

# From environmental constraints to cost savings in France



**BACKGROUND**  
Customers needs



**CONCEPT**  
Calderys solution



**SUMMARY**  
Recap of  
the solution



**RESULTS**  
Concrete  
benefits



## The background situation

Today, environmental considerations cost an average french foundry about 188.000€/ year in taxes (CO2 emission and Green Sand waste disposal cost) and this trend will continue to increase over time.

Impact on workers' conditions, neighborhood, branding is intangible.



## The request from the customers

The primary interest of the customer is to be able to act on the GMSA formulation and the components that are triggering those emission levels since it has the potential to substantially decrease those costs, both from an emission and a waste standpoint. The main component motivating the incineration and hence higher cost option is as well a major emission emitter.

By repercussion being able to act on this has the additional benefit to improve the workers conditions in terms of Health and Safety.





## Analysis of the situation

Based on combined information from SWECAST and CKinetics, the foundry industry emits globally less than 4% of the CO2 emissions.

An average European foundry emits about 500 kg CO2e/T net castings sold (scope 3).

In France, per SWECAST, an average foundry produced in 2021 100 kg CO2e/T net metal casted, where it sells on average 11,000T of casted material.

With carbon taxes being at 45€/mT of CO2e in France (Tax Foundation, April 2022 data), an average french foundry would pay about **50,000€** per year.

## Analysis of the impact by Calderys

In France sending waste sand to incineration or reuse costs ~40-50€/T, sending it to landfill costs 10-15€/T.

1T of molten metal requires 10T of mold sand. This mold sand generate 2.8% waste. So 1T of casted material generates 2.8% waste sand or 280kg of waste sand.

Hence an average foundry generates 3,000T (280\*11,000) of waste sand per the data shared above, or costs about 138,000 € (45€ \* 11,000 \* 0.280) in waste tax for an average foundry.



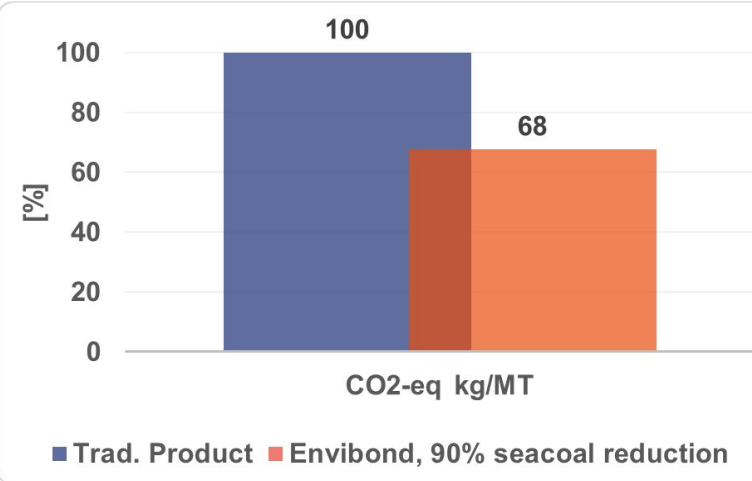


### Description of the solution brought by Calderys

Foundries must produce quality castings consistently and as efficiently as possible while minimizing the impact on the environment and the workplace.

**ENVIBOND®** effectively consumes gasses, significantly reducing fumes and hazardous organic compounds. It:

- Reduces the use of sea coal by 30% to 90%
- Decreases emissions and odors by up to 95%
- Lowers consumption of molding sand binders
- Results in cleaner air in the workplace with less need for air filtration
- Increases the recyclability of molding sand
- Improves casting surface quality
- Reduces environmental investments







### The right solution for customers' needs

Our expert engineers with a deep understanding of your local market, industrial process, and the chemical reactions in your equipment will work with you to identify the best products in terms of performance, lifetime, and cost. Through careful product selection, we will:

- Reduce downtime for installation and maintenance
- Decrease manpower needs
- Increase production volume, quality, and reliability
- Extend product life, thereby cutting pollution
- Make manufacturing safer

### Services - Expertise

In addition to constantly developing new technologies for the foundries of tomorrow, Calderys' foundry experts have developed a full package service: from engineering & design to product installation, dry-out and commissioning as well as maintenance services.



# Thank you for your attention

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