



GLASS, CERAMICS AND
CONSTRUCTION MATERIAL

INNOVATION FUND

Deployment of net-zero and innovative technologies

BEAR: BEAR: HyBrid rEgenerative gLAss fuRnace

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

| Project Factsheet

The end-fired regenerative furnace is a widely used technology in the glass industry and accounts for 75% of global production of container glass. However, it is not a very energy efficient process and has a high carbon footprint due to its reliance on fossil fuels. Less carbon intensive technologies are available, such as electric furnaces, however these have major limitations that hinder an industry-wide uptake across the European container glass sector, such as limited pull flexibility and short furnace lifespan. To address this issue, the BEAR project aims to demonstrate a new hybrid regenerative furnace that combines the energy efficiency of all-electric furnaces with the operational flexibility of conventional regenerative furnaces.

With the envisioned hybridisation, the project aims the increase energy share of electrical boosting from the conventional 5-10% of end-fired

COORDINATOR

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STEKLENIH IZDELKOV DOO

LOCATION

Slovenia

CATEGORY

Energy intensive industries (EII)

SECTOR

Glass, ceramics construction material

AMOUNT OF INNOVATION FUND GRANT

EUR 2,238,000

EXPECTED GHG EMISSIONS AVOIDANCE

96,384 tonnes CO2 equivalent

STARTING DATE

01 September, 2022

ENTRY INTO OPERATION DATE

31 December, 2024

FINANCIAL CLOSE DATE

31 March, 2023

regenerative furnaces to beyond 40%. This will enable SH's production site to reduce its natural gas consumption by more than 50% and avoid 0.1 million tonnes CO2 equivalent of greenhouse gas emissions over the first ten years of operation. This is greater than the total yearly household GHG emissions of the Zasavje region (>20 000 inhabitants), where SH resides, for more than one year.

Through the introduction of the hybrid regenerative furnace, the electrification of the container glass sector will allow the glass melting process to align with the availability of renewable energy sources (RES). Moreover, with the proposed solution, local RES can be coupled directly to the melting process. A sector wide uptake of the hybrid regenerative furnace would therefore significantly increase the

resilience and security of the glass manufacturing process in terms of energy supply.

With BEAR, SH aims to replace the existing regenerative furnace for extra-white flint glass production at one of its two sites. Both production sites are in Zasavje, a Slovenian coal region in transition, with a high unemployment rate. SH accounts for roughly 5% of jobs in the region and represents more than 10% of the region's GDP. The proposed investment in sustainable production technologies is expected to have a significant impact on the local economy by retaining current jobs and creating new ones. Furthermore, with the coupling of innovative technologies and local RES, the project will serve as a model for decarbonisation in other energy intensive industries in the region.

| Participants

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