sequestra opens world's first laboratory for carbonation analytics in Vienna

Short:

sequestra is opening the world's first laboratory to determine how much CO2 can actually be bound in slags, ashes, and construction debris. The research is led by chemist Matthias Ginterseder, recently appointed Chief Scientific Officer, who previously conducted research at ETH Zurich and MIT. At its core is Luma, the company's proprietary analytics platform, which delivers robust data on CO2 binding through automated test series. Backed by customers from the steel, cement, and construction industries as well as new EU regulation, the Vienna-based startup is positioning itself at the forefront of an emerging billion-euro market. In parallel, sequestra is advancing the construction of its first industrial plant at its Attnang-Puchheim site.

Long:

Fresh momentum for permanent CO2 utilization

As climate change continues to advance, technologies that avoid or reduce CO2 emissions have become absolutely essential. Under the European Commission's latest legislative proposal, measures aimed at permanently removing CO2 from the atmosphere are set to become an integral part of the path toward a climate-neutral Europe. With its proposal (COM(2026) 616, Link), which provides for the inclusion of projects reducing atmospheric CO2 levels or biogenic CO2 emissions within industry's mandatory emissions trading system, the EU is sending a clear signal that these processes are indispensable.

sequestra develops technologies to permanently bind CO2 in industrial mineral residues and primary materials. These processes, collectively known as mineralization, hold enormous potential to reduce the global carbon footprint given the vast quantities of mineral by-products generated worldwide each year. Leading sources cite a potential to prevent the emission of up to 4 gigatons of CO2 annually (Nature Sustainability, 2020, Link). As a result, industrial companies are increasingly asking about the real CO2 uptake capacity of their materials.

A solid data foundation for scientifically verifiable CO2 binding

In September, sequestra Intelligence - the analytics business unit of the Vienna-founded climate tech startup - opened the world's first dedicated laboratory for measuring real CO2 uptake and the additional material characteristics needed to assess the technological and, by extension, monetary potential of slags, ashes, and construction and demolition waste. At the heart of operations is sequestra's proprietary analytics platform, Luma, which delivers unprecedented insight into the reactivity of the residual materials under investigation through fully automated test series, upstream and downstream material analysis, and algorithmic data interpretation.

“Looking back, we are proud to have moved from our first steps in technology development to the commissioning of our commercial laboratory considerably sooner than originally planned. One of the things that made this possible is FFG’s sequence of complementary funding programmes, which have supported us from day one of our journey,” says Roberto Lerche-Antoniazzi, Founder and Co-CEO of sequestra.

The company's ambition is to become the global market leader in Carbonation Intelligence - the technological field of measuring and data-driven optimizing mineralization processes, which sequestra aims to substantially shape.

Scientific interpretation is led by Matthias Ginterseder, PhD. Following research positions at ETH Zurich and the Massachusetts Institute of Technology (MIT), he went on to serve as CTO of a company specializing in enhanced rock weathering technologies, where he developed methods for verifying complex carbonation reactions. Drawing on this unique combination of research and startup experience, Ginterseder has spent more than a year driving the development and optimization of the scientific foundation behind sequestra's process technologies. In August, he was appointed Chief Scientific Officer and now leads research into solutions that provide scientifically robust figures to verify the permanent CO2 storage achieved through mineralization technologies.

"Measures to reduce CO2 - whether by cutting industrial emissions or removing CO2 from the atmosphere - must be backed by transparent, scientifically sound methods. At sequestra, we are building audit-ready, future-proof solutions that form the backbone of measuring and validating CO2 binding through mineralization," said Matthias Ginterseder.

Clear plans for scaling CO2 mineralization technologies further

The company counts numerous clients across industries including steel, cement, waste incineration, biomass combustion, and construction. Its medium-term goal is to establish its measurement methods and analytical technologies as the industry standard for verifying permanent CO2 mineralization.

Alongside developing its analytical methods and operating the laboratory, sequestra is advancing the construction of its first pre-industrial process line for combined grinding and carbonation at its technology center in Attnang-Puchheim. The goal is to bring the first industrial-scale CO2 capture plants to market starting at the end of 2027.

Earlier this year, the company announced the completion of a €3 million seed funding round. It now employs 18 people across three locations and ranks among the fastest-growing greentech companies in Central Europe.

Relevance for companies across many industries

sequestra offers heavy industry companies that generate significant volumes of mineral residues deep insight into the potential of their materials. Based on a material sample of roughly 3 kg, it is possible to derive a complete business case in the field of mineralization. Following a thorough assessment of a material's CO2 binding potential, companies can determine its suitability for use in the construction sector as well as the investment and operating costs of industrial mineralization plants.

For inquiries regarding sequestra's technologies and analytical services:
intelligence@sequestra.tech