

Fives and NOC Energy collaborate on electrified clay calcination for low-carbon cement production

Fives and NOC Energy have announced a technology partnership aimed at advancing the electrification and decarbonization of high-temperature thermal processes in the cement industry.

The cooperation focuses on integrating NOC Energy's high-temperature thermal battery technology, NOC Cell™, into the Fives FCB clay calcination pilot plant. The project was presented during the Innovation Day organized by Fives at its Research and Testing Center in France, attended by European cement producers and industry specialists.

The initiative targets one of the main challenges in cement decarbonization: replacing fossil fuel-based heat in energy-intensive thermal processes. Cement production currently accounts for a significant share of global industrial CO₂ emissions, with clay calcination increasingly recognized as an important pathway for reducing clinker content and lowering the carbon footprint of cement.

NOC Cell™ is designed to convert renewable electricity into high-temperature industrial heat and can reportedly operate at temperatures of up to 1500°C. According to NOC Energy, a single 10 MW module could avoid up to 20,000 t of CO₂ emissions annually, depending on the application and energy mix.

Within the collaboration, Fives will contribute its expertise in thermal processes, cement technologies and pilot-scale calcination systems, while NOC Energy will provide the thermal storage and electrification technology. The pilot demonstration aims to evaluate the integration of electrified heat into clay calcination processes

and assess the potential for future industrial-scale deployment.

In addition to calcined clay applications, the partners indicated that the technology could also be applicable to other supplementary cementitious materials (SCMs), including fly ash and blast furnace slag processing. Longer-term possibilities may include the electrification of rotary kiln systems.

The project is also supported by Schneider Electric, which contributed to the development of the partnership and the broader industrial integration approach. Schneider Electric highlighted the role of electrification, automation and digitalization in supporting industrial decarbonization strategies.

The collaboration reflects the growing industry interest in electrified process heat, thermal energy storage and alternative approaches to reducing fossil fuel dependency in cement manufacturing.

<https://www.fivesgroup.com/newspress/detail-view/fives-and-noc-energy-combine-their-expertise-to-accelerate-the-decarbonization-of-cement-processes>



Figure 1 From left to right: Maxime Ramael (Global Business Development Leader, Schneider Electric), Alain Cordonnier (CEO, Fives FCB), Eric Bourdon (Deputy CEO, Vicat), Carlos Ceballos (CEO, NOC Energy), and Martin Schneider (Managing Director, ECRA)



Figure 2 Alain Cordonnier (CEO, Fives FCB), Carlos Ceballos (CEO, NOC Energy), and Guillaume Mehlman (Deputy General Manager, Fives Group)

SPOTLIGHT