

ABB instruments enable the transition to green quicklime and cement at the SaltX pilot production facility in Sweden



ABB solutions for Decarbonizing Industries.

Measurement made easy

SaltX pilot production facility, Sweden

SaltX electric arc calcination and sustainability mission

The Electric Arc Calciner is a modern electrified take on a traditional fossil-driven kiln used for calcination, an industrial process in which materials are heated to very high temperatures (+1000 °C). This process is a key component of quicklime and cement manufacturing worldwide and is also the main reason why this industry is seen as hard to abate as it is CO₂-emission heavy. This industry alone stands for a staggering 8% of global CO₂ emissions, making it the biggest industrial polluter globally. It releases CO₂ from fossil fuels and from the material itself, the limestone, which releases its bounded gas when heated to high temperatures.

SaltX innovation eliminates these two sources of CO₂ emissions by first replacing fossil fuels with renewable energy and separating and isolating the released CO₂ from the limestone in the same process. No external CCS systems are needed, and the separated stream of CO₂ is as pure as possible, as no fossil fuels are used during combustion. The technology is also adaptable for other industrial high-heat temperature processes. However, our focus area is the quicklime and cement industry and the upcoming direct air capture industry.

SaltX innovation has the potential to eliminate millions of tons of CO₂ emissions from heavy industries. As we set a new standard for a clean, all-electric solution for the manufacturing of quicklime and cement, we are not alone in this mission. We are proud to work with leading partners such as ABB, who share our vision and are committed to playing a vital role in this important sustainable transition to a net-zero scenario.

Electric calcination in the cement industry represents a significant opportunity for market growth due to a combination of regulatory pressures, environmental concerns, and technological advancements. Governments worldwide are implementing stricter environmental regulations to reduce carbon emissions. Since traditional cement manufacturing is highly energy-intensive and a significant source of CO₂, the EAC technology is a promising path toward a clean and sustainable business. Cement is the most used building material in the world, every second a mind-blowing approx. 1300 tons of cement are produced.

SaltX pilot production process, Sweden

Already back in 2022, SaltX completed their first proof-of-concept phase with very good results.

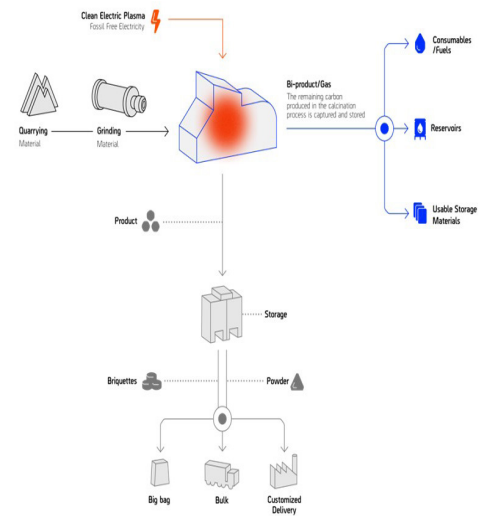
At the end of last year (2023), they opened the world-unique large-scale test- and research center, ECRC (Electric Calciner Research Center), in Hofors. This facility is a key step for tests and adjustments of this technology as well as running material tests to be able to scale up to industrial standards for different applications from various customers.



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SaltX pilot production
facility, Sweden

ABB bidding advantages

"First", says Michele, "both companies have a shared vision of electrifying industries, which has provided a strong foundation for our cooperation. Furthermore, ABB is a world-leading supplier with a strong track record of high-quality deliveries to complex industrial projects and a strong will to be at the forefront of innovation. Altogether, it was the natural choice for us going forward."



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EAC Technology

The contract

This project included both pressure and temperature transmitters.

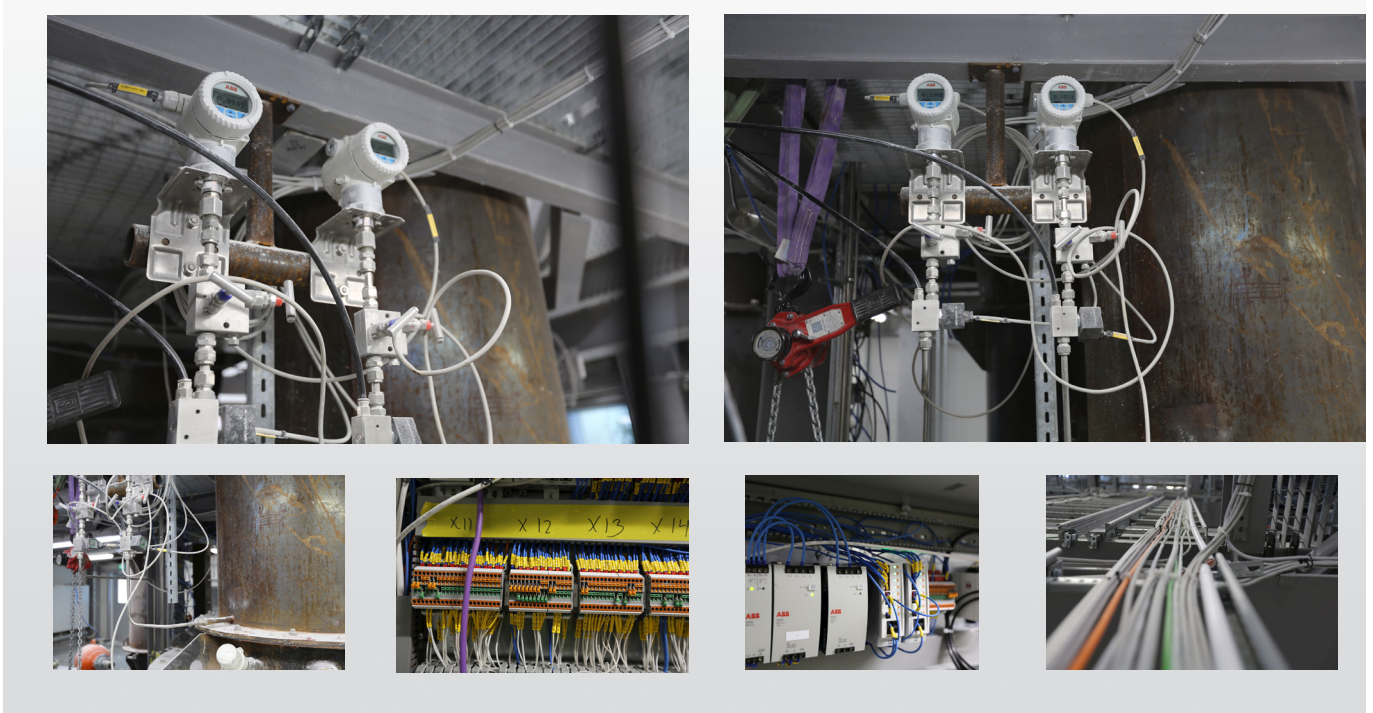
According to Michele Angelini, Area Market Manager Pressure Northwest Europe, the instrumentation supplied included :

- Model 266GST - Top performance transmitter, standard P-Style construction.
- Model TSH220 - High temperature thermometer SensyTemp.
- Model TSP121 - Temperature sensor SensyTemp.
- Model TSH210 - High temperature thermometer SensyTemp.

When purchasing instrumentation ABB proved to have a competitive price and a wide sector specific experience, which helped them a lot with instrumentating the process correctly. A strong support from ABB sales and technical team helped them in choosing the correct level of instrumentation as ABB have multiple ranges of precision".

"Our comprehensive portfolio", he adds "with the reliability, robustness and accuracy of our pressure transmitters, the wide range of temperature sensors and thermowell materials that can sustain the harsh process environment, helped to award the contract."

Now that the plant is operational and has been turned over to the customer, Johan Blomkvist, ABB Pressure, Temperature and Level product specialist, has picked up supporting the installed instrumentation on site, thus building the new relationship with the operator, and bringing ABB's value to the site through service and support.



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Installed instruments

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