Consortium & Key Facts

Programme	RFCS – Research Fund for Coal and Steel
Duration	2024–2028
Coordinator	K1-MET GmbH
Grant Agreement	No. 101150482

www.safe-hdri.eu **info@safe-hdri.eu**

This project has received funding from the Research Fund for Coal and Steel (RFCS) under Grant Agreement No. 101150482. 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 Commission. Neither the European Union nor the granting authority can be held responsible for them.

Safe H-DRI

Research Fund for Coal & Steel

Co-funded by the European Union

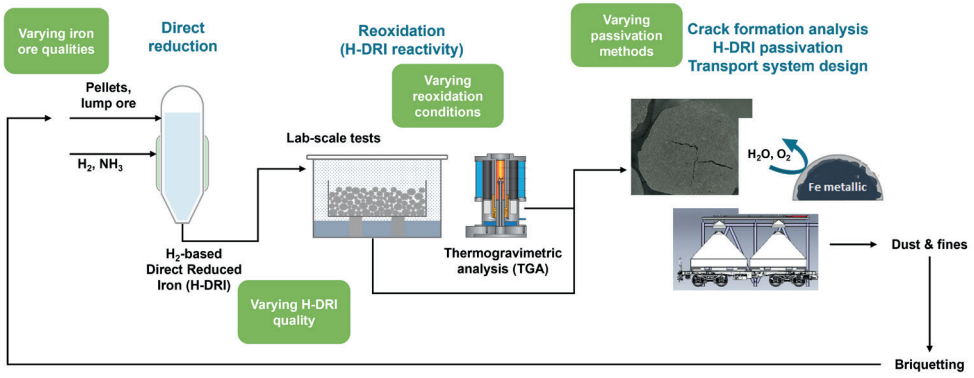
SAFE H-DRI

Safe transport of DRI from H2-based direct reduction considering quality-related H-DRI reactivity, stability, the efficiency of passivation methods and health and recycling aspects

What is Safe H-DRI?

SAFE H-DRI supports the EU Green Deal and RFCS goals by advancing safe and sustainable hydrogen-based direct reduction of iron ores. The project evaluates different ore qualities (including low-grade types) under pure and mixed H_2/NH_3 reduction conditions and passivation options, assessing performance, safety and environmental impact.

A key focus is the reoxidation of H-DRI during storage and transport. SAFE H-DRI investigates potential risks such as self-heating, ignition, or local explosions, and develops safe logistics and handling protocols connecting steel producers and transport operators. Moreover, the project explores circular reuse routes for emerging H-DRI fines within the steel cycle, supporting material recovery and reducing overall waste generation. With a strong consortium of steelmakers, plant suppliers, logistics experts, and research centres, SAFE H-DRI provides new knowledge creating a basis for standardization and secure H-DRI transport, generating crucial know-how for industrialization of low-carbon steelmaking needs to be solved.



Approach and expected impact

Hydrogen-based direct reduction process safety
Identification and control of potential hazards.

Material and process testing
Experimental validation at lab and pilot scale.

Industrial and environmental impact
Enabling safer sustainable low-C-steelmaking operations.

FOCUS *Hydrogen-based direct reduction efficiency and safety including transport, storage, NetZero-waste and health*

SAFE H-DRI contributes to the EU Green Deal and Clean Steel Partnership goals by enhancing safety and efficiency of hydrogen-based DRI technologies