LC-SC3-NZE-5-2019-2020

LEILAC2

Full Title: Low emissions intensity lime and cement 2: demonstration scale

Aim:

The majority of the CO2 emissions from the production of cement are released directly and unavoidably from the processing of the raw materials. The LEILAC projects are developing a breakthrough technology that aims to enable the cement and lime industries to capture these unavoidable CO2 emissions emitted from the raw limestone at low cost, quickly and efficiently.

Concept:
The Calix process changes the existing process flows of a traditional calciner by indirectly heating the limestone via a special reactor. This unique system enables pure CO2 to be separated and captured as it is released from the limestone. LEILAC operates, in principle, with the same specific energy as conventional plant. Unlike other carbon capture technologies, the new process does not involve any additional processes or chemicals. The first LEILAC project sought to apply this technology to the cement sector. This successor project, LEILAC2, which started in 2020, is applying the technology at a larger scale and will address the major remaining hurdles. In LEILAC2 the process will be capable of capturing 20% of the plant's capacity, or around 100,000 tonnes of CO2 per year – equivalent to the combined annual emissions of 55,000 cars. The technology will also be electrified and can use hydrogen and there is the possibility to provide flexible load balancing, thereby enabling power grids to use more renewable energy. The LEILAC2 Demonstration plant is a module that can be easily duplicated, paving the way for swift, cost effective deployment of this carbon capture technology across the globe.

Start date:

01/04/2020

End date:
31/03/2025