

Cutting-edge GLASS SERVICE ITALY combustion system lowers industrial emissions

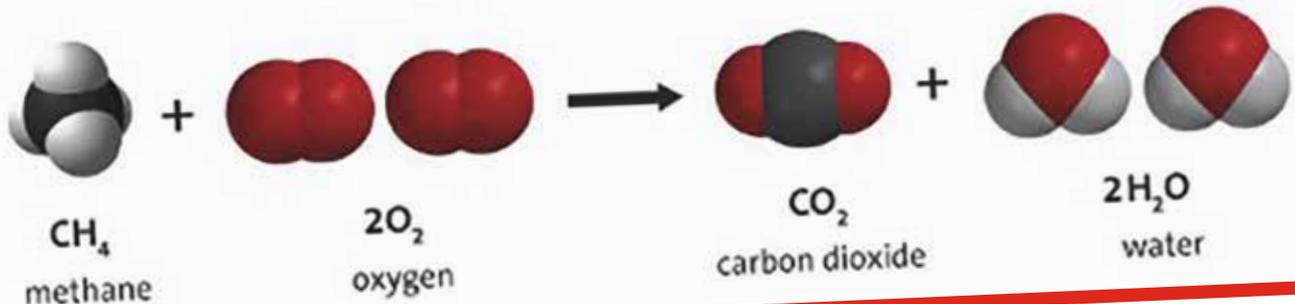
Glass Service srl has officially showcased the final stage of its oxy-gas combustion process, a technology that not only optimises but redefines efficiency parameters for glass forehearth. This development comes at a time when the global glass industry faces an unprecedented challenge: the need for real, structural decarbonisation to reduce carbon footprint and achieve net-zero emis-

sions by 2050, in line with the Paris Climate Agreement.

ADDRESSING DECARBONISATION CHALLENGES

Decarbonisation remains a complex process, particularly in key sectors such as glass. Despite significant progress through improvements in furnace design, increased use of cullet (recycled glass) and enhanced energy efficiency via

raw material preheating, best available technologies and incremental improvements must continue to reduce emissions whilst maintaining operational performance, economic advantages and environmental sustainability. Glass Service srl is contributing to this transition with forward-thinking solutions aimed at supporting a circular and carbon-neutral economy, turning a global challenge into an opportunity.



Significantly reducing gas consumption, CO₂ and NO_x emission, GLASS SERVICE srl has introduced an oxy-gas combustion system for forehearths. With technology that improves thermal efficiency, maintains glass quality and delivers cost savings, it is also rigorous in supporting current decarbonisation goals through more sustainable operations across the global glass industry.



ELIMINATING INEFFICIENCIES IN COMBUSTION

The oxy-gas system provides a direct response to this need, marking a shift from traditional air-gas combustion methods to an innovative process. Conventional systems inherently waste energy by heating nitrogen present in the air, representing both an economic and environmental cost. By replacing air with oxygen, the system eliminates nitrogen from the combustion process, ensuring

that no energy is wasted heating nitrogen, which accounts for 78 percent of air.

Results from chemical analysis, testing, and recent installations confirm measurable improvements:

- Up to 60 percent reduction in gas consumption
- Up to 60 percent reduction in CO₂ emissions
- Up to 80 percent reduction in NO_x emissions

At the same time, the process maintains high performance lev-

els, improving furnace efficiency and glass quality.

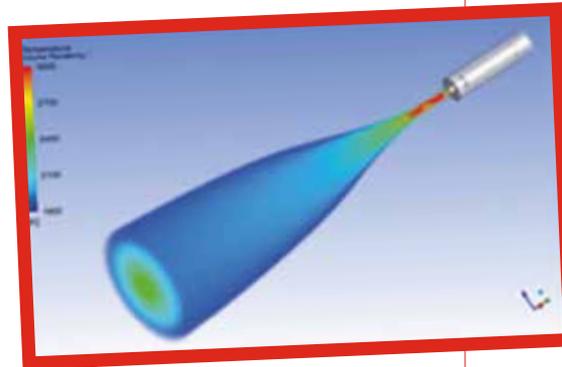
PERFORMANCE AND ECONOMIC IMPACT

Central to this are new oxy-gas burners, characterised by low power levels (1.5-5 kW) and ease of assembly. Installed along the forehearth, they ensure thermal homogeneity of the glass.

The burners have been designed and developed using CFD modelling to simulate thermal parameters and include

SUSTAINABILITY

Sustainability



a cleaning technology that removes carbon deposits from the nozzle, ensuring long-term reliability.

The financial impact is also significant. Analysis of a single forehearth indicates average annual savings of approximately EUR

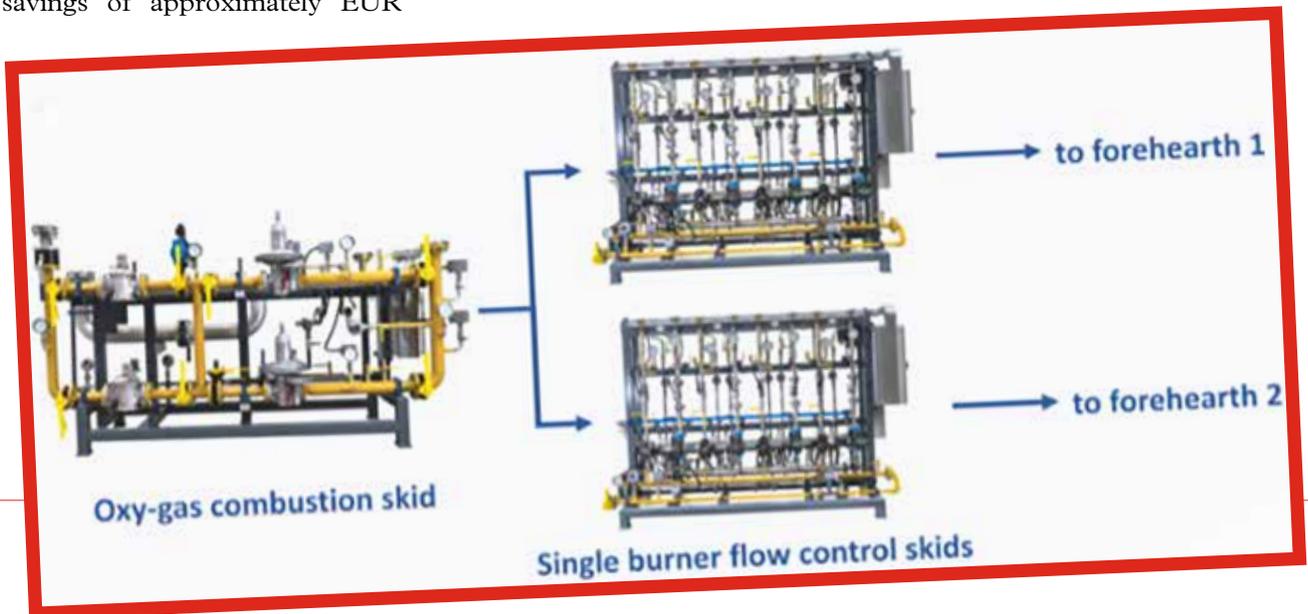
55.000, supporting a rapid return on investment and reducing costs associated with ETS. These combined benefits position the oxy-gas combustion system as a response to increasingly demanding industry conditions. ■

glass
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