Commercializing Hydrogen in the North Adriatic:

Industrial Use-Cases and Clean Tech Integration

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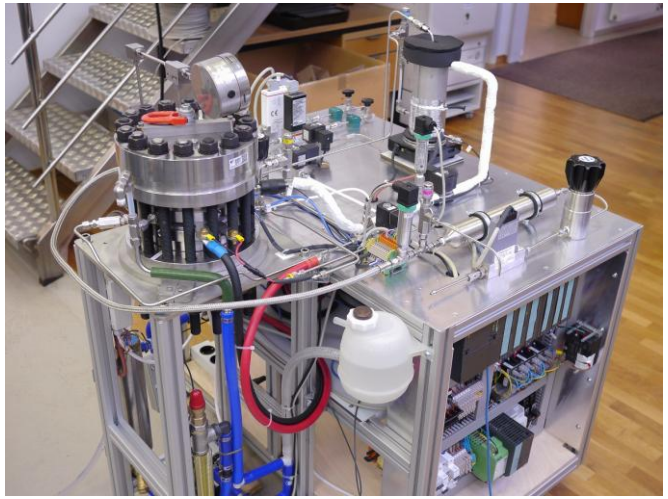
Jožef Stefan Institute



Extensive experience in

- physics
- chemistry
- biochemistry
- electronics
- information technology
- reactor techniques
- energy
- environmental protection

(1300+ employees)



SMART CITIES
SMART FACTORIES

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Materials

- Photocatalytic and photo-electrochemical water splitting
- Electrocatalysts and electrolysers for green hydrogen
- Advanced materials

System and Control- E2

- Process control, modelling, optimisation of complex systems
- Diagnostics, prognostics, condition monitoring
- Smart factories, digitalisation

Coordination of European projects and cooperation with industry

- Extensive experience with Horizon, ERDF/I3

Electronic Ceramics

- Ceramic electrolytes
- Fabrication of solid oxide electrolyzer cells (SOEC)
- Electrochemical sensors from hydrogen production

Gaseous Electronics

- Hydrogen permeation- storage and transport
- Measurements of hydrogen permeation
- Hydrogen & graphene production from waste & plastics with plasma

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Connecting Hydrogen Innovation with Industrial Investment









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„Developing hydrogen technologies and creating investment propositions“

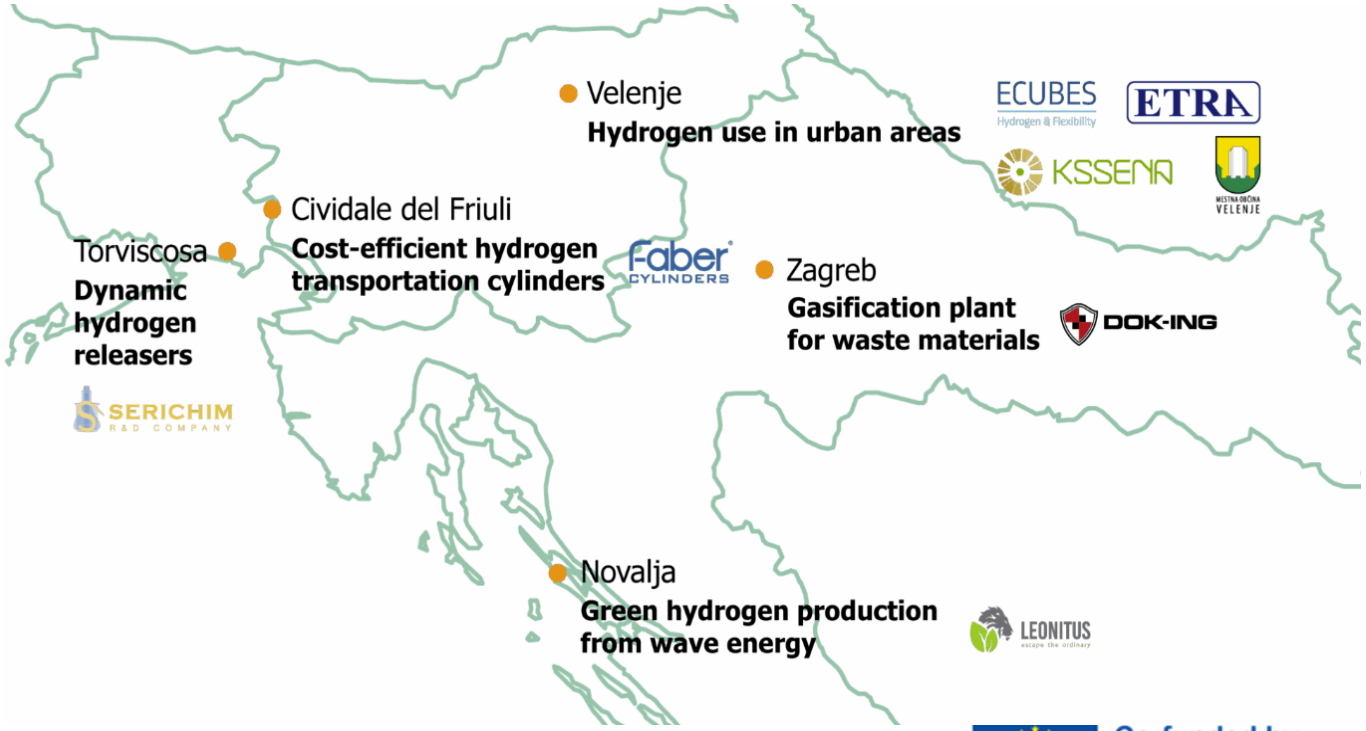
- I3 Instrument: Strand 2a, 2024-2027
- 12 industrial and public partners: Croatia, Italy, Slovenia
- Budget: 10,5 mio EUR

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Main objectives:

1. To bring hydrogen technologies of five pilots from **TRL6/7 to TRL8/9**
2. To create portfolio of **investment propositions**

   (Manufacturing, transportation, urban area)
3. **To connect regional innovation ecosystems** (Slovenia, Italy, Croatia)

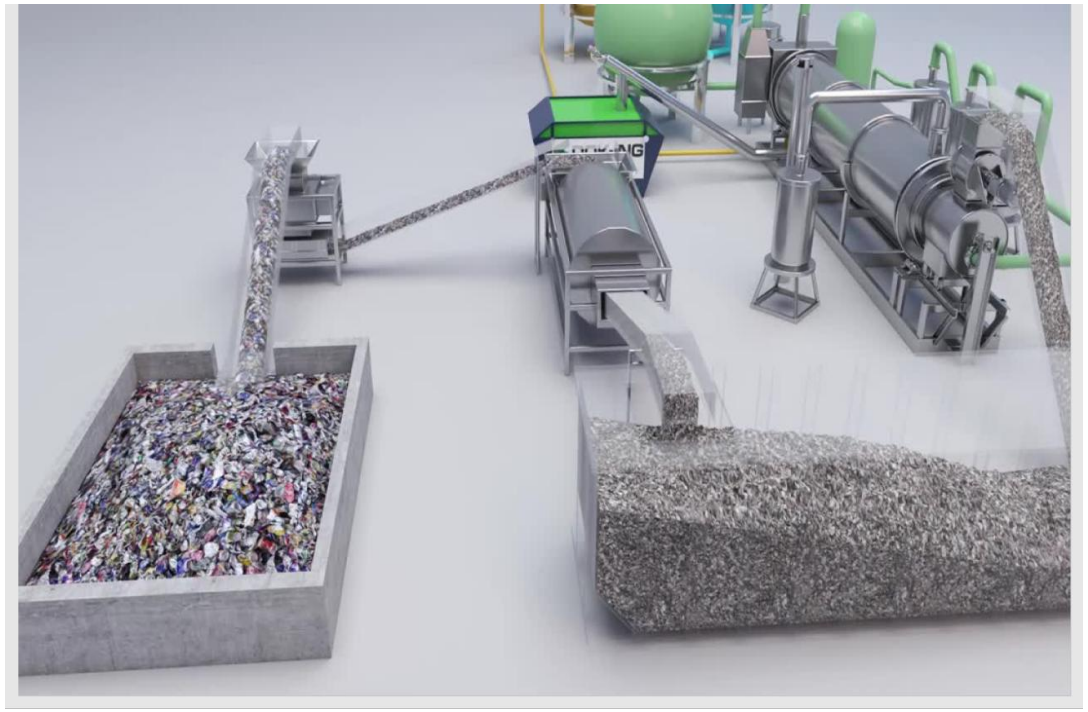


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Planned pilot's results:

- Singas (hydrogen) production from waste materials
- Energy production from wave energy *(1MW-7.500 tons/year)*
- Development of cost-efficient **transportation cylinders**

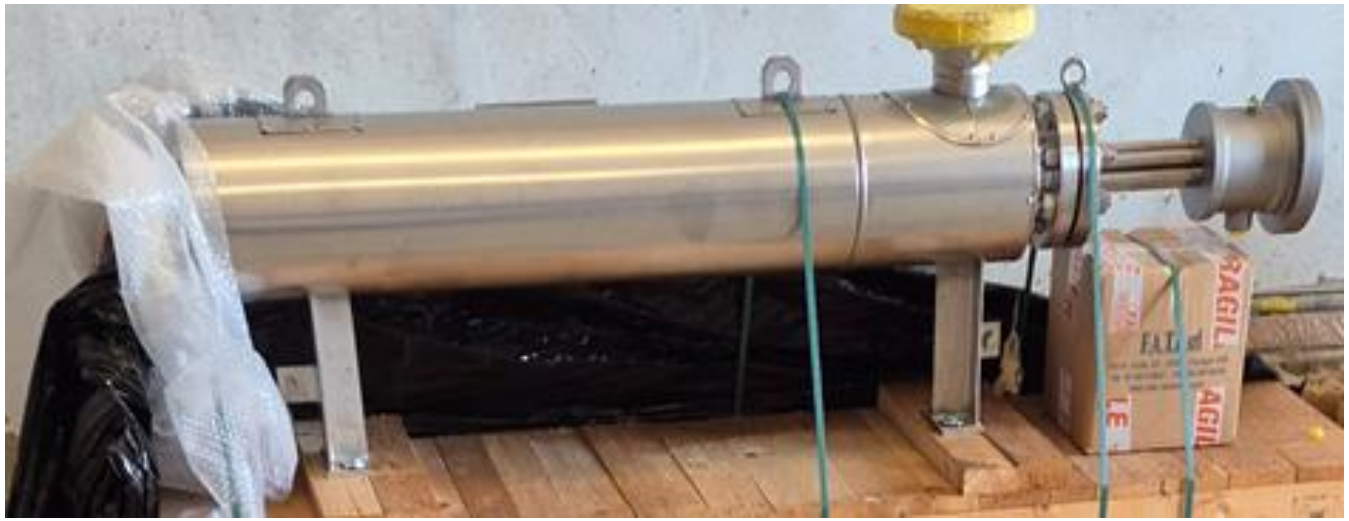






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- Innovative **dynamic hydrogen releasers** (transport)
- **Hydrogen production and usage in urban areas** (public building)



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NACHIP and other I3 hydrogen related projects

Market off take (cylinders, green hydrogen)

VANGUARD- Interregional industrial innovation

POTENTIAL SYNERGY: To connect and support investment opportunities, Project cooperation

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Potential cooperation

1



Industrial matchmaking:

Identify complementary technology providers, industrial off-takers and potential partners across Vanguard and NACHIP regions.
(Example: H2BLUE project)

2



Pilot replication and investment:

Explore opportunities to replicate NACHIP hydrogen solutions in other European regions and develop joint investment propositions.

3



Strategic cooperation between networks:

Connect Vanguard's Hydrogen Pilot with the informal I3 Coordinators' Working Group to identify synergies beyond individual projects.

QUESTION:

Where do you see the strongest opportunities for cooperation between **Vanguard's Hydrogen Pilot** and **NACHIP**?



Proposed next step:

A joint matchmaking workshop involving NACHIP, Vanguard's Hydrogen Pilot and interested I3 projects?