



## **IPHE Country Update Nov 2024 – Jun 2025: Croatia**

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<b>Covered Period</b>	[2024-Jun 2025]

### **1. New Initiatives, Programs, and Policies on Hydrogen and Fuel Cells**

The [Hydrogen Strategy of the Republic of Croatia](#) until 2050 was adopted in 2022. The Strategy is fully aligned with the European Hydrogen Strategy. The Strategy provides a framework for hydrogen production and use with a focus on renewable hydrogen.

In 2023, the Croatian Hydrocarbon Agency was assigned the role of the National Coordination Body for Hydrogen with the aim to provide technical support to the Croatian Ministry of Economy and other public bodies in programming, strategic planning, implementation and reporting regarding hydrogen deployment.

The Agency played a leading role in drafting the Implementation plan of the Croatian Hydrogen Strategy until 2050, which outlines a detailed roadmap for integrating hydrogen into Croatia's energy system. It was presented to the public in July 2024.

In March 2025, Croatia submitted the final revised NECP 2021-2030 to the European Commission. The document outlines hydrogen's role in enhancing the resilience of regional and national energy systems.

### **2. Hydrogen and Fuel Cell R&D Update**

In accordance with Croatian Hydrogen strategy R&D activities are recognised and envisaged as an important part of development of hydrogen economy in Croatia.

### **3. Demonstration, Deployments, and Workforce Developments Update**

Croatia is a member of the North Adriatic Hydrogen Valley (NAHV) initiative, the first transnational hydrogen valley in the EU. It covers three countries, Slovenia, Croatia, and Italy (one region, the Autonomous Region of Friuli Venezia Giulia). The NAHV is led by the consortium of 37 partners from industry, research institutions and ministries. The NAHV has obtained a 25 mil EUR grant from the Clean Hydrogen Joint Undertaking (CHJU). The LOI was signed in 2022 and the NAHV project will last for six years.

The NAHV should demonstrate cross-border integration of hydrogen production, distribution and consumption, and building up capacities for an annual hydrogen production of over 5000 tons of which over 20% is expected to be exchanged within the area of the NAHV.



## INTERNATIONAL PARTNERSHIP FOR HYDROGEN AND FUEL CELLS IN THE ECONOMY

In 2024, the NAHV has activated 17 testbed applications in their related ecosystems, clustered in three main pillars – the hard-to-abate industries and the energy and transport sectors. These will act as real-life cases for piloting global hydrogen markets, moving from TRL 6 at the beginning to TRL 8 by the end of the project. Four fuel cell applications in the energy and transport sectors will be demonstrated. Testbeds will then be scaled up at industrial level as a replicable model.

### 4. Events and Solicitations

Completed hydrogen-related events:

1. *16th Symposium CRO CIGRE (Conseil International des Grands Réseaux Electriques), Symposium on power system management, Round table on hydrogen role in future economy*, Cavtat, Croatia, November 4 - 7, 2024.
2. Conference on hydrogen safety: from production to refuelling station, Zagreb, April 3, 2025. Organised by the Croatian Hydrocarbon Agency and the Croatian Hydrogen Association. This international event brought together experts to present and discuss good practices in hydrogen refuelling stations and hydrogen deployment across Europe.
3. Spring training on hydrogen and fuel cells (international), Zagreb, April 14-16, 2025. Organised by the University of Zagreb, Faculty of Mechanical Engineering and Naval Architecture and the Croatian Hydrogen Association.
4. Follow up Seminar organised by HRO CIGRE on Regulatory, financial and safety factors in the preparation and implementation of hydrogen projects, Zagreb, May 12, 2025.

Upcoming hydrogen-related events:

1. Green Energy Expo Zagreb 2025, June 3-4, 2025. Organised by the Croatian H2 – Hydrogen Cell Association. This international event combines a conference program with a large-scale exhibition dedicated to green hydrogen, solar energy, wind energy, waste-to-energy solutions, and battery storage systems.

### 5. Investments: Government and Collaborative Hydrogen and Fuel Cell Funding

In 2024, the Croatian Ministry of Economy adopted a funding programme for investments in refuelling station infrastructure to increase renewable energies in the transport sector. The total budget is 39 mil EUR, of which 33 mil EUR is dedicated to hydrogen refuelling stations.

In February 2025, the company INA, the biggest oil and gas company in Croatia, received EU funding of 15 mil EUR to establish the production of renewable hydrogen at the Rijeka oil refinery with a capacity of up to 4000 kg of renewable hydrogen daily (10 MW PEM electrolyser). To support electrolyser operations, an 11 MW photovoltaic power plant will be constructed to generate part of the required electricity. The system for storage and distribution of hydrogen will be also established at the Rijeka oil refinery. The total project value is 45 mil EUR, and the construction should be completed by the end of 2026.



## INTERNATIONAL PARTNERSHIP FOR HYDROGEN AND FUEL CELLS IN THE ECONOMY

### **6. Regulations, Codes & Standards, and Safety Update**

Croatia is continuously harmonizing Croatian legislation with EU legislation.

On going activities:

- Implementation of EU REFUEL Aviation and Marine Fuel Directive
- Activities on Renewable Energy Directive (RED II/III) Directive transposition.

ReFuelEU Aviation promotes the increased use of sustainable aviation fuels (SAF) and synthetic fuels as the single most powerful tool to decrease aviation CO<sub>2</sub> emissions. The regulation set out a clear trajectory for the uptake of sustainable aviation fuels (SAF) in the EU until 2050 by introducing mandatory SAF quotas as of 2025.

The FuelEU Maritime Regulation promotes the use of renewable, low-carbon fuels and clean energy technologies for ships, essential to support decarbonisation in the sector. The revised Renewable Energy Directive (RED III) was officially published on 31 October 2023 as Directive (EU) 2023/2413 and entered into force on 20 November 2023. Croatia will prepare a new Act on RES and High Efficiency Cogeneration in line with RED III Directive.

The Hydrogen Refuelling Station Regulation (Draft, April 2025) is currently being prepared to facilitate the co-financing by the Croatian Ministry of Economy. These developments represent the initial steps toward establishing a hydrogen infrastructure in Croatia.