A Greek research center is seeking an iron and steel industry partner for a Horizon Europe project on CO_2 utilisation under HORIZON-CL4-2026-01-MAT-PROD-04 (RIA)

Summary

Profile type	Company's country	POD reference
Research & Development Request	**Greece**	**RDRGR20260319002**
Profile status	**Type of partnership**	**Targeted countries**
PUBLISHED	**Research and development cooperation agreement**	**• All countries**
Contact Person	**Term of validity**	**Last update**
Enrico FRANZIN	**19 Mar 2026** **19 Mar 2027**	**23 Mar 2026**

General Information

Short summary

A Greek research center is part of an international consortium preparing a proposal for the Horizon Europe call HORIZON-CL4-2026-01-MAT-PROD-04 (RIA). The project develops a nanotechnology-based platform converting iron and steel waste gases into valuable chemicals such as acetic acid and sustainable aviation fuel precursors. An industrial partner from the steel sector is sought for validation and scale-up support.

Full description

A Greek research center is preparing a proposal for the Horizon Europe call HORIZON-CL4-2026-01-MAT-PROD-04 (Research and Innovation Action), focusing on optimising resource use within a circular economy under the Processes4Planet and Clean Steel partnerships.

The project aims to develop an integrated carbon capture and utilisation (CCU) value chain that converts steel industry gases, including blast furnace gas (BFG) and coke oven gas (COG), into renewable acetic acid and sustainable aviation fuel (SAF). This will be achieved through advanced CO_2 activation and carbon–carbon coupling reactions leading to multi-carbon products.

The concept combines graphene-based catalytic nanoarchitectures with membrane-intensified reactor systems designed to continuously remove reaction by-products, thereby improving CO_2 conversion efficiency.

The project will advance the technology from TRL 3 to TRL 5 through catalyst development, advanced membrane technologies, and laboratory-scale reactor demonstrations. The research focuses on nanostructured catalytic materials, integrated reaction–separation processes, and optimisation strategies for efficient carbon utilisation in energy-intensive industries.

To strengthen industrial relevance and future deployment potential, the consortium seeks an industrial partner from the iron and steel sector willing to provide practical insights into industrial processes, operational constraints, and integration pathways.

Industrial partners will contribute by defining performance targets, providing process data and insights, supporting techno-economic and life-cycle assessments, evaluating scalability and integration potential, and contributing to the exploitation and scale-up roadmap. Their role focuses on industrial validation and strategic input and does not require laboratory experimentation.

The proposal will be submitted to Horizon Europe, with a call deadline of 21 April 2026, while the deadline for Expressions of Interest is 31 March 2026.

Advantages and innovations

The project introduces a novel nanotechnology-enabled catalytic approach for converting industrial carbon emissions into high-value chemical products, supporting circular economy objectives and industrial decarbonisation. By integrating graphene-based catalytic nanoarchitectures with membrane-enhanced reactor systems, the solution enables continuous removal of reaction by-products and improved CO_2 conversion efficiency. This approach supports resource efficiency, promotes carbon utilisation across industrial value chains, and contributes to climate-neutral manufacturing, while enabling future scale-up toward industrial demonstration. The involvement of industrial partners ensures alignment with real industrial needs and strengthens the pathway toward deployment.

Technical specification or expertise sought

The consortium seeks organisations active in iron and steel production with experience in industrial gas streams, process operations, and decarbonisation strategies. Expertise in blast furnace or steel plant gas management, process engineering, CO_2 utilisation, or industrial system integration will be considered an asset.

Stage of development

Sustainable Development goals

- **Goal 17: Partnerships to achieve the Goal**

IPR Status

IPR Notes

Partner Sought

Expected role of the partner

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Type of partnership

Research and development cooperation agreement

Type and size of the partner

- **Big company**
- **SME 50 - 249**

Call Details

Framework program

Horizon Europe

Call title and identifier

HORIZON-CL4-2026-01-MAT-PROD-04

Submission and evaluation scheme

Anticipated project budget

Coordinator required

No

Deadline for EoI

Deadline of the call

31 Mar 2026

Project duration in weeks

21 Apr 2026

Web link to the call

Project title and acronym

Dissemination

Technology keywords

Market keywords

- **08004002 - Chemical and solid material recycling**
- **08005 - Other Industrial Products (not elsewhere classified)**

Targeted countries

- **All countries**

Sector groups involved