

4th Hydrogen Ecosystem North Adriatic Conference:

A game-changing energy storage enabler of affordable clean energy in the region by ECUBES to revolutionise the offtake of hydrogen in the North Adriatic

Key messages from the 4th Hydrogen Ecosystem North Adriatic Conference held in Nova Gorica and Gorizia call for an acceleration on the path of adoption of renewable hydrogen

Press release, 15th November 2024

The challenge of the missing market for hydrogen may soon be bridged by the introduction of an innovative liquid carrier that can significantly lower the cost of energy conversion from renewable energy sources, its transportation and seasonal storage. ECUBES partnering with Hydro X has announced the game changing hydrogen carrier that enables green hydrogen to become affordable without large investments in vessels, ports, ammonia plants, ammonia crackers and other safety features. This is just one of the most compelling messages coming from the **4th Hydrogen Ecosystem North Adriatic Conference held in Nova Gorica and Gorizia on 13th and 14th November.**

A growing portfolio of innovation and investment initiatives in the field of renewable hydrogen opens new opportunities for the development of new businesses across the Ecosystem. To meet these challenges, the **Northern Adriatic Hydrogen Ecosystem Conference** is becoming an **investment platform** to stimulate new investments in emerging technology initiatives, projects and start-ups.

On the first day of the Conference research contributions of students and their mentors from four leading educational institutions were introduced a **transgenerational dialogue** on solutions and challenges of hydrogen applications in the transition to renewables to combat the planetary crisis of climate and resources. Participating student teams represented: **United World College Adriatic from Duino, the International Master of Business from the School of Economics and Business of Ljubljana University, the Industrial Engineering Department of the Faculty of Engineering and Architecture at the University of Trieste and Team Delft, a group of students from the Technical University of Delft in the Netherlands** presented an experimental project for the world's most powerful hydrogen-powered self-driving car, which is the record holder in terms of kilometres travelled per unit of hydrogen consumed.

A vertically integrated hydrogen business to bring affordable hydrogen to the EU market

“Oryx Green Adriatic Blue”, a joint venture by ECUBES and Hydro X, builds a vertically integrated hydrogen business to import up to 10% of EU Hydrogen needs engaging in a collaborative, partner-centric approach for large quantities of affordable green hydrogen to be delivered into the North Adriatic Hydrogen Ecosystem. This business concept enables ECUBES to build the supply chain on midstream and upstream concurrently,

Aleksander Gerbec, founder, ECUBES: " After ten years of development and preparation, we are proud to share the milestone of the first delivery of hydrogen to the region of the North Adriatic using this innovative carrier and the application in seasonal storage being so widely adopted. This is only possible thanks to all partners in the Ecosystem started by the NAHV addressing primarily hard-to-abate sectors like steel and cement producers, heavy vehicles transportation like ferries powered by hydrogen, and grid operators, supported by governments and educational institutions.”

“We use the carrier that allows for cheap, safe transport as it is retrofittable with existing infrastructure, allows us to develop a hydrogen production in places where solar can be produced more efficiently than halfway the North Pole creating economies of scale,” emphasises **Werner Groenendijk**, Chief Financial Officer of ECUBES.

“We can use tankers to transport replacing containers creating economies of scale. Hydrogen only becomes affordable when three aspects are addressed simultaneously: the hydrogen carrier, renewable energy production around equator at scale and the economies of scale are achieved both at the production and the transportation level. ECUBES successfully addresses all three aspects,” concludes Groenendijk.

“Hydrogen only becomes affordable when three aspects are addressed simultaneously: (1) an hydrogen carrier that is simple, safe and cheap preventing costs for safety in ports and storage, (2) we can use tanker vessels to transport replacing containers creating economies of scale in transport, and (3) renewable energy production at places where solar and wind are in abundance and cheap. Only with economies of scale with efficient upstream, and midstream we can achieve affordable energy for European industries in hard to abate sectors. ECUBES and all its partners, successfully address all three aspects,” concludes Groenendijk.

Assaf Sayada, CEO of HYDRO X, a joint venture with several non-European large conglomerates and ECUBES, which provides the equipment for conversion and reconversion for which ECUBES, holds an exclusive license. “We are extremely pleased with the leading role ECUBES provides in deployment of the carrier which allows for 60 percent less capex than ammonia as a carrier, 75 percent less energy loss and is not toxic and not inflammable. It is retrofittable to all existing infrastructure: ports, vessels, water tanks, making it easy, affordable and safe to scale. We see how ECUBES with activities in upstream, midstream and an EU Flagship for downstream provides for us a one-stop shop to further growth.”

Groenendijk foresees that ECUBES can deliver green hydrogen at a 7 euro per kg in 2025. When the upstream is at even more favourable locations at scale in 2027-28, it is possible to deliver green hydrogen at a cost price of 5 euro per kg and the path to 3 euro per kg by early 2030s. This puts green hydrogen at par with today’s fossil-fuel prices.

An investment platform launched to meet the needs of a growing portfolio of investment proposition of the Hydrogen Ecosystem North Adriatic

A growing portfolio of innovation and investment initiatives in the field of renewable hydrogen opens new opportunities in a growing period of intensive exchange of competences and technology transfer, and consequently the development and growth of new businesses across the Ecosystem. For this purpose, the **Northern Adriatic Hydrogen Ecosystem Conference**, in its fourth edition, is becoming an **investment platform** to stimulate new investments in emerging technology initiatives, projects and start-ups.

The vision of this international meeting is long-term as a focal point for the Hydrogen Ecosystem North Adriatic. It offers a space for inspiration, dialogue and collaboration with the aim to **support the development of the Ecosystem and to connect available resources with motivation and talent**, all based on a strong foresight of the role of renewable hydrogen for a sustainable future.

Key pilot projects of the multiple innovation initiative of the Hydrogen Ecosystem North Adriatic expose diverse applications, such as waste gasification for hydrogen production, wave-powered hydrogen generation, efficient hydrogen storage and transport solutions, and the development of liquid organic hydrogen carriers.

Pilot projects include ETRA's renewable energy and hydrogen-based urban energy solution in Velenje, Faber Italia's development of affordable hydrogen transport vessel, and Serichim's technology for hydrogen storage, transmission based on fast release feature. CTS H2, a tech startup from Gemona del Friuli develops a next generation refilling stations and Patria Composite's hydrogen storage tank. The city of Cres has presented two hydrogen initiatives developing under the NAHV which aim for multiple applications for urban and maritime transport and heating across the entire Cress-Lošinj archipelago.

Andrej Bernard Horvat of Pipistrel, a lightweight aircraft producer, presented their endeavours at the forefront of developing hydrogen-powered aviation solutions, with three significant initiatives that aim to advance sustainable air travel by the use of hydrogen-powered small passenger aircraft, which may soon allow for short-distance, "hop on, hop off" connections.

Nova Gorica and Gorizia firmly support the continuity of the dialogue taking place at the Hydrogen Ecosystem North Adriatic Conference

Samo Turel, Mayor of Nova Gorica, and **Sarah Filisetti**, Municipal Councillor for Public Works, European Projects and European Policies Committee, Municipality of Gorizia welcomed the participants on the second day of the 4th Hydrogen Ecosystem North Adriatic conference, voicing their support to the Conference, and willingness to continue backing the event in the future. Their shared vision underscored the cross-border collaboration and partnership between Nova Gorica and Gorizia in light of the forthcoming European Capital of Culture 2025.

The morning session on the second day of the Conference centred on the **first Report on the development of the North Adriatic Hydrogen Ecosystem**, presented by **Stephen Taylor**, Strategic Coordinator of NAHV. Taylor highlighted the significant strides made in the hydrogen market over recent years, emphasizing the importance of leveraging current resources to accelerate hydrogen projects. He pointed out that, in this critical phase of energy transition, hydrogen holds immense potential to drive sustainable change and **called for an acceleration of actions initiated through multiple EU-granted projects and other public and private initiatives in the North Adriatic**. Taylor also underscored the region's wealth of expertise, and the enthusiasm of young talent poised to lead these advancements over the next fifty years.

"It is our responsibility," Taylor affirmed, "to ensure this vision becomes a reality."

The European Union has supported the Northern Adriatic Hydrogen Ecosystem with **€34 million in co-funding** for several projects through various funding mechanisms, with a total estimated investment of **€1.4 billion** from private and public sources. Some of these are already underway.

The Ecosystem Report video and presentation is available from the **Conference website**:

<https://www.hydrogen-ecosystem.eu/>

Renewable hydrogen, an essential element for a more sustainable future

Hydrogen is an essential element for a more sustainable future. It enables the electrification of energy storage, transmission, distribution and consumption. It is a key enabler of the global transition towards carbon neutrality. In the present geopolitical architecture, it is a factor of peace, security and risk mitigation. In the European context, hydrogen is key to reach the EU Green Deal targets and for a more resilient and more competitive European Union.

Companies, research institutions, academia, and policy makers from three countries - Croatia, Italy (FVG) and Slovenia - are coming together in the Hydrogen Ecosystem Northern Adriatic. This already consists of several entrepreneurial, research and innovation initiatives, three of which are co-funded by the European Union. The flagship initiative, the **North Adriatic Hydrogen Valley (NAHV)**, is in its second year of operation and represents the central axis of the ecosystem convergence. More information is available here: www.nahv.eu.

Background and general information about the Conference

The first Hydrogen Ecosystem North Adriatic Conference was held on 21st November 2021. It brought together the initiators of a transnational territory of two countries and one region to start designing a regional hydrogen Ecosystem. Ever since, the Conference has demonstrated, to be an effective meeting point for all stakeholder to reconvene, accelerating the energy transition and delivery of real projects. This did not pass unnoticed by Brussels. EC Commission President Ursula Von der Leyen mentioned the NAHV in her speeches as an example how we could accelerate the hydrogen economy. (See the EU Hydrogen Week, 29th November 2021).

The conference is a partnership event of the North Adriatic Hydrogen Valley (NAHV) and the North Adriatic Clean Hydrogen Investment Platform (NACHIP, more information here: <https://www.nahv.eu/nachip/>). The conference is supported by Hydrogen Europe and Hydrogen Europe Research.

The conference organised by ECUBES, the pioneer of the conference, and META Circularity has been generously supported by ETRA, Alpacem, both firms also partner of several initiatives of the Hydrogen Ecosystem North Adriatic, and Grof.

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See also **The story of the Conference** for more details on its origins and its role in the development of the hydrogen ecosystem of the Northern Adriatic.

General information about the event and the latest meeting programme are available here: <https://www.hydrogen-ecosystem.eu/>.

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