



INNOVATION FUND

Deploying innovative net-zero technologies for climate neutrality

Volta Project: Hybrid mid-sized pilot furnace for flat glass

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

| Project Factsheet

The objective of the project is to design and build a novel hybrid glass furnace combining electric melting and oxy-gas combustion. The integrated design provides an alternative to the mostly natural gas fired flat glass industry. The highly electrified furnace provides a more cost-efficient and scalable solution to abate the CO₂ emissions of the flat glass industry compared to other clean alternatives, such as a full clean hydrogen combustion option. The new design will be piloted through a partnership with Saint-Gobain in AGC's existing patterned glass furnace in Barevka (Czech Republic). The hybrid furnace is expected to reduce the pilot site's scope 1 and 3 emissions by 75% compared to the reference scenario.

This first-of-a-kind technology consists in an all-electric melting technology and oxy-gas combustion that are combined in an integrated furnace. This enables a 50% electrification rate whilst ensuring the high-quality standards that are necessary to float glass. Furthermore, sustainability model of the

COORDINATOR

AGC GLASS EUROPE SA

LOCATION

Czechia

CATEGORY

Energy intensive industries (EII)

SECTOR

Glass, ceramics construction material

AMOUNT OF INNOVATION FUND GRANT

EUR 12,200,000

EXPECTED GHG EMISSIONS AVOIDANCE

92,500 tonnes CO₂ equivalent

STARTING DATE

01 April, 2023

ENTRY INTO OPERATION DATE

31 December, 2024

FINANCIAL CLOSE DATE

31 March, 2024

* Calculated vs. the 2021-2025 ETS benchmark of 6.84 tCO₂e/tH₂, not taking into account additional carbon abatement due to substitution effects in the H₂ end use application, i.e. conservative estimate.

project will be strengthened by substituting virgin raw materials with up to 100% recycled glass. The flat glass sector accounts for ~4.6 million tonnes of CO₂ equivalent of direct emissions annually in Europe (~75% from natural gas combustion and ~25% from raw materials). The novel furnace is therefore expected to reduce the energy-related emissions, resulting in a planned emission reduction of over 193 000 tonnes CO₂ equivalent over the first ten years of operation.

The project will contribute to the European goals set out in the REPowerEU communication, by reducing fossil fuel consumption in industry and transport, through innovative technologies and electrification.

The project is also expected to have a positive socio-economic impact at regional level. While the Barevka site currently produces ~90 tonnes of glass a day, the project has great potential for scalability through technology uptake at bigger production sites (600-800 tonnes daily). Furthermore, there is significant replication potential throughout Europe, as the industry currently produces ~9 million tonnes of glass annually, and is a critical supplier to the construction, automotive, and consumer goods industries. Therefore, the technology could promote the upstream decarbonisation efforts of critical sectors (construction and automotive) while safeguarding the competitiveness of the EU flat glass industry.

| Participants

AGC FLAT GLASS CZECH AS CLEN AGC GROUP

Czechia

AGC GLASS EUROPE SA

Belgium

SAINT-GOBAIN GLASS FRANCE

France