

Seeking a sustainable future



▲ Ernesto Cattaneo



THIS PROJECT IS CO-FUNDED BY THE EUROPEAN UNION'S LIFE PROGRAMME - LIFE19 CCM/IT/001314
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CAN YOU TELL READERS MORE ABOUT THE LIFE SUGAR PROJECT?

Stara Glass has been focusing for more than 70 years on present and future to implement sustainable solutions, together with high performance.

In fact, the idea comes from our innovation department. Like most melting furnace design companies, we have been struggling for years to find a viable way to bring back inside the glass melting process the residual waste gas thermal power that is not possible to use to preheat combustion air.

We experimented cullet and glass mix pre-heating, and also natural gas pre-heating but, for many reasons, neither one was completely satisfactory. Then, recently, the growing global attention to Greenhouse Gas (GHG) containment and the common goal of a having a climate-neutral industry before 2050 pushed us and many other companies to evaluate the usage of hydrogen as a fuel, and we realised that the particular heat recovery architecture of our Centauro system (<https://www.staraglass.it/innovative-products/centauro/>) allowed us to use the residual waste gas energy to turn methane into hydrogen with a steam reforming reaction, and we did not want to miss the opportunity of doing something this interesting for the glass production sustainability.

Therefore, in 2016 we started with a low TRL project, financed by the Liguria region, and we became ready to develop a wider project. Stara Glass is the project leader and, since we are way more skilled

in glass furnace design than hydrogen production, we teamed up with four different partners:

- JM - Johnson Matthey is a global science and chemicals company, and a leader in sustainable technologies including catalysts and processes for steam reforming.

- KT - Kinetics Technology is a leading international technology licensor and EPC contractor with a significant track record in steam reforming

- The University of Genova is a reference research centre for modelling and testing glass production industrial solutions

- SSV - Stazione Sperimentale del Vetro is an internationally renowned research centre and analysis laboratory specialised in glass science and technology, with a strong experience in the fields of emissions measurements and mitigation, energy efficiency, furnace technology and refractory materials characterisations.

The final goal is to launch to the market what we call a 'total recovery furnace', that is supposed to decrease the energy consumption (and NOx production as well) of regenerative furnaces in a significant way and, with it, CO₂ emission and glass production cost. The main difference between us and many other companies that are testing the usage of hydrogen as a fuel for glass production, is that we don't just use it, we produce it as well.

Stara Glass has secured European LIFE funding for a project aimed at energy saving, CO₂ containment and the sustainability of glass production: the LIFE SUGAR project. Stara Glass's Ernesto Cattaneo* discusses the details.

WHY DID STARA GLASS DECIDE TO PARTICIPATE?

Stara Glass is firmly committed in increasing the sustainability of glass production, and the innovation department is inevitably at the forefront of this policy. The SUGAR project is ambitious and extremely time and investment consuming, so we decided to try and use LIFE funding. We obtained an important financing at the first attempt. Furthermore, the interest of the European Union in our project is a business card which every industrial field always appreciates.

WHAT BENEFITS WILL THIS PROJECT BRING TO STARA GLASS AND TO THE WIDER GLASS MANUFACTURING INDUSTRY AS A WHOLE?

Stara Glass aims at improving its position on the market by consolidating its name on the forefront of glass production innovation, therefore we constantly struggle to develop technologies that improve the sustainability of glass production. The Centauro technology and the outcomes of the last LIFE Prime Glass project (www.primeglass.it) taught us that the glass industry has increased its demand for green technologies. Personally, I don't only strive for the competitiveness of my company, I also do all I can to leave a livable world to my children.

CAN YOU DESCRIBE WHAT YOU HOPE TO ACHIEVE ENVIRONMENTALLY FROM THIS PROJECT?

We aim at a significant reduction of gas consumption, and therewith CO₂ emission, for the glass manufacturing industry. And, since the technology is being developed on our Centauro system, we already know it will include an effective SNCR system for NOx abatement.

WHAT IS THE SCHEDULE OF THE PROJECT?

The project started on June 1st 2020 and it is scheduled to end on November 30th 2023. The project includes the installation of a prototype on an operating furnace and, therefore, we are scouting an industrial user. We have already obtained three letters of interest from important global glass producers, we mainly need to find a furnace whose rebuilding time and factory layout matches our project requirements. If any glass producer is reading and interested, my e-mail address is ernesto.cattaneo@hydragroup.it.

HAS STARA GLASS WORKED ON SIMILAR EU PROJECTS SUCH AS THIS BEFORE? WAS IT SUCCESSFUL?

Yes and yes. Stara Glass, in the last 15 years has participated to and, most of the times, led European and domestic financed innovation projects and their outcomes improved our position on the market.

In particular, the LIFE Prime Glass allowed us to develop two important solutions for NOx primary containment, the Strategic Waste Gas Recirculation (SWGR <https://www.staraglass.it/innovative-products/swgr/>) and the High Efficiency Air Staging (HEAS <https://www.staraglass.it/innovative-products/heas/>) whose important commercial success responds to the direction of sustainability that the European Union is steering every industrial sector towards. ■

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