

◀ Davide Cappellino.

Appointed President of the Architectural Glass Division of AGC in Europe and the Americas in 2022, Davide Cappellino* is helping pave the way towards a future of sustainable glass. With the vision that glass will play a central role in tomorrow's world, AGC aims to play a leading role in its future. He spoke to Jean Hardy** about AGC's role in sustainability.

AGC President: A future made of glass

I'm from Cuneo, a town in Northern Italy surrounded by the Alps where we have an AGC flat glass plant. After my engineering studies in Turin, I joined the glass plant as engineer. At the time, the Cuneo plant had just been acquired by Glaverbel, a European glass manufacturer belonging to the AGC Group.

After a few years I was invited to join the European headquarters in Brussels, within the Procurement Department.

For me it was the beginning of a long trip with many stopovers: Brazil, United States, with some returns to Italy and various missions within the headquarters of AGC Glass Europe in Belgium.

Today, I am responsible for the architectural glass business of AGC in Europe and in the Americas. We produce and sell primary float glass, we transform it into speciality and functional glass such as coated and laminated glass, fire resistant glass, mirrors and decorative glass.

We also supply to our customers processed glass, such as insulating glass panes for windows and



▶ Pic A. AGC's Brevka, Czech Republic facility.

façades. Our float production sites are located in Belgium, France, Italy, Czech Republic, Spain, Germany, Russia and Brazil.

We have a network of processing and distribution units and commercial organisations in almost all the countries in Europe and South America.

The AGC Group is made up of almost 60,000 employees and is organised in six in-house companies that cover diverse business and technology fields from glass, to chemicals, to electronic materials and life science.

Glass is an important portion of the AGC business portfolio, covering about 50% of the global sales.

The four values that inspire AGC strategy, actions and behaviours are: Innovation & Operational Excellence, Environment, Integrity and Diversity.

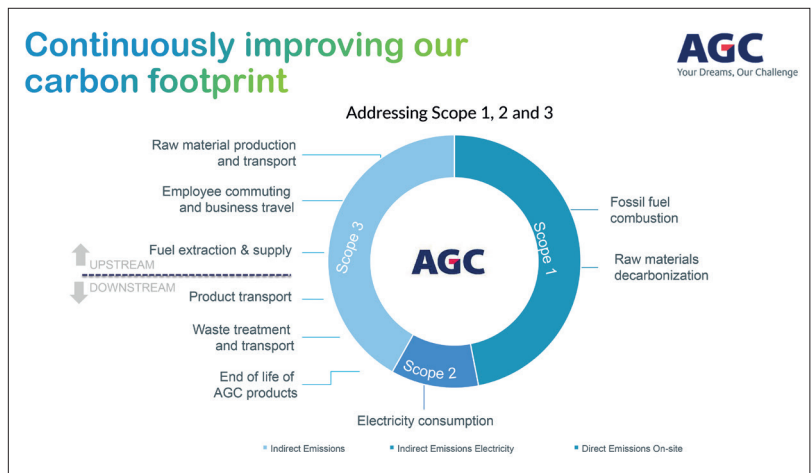
Our motto is One Team and our brand statement: Your Dreams, Our Challenge, and that's what we try to do every day, transforming the dreams and expectations of our customers and stakeholders into reality.

AGC Glass Europe recently released its 2023 Sustainability Report. First of all let me tell you that, as we all become more conscious of the ongoing changes in our climate and about the necessity to improve the sustainability of human activities, it is a privilege to work in the glass industry.

Our products bring to society one of the most efficient and cost-effective solution to improve the energy efficiency of buildings.

Everyday, with our work, we contribute to reducing global emissions, because heating, conditioning and lighting of buildings account for an important fraction of the total CO₂ emissions.

At the same time, we are seriously addressing the emissions generated by our production processes, executing an ambitious roadmap that aims at achieving in 2030 a reduction of our greenhouse



▲ AGC's carbon emissions and how it is reducing them.

gas emissions by 30% compared to 2019, and to achieve carbon neutrality in 2050.

Let's examine the three stages as follows: the work already done by AGC, our short-term objectives (2030) and longer-term objectives (2050).

Thanks to technological innovation, a continuous upgrade of our production facilities and the use of cleaner sources of energy, today we have reduced our CO₂ emissions by 30% compared to 1990.

Moreover, we recycle more than 1 million tons of cullet per year, saving about 1.150.000 tons of raw materials and 700,000 tons of CO₂ emissions;

In the past 30 years we have been substituting all the oil formerly used in our furnaces with natural gas and now we are increasing the use of renewable electricity to melt raw materials and produce glass.

To achieve our 2030 goals we will need to increase the use of renewable electricity in the melting process, by installing electrodes in all our existing furnaces.

And we are working, together with all the actors in the glass value chain, to achieve a higher degree of circularity in the glass lifecycle, making sure that we bring back to our furnaces all the glass that is dismantled from existing buildings during renovation or demolition.

This is a major challenge that will require coordinated actions across the glass industry and the construction industry as well as an evolution of the legislation.

Circularity and 'mild' electrification will not be enough to achieve carbon neutrality. We will need a breakthrough technology innovation, designing and realising production equipment that do not exist today.

Renewable electricity will contribute to a large fraction of the energy used in our furnaces, combined with clean combustion processes, raw materials different from what we use today and possibly carbon capture technologies.

A major portion of our R&D investment is now addressing the glass production technology of the

Pilot project to reduce emissions

AGC and Saint-Gobain said the pilot flat glass line would help reduce direct CO₂ emissions.

AGC's patterned glass production line in Brevka, Czech Republic, will be entirely refurbished into a line that targets to be 50% electrified and 50% fired by a combination of oxygen and gas.

The companies said it was a technical breakthrough compared to current technology used in flat glass furnaces fired by natural gas.

The new technology is expected to be implemented on the patterned glass line by the second half of 2024.

It is planned for the technology to be scaled up and applied to large furnaces for architectural and automotive glass.

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future. Such breakthrough innovation requires a new and open approach. For this reason we decided to join forces with another leader of our industry, Saint-Gobain. Together we are designing and realising a commercial-size pilot plant that is being installed in our Brevka, Czech Republic facility *pictured (A)* and *see 'Pilot project' section on previous page.*

Low Carbon Glass

Customers, architects and investors are concerned with the carbon footprint of their products and projects. Moreover in several countries legislation is evolving and is gradually putting in place restrictions on the quantity of 'embodied carbon' in the construction materials.

Meaning the CO₂ emitted all along the production, installation and end of life treatment of the construction materials used in buildings.

To give an answer to these needs and to support our customers in their decarbonation efforts, we offer a range of Low Carbon glass products, from float glass, coated and laminated glass and insulating glass units, that are made with specific production processes and parameters allowing to reduce 'embodied carbon' by more than 40%.

For example a square metre of Low Carbon float glass with 4mm of thickness emits, during the complete lifetime, from raw materials to disposal, only 7kg of CO₂ instead of the 12kg emitted for

traditional glass.

The glass value chain is cost conscious. The evolution of legislation in Europe and other regions, the increasing restrictions on emissions and the long-term sustainability roadmaps will require major investments by all the players of our industry and by the entire value chain.

We will need to balance wisely environmental sustainability and financial sustainability.

In one way or another the entire society will need to participate financially to this effort, to make sure we keep a financially sound and sustainable industrial presence in Europe.

The future is made of glass, glass has a great role to play in the society of tomorrow, if we succeed in the challenge of making our industry even more sustainable and future proof.

We will need to build on our traditional experience in glass production and be ambitious and courageous to embrace innovation.

I'm confident that our people at AGC combine one of the strongest knowledge base and experience in the glass world with amazing curiosity, the spirit of innovation and their dedication. ■

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To maximize production efficiency and become more sustainable, plants must be thoroughly optimized. By transforming into a Digital Enterprise and using a Digital Twin, you can test system components before commissioning, train operators offhand, and optimize plant sections during operation. We support you with integrating solutions of machine and plant builders into a plant-wide automation, providing a reliable foundation for data transparency, holistic operation, and process optimization. This way, you can maintain your leading market position and meet customer expectations while boosting the productivity and availability of your plant along the entire lifecycle.

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