Newsletter 3

MECALO

November 2026

SUMMARY

Introduction

Project highlight: agglomerated SiC tested in Elkem's silicon pilot furnace 1

Consortium meeting in Montigny-le-Bretonneux 1

MECALO on the conference circuit 2

Upcoming events 3

Closing Thoughts 3

Introduction

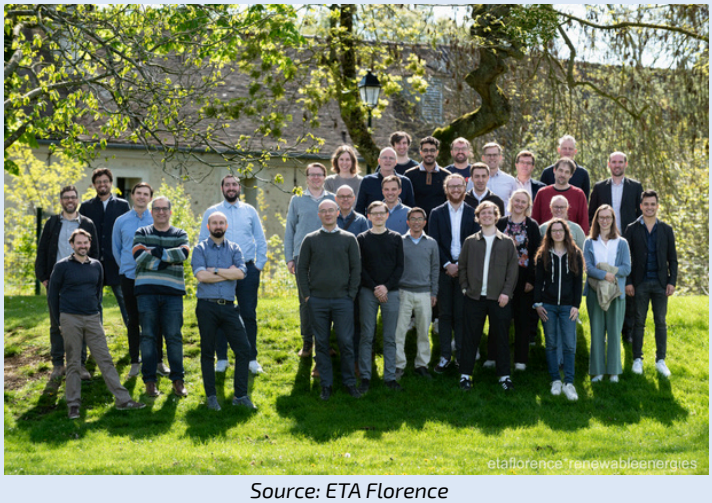
Welcome to the third edition of the MECALO newsletter.
Since our last issue, the project has moved from lab results to industrial-scale testing: a key material developed in MECALO has now run in a silicon pilot campaign and our partners have shared progress at several international conferences.
Read on for the highlights and for the events where you can meet us next.

Project highlight: agglomerated SiC tested in Elkem's silicon pilot furnace

In April 2026, more than 600 kg of spray-agglomerated silicon carbide (SiC), developed and produced by GLATT within MECALO, was fed into the Elkem Sicalo silicon pilot furnace under realistic operating conditions. The goal is to turn fine particles, which are hard to use directly in furnaces, into robust agglomerates that can be handled like conventional raw materials.
The agglomerates went through every key step, from transport and storage to blending, charging and continuous operation. They helped keep the furnace charge open and permeable, and fines generated during heating did not hurt permeability. About 60% of the reductant input came from the GLATT material, which is now a candidate for the next demonstration campaigns, where higher substitution rates will be explored.

Consortium meeting in Montigny-le-Bretonneux

On 14–15 April, all partners met in France, hosted by Eramet, to review progress across all work packages: materials preparation, process design, system modelling, techno-economic and sustainability assessments, dissemination and safety. Discussions focused on linking upstream material development with downstream process performance. The consortium confirmed the validity of the selected process routes, identified areas for further refinement and visited the Eramet Ideas facilities.



Source: ETA Florence

MECALO on the conference circuit

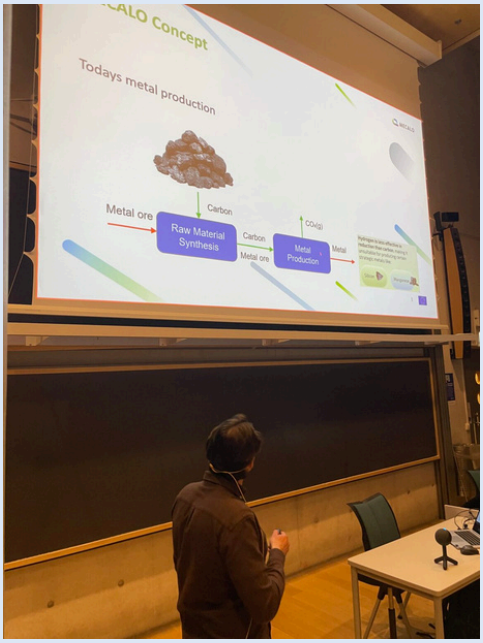
Biocarbon in Metallurgy 2026 (Krakow, 21–23 April): Hans Heeres (BTG) presented the production of bio-binders through thermo-chemical fractionation of biomass. The talk covered BTG's work on fast pyrolysis and fractionation, and the recent progress in moving bio-binder production from laboratory to pilot scale, which supports MECALO's goal of reducing fossil carbon in carbothermic reduction.

SETAC Europe 2026 (Maastricht, 17–21 May): At the 36th Annual Meeting, David Clousier (LIST) presented the poster "Parametric Life Cycle Assessment: flexible models for complex processes", on a framework developed within MECALO and applied to metallurgical-grade silicon production. Unlike conventional LCA studies, it lets users change key parameters, such as process yield, carbon source, electricity mix and CCS, and compare scenarios.
Results show that carbothermic reduction is the main source of greenhouse gas emissions, that the electricity mix strongly affects climate impact, and that better process efficiency and CCS can reduce overall emissions. The work also produced an interactive web tool for MECALO partners to explore process configurations and the environmental effects of design choices.



Source: LIST

SiFMa Conference 2026: SiFMa is dedicated to strengthening Swedish-Norwegian cross-border collaboration among research communities, industry and civil society in sustainable materials and chemical production.
Dr. Nikolaos Tsakoumis (SINTEF) presented the MECALO concept and its progress towards sustainable carbon production for metallurgical industries. The presentation focused on the two-step process that converts captured CO_2 into valuable carbon materials, which could provide a more sustainable carbon source for metal production. Among the scientific results, the catalyst tests carried out under conditions relevant to silicon and manganese production showed strong performance and stability throughout the testing campaign. The different testing methods also gave consistent results, which increases confidence in the findings so far and supports the future scale-up of the concept.



Source: SINTEF

A.SPIRE Industrial Innovation Days 2026 – Brussels, Thursday 22 October

The MECALO coordinator was invited to present the project at [nome evento], which brought together industry leaders and EU representatives to shape the Process Industry agenda. The presentation focused on the two pilot campaigns carried out within MECALO: silicomanganese production at SINTEF and silicon production at Elkem. It showed how the project's key materials are being developed and scaled: bio-binders, carbon agglomerates, silicon carbide and metal production.

Upcoming events

INFACON 18 – Reykjavik, Iceland, 23–27 May 2027

MECALO will be present with several presentations at the International Ferro-Alloys Congress, the reference forum for the silicon and ferroalloy community, hosted by Reykjavik University.

Closing Thoughts

Over the coming months, MECALO will keep building on these results, with further testing and validation work and the preparation of the next demonstration campaigns. We will keep sharing our progress through our website and social channels, and in the next edition of this newsletter. If you would like to know more about the project, collaborate with us or invite us to an event, we would be glad to hear from you at info@mecaloproject.eu. And if you found this newsletter useful, feel free to forward it to colleagues who may be interested in the decarbonisation of silicon and manganese production.

Funded by the European Union

This project has received funding from the European Union's Horizon Europe Research and Innovation Programme under Grant Agreement No. 101177480. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. Neither the European Union nor the granting authority can be held responsible for them