H2STEEL concludes its journey advancing circular hydrogen solutions for sustainable steel production.

- *A final webinar and project review mark the closing phase of a pioneering EU initiative for industrial decarbonization.*
- *Innovative integration of hydrogen technologies and circular biowaste offers new pathways for low-carbon steelmaking.*

Madrid, 17th of March 2026 - *The H2STEEL project reaches its conclusion after demonstrating how circular biowaste streams can be transformed into green hydrogen and carbon-rich materials for cleaner steel production. By combining thermochemical conversion processes, catalytic methane cracking, and circular carbon utilization, the project has developed and validated an innovative approach to reduce emissions in one of the most carbon-intensive industrial sectors.*

Steel remains a cornerstone of modern society, underpinning infrastructure, transport, construction, and renewable energy systems. However, its production is also a major contributor to global carbon emissions. Addressing this challenge has been at the core of the H2STEEL project, which is set out to explore alternative, sustainable pathways for steel manufacturing.

Over its lifecycle, H2STEEL has successfully demonstrated how waste streams such as sewage sludge, agricultural digestate, and industrial residues can be converted into valuable resources. Through processes including pyrolysis and upgrading treatments, these materials were transformed into bio-coal and engineered carbon materials. These carbon-based materials were further developed to act as catalysts in methane cracking reactions, enabling an innovative route to hydrogen production.

At the heart of the project lies the concept of catalytic methane cracking, a process that splits methane into hydrogen and solid carbon without directly generating carbon dioxide. To validate this approach, the consortium designed and built a proof-of-concept reactor system, testing it under controlled operating conditions and demonstrating its technical feasibility. Experimental campaigns provided key insights into hydrogen yields, catalyst performance, and system stability.

Beyond technological development, H2STEEL has also delivered important environmental and techno-economic assessments. These analyses confirm the potential of integrating circular carbon and hydrogen technologies into future steelmaking routes, contributing to emission reduction and supporting Europe's transition towards climate neutrality.

Final Dissemination Activities and Project Closure

As the project reaches its final stage, dissemination and knowledge transfer remain a priority. A final webinar, scheduled to take place in the coming days, will bring together stakeholders, researchers, and industry representatives to present the project's remaining results and discuss future applications of the developed technologies.

Shortly after, the consortium will participate in its final project review on 27 March, marking the official closure of H2STEEL. This milestone represents the culmination of collaborative efforts

Funded by the European Union under grant agreement 101070741. Views and opinions expressed are, however, those of the author(s) only and do not necessarily reflect those of the European Union or the European Innovation Council. Neither the European Union nor the granting authority can be held responsible for them.

across partners and countries, and an opportunity to evaluate the project's achievements and long-term impact.

A Lasting Contribution to Industrial Decarbonization

H2STEEL *has demonstrated that combining circular resource use with hydrogen innovation can open new pathways for reducing the environmental footprint of the steel sector. By valorizing waste, avoiding direct CO2 emissions in hydrogen production, and creating synergies between industries, the project contributes to a more sustainable and resilient industrial ecosystem.*

The knowledge generated throughout the project provides a solid foundation for future research, scale-up opportunities, and potential industrial deployment. As Europe continues to advance towards its climate goals, initiatives like **H2STEEL** *highlight the importance of innovation in transforming hard-to-abate sectors.*

Key Project Information

H2STEEL *is a Horizon Europe project funded by the European Innovation Council (Grant Agreement No. 10107041). Coordinated by Politecnico di Torino, the project brings six partners from four countries, working collaboratively to support the decarbonization of the European steel industry and the development of the green hydrogen economy.*

More information

Project website: https://h2steelproject.eu/

Communication manager: fernando.albanez@contactica.es

Funded by the European Union under grant agreement 101070741. Views and opinions expressed are, however, those of the author(s) only and do not necessarily reflect those of the European Union or the European Innovation Council. Neither the European Union nor the granting authority can be held responsible for them.