LIFE Smart Oxy-Boost

Report on socio-economic impact

With the contribution of the LIFE financial instrument of the European Community

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Introduction

LIFE Smart Oxy-Boost is a **close-to-market project**.
From a revenue standpoint, the objective is to deploy the new offer (e.Burner) to customers worldwide (customers for Glass, customers for Metal and Non Ferrous, customers for other combustion applications), for a total of and estimated 90 burners sold over the next decade after the validation of the technology.

It is also expected that e.burner will contribute to the overall growth of the combustion sales for oxy-combustion. The total oxygen sales are estimated at about 20M€ of sales by 2023..

The effect on the local economy and population are closely linked to the place the project takes place. **Oxy-combustion technology with e.Burner** aims at setting one of the greenest glass processes in the world and in doing so, giving to the area environmental benefits and lower fuel dependency of the glass company. In addition it is expected to have a favorable impact on the development of green processes and to initiate a more active phase of the implementation of greener technologies. Projects create direct and indirect jobs in the regions by allowing the start-up of additional production lines. Indirect job creation is linked mainly to the building of the production line and external maintenance and survey of the process.

The LIFE Smart Oxy-Boost project strengthens employment by making highly qualified staff. It will broaden and deepen the knowledge and skills of the team members, enabling the career development and insertion of workers, including young workers. Among the FTE required for replication of the technology, it is estimated that half of them will create new positions. To successfully roll out this new technology in Europe and worldwide, TGB and AL will train local people and capitalize on first industrial references. All workers will be trained on specific standards and codes of the new technology.

Monitoring the impact of the project on society and its economy is a far-reaching task, as the project will influence socio-economic development years after it has officially ended. Especially permanent job-creation and impact on economies cannot be yet fully estimated.

However, the impact of the project through changes in legislation, volume of dissemination activities, and number of contacts in social media and face to face with stakeholders are possible to track as indicators and they are likely to correlate closely with the resulting socio-economic impact of the project.

Methodology

Direct and potential indirect employment growth

This project created direct and indirect jobs in the region. Production engineers, operators, technician at furnace and batch department also engineers, technicans in the auxiliary facilities are responsible

on the daily operation of the oxy-burners and they become specialized on operating a furnace with Smart Oxy-burners. The man-hours spent on the project are shown in detail at table.1

Table.1 TGB Man-hour table for LIFE Smart Oxy-Boost Project

	Total number of hours worked per year	Number of hours worked on the project per year	%
Auxiliary Facilities Chief	6.015	1.305	21,7
Auxiliary Facilities Specialists	5.324	998	18,7
Chief Accountant	4.864	389	8,0
Energy Chief	5.973	1.028	17,2
Engineer Production	5.703	1.213	21,3
Financial Manager	5.584	368	6,6
Furnace Batch Chief	3.688	966	26,2
Furnace operator	4.632	1.351	29,2
Furnace technician	4.584	673	14,7
Gas Facilities Controller	5.466	1.008	18,4
General Manager	2.896	105	3,6
HR Chief	566	144	25,4
HR Manager	4.008	161	4,0
HR Officer	3.491	173	5,0
Manager Production	168	15	8,9
Plant Manager	1.640	425	25,9
Production Chief	2.384	373	15,6
Production engineer	4.696	888	18,9
Production Manager	4.036	764	18,9
Technical Manager	5.624	1.231	21,9
Technician	5.519	704	12,8
Grand Total	86.861	14.282	16,4

The LIFE Smart Oxy-Boost project strengthens employment by making highly qualified staff. It broadens and deepens the knowledge and skills of the team members, enabling the career development and insertion of workers, including young workers.

The 20 employees involved in the project spent an average of 16.4% of their time on this project throughout the project period. This time spent is equal to 3,28 FTE. Employees working in the furnace department and auxiliary facilities (yellow and orange in the table) will continue their responsibilities after the project. To successfully roll out this new technology in Europe and worldwide, TGB and AL will train local people and capitalize on first industrial references. All workers will be trained on specific standards and codes of the new technology. In addition, the inexperienced staff working for glass industry insofar with only air-combustion knowledge would be trained for oxy-fuel combustion.

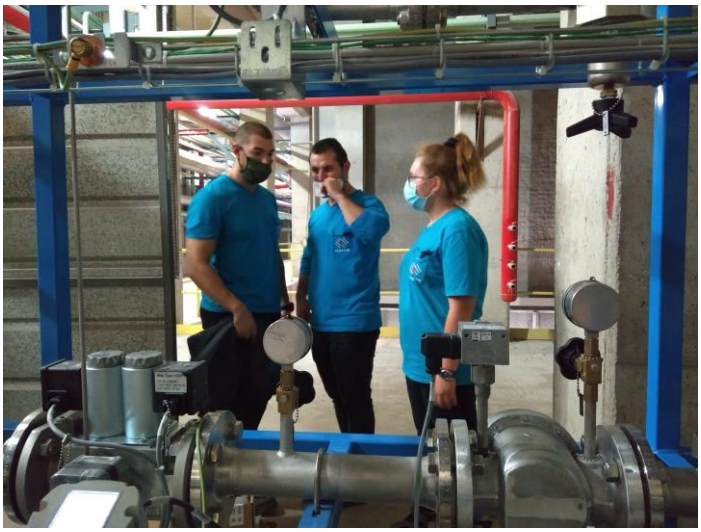
Beyond three years FTE will be three times as Şişecam has a plan to implement Smart Oxyboost system at its Russia and Turkey plant.

Training

TGB planned and executed training continuously for the newly recruited people whose main duty will be on relieving the experienced furnace technicians from day-to-day operations and allowing them to focus on keeping the performance of the cold and hot operation equipment at top level. In addition, the staff working in Targovishte does not have experience in oxy-combustion insofar as only airfuel combustion is currently used. Therefore specific interactions and training have been made and will continue to be held with AL will be performed for knowledge and know-how transfer on this technology.

AL trained TGB teams at site on:

1) valve trains' operation & maintenance



2) e.Burners maintenance (insertion and removal of the metallic parts)

3) automation of the e.Burners

Following procedures have been set up by AL and handed over to TGB teams at site:

Smart Oxy Boost Burner - Instruction summary

User's manual for Smart FC Boost Burner gas fuel version

Smart Oxy Boost Burner - Instruction for automatic NG valve

2019-007-IOM-001-CNPL-A - INSTRUCTIONS FOR USE FLAMOXAL-B 1.5 MW

Dissemination Activities

Communication and dissemination activities have an important role in enhancing the replicability and transferability strategy by enabling to reach a wider audience and by providing long-term dissemination tools. To achieve these objectives, Şişecam has defined several dissemination tools such as the participation in seminars and conferences, and the creation of a website. Şişecam also will publicize articles in specialized journals, elaborate and print information materials, such as brochures and flyers and organize meetings and events with potential clients and users to reach a large audience.

Website

LIFE Smart Oxy-boost project website is online https://smartoxyboost.com/ since September 2019 both in English and Bulgarian. Brief information of the project, presentations, development about the project are available on the website. The website will be regularly updated during the project duration and maintained online for at least 5 years after the end of the LIFE Smart-Oxy boost project. TGB is taking the lead of the action. However, this action will take the form of a close collaboration between both partners for the update of the website with the obtained results (technical achievements) and with the news (dissemination events).

Conclusion

Based on the business plan and the dissemination activities performed by the partners during and after the project, Şişecam would replicate the process in other float furnaces of the Şişecam Group.

Specialized personnel in the Smart oxy-boost system at TGB will play an important role in achieving this goal.

In addition, the knowledge and experience gained during the LIFE Smart Oxy-Boost project has been invaluable for other types of glass furnaces. The trained and specialized personnel here have also become important and an opportunity for the sectors having in other furnace types.