

<b>Session</b>	<b>Decarbonizing the Glass Industry (I)</b>
Date	APRIL 10, 2025
Time (CET)	14:00 - 14:15
Chair	Serkan Şahin

## Progress in Lower Carbon Float Glass Melting: From Oxyfuel to Hybrid

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### Biography

Bruno Malphettes is the Marketing and Sales Director – North America - Glass at Fives, where he is also in charge of PV Glass Hot End and Innovative Float Glass Furnace Technical Solutions worldwide. He has been with Fives since 2018, when he joined as a glass furnace expert to participate in the development, design and implementation of innovative glass melting projects.

He obtained his degree in Materials Science and Engineering at the Ecole des Mines in France, where he discovered a passion for glass.

Prior to Fives, Bruno started his career as Melting Operations Manager for the Saint-Gobain – Corning joint-venture Eurokera. From this point, he assumed several technical and commercial roles in the Saint-Gobain group over 15 years, in the fields of solar glass, furnace refractory, glass furnace design and glass melting problems troubleshooting.

### Abstract

Glass melting is a demanding process that faces unique challenges related to energy consumption, efficiency, cost, and productivity. Float Glass makers are requested to make drastic changes to their furnaces and processes to follow a long term decarbonization path, while maintaining quality and total cost of ownership of their assets with minimal industrial risk. While most of the changes glassmakers make are usually incremental, Fives is developing a specific roadmap for Float Glass melting decarbonization, ready to bring change for good.

As an example, the paper will discuss Fives recent industrial success in float glass melting using preheated oxygen and natural gas as a primary melting energy. Combining this technology brick with advanced furnace design features, a unique L.E.M® technology solution was applied by Fives on a float glass furnace, yielding undeniable results in terms of energy consumption, furnace productivity, and NOx and SOx primary emissions.

As a second step, we will dive into Fives roadmap for melter electrification applied to Float Glass. While electrification is already well underway in most glass sectors, from fibers to container, especially with Fives new Ecoflex design, Float Glass electrification requires a dedicated approach to tackle specific issues. We will discuss the challenges of optical quality, fining, furnace durability and energy saving concerns and how to solve them to reach high levels of electrification with high tonnage and no compromise on glass quality.

