

North Adriatic Hydrogen Valley launches in Portorož

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The North Adriatic Hydrogen Valley (NAHV), the first transnational initiative of this kind under the Horizon Europe programme, supported by the Clean Hydrogen Partnership, was launched in Portorož-Portorose, Slovenia. Fondazione Bruno Kessler as partner in the project, will be in charge of several activities such as the safety plan, the modelling of the digital twin of H2 valley and definition for a certification scheme for the green H2 guarantees of origin.

Beginning on 1st September 2023, the NAHV will run for 72 months. It includes 17 pilots to be developed in different locations in all three partner countries. The partnership, which has been awarded a grant of €25 million by Clean Hydrogen Partnership, and is led by HSE, Slovenia's largest electricity producer and trader and the largest producer of electricity from renewable sources, includes 37 organisations: companies, universities, institutes and other public entities from the three participating countries. The project design covers the **entire value chain of renewable hydrogen use**, from production, through storage and distribution, to its end use in various sectors, notably industry and land and maritime transport, creating leverage to accelerate the transition to renewables on three target pillars: hard-to-abate industries, and the energy and transport sectors. These are the main reasons why the NAHV has received the Seal of Excellence, which is awarded under Horizon Europe to projects that have been highly rated.

The key aim of the initiative is to create a market for **green hydrogen on both the demand and supply sides**, making it a competitive energy source for the future. Key industry players from all three countries will develop pilot projects to produce up to **5,000 tonnes of renewable hydrogen** per year from renewable energy sources, destined for energy storage, distribution and use. It is expected that some 20% of the produced renewable hydrogen will be exchanged between the participating countries, thus creating a primary regional market for hydrogen. By introducing advanced hydrogen technologies and developing skills and infrastructure, the partnership also pursues other key objectives of the European Green Deal. In particular, the NAHV testbed projects

address the decarbonisation of important industrial sectors such as steel, cement and glass production, and provide sustainable land and maritime transport solutions linked to reducing the carbon footprint.

It is expected that the implementation of the planned mature stage innovation activities will unleash further investments in renewable hydrogen-related technologies in an amount of more than **€300 million**, destined to increase the capacity of hydrogen production, storage, transmission and use. Additional investments are expected to be funded on top, both during the course of the project implementation and afterwards, from private and public sources in the form of follow-up investments in the successfully implemented pilots in 17 testbed locations across the three participating countries, as well as through new initiatives which will contribute to the evolution of a social and economic ecosystem based on renewable hydrogen. The foreseen development creates the need for new competencies and skills, which makes the universities and research institutions which are partners in the initiative important protagonists in designing and disseminating new educational programmes, as the NAHV is destined to become a vehicle for job creation.

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FBK will assist the project and project partners in **identifying hazards and associated risks**, in prevention and/or mitigation of them through a proper safety plan, in implementing the safety plan, and reporting safety related events.

A high-level model of the H2 valley digital twin will be developed by FBK with other scientific partners, including all connections, handling, and transport of H2 between production and consumption site, as well as the input/output to connect the single plant's models, developed by an industrial partner and the universities involved in the task.

Furthermore, FBK will coordinate the development and establishment of the renewable hydrogen certification scheme in the context of H2 valley (NAHV), managing the contact with issuing body and the industrial partners, that will allow making autonomous any production and consumer plant. Finally, FBK will be responsible of the activities related to exploitation and replication of the results.

"FBK is enthusiastic about taking part in this H2 Valley that gathers together Italy, Croatia and Slovenia" outlines **Matteo Testi**, Head of **Hydrogen Technologies Area** at the Center SE and **reference of the NAHV Project for FBK**, and continues *"FBK will be actively involved and in charge of different aspects of the project: the development of the H2 Valley digital Twin, the conceptualisation and implementation of the safety plan, the definition of a guarantee scheme related to the origin of the produced and distributed hydrogen, and finally, the exploitation of the project results and the replication of NAHV in other territories"*.

Luigi Crema, Director of the [Center for Sustainable Energy](#) at Fondazione Bruno Kessler stated that *"Hydrogen Valleys are the pathway indicated by the European Commission to develop local hydrogen ecosystems. The Hydrogen valleys are complementary to the*

development of the enabling infrastructures on a continental scale. They create a first market and expand the supply chain development. As FBK, we are deeply involved and highly motivated to support hydrogen valley projects through the participation in numerous European and national initiatives, where the NAHV is example of excellence

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