OBJECTIVES

1. Production, testing and validation of a carbon-based catalyst of biomethane obtained by pyrolysis of digestate and recovery of Critical Raw Material (CRM)
2. Validation and parametric optimization of the new catalytic biomethane pyrolysis process in ad-hoc POC unit.
3. Testing and validation of obtained products as bio coal for steel sector.
4. Assessment of H2STEEL Green House Gas (GHG) savings and raw materials use and recovery.
5. Assessment of H2STEEL Economics and role on the life quality of EU and non-EU citizens.
6. H2STEEL impact assessment on Sustainable Development Goals (SDGs).
7. Placing H2STEEL in the context of EU Fit-For-55 package and global sustainability targets.
8. Facilitate H2STEEL concept acceptance for industrial stakeholders.
9. Determination of the economic feasibility of a first H2STEEL case study.
10. Map the EU regulations impacting on H2STEEL concept commercialization.

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H2STEEL



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H2STEEL

A European project that aims to support the ecological transition of the steelmaking industry

Green H2 and circular bio-coal from biowaste for cost-competitive sustainable Steel

Funded by the European Union

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THE CONCEPT

A zero-emissions continent is the top goal set by the European Commission for a greener and more resilient Europe, and performed through policies and initiatives like the European Green Deal, the 2030 Climate Target Plan or the 2050 long-term strategy.

H2STEEL project presents an innovative, disruptive solution to convert wet waste streams into green Hydrogen, Carbon and Critical Raw Materials. The disruptive hydrogen production, made via a biomethane catalytic cracking through a new biochar-based catalyst and reactor, is meant to open a new route for cost-competitive green H2 in Europe.



A greener and more resilient Europe

Funded by the European Union

MAIN CHALLENGES

Build on new, cutting-edge directions in science and technology to disrupt a field and market by providing **innovative technological solutions** rooted in high-risk/high-gain research and development.



Capture **cross-sectorial coupling and system integration opportunities** through the exclusive use of renewable sources and non-toxic, non-critical raw materials.

Developing novel processes and technologies to produce **green H2**, at different scales

Facilitate **circular economy principles**, potentially enabling the co-production of decarbonized chemicals.

Support the development of innovative technologies and platforms for **scalable green hydrogen production.**

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BENEFITS AND SUSTAINABLE IMPACT FOR H2STEEL

Innovative green hydrogen production





Decarbonization of the European steel sector

Modification of the conventional route: materials and energy chains



Link to the website: https://h2steelproject.eu/