

Catch4Climate Pure Oxyfuel Plant in Mergelstetten officially inaugurated – a milestone for low-carbon cement

- Catch4Climate pioneering plant officially inaugurated in Mergelstetten, Germany
- World's first industrial-scale demonstration of thyssenkrupp Polysius' Pure Oxyfuel technology for cement production
- Groundbreaking technology enables capture of up to 95% of CO₂ emissions from the clinker production process
- thyssenkrupp Calvion takes over for further development, scale-up and commercialization
- Project marks a major milestone toward decarbonizing one of the world's most carbon-intensive industries

Mergelstetten, Germany | July 9, 2026 — The CI4C (Cement Innovation for Climate) Pure Oxyfuel plant in Mergelstetten (state of Baden-Württemberg) has been officially inaugurated, marking a major milestone in the decarbonization of cement production. Thyssenkrupp Polysius, together with thyssenkrupp Calvion, is proud to have contributed to this landmark project in close collaboration with the CI4C consortium (Buzzi SpA / Dyckerhoff GmbH, Heidelberg Materials AG, SCHWENK Zement GmbH & Co. KG and Vicat S.A) and additional project partners.

As part of the “catch4climate” initiative, the plant represents a research and development facility for carbon capture technologies in cement production. With a capacity of around 450 tonnes of clinker per day, the installation provides an important platform for research, validation, and further development.

“For the first time, Pure Oxyfuel is being demonstrated at industrial scale in a cement plant. This achievement reflects the dedication, expertise and pioneering spirit of everyone involved in the project. At thyssenkrupp Polysius, we are proud to have translated a bold vision into operational reality and to contribute a technology that can help transform one of the world’s most challenging industries to decarbonize,” said Christian Myland, CEO of thyssenkrupp Polysius.

At the core of the plant is the Pure Oxyfuel process. By replacing ambient air with pure oxygen in the clinker burning process, the technology significantly increases the CO₂ concentration in the exhaust gas, creating the conditions for capturing nearly 95% CO₂ emissions from cement production — including unavoidable process emissions from limestone calcination.

thyssenkrupp Polysius led the overall engineering, plant design, and execution of the facility, successfully translating an innovative concept into industrial-scale reality. The Pure Oxyfuel technology developed and implemented within the “catch4climate” project will be further advanced within thyssenkrupp Calvion, ensuring continuity and focused development beyond this milestone.

With the transfer of the technology into thyssenkrupp Calvion's portfolio, the focus is now on advancing, scaling, and commercializing Pure Oxyfuel solutions. Calvion will further develop the process to support carbon capture deployment across cement and other hard-to-abate industries.

"This inauguration is much more than the opening of a pilot plant. It demonstrates that Pure Oxyfuel has reached industrial reality. The global cement industry has been eagerly awaiting this milestone, and we are proud that thyssenkrupp Calvion will now take the technology to the next stage — further developing, scaling and commercializing Pure Oxyfuel for customers around the world," said Lukas Schoeneck, CEO of thyssenkrupp Calvion.

The inauguration of the CI4C plant underlines thyssenkrupp's commitment to driving sustainable innovation and represents an important step toward climate-neutral cement production at scale.

About thyssenkrupp Calvion

thyssenkrupp Calvion is a leading engineering partner for industrial decarbonization, delivering scalable solutions across four core fields: Cement with focus on Oxyfuel technology, Direct Air Capture (DAC), Green Quicklime, and Phosphogypsum Recycling. Based on its flash calcination technology and extensive process experience, thyssenkrupp Calvion is able to serve a wide range of industrial markets and applications. With decades of process expertise and a strong track record in large-scale plant execution, the company supports emissions-intensive industries on their path toward a competitive low-carbon future. Driven by a strong innovation mindset and agile ways of working, thyssenkrupp Calvion transforms advanced process know-how into reliable, industrial-grade technologies that unlock new value streams. Its electrification-ready platforms and CO₂-focused solutions help customers reduce emissions quickly while strengthening long-term operational resilience.

About thyssenkrupp Polysius

thyssenkrupp Polysius is one of the leading suppliers of technologies and automation solutions for the decarbonization of the cement and lime industry and, increasingly, for other industries. With more than 160 years of experience, we set standards in the development of innovative technologies and services, as well as a comprehensive and customized service offering that enables sustainable and economical production. Our services are not only tailored to our own products, but also cover installations from third-party suppliers.

Thanks to close cooperation with customers and partners, we are able to meet the specific challenges of our customers and offer them optimal service. This special commitment, coupled with decades of expertise, makes thyssenkrupp Polysius a reliable partner on the road to a sustainable future.

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