

FURNACES

Sustainability breakthrough signalled by **SORG** hybrid furnace

Marking a major sustainability breakthrough for the glass industry, SORG's CLEAN Melter® hybrid furnace combines electric and combustion heating – also reducing carbon emissions while delivering high-performance flexibility. Backed by global installations, it indicates a transformative shift toward low-carbon glass production worldwide.

Sorg, a global leader in glass melting and conditioning, is working with leading international glass manufacturers on the next generation of sustainable melting technologies. Although glass is generally 100 percent recyclable, the energy required and emissions produced during melting remain a major sustainability challenge for the industry.

THE INITIAL NEED FOR EVOLUTION

All electric melters have been a proven technology for glass melting for many years. However, they have a certain number of limitations that restrict their use in a wide range of applications. These limitations include maximum pull, restricted glass chemistry and sensitivity to changes in raw materials and pro-



IMAGE WITH COURTESY OF ARDAGH GLASS PACKAGING



cesses. The logical conclusion was that a new technology was needed to expand the use of electric melting to a broader range of applications and to overcome its limitations. Sorg addressed this challenge by combining electric heating with fuel combustion in a hybrid furnace - marking a significant advancement in sustainable glass melting. Sorg Group's new CLEAN Melter[®] hybrid furnace allocates 20-80 percent of power to (renewable) electric energy, reducing carbon emissions compared to a non-hybrid/nonelectric furnace.

A HYBRID SOLUTION

Meeting market demand for technology that offers future-proofed flexibility in the choice of energy source, this breakthrough furnace supports large applications and high pull rates. Like most pioneering technologies, this hybrid furnace has actually been built on decades of proven experience as well as established processes and components. Key characteristics of the CLEAN Melter[®] include a refining shelf to stabilise the melting process and secure the glass quality. A radiation wall keeps the energy of the superstructure heating in the melting area. The CLEAN Melter[®] also delivers high flexibility in raw materials and raw material changes with no negative impact on the quality of the glass produced.

ARDAGH GLOBAL LAUNCH

Launch customer Ardagh Glass Packaging, a Luxembourg-based

global sustainable supplier, officially unveiled their hybrid furnace, branded 'NextGen Furnace' by the company, at Obernkirchen in Germany in November 2023. The Sorg Group supplied all the technology and managed the process from design and engineering to installation, with the construction completed over six months. After a successful operational launch, the furnace is now producing low-carbon amber glass bottles.

POWERING UP IN PARAGUAY

At the end of 2024, the Sorg Group celebrated commissioning the world's second CLEAN Melter[®] furnace, at Fabrica Paraguaya de Vidrios (FPV) in Paraguay. FPV is a highly respected manufacturer of glass packaging in the Mercosur region. Helping FPV meet the company's emissions and sustainability goals, the CLEAN Melter[®] is set up to achieve an electric share of up to 80 percent of the melting energy. Planned and supplied by Nikolaus Sorg, the furnace is designed for a melting capacity of 140tpd, melting flint, amber and green glass. The Sorg Group delivered technology including all furnace-specific equipment and Sorg 340S+[®] forehearth, with the furnace steel supplied and installed by Siam Furnace Construction (Thailand), an SKS company. Sorg Feuerungsbau und Service GmbH was responsible for the heating up and filling of the furnace.

FUTURE CLEAN MELTER[®] LAUNCHES PLANNED

Sorg Group is now continuing to design CLEAN Melter[®] hybrid furnaces for installation across the world, with new project and contract announcements expected soon. The company says many manufacturers are discussing the introduction of hybrid furnace technology as part of their sustainability strategies to reduce CO2 emissions. Internationally, numerous projects are at different stages of project implementation.

SUPPORTING A SUSTAINABLE FUTURE

The glass industry's journey to a low-carbon tomorrow continues. The CLEAN Melter[®] has moved smoothly from concept to proven technology. Minimising carbon emissions through the increased use of electricity has always made sense in the glass-melting industry. The Sorg Group is working with leading international glass manufacturers on the next generation of sustainable melting technologies, driving down emissions and helping glassmakers to produce net zero glass at volume within the near future. ■

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