ProSynteg

RFCS-02-2021-PDP

Project n. 101057965

01/07/2022 – 31/12/2025

Production of hot hydrogen-rich syngas in integrated plants for efficient injection in the blast furnace and CO2 mitigation.

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Partners

- RINA CONSULTING – CENTRO SVILUPPO MATERIALI (**RINA – CSM**)
- CENTRE DE RECHERCHES METALLURGIQUES (**CRM**)
- ARCELORMITTAL GLOBAL R&D SPAIN (**AM**)
- PAUL WURTH (**PW**)
- ACCIAIERIE D'ITALIA (**AdI**)

Project objectives

- To adapt an existing pilot plant on industrial site to **produce hot H2-rich syngas** by dry-reforming of coke oven gas and/or natural gas with hot CO2 from oxy-combustion of **coke breeze** or **alternative solid circular Carbon sources**.
- To evaluate the performance of the **reforming process** and provide sufficient and reliable **data** to extrapolate the operating results to the industrial scale through **pilot tests**.
- To evaluate the **industrial applicability** of the reforming process, evaluating alternative applications of the syngas with detailed **CO2 emission**, **LCA** and **economic evaluation**.

Main activities

- **Laboratory analysis** on feedstock material and reforming process.
- **Modeling** and **fine tuning** of the reforming reactor and burners.
- **Engineering**, **adaptation** and **commissioning** of the pilot plant for coke breeze combustion.
- **Pilot tests campaigns** and analysis of the results.
- **Evaluation of industrial application potential** of the reforming process in integrated steel plants.
- **Calculations of CO2 emissions**, **LCA** and **economic calculations**.