North Adriatic Hydrogen Valley

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Area Science Park

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Co-funded by the European Union

The project is supported by the Clean Hydrogen Partnership and its members.

IDENTITY

Area Science Park is a public research body under the supervision of the Italian Ministry of University and Research.

Established in 1978 and headquartered in Trieste, it is the managing body of the main italian scientific and technological park.

VISION

To contribute to the **knowledge society by creating bridges between research and business**.

MISSION

To encourage and promote **innovation** through scientific research and technological transfer of its results to the **market**.

AREA SCIENCE PARK

A SITE OF LABS AND INTERNATIONAL RESEARCH INFRASTRUCTURES, INTEGRATED IN THE SCIENTIFIC AND TECHNOLOGICAL PARK

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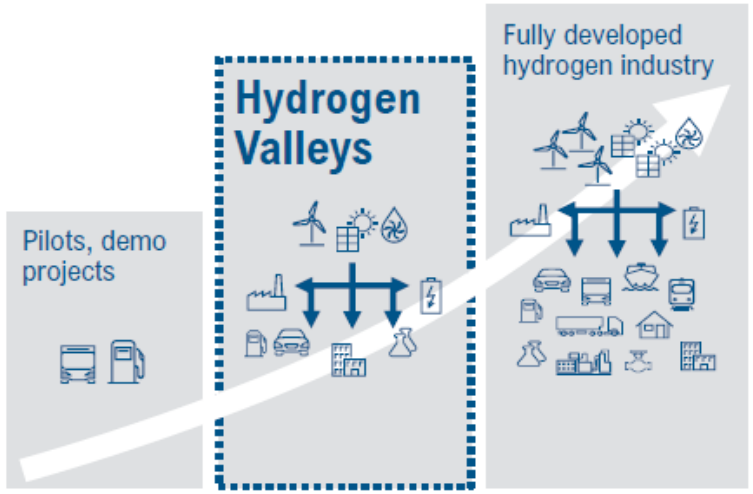
Hydrogen Valleys are local or regional „market makers“ for renewable (clean) hydrogen along its entire value chain

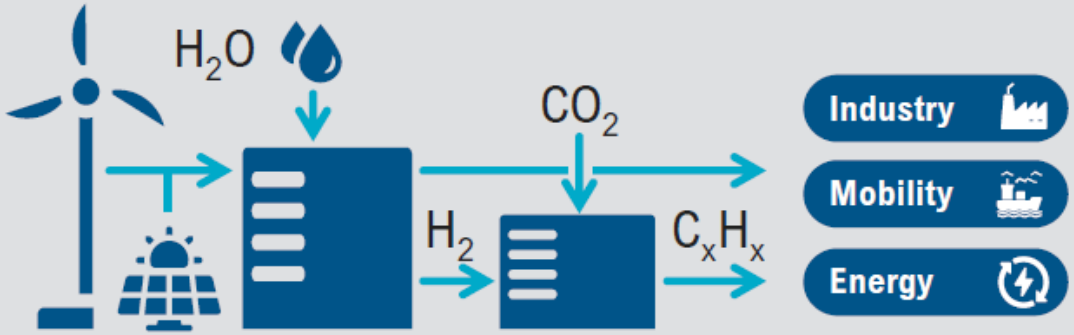
Hydrogen Valleys …

- Next-generation H2 market development
- Integrated (and larger-scale) projects covering more and more of the value chain – "mini hydrogen economies"



… and what they're made of

- **Large-scale joint investment** (> EUR 10 m and up to multi-bn EUR)
- **Full hydrogen value chain coverage**
  - Centralized clean hydrogen production (*de facto* mostly green H2)
  - Shared infrastructure (e.g., pipelines, refueling stations)
  - Multiple end-uses (e.g., steel industry, fuel cell trucks)
- **Clear regional scope** (e.g., around a major port)



Source: *Clean Hydrogen Partnership JU / Roland Berger*

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The context of the NAHV

To contribute to solve the above challenges and gaps.
To accomplish to the EU strategy and support the development of national and regional business and innovation ecosystem.

The North Adriatic Hydrogen valley initiative (NAHV) was created in 2022.

NAHV is the first transnational Hydrogen Valley in the EU, merging two countries and one region, and is set to contribute to opening Central Europe to the Balkans.

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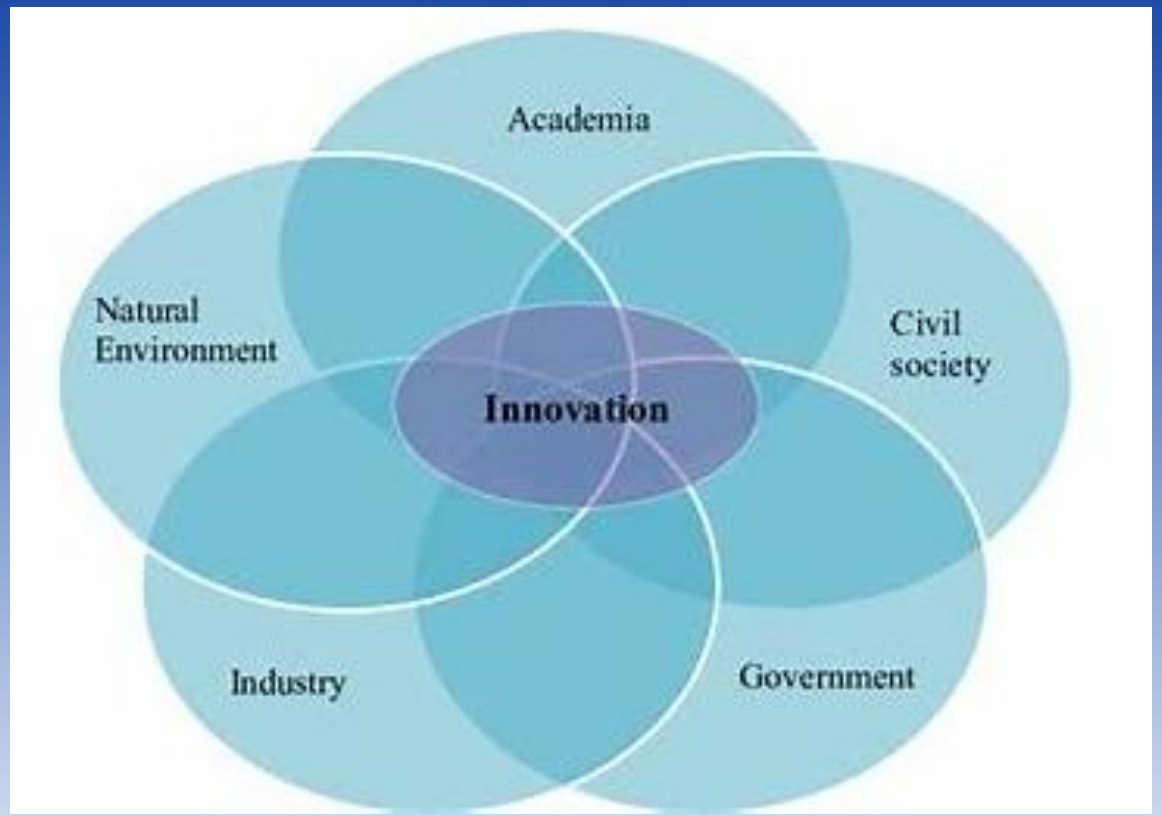
The NAHV's theoretical model

The model of Hydrogen Valley is based on two main paradigms:

1) the **open innovation model**, where the exchange of know-how among the several actors of the valley is stimulated;

2) The "**quintuple helix**" model that is a model in which innovation is pushed by the integration in the classical triple helix model of the needs expressed by the civil society & media and by a targeted effort to solve a specific challenge.



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Key facts about the NAHV

Target territories: **Croatia, Friuli-Venezia Giulia and Slovenia**.

A grant of **€25 million** awarded by Clean Hydrogen Partnership.

+ **€350 million** of overall inverments to be covered by the partners.

Duration: 72 months.

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Partners of the NAHV consortium

Over 120 participants from 37 project partners are directly involved in the tasks and activities of the NAHV: companies, universities, institutes and other public entities.

Lead partner: HSE, Slovenia's largest electricity producer and trader, largest producer of electricity from renewable sources.

Territory	SLOVENIA	CROATIA	ITALY Regione autonoma Friuli-Venezia Giulia
Institutional Partners	Ministry of the Environment, Climate and Energy	Ministry of Economy and Sustainable Development	Regional Council of Friuli-Venezia Giulia
Research Community	University of Ljubljana	University of Rijeka	University of Trieste
Industrial Partners	Holding Slovenske elektrarne d.o.o. Termoelektrarna Šoštanj d.o.o. HSE Invest d.o.o Ecubes d.o.o. Steklarna Hrastnik d.o.o. Salonit Anhovo d.d.	ACI Marine Active Solera Dilj Indeloop MCoE Gitone Kvarner d.o.o.	AREA Science Park ABS /Danieli Centro Combustion Snam S.p.A Ferriere Nord, Pittini Group ACEGAS Faber Industrie Meta Group Fondazione Bruno Kessler CTS H2 TPL FVG
Partners Outside Territory	Fundación para el Desarrollo de las Nuevas Tecnologías del Hidrógeno en Aragón		

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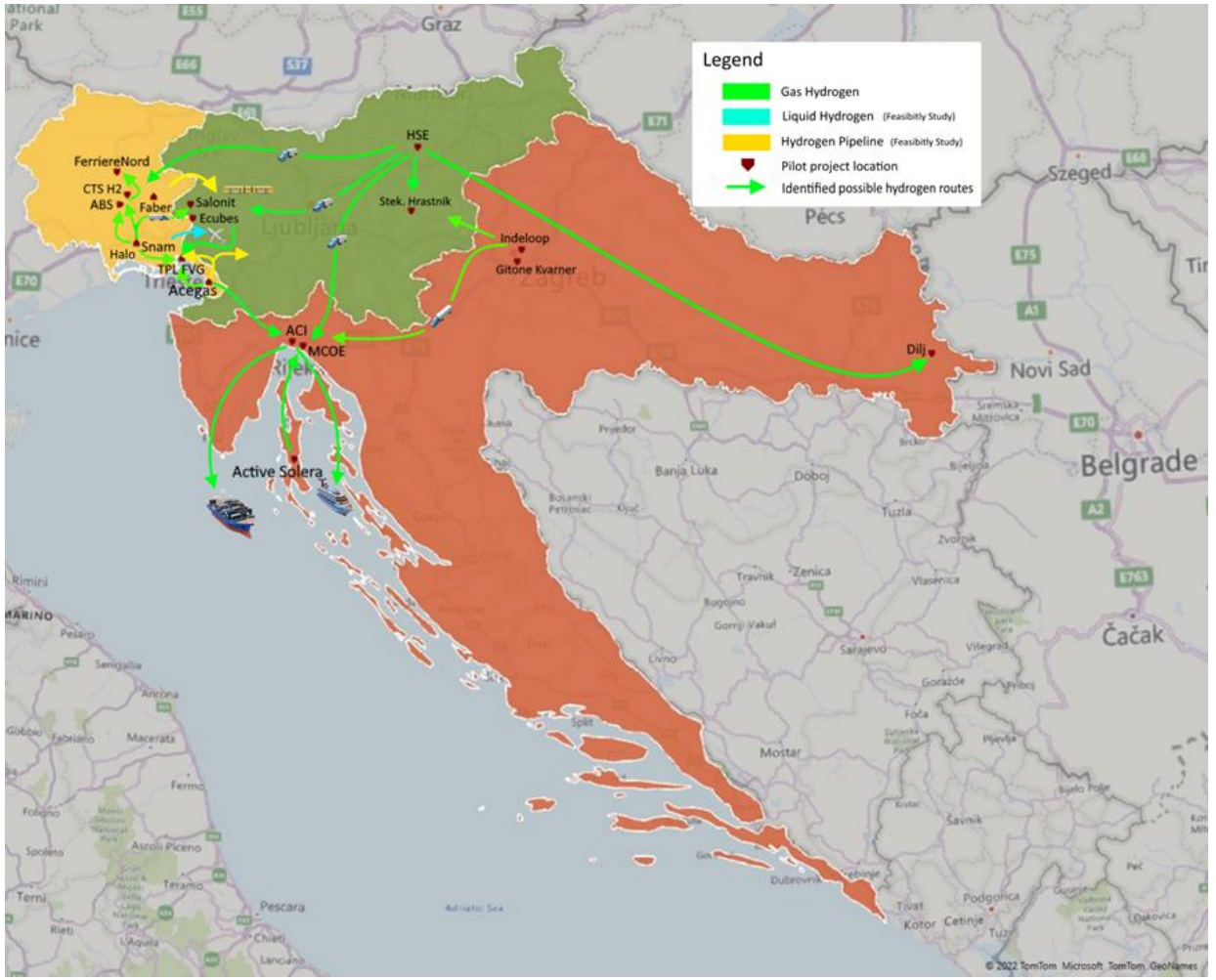
Objects of the NAHV: creating a cross-border market for renewable hydrogen

- To create a **market for green (renewable) hydrogen** on both the demand and supply sides, making it a competitive energy source for the future.
- up to **5,000 tonnes** of renewable hydrogen per year from renewable energy sources, destined for energy storage, distribution and use.
- **20% of the produced renewable hydrogen** will be **exchanged** between the participating countries, thus creating a primary regional market for hydrogen.



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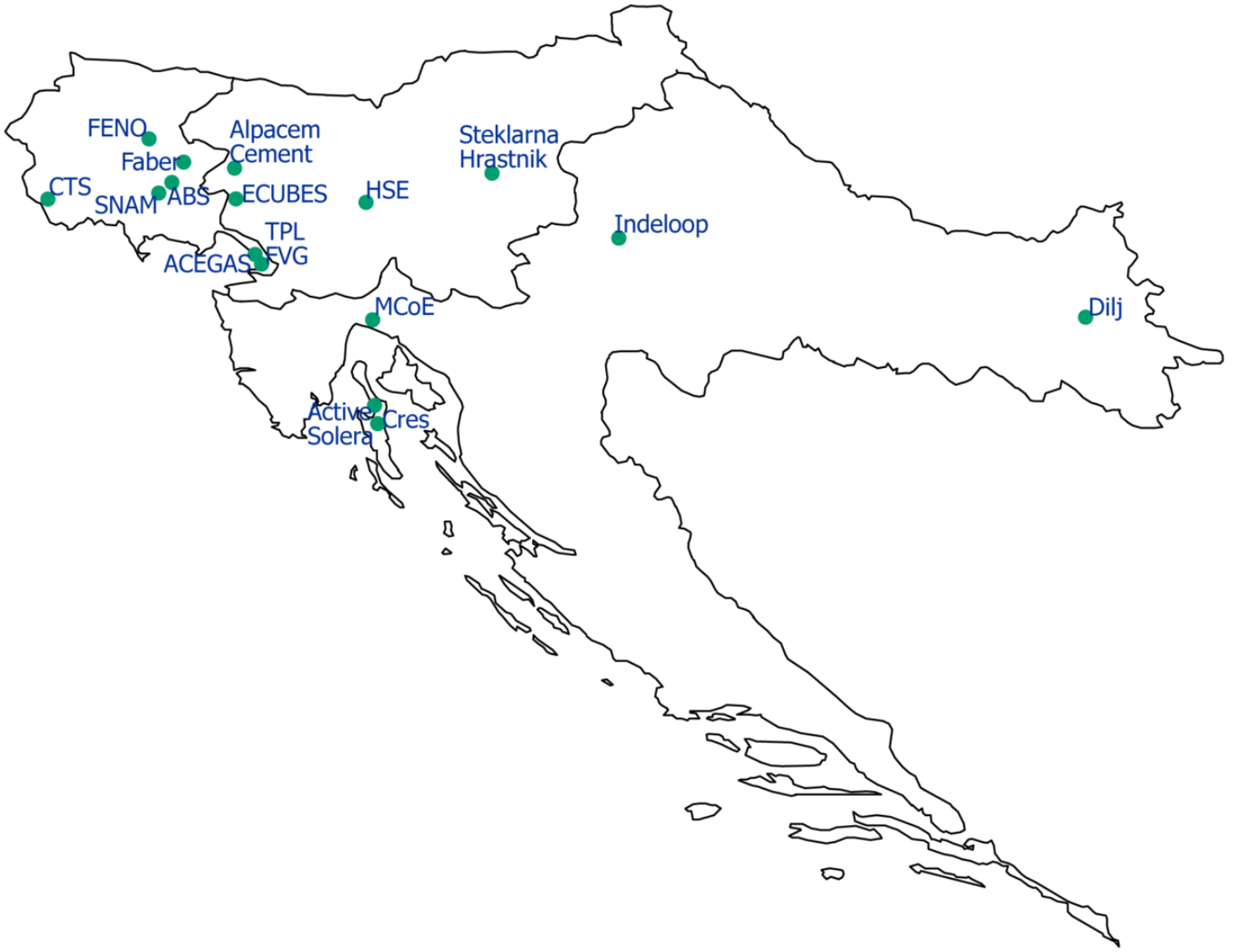
Pilot Projects

The project 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 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.**



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The concept

Innovative aspects

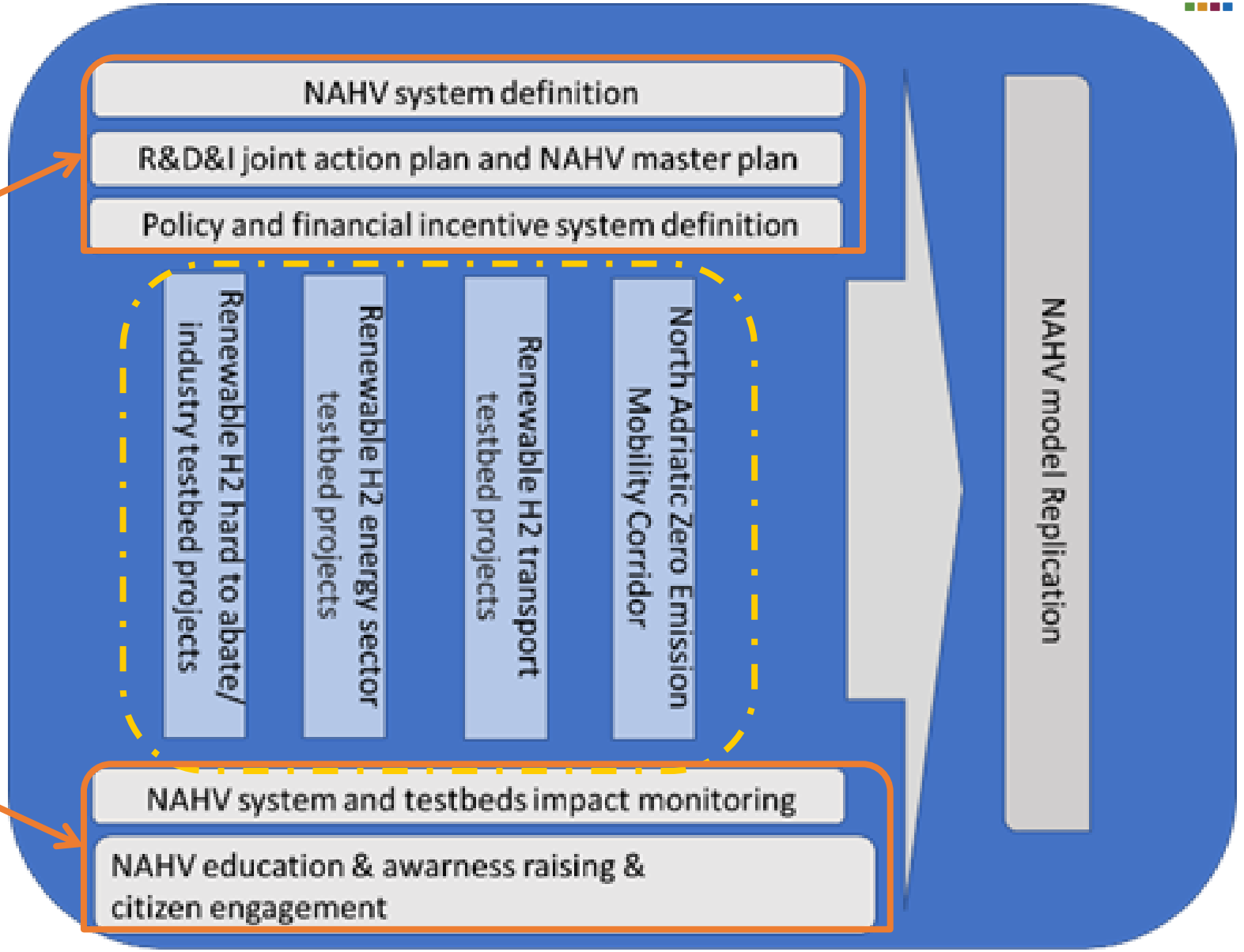

Figure 2: NAHV structure

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Education and Citizens engagement

- New competencies and skills, made by **the universities and research institutions:** designing and disseminating new educational programmes, as the NAHV is destined to become a vehicle for job creation.

- Citizens must feel to be part of an **economic and social transformation**: hydrogen cafè, conferences, presence in the schools.

- Stakeholders engagement – by the **Stakeholder Advisory Forum**.

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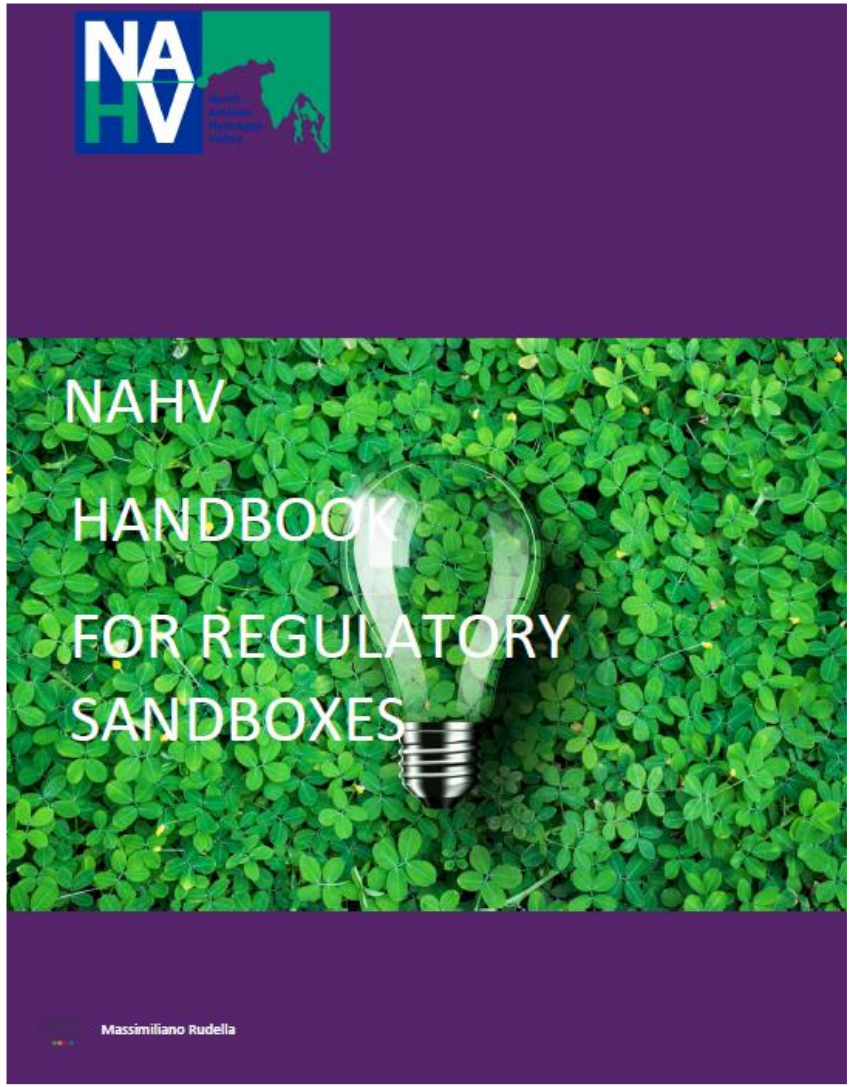
Regulatory sandboxes and incentive

- ✓ Identification of **regulatory gaps** and **obstacles** that hinder the ecosystem development.
- ✓ Development of a **regulatory sandbox** to overcome them in a «safe regulatory environment».
- ✓ Development of incentives and attraction system of investment plan.



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Joint action plan and masteplan for filling the gaps

- ✓ Strategy for common area development in **research and innovation**.
- ✓ Strategy for synergic **long term investment** in research and innovation.
- ✓ Acceleration of **funds and services for new startups** to fill in the H2 value chain gaps.

NACHIP: An accelerator for clean hydrogen-related technology solutions.

TRL 6-8

7. Mln euro

I3 funded

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Stakeholders engagement – the SAF

The SAF (*Stakeholder Advisory Forum*) is one of the **consultation bodies** of the NAHV project. The SAF is built to collect and represent the voice of the stakeholders of NAHV according to the **quadruple helix model.**

NAHV project's SAF aims to:

- Provide advisory opinions regarding **the overall direction of the project in line with emerging trends and scenarios from science and society**, considering stakeholders' priorities and expectations.
- **Support the dissemination** of the project's results in their respective institutions, organisations and countries/territories.
- Provide **the voice of the end users and of the citizens** at glance, as a source of ideas and needs to develop the NAHV's ecosystem also via surveys and interviews.
- Provide **data, information and feedback** from the field to the project partners and policy makers.

If you are interested to join the NAHV SAF click here to express your interest!!!

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Replicability and inclusiveness

A non-profit special purpose mean is going to be established under the Belgian law as the international non-profit association (AISBL) to become a point of reference for the coordination and governance of the NAHV‘s exploitation forms after the end of the Horizon project life as well to hold space for the new initiatives.

Replicability will be ensured for the whole NAHV model, with the uptake of **at least five additional hydrogen valleys in Europe, particularly in Central and South-Eastern Europe.**

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You can follow the NAHV

The NAHV web site: https://www.nahv.eu/

Register for the NAHV Newsletter here:

And write to us: Communication@nahv.eu

The NAHV is on Linkedin: https://www.linkedin.com/company/nahv/

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Thank you

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