Life SUGAR has STARA GLASS driving sustainability in glass

With sustainability and innovation being no longer optional but imperative in the glass industry, a crucial initiative is currently underway - piloted by Stara Glass and with the involvement of key European partners. Leading the mission is the LIFE SUGAR project, which has the collaboration of Kinetics Technology, Nextchem, Johnson Matthey, Stazione Sperimentale del Vetro and the University of Genoa. Through groundbreaking advances in furnace technology, LIFE SUGAR promises a substantial leap toward reducing energy consumption and CO_2 emissions. In the following article we explore the goals, impact and upcoming pilot of LIFE SUGAR, which is set to launch at Vetrerie Meridionali S.p.A. by mid-2025.

A STEP TOWARD CARBON-NEUTRAL GLASS

The glass industry is under intense pressure to reduce its environmental impact. Albeit sustainable due to its recyclability and inert properties, glass production remains nonetheless energy-intensive - contributing significantly to greenhouse gas emissions. The LIFE SUGAR project, co-financed by the European Union, addresses this challenge by developing a total recovery furnace that reclaims waste energy and transforms it into a usable fuel source - reducing both energy usage and CO_2 emissions. Indeed the technology behind LIFE SUGAR involves steam-methane reforming (SMR) within Stara Glass's Centauro furnace architecture. This approach uses residual heat from exhaust gasses to produce hydrogen-rich syngas - an innovative method that replaces part of the natural gas fuel with a cleaner, high-energy alternative.

PILOT AT VETRERIE MERIDIONALI S.P.A.

Before the pilot phase, the SUGAR system was tested at the Savona Campus of the University of Genoa to ensure its reliability and efficiency. Now the upcoming pilot at Vetrerie Meridionali S.p.A will be a key milestone, showcasing how the technology can scale and perform in real-world conditions and thereby offering valuable

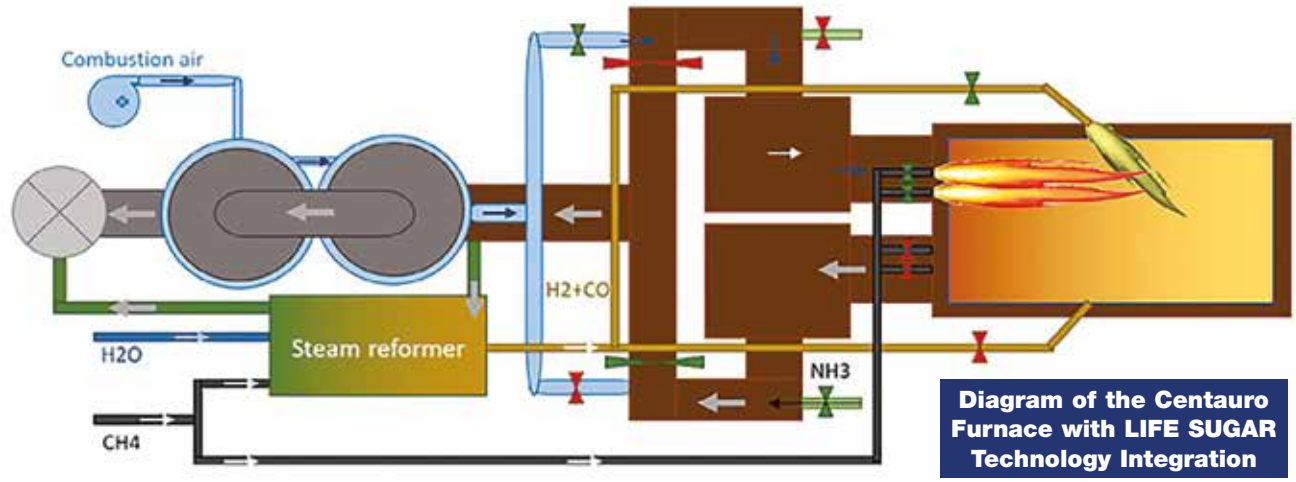

Diagram of the Centauro Furnace with LIFE SUGAR Technology Integration

Set to launch in 2025, the LIFE SUGAR project marks a critical step toward sustainable, carbon-neutral glass manufacturing. Led by STARA GLASS and its European partners, it aims to revolutionize glass production by way of a pioneering furnace technology that harnesses waste energy to produce cleaner fuel - all to drive significant reductions in energy use, CO_2 and NOx emissions.

insights for the glass industry's shift toward sustainability.

The mock-up installed at Savona Campus, University of Genoa

Exterior images of Vetrerie Meridionali S.p.A.

The pilot's installation is expected to begin in mid-2025, with the support and leadership of Eng. Leonardo Spinelli, the company's Plant Director. This installation will not only test the scalability and efficiency of the LIFE SUGAR model but also serve as a benchmark for future sustainable practices across the industry.

THE ROLE OF INNOVATION AND COLLABORATION

Central to the success of LIFE SUGAR is the innovative spirit and collaboration between Stara Glass and other industry experts. Here Eng. Ernesto Cattaneo, Head of Innovation Department at Stara Glass, underscores the importance of advancing sustainable glass production methods. By integrating SMR within the Centauro furnace, Stara Glass combines cutting-edge technology with operational feasibility, presenting a tangible pathway toward a carbon-neutral future. That said, beyond energy savings, the LIFE SUGAR system is designed to work with different furnace types, extending its applicability to other high-energy industries. This adaptability speaks to the broader potential of LIFE SUGAR as an innovative solution for energy-intensive sectors striving to reduce their carbon footprint.

LOOKING AHEAD

The LIFE SUGAR pilot at Vetrerie Meridionali S.p.A. is poised to be more than just a technological experiment; it embodies a commitment to environmental responsibility and sustainable industrial practices. By offering a glimpse into a future where sustainable production aligns with business growth, the LIFE SUGAR project is creating a valuable roadmap for industries worldwide. The project's goals are ambitious but achievable, with targeted reductions of 15 percent in energy consumption and CO_2 emissions. Additionally, the system aims for a 50-70 percent reduction in NOx emissions, thanks to an integrated Selective Non-Catalytic Reduction (SNCR) system. These advancements underscore LIFE SUGAR's role in pushing the glass industry closer to climate neutrality. More information on the project and Stara Glass's commitment to sustainable glass production is available from the company's website on the LIFE SUGAR project page. ■

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