ALCHEMHY

ALTERNATIVE ROUTES FOR BASIC CHEMICALS PRODUCTION
USING HYDROGEN AS FEEDSTOCK

Driving industrial decarbonisation through chemical innovation

PROJECT **OVERVIEW**

The ALCHEMHY project focuses on advancing sustainability in the chemical industry by developing electrified, zero-emission production routes for ammonia and methanol using green hydrogen. By prioritising decarbonisation, the project seeks to reduce dependence on fossil fuels and incorporate renewable energy sources, contributing to a more resilient and climate-neutral industry.

ALCHEMHY **TECHNOLOGIES**

Innovative Processes for Ammonia and Methanol

ALCHEMHY integrates four innovative technologies to advance sustainable production of ammonia and methanol. These technologies will be demonstrated across pilot sites, showcasing their scalability, flexibility, and real-world impact in decarbonising chemical production.

- **MSER:** Magnetic-heated Sorption-Enhanced Reactor
- **DESA:** Direct Electrochemical Synthesis of Ammonia
- **SFMR:** Small Flexible Methanol Reactor
- **PCH:** Plasma Catalytic Hydrogenation

KEY **OUTCOMES**

ALCHEMHY is committed to delivering measurable progress toward a sustainable, resilient and decarbonised chemical industry. Below are the key areas where the project aims to create a lasting impact:

Decarbonisation	Potential to achieve significant GHG emissions reduction.
Digital Integration	Advance digital twins for process optimisation.
Resilience	Reduce dependency on natural gas imports.
Job Creation	Support re-skilling and up-skilling for a high-tech workforce.
Scalability	Develop roadmaps and guidelines for industrial adoption.
RES and green hydrogen Integration	Leverage renewable energy sources and green hydrogen in innovative production methods.

CONSORTIUM

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Visit: **www.alchemhyproject.eu**
Contact us: **info@alchemhyproject.eu**

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