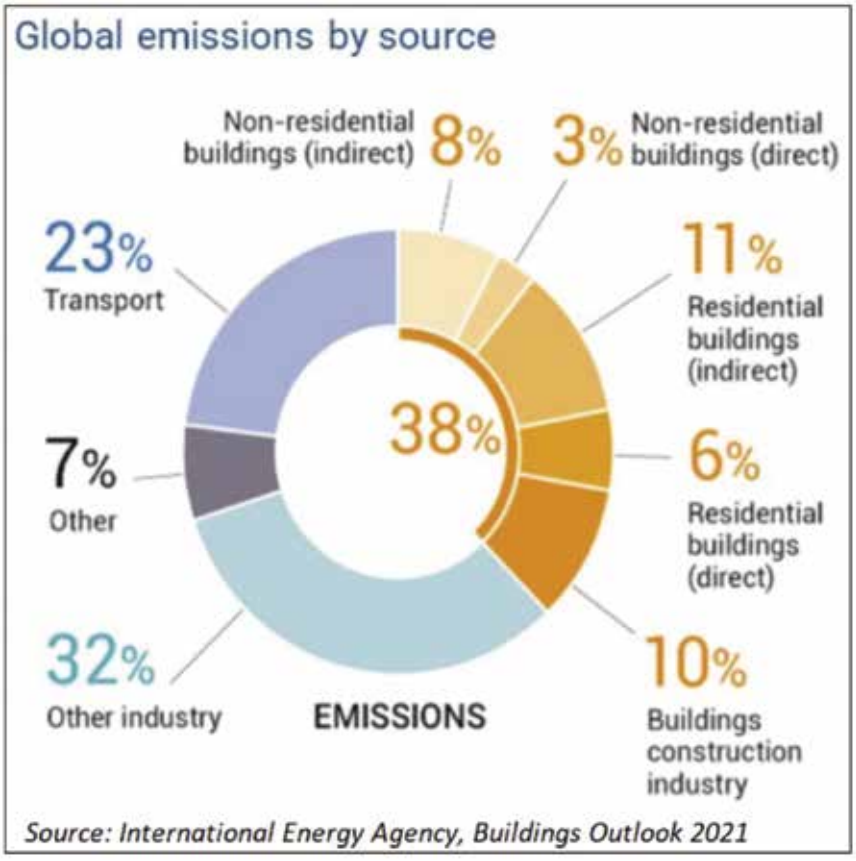
A word from FEVE on climate neutral production

FEVE (the European Container Glass Federation) recently reported that, with glass now 30 percent lighter, the industry has made great strides towards decarbonising production over the past fifty years. It's also 70 percent less energy-intensive and it emits 50 percent less CO2. That said, a significant step-change remains to be made to arrive at zero carbon emissions.

Being energy-intensive, the glass industry continuously invests in reducing and optimising energy use while switching to green and renewable energies – all to reduce both overall environmental impact and the costs associated with glass manufacturing. So, too, is the rationale behind the glass packaging industry's current aims to transform how glass is produced by 2050 as it offers climate-neutral packaging solutions - always striving to be fully circular.

Here many a 'disruptive' pathway for decarbonising the production process is actively sought. Transitioning to climate-neutral production requires a large sum of capital and opera-



tional expenditure. As such, public sector support and funding are essential towards helping industries deploy the latest disruptive technologies in order to best meet the decarbonisation targets set by the Paris Climate Agreement: a -61 percent CO2 reduction by 2030, as compared to 2005, and net carbon neutrality by 2050.

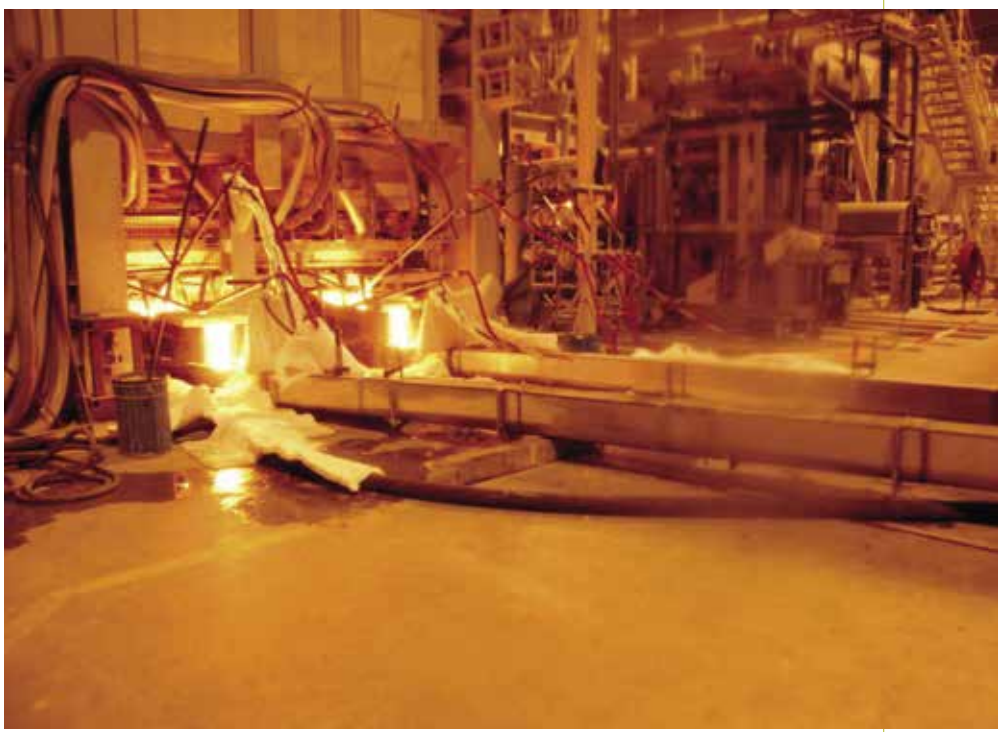
Here's why the glass packaging industry is committed to a strategic approach towards addressing the industry's carbon footprint and transforming regulation to address the emissions of other industries, especially by promoting the following:

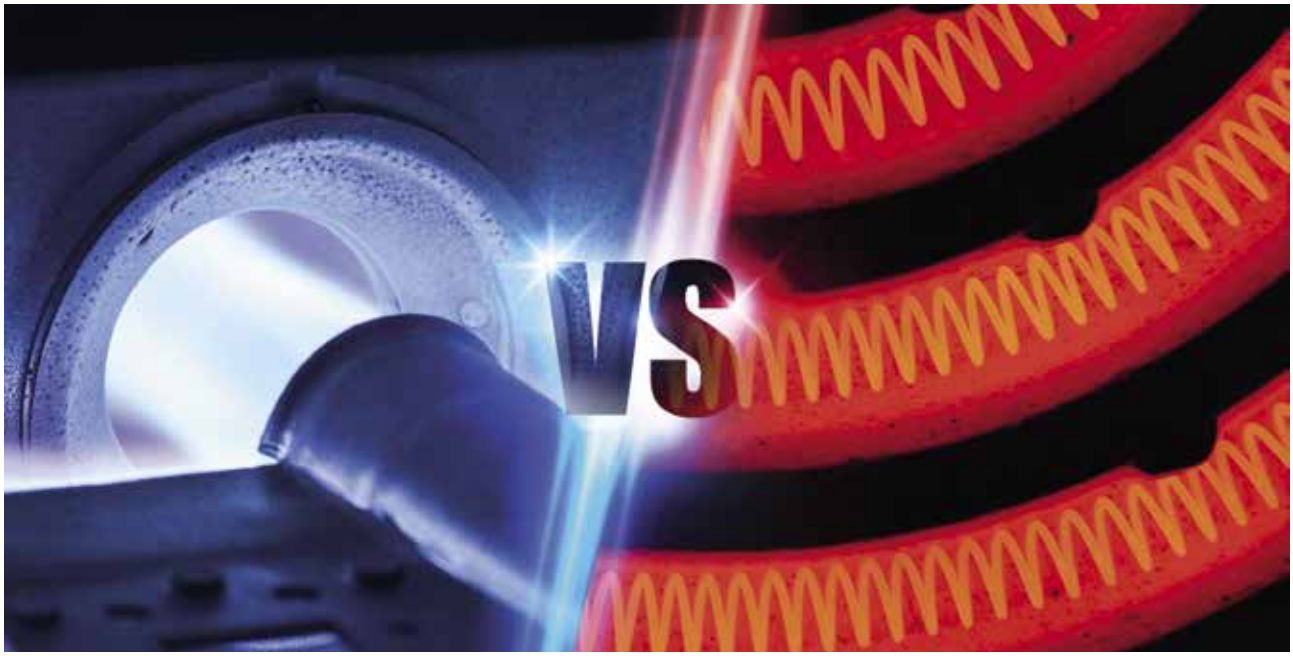
CUTTING 60 PERCENT DIRECT FURNACE CO2 EMISSIONS VIA MELTING TECHNOLOGY ENERGY TRANSITION

The European container glass industry's joint efforts with the 'Furnaces for the Future' project has afforded the industry an opportunity to design breakthrough technology to massively reduce CO2 emissions from large-scale container glass furnaces by replacing natural gas with up to 80 percent renewable electricity. Through new insights and expertise, glass manufacturing companies continue to invest in breakthrough technology and the scaling up of electric melting at commercial level. These 'Furnaces for the Future' will be able to melt reduced (amber) glass as well as flint and green glass, together with high levels of recycled glass. The industry continues to invest in exploring other solutions (biomass, hydrogen, etc.). Indeed at company level too there are many ongoing sustainability initiatives to reduce carbon emissions from glass production - of which some examples are viewable at glasshallmark.com.

ADDRESSING THE REMAINING 20 PERCENT BY CLOSING THE GLASS RECYCLING LOOP

This 20 percent of CO2 emissions comes from the melting of virgin raw materials in the furnace, which can be eliminated by replacing these materials with recycled glass (cullet). Every tonne of recycled glass saves 1.2 tonnes of virgin raw materi-





als, with a three percent energy reduction for each 10 percent of glass recycled in the furnace and a 5 percent reduction in greenhouse gas emissions.

Glass is Europe's most recycled, closed-loop packaging material with a collection rate of 80 percent. Most recycled glass ends up back in the production loop: the average batch-mix contains 52 percent recycled content. However, while 80 percent of the glass that ends up on the market gets collected, 20 percent is not. To close the loop, glass depends upon a whole system of stakeholders working together to collect more and better-quality glass for recycling.

closetheglassloop.eu is a multi-stakeholder platform that unites the glass collection value chain with that of recycling - all while establishing a material stewardship programme to advance more bottle-to-bottle recycling. The platform aims to increase and improve recycling habits by bringing together local authorities, cities, brands, recyclers and producers - all to achieve a 90 percent collection rate by 2030.

ENCOURAGING INVESTMENTS AND TRANSFORMING REGULATION TO ADDRESS OTHER INDUSTRY EMISSIONS

The industry is keeping pace in addressing not only CO2 but also other emissions coming from the production process. However, the transformation process will require significant investments over the coming years. Here the regulatory framework needs to allow for an investment-conducive environment - which is key to the materialisation of the EU policy objectives. Indeed it must carefully combine incentives for pollution reduction and provide sufficient flexibility for the integration of new, potentially disruptive technologies. Here the European Carbon Border Adjustment Mechanism is one of various possible options by which EU industries can potentially mitigate carbon leakage risks even if, as FEVE notes, it remains crucial that a medium to long-term vision of regulation is established - ever bearing the effects upon different sectors in mind.

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