



INNOVATION FUND

Deployment of net-zero and innovative technologies

CLYNGAS: Substitution of petroleum coke in the cement industry by synthesis gas (syngas) generated from gasification of stabilised RDF

The Innovation Fund is 100% funded by the EU Emissions Trading System

| Project Factsheet

Cement

CLYNGAS aims to produce high-added-value synthesis gas (syngas) by means of a gasification process. The gasification uses a combination of waste residues from other industrial processes as a feedstock. The proposed technology will expand the opportunities to use refuse-derived fuel in the cement sector. It will increase fossil fuels substitution, achieving a relative greenhouse gas (GHG) emission avoidance of 8%, whilst ensuring a stable process and high-quality production in CEMEX's cement plant in Alicante (Spain). This project is a relevant part of the CEMEX "Future in Action" strategy and roadmap to achieve net carbon neutrality by 2050. CLYNGAS is a first-of-akind project, with replicability in the cement sector at the global scale.

Lime

The proposed technology allows the cement industry to use waste and by-products from other industrial processes to replace fossil fuels and

COORDINATOR

CEMEX ESPANA OPERACIONES SL

LOCATION

Spain

CATEGORY

Energy intensive industries (EII)

SECTOR

Cement lime

AMOUNT OF INNOVATION FUND GRANT

EUR 4,416,864

EXPECTED GHG EMISSIONS AVOIDANCE

406,960 tonnes CO2 equivalent

STARTING DATE

01 August, 2023

ENTRY INTO OPERATION DATE

31 December, 2025

FINANCIAL CLOSE DATE

31 July, 2024

natural raw materials. This constitutes a critical component in the transition of the cement industry towards a low-carbon economy. One of the key elements in CEMEX's roadmap for carbon neutrality is the substantial substitution of fossil fuels with refuse-derived fuel (RDF) with high biomass content. However, certain characteristics of these fuels such as humidity, calorific value, and composition can often limit their use. The CLYNGAS project provides an innovative and reliable solution to direct RDF burning. The proposed technology transforms RDF into syngas, which is then fed into the main burner of a clinker kiln. This ensures a stable production, which maintains the strict process quality requirements.

As a result of this process, a significant reduction in absolute GHG emissions is achieved, estimated at

406 960 tonnes CO2 equivalent over the first ten years of the project's lifetime. In addition, CLYNGAS contributes to the circular economy by reusing waste that contains energy potential, and avoiding its disposal in landfills. The integration of CLYNGAS in the Alicante cement plant takes advantage of existing infrastructure, thus minimising the use of new natural resources in the gasifier construction process.

The project contributes to climate objectives at the global, European (EU Green Deal and EU Policies and Regulations), national (Energy Transition Regulations, Strategic Agendas and Roadmap), regional (Regulations of the Valencian Community on Climate Change, Strategic Agenda and Integrated Plans) and local (Waste Management Plan of the Province of Alicante) levels.

| Participants

CEMEX ESPANA OPERACIONES SL

Spain

