

# NAHV

## NORTH ADRIATIC HYDROGEN VALLEY



Project ID	101111927
PRR 2024	Pillar 6 – H <sub>2</sub> valleys
Call topic	HORIZON-JTI-CLEANH2-2022-06-01: Hydrogen valleys (large-scale)
Project total costs	EUR 345 326 582.18
Clean H <sub>2</sub> JU max. contribution	EUR 24 996 826.69
Project period	1.9.2023–31.8.2029
Coordinator	Holding Slovenske elektrarne d.o.o., Slovenia
Beneficiaries	Acciaierie Bertoli Safau SpA, AcegasApsAmga SpA, ACTIVE SOLERA jedinstavno društvo s ograničenom odgovornošću za usluge, Adriatic Croatia International Club, za djelatnost marina d.d., Alpacem Cement, d.d., Area di Ricerca Scientifica e Tecnologica di Trieste, Azienda Provinciale Trasporti SpA, CTS H2 SRL, Danieli Centro combustion SpA, Dij industrija građevinskog materijala d.o.o., DOK-ING Indeloop d.o.o. za proizvodnju električne energije i gospodarenje otpadom, Ecubes Tehnologije d.o.o., Faber Industrie SpA, Ferriere Nord SpA, Fondazione Bruno Kessler, Fundación para el Desarrollo de las Nuevas Tecnologías del Hidrógeno en Aragón, Gitone Kvarner d.o.o., HSE Invest družba za inženiring in izgradnju energetske objekta d.o.o., Maritime Center of Excellence d.o.o., META, META circularity, svetovanje in inovacije d.o.o., META Group SRL, Ministarstvo gospodarstva i održivog razvoja, Ministarstvo za infrastrukturu, Regione Autonoma Friuli Venezia Giulia, Snam SpA, Steklarna Hrastnik, družba za proizvodnju staklenih izdelkov d.o.o., Sveučilište u Rijeci, Sveučilište u Rijeci Tehnički Fakultet, Sveučilište u Splitu Fakultet elektrotehnike, strojarstva i brodogradnje, Sveučilište u Zagrebu Fakultet strojarstva i brodogradnje, termoelektrana sostanj d.o.o., Trasporto Pubblico Locale Friuli Venezia Giulia SCARL, Trieste Trasporti SpA, Università degli Studi di Trieste, Univerza v Ljubljani

### PROJECT AND GENERAL OBJECTIVES

The North Adriatic Hydrogen Valley (NAHV), a Horizon Europe project supported by the Clean Hydrogen Partnership, is a response to an initiative launched by key members of industry in the target region, who requested coordinated action to develop a cross-regional innovation ecosystem at the first Hydrogen Ecosystem North Adriatic Conference, held in Nova Gorica in the autumn of 2021. The initiative builds on the agreement signed in early 2022 by representatives of the Slovenian Ministry of Infrastructure, the Croatian Ministry of Economy and Sustainable Development, and the Friuli Venezia Giulia (FVG) autonomous region in Italy to jointly contribute to the European Green Deal and European hydrogen strategy goals. On 14 March 2022, the Slovenian State Secretary of the Ministry of Infrastructure, the Croatian State Secretary of the Ministry of Economy and Sustainable Development, and the President of the FVG autonomous region signed a joint letter of intent in which they recognised the importance of regional cooperation and a cross-border hydrogen valley in boosting the energy transition and promoting sectoral integration between transport, hard-to-abate industries and end users in an integrated ecosystem. With this letter of intent, the three signatories committed to implementing a common innovation agenda and cooperation projects to accelerate the deployment of hydrogen-based solutions, thus strengthening local hydrogen ecosystems and building interregional value chains. The European hydrogen backbone considers the three territories that are part of the NAHV project – Croatia, FVG (Italy) and Slovenia – as one part of the larger pan-European hydrogen supply and import corridors, which will connect industrial clusters, ports and hydrogen valleys to regions with abundant hydrogen supply.

To fulfil these objectives, the NAHV project involves a well-rooted partnership of 37 organisations (of which two are part of Hydrogen Europe and three are part of Hydrogen Europe Research), covering the transnational central European area of three territories – Croatia, Slovenia and

the FVG region – demonstrating the cross-border integration of hydrogen production, distribution and consumption, and building capacities for annual hydrogen production of over 5 000 t, of which over 20 % is expected to be exchanged within the area of the NAHV project.

The project will activate 17 test bed applications in their ecosystems, clustered into three main pillars: hard-to-abate industries, the energy sector and the transport sector. These will act as real-life cases for piloting global hydrogen markets, moving from technology readiness level 6 at the beginning to level 8 by the end of the project.

Four fuel cell applications in the energy and transport sectors will be demonstrated. Test beds will then be scaled up to the industrial level as a replicable model, contributing to the decarbonisation of the three territories by harnessing renewables to improve system resilience, security of supply and energy independence.

### NON-QUANTITATIVE OBJECTIVES

The NAHV project is the establishment of a NAHV association as an Association Internationale Sans but Lucratif (AISBL). Under the coordination of Area di Ricerca Scientifica e Tecnologica di Trieste, the first steps towards the AISBL constitution have been taken. Partners will work to (i) prepare all the formal documentation for the incorporation of the AISBL, (ii) define the business plan and organisational model and (iii) define the financial needs and source for covering those costs. The NAHV AISBL will be supported by the three countries involved, and it will become the governing body of the NAHV ecosystem, going far beyond the NAHV project.

### FUTURE STEPS AND PLANS

In the coming months, the main activities of the project NAHV will be identifying co-funds at the European and national levels and preparing all spatial and technical documentation needed to start hydrogen production installation at various locations in the valley.

### PROJECT TARGETS

Target source	Parameter	Unit	Target	Target achieved?
	CO <sub>2</sub> savings	t/year CO <sub>2</sub> eq	32 000	
	Cross-border hydrogen valley	-	17 renewable H <sub>2</sub> supply chain test beds in hard-to-abate, energy and transport sectors	
Project's own objectives	Education and training	-	7 000 future professionals and experts trained, including through vocational training programmes and the creation of a macroregional competence centre for hydrogen research and education and the training and educational mentoring programme H2Student	
	Hydrogen production distributed in Croatia, Italy and Slovenia	t/year	6 000 (indicatively 50 % in industry, 30 % in the transport sector and 20 % in the energy sector)	

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