Hydrogen Skills Strategy for Europe that will ensure the skills needs of the rapidly expanding and evolving Hydrogen Value Chain can be met in the short, medium, and long term. This blueprint will address the skills need of workers in declining sectors and transition regions to provide them with upskilling and reskilling opportunities that will enable them to access new employment opportunities within the hydrogen sector.

Funding:

EUR 3 793 793

Key activities:

The key activities of the project comprise six work packages (WP) whose activities and tasks will be jointly coordinated by the partners throughout the life of the project (for more detail on the work packages see, <https://greenskillsforhydrogen.eu/public-deliverables/>). The work packages include the following:

1. Hydrogen skills alliance management and growth;
2. Skills intelligence, needs analysis and skills strategy;
3. Core curriculum, qualifications and VET training;
4. Rollout of VET training programmes to meet existing and emerging skills needs;
5. Europe wide dissemination, adoption and European impact;
6. Long term sustainability and impact

The European Hydrogen Skills Strategy: The Green Skills for Hydrogen project has collaborated closely with hydrogen stakeholders across the European Union to identify the occupational profiles in high demand in the sector and analyse the required level of hydrogen knowledge of these profiles. This has enabled the production of a European Hydrogen Skills Strategy which aims to provide insight into the current landscape of educational and training programmes available for hydrogen skill development in Europe.

- HYDROGEN SKILLS CORE VET Curriculum
- 1 of 4 VET TRAINING PROGRAMME TO ADDRESS URGENT NEEDS

The project has already attracted strong interest in the context of integrating this project in the Clean Hydrogen partnership as it is one of the first projects to identify specific skills needed for particular professional occupations in declining sectors and transition regions and to provide them with upskilling and re-skilling opportunities.

Other information

Hydrogen, clean hydrogen, and renewable hydrogen production is currently at the top of EU agenda. EU hydrogen strategy EU hydrogen policy

**SOURCES**

[ERASMUS+ programme for education, training, youth and sport \(GreenSkills4H2 project\)](#)

[Green Skills For Hydrogen website](#)