HORIZON-CL5-2026-04-Two-Stage-D3-02: Industrial & research partners sought for plasma-enabled, electricity-driven production of ammonia and urea from air and captured CO_2

Summary

Profile type	Company's country	POD reference
Research & Development Request	**Germany**	**RDRDE20260116008**
Profile status	**Type of partnership**	**Targeted countries**
PUBLISHED	**Research and development cooperation agreement**	**• World**
Contact Person	**Term of validity**	**Last update**
Enrico FRANZIN	**16 Jan 2026** **16 Jan 2027**	**16 Jan 2026**

General Information

Short summary

A German consortium, led by research institute, is preparing a Horizon Europe proposal to develop a modular, fully electric route for sustainable ammonia and urea production, combining non-thermal plasma (air-to-NOx) with electrochemical reduction (NOx-to-NH3; NOx/CO2-to-urea). Sought are eligible companies/applied R&D partners for (i) process & energy system modelling, (ii) TEA/LCA/sLCA & policy framework, (iii) end-user validation, and (iv) proposal support and dissemination/exploitation.

Full description

Ammonia and urea are essential for fertilizers, chemicals and emerging energy applications. Yet production is dominated by fossil-based Haber–Bosch and downstream synthesis routes, resulting in high energy demand, centralized infrastructure and significant CO2 emissions.

The German partners (research institute & university) have a strong background in the development of electrochemical processes based as well as on the usage of plasma for the facilitation of disirable chemical processes.

The goal is to develop an alternative, fully electricity-driven platform based on plasma transformation and electrochemistry for the sustainable production of ammonia and urea.

The project will address the following areas:

The German coordinator seeks additional partners with the goal to submit a proposal under HORIZON-CL5-2026-04-Two-Stage-D3-02 (two-stage).

Indicative call timeline:

The first-stage submission deadline is 31 March 2026, and the second-stage submission deadline is 20 October 2026. Therefore the EOI deadline is set for 10 March 2026.

The consortium currently consists of 3 German partners with expertise in plasma- and electrochemistry.

The coordinator is looking for companies and applied R&D partners from eligible countries under Horizon Europe to contribute to

1) Process & energy system modelling

These can be: Process systems engineering groups, engineering consultancies/EPCs, and modelling teams experienced with flowsheeting, plant integration and flexible operation under renewable electricity .

2) TEA/LCA/sLCA and policy framework

These can be: Partners with demonstrated expertise in techno-economic assessment, LCA (ISO 14040/44), social LCA and EU policy/market frameworks relevant to low-carbon ammonia/urea and certification.

3) End-user validation

Industrial end-users/offtakers such as fertilizer producers/blenders, chemical manufacturers, and emerging ammonia/urea application stakeholders (e.g., energy carrier/fuel value chains) to validate requirements and use cases.

4) Proposal support, dissemination and exploitation

Partners experienced in Horizon Europe proposal development (two-stage), communication/dissemination, and exploitation/IP and business planning.

Only non-German EOIs will be considered.

Advantages and innovations

Technical specification or expertise sought

Stage of development

Sustainable Development goals

- **Goal 7: Affordable and Clean Energy**

IPR Status

IPR Notes

Partner Sought

Expected role of the partner

Sought are industrial or academic partners with the abovementioned expertise. Role in the project would be depending on the exact task, usually involving a responsible leading role in a specific working package aligned with the respective expertise. Partners involved in the end-user-applications should be willing to collaborate on testing and validating project outcomes in practical applications.

Ideally, the partner is also experienced in EU projects and has the capacity to meet the requirements of EU-funded projects (e.g., administrative compliance, ability to co-invest time and resources). Familiarity with collaborative R&D environments is preferred.

Sought are partners from all countries that are eligible for funding except Germany.

Type of partnership

Type and size of the partner

Research and development cooperation agreement

- **University**
- **Big company**
- **R&D Institution**
- **SME 11-49**
- **SME 50 - 249**
- **Other**
- **SME <=10**

Call Details

Framework program

Horizon Europe

Call title and identifier

Next generation of renewable energy technologies
HORIZON-CL5-2026-04-Two-Stage-D3-02

Submission and evaluation scheme

Anticipated project budget

Coordinator required

No

Deadline for EoI

10 Mar 2026

Deadline of the call

31 Mar 2026

Project duration in weeks

Web link to the call

https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/HORIZON-CL5-2026-04-Two-Stage-D3-02

Project title and acronym

Dissemination

Technology keywords

- **04009 - Carbon capture and energy**
- **04002002 - Hydrogen production**
- **03002 - Process Plant Engineering**
- **10002013 - Clean Production / Green Technologies**
- **04002001 - Fuel cells**

Market keywords

- **06007001 - Other energy production**
- **08001017 - Industrial chemicals**
- **06010003 - Energy for Industry**
- **06008 - Energy Storage**
- **03003 - Power Supplies**

Targeted countries

- **World**

Sector groups involved

- **Mobility - Transport - Automotive**
- **Renewable Energy**
- **Energy-Intensive Industries**