PRESS RELEASE

H2STEEL enters final phase to deliver green hydrogen and biocoal solutions for steel industry decarbonisation

- H2STEEL develops innovative technology to produce green hydrogen and bio-coal from biogenic waste.
- The project advances steel decarbonisation through circular and sustainable solutions.
- In its final phase, key results will be shared through workshops and a special session at EUBCE 2025.

H2STEEL is actively disseminating its innovations to accelerate the transition towards sustainable steelmaking in Europe

6 June 2025 – The Horizon Europe project H2STEEL is entering its final phase, marking a key milestone in its mission to support the green transition of the European metallurgy sector. In the coming months, the consortium will host a series of workshops and dissemination activities to present its findings and demonstrate its impact on steel decarbonisation.

Upcoming Workshops & Events

9 June 2025, Valencia (On-site at the European Biomass Conference and Exhibition -EUBCE-) Workshop: "Green H_2 and Circular Bio-Coal from Biowaste for Cost-Competitive Sustainable Steel"

This in-person session will present the scientific and technical foundations of H2STEEL's approach. The project team will lead a dedicated session at EUBCE covering:

- Valorisation of sewage sludge and digestate
- Slow pyrolysis and biocoal quality
- Phosphorus recovery and circular applications

18 June 2025, Defossilizing the steel sector: H2Steel/ BioRECAST (online webinar)

The session, organised by the Horizon Europe projects BioRECAST and H2Steel, in collaboration with IEA Bioenergy Task 33, will highlight how residual biowaste streams can be transformed into sustainable biocoal and green hydrogen through pyrolysis and other advanced processes. Registration is open here.

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3 July 2025, Valorizing Biomass and Bio-Waste – Biocoal and Critical Raw Materials in the Framework of the H2STEEL Project (online webinar)

The session will showcase innovative developments from H2STEEL, focusing on the upgrading of bio-waste-derived biocoal for industrial applications. Registration opens soon.

A Circular Innovation for Clean Hydrogen

At the heart of H2STEEL lies an innovative, **circular approach to producing green hydrogen and biogenic carbon from biowaste**. This pioneering process combines methane catalytic pyrolysis and the development of sustainable, low-cost catalysts derived from digestate—a by-product of anaerobic digestion. The result is a competitive route to clean hydrogen and bio-coal, both crucial components for decarbonising steel manufacturing.

Project Progress and Next Steps

In March 2025, the consortium met in Torino for a General Assembly where partners reported significant progress on biowaste conversion, catalyst optimisation, and pilot system assembly. Notably, the project's **proof-of-concept (PoC) system, hosted at RE-CORD**, is nearing completion and will serve as a key demonstration of H2STEEL's feasibility and scalability.

By combining scientific innovation with circular economy principles, **H2STEEL contributes directly to the EU Emission Trading Scheme (ETS),** enabling steelmakers to reduce their greenhouse gas emissions while fostering industrial symbiosis. Preliminary life cycle assessments show **potential CO_2 emissions reductions of up to 42%.**

As H2STEEL prepares to **conclude in September 2025**, the consortium remains focused on refining its technical assessments, disseminating results to stakeholders, and securing pathways for future exploitation. A **patent** has already been filed for key technologies, and market analyses suggest strong uptake potential within the steel and hydrogen sectors.

The project, **coordinated by the Politecnico di Torino** and funded under the European Innovation Council (Grant Agreement No. 101070741), brings together **six partners from four countries.** Their collaborative work supports the EU Green Deal and Climate Target Plan 2030, as well as the long-term goal of climate neutrality by 2050.

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