



INNOVATION FUND

Driving clean innovative technologies towards the market

BCP: Recovery and use of waste heat to support the decarbonisation of flat glass production in France

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



Project summary

The Batch and Cullet Preheating (BCP) project will implement and validate an innovative technology that recovers and reuses waste heat from furnace fumes in the float glass production process of Saint-Gobain's glass plant in Aniche, Northern France. This innovation is the result of about 10 years of R&D studies and will save 10% of the total energy consumption of the glass furnace float line, as well as bringing important reductions in production costs.

COORDINATOR

Saint-Gobain Glass plant in Aniche, France

LOCATION

Saint-Gobain Glass plant in Aniche, France

SECTOR

Glass, Ceramics & construction material

AMOUNT OF INNOVATION FUND GRANT

EUR 4 343 692

RELEVANT COSTS

EUR 7 239 487

STARTING DATE

01 December 2021

PLANNED DATE OF ENTRY INTO OPERATION

April 2025

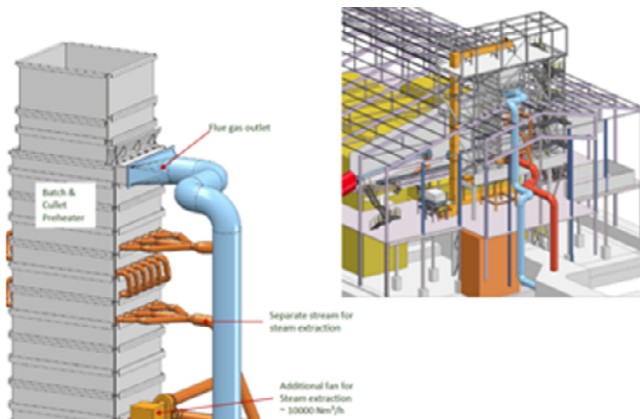


Illustration of the BCP technology

Innovative adaptation of existing technology to a float glass production process

The BCP project is a first-of-a-kind demonstration at commercial-scale that will entail the adaptation of existing technology used in the container glass sector to the float glass production process. The strong degree of innovation lies in introducing a modular approach to enhance capacity of the processes pre-heating installations by combining three pre-heating modules using waste heat, also allowing for the use of raw materials in the float glass production process with wider characteristics.

Significant environmental and economic benefits in a highly energy intensive process

The proposed technology will decrease energy consumption and significantly reduce CO₂ emissions compared to the state-of-the-art, saving 10% of the total energy consumption of the glass furnace and more than 5 600 t CO₂/year compared to a standard float line, which corresponds to 7% of the total CO₂ emissions of the flat glass production process.

The innovation will also help reduce natural gas consumption by 8 to 12%, which amounts to 35 GWh/year. Additionally, pilot studies concerning hydrogen use for glass melting are underway at Saint-Gobain, with the potential for further savings in natural resources.

The expected economic benefits in terms of natural gas and CO₂ savings are significant, hence reducing production costs and increasing the overall profitability of the plant.

High scale-up potential to other glass production sites and other sectors

The application will require minor changes to the glass floating process and therefore it has the potential to be easily replicable to other plants in Europe (60 sites have already been identified).

Initially, the technology could be deployed within Saint-Gobain Group's network of plants, which comprises 27 float glass production lines, of which 13 are in Europe, and then extended further. The innovative aspects of the pre-heating solution, which are the modularity and the handling of raw materials with higher moisture content, can potentially then be replicated beyond European plants and can be envisaged in other sectors such as cement and steel.