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## **Seeking partners to build a consortium for HORIZON-CL4-INDUSTRY-2025-01-TWIN-TRANSITION-05 (from the draft HE Work Programme 2025)**

National Manufacturing Institute Scotland (NMIS) is the research and innovation centre within the University of Strathclyde, Glasgow, United Kingdom, <https://www.nmis.scot>.

We are looking for partners to build a consortium and submit a proposal for the following call: HORIZON-CL4-INDUSTRY-2025-01-TWIN-TRANSITION-05: Advanced manufacturing technologies for leadership of EU manufacturers in products for the net-zero industry (Made in Europe Partnership) (IA)

The proposed research will concentrate on digitalisation and AI-powered smart manufacturing technologies which would enable the development of scalable hydrogen storage systems. The project will address key challenges in FEA simulation, material integrity, advanced joining techniques, manufacturing process optimisation and production cost minimisation to facilitate medium scale sustainable hydrogen storage commercial solutions.

This initiative aims to consolidate Europe's leadership in advanced industrial technologies while driving innovation in clean energy infrastructure. The study will prioritise transport applications, particularly focusing on railway networks and heavy goods vehicles (HGV) as primary implementation domains for hydrogen fuel systems.

NMIS is intended to lead this project. The consortium has already secured several key development partners. However, we are looking for more research and industrial partners:

- A research partner to develop welding/joining techniques for aluminium based materials to be exposed to liquid hydrogen and mechanical vibrations.
- A commercial manufacturer of metal hydrogen tanks.
- An organisation with proven expertise in the design of hydrogen fuel systems and testing procedures.
- End users of the proposed technology, including European railway operators and HGV manufacturers who are either already utilising hydrogen fuel systems or are interested in implementing them in the future.

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