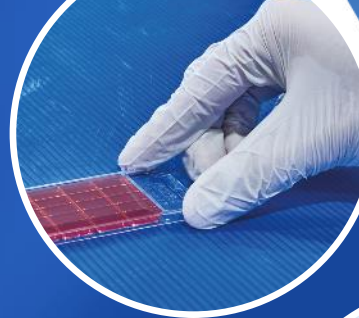




# LCA and TCO analysis

## The best decision for your pallets



In collaboration with







**21 service centers in 11 countries**



**130 recipients in 20 countries**



**7.300 Filler in 30 countries**

## OUR VISION

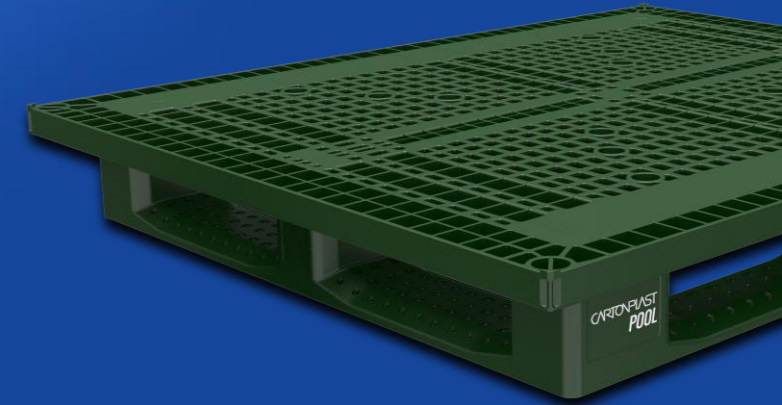
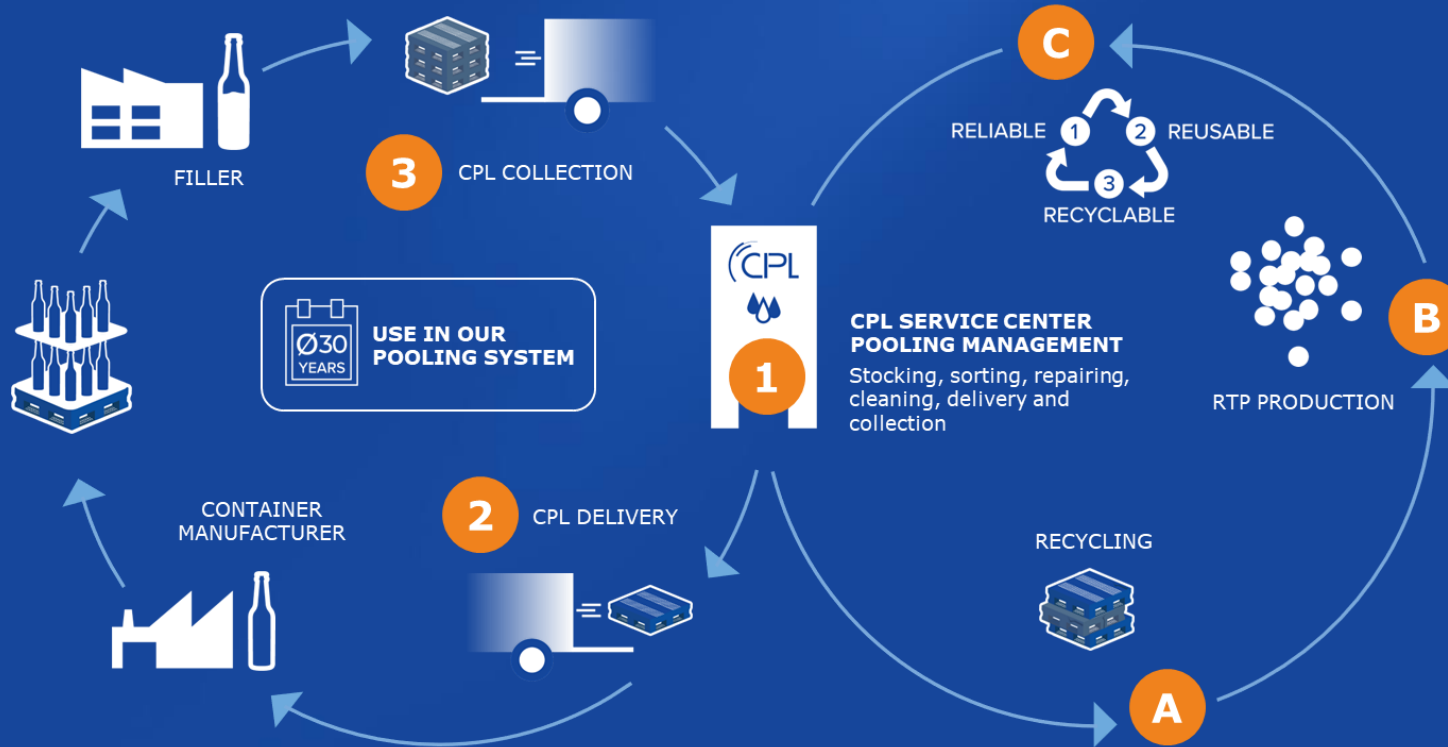
To create a better world where nature is preserved and where packaging is not a waste anymore.

## OUR MISSION

To provide innovative and sustainable packaging solutions in collaboration with our customers, enhancing the efficiency and environmental sustainability of their supply chains. Our commitment is to improve people's lives by creating lasting value through reusable and recyclable transport packaging.



# EFFICIENT CLOSED LOOP LOGISTICS SYSTEM | PALLETS



**GLOBAL COVERAGE OF OUR EFFICIENT POOL SYSTEM**



**RELIABLE & TRANSPARENT**



**HYGIENIC & FOOD SAFE PRODUCTS**



**ECO-FRIENDLY**



**SUPPLY CHAIN GUARANTEE**



**SAVING & FULL TRANSPARENCY OF COSTS**

# THE MARKET FOR REUSABLE PACKAGING IS EVOLVING



## What are the advantages of the Cartonplast plastic pallet pool compared to the traditional wooden pallet model for the glass sector?

The choice of the Pallet Pool model is based on two pillars:

Economic sustainability (TCO<sub>1</sub>) and Environmental sustainability (LCA<sub>2</sub>).



A TCO and LCA have been carried out to give glass manufacturers visibility and help them decide on transitioning from a traditional wooden pallet model to a plastic pallet pool, based on:

- » Cost savings associated with the model change.
- » Environmental impact reduction: selecting the most sustainable option.
- » Simplification of the supply chain operation.
- » Compliance with packaging and waste regulations (PPWR), both at local and EU levels.

# TCO OF THE WOODEN PALLET POOL OWNED BY GLASS MANUFACTURERS

Managing your own pool of wooden pallets is complex and it is difficult to see all the associated costs. Miebach has carried out a TCO (Total Cost of Ownership) to identify and quantify all the costs of the closed glass manufacturer - filler cycle.

## PROCUREMENT



Purchase cost of new wooden pallet

## TRANSPORT



Cost of reverse logistics for pallet collection

## REPAIR



Cost of sorting, repair and cleaning and treatment of the used pallet

## END OF USE



Cost of end-of-life residue treatment (SCRAP or SIRAP) of wooden pallet

## HIDDEN COSTS



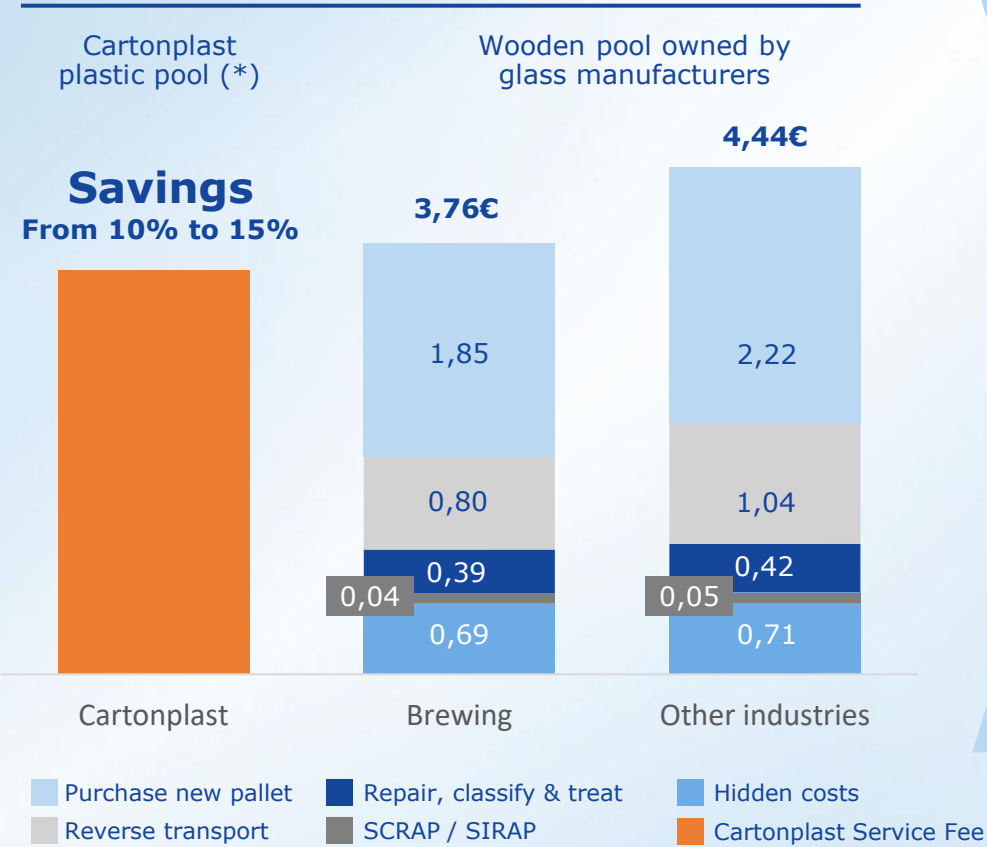
Indirect costs: storage, pool management, operational inefficiencies...

# SAVINGS IDENTIFIED IN CARTONPLAST POOL MODEL

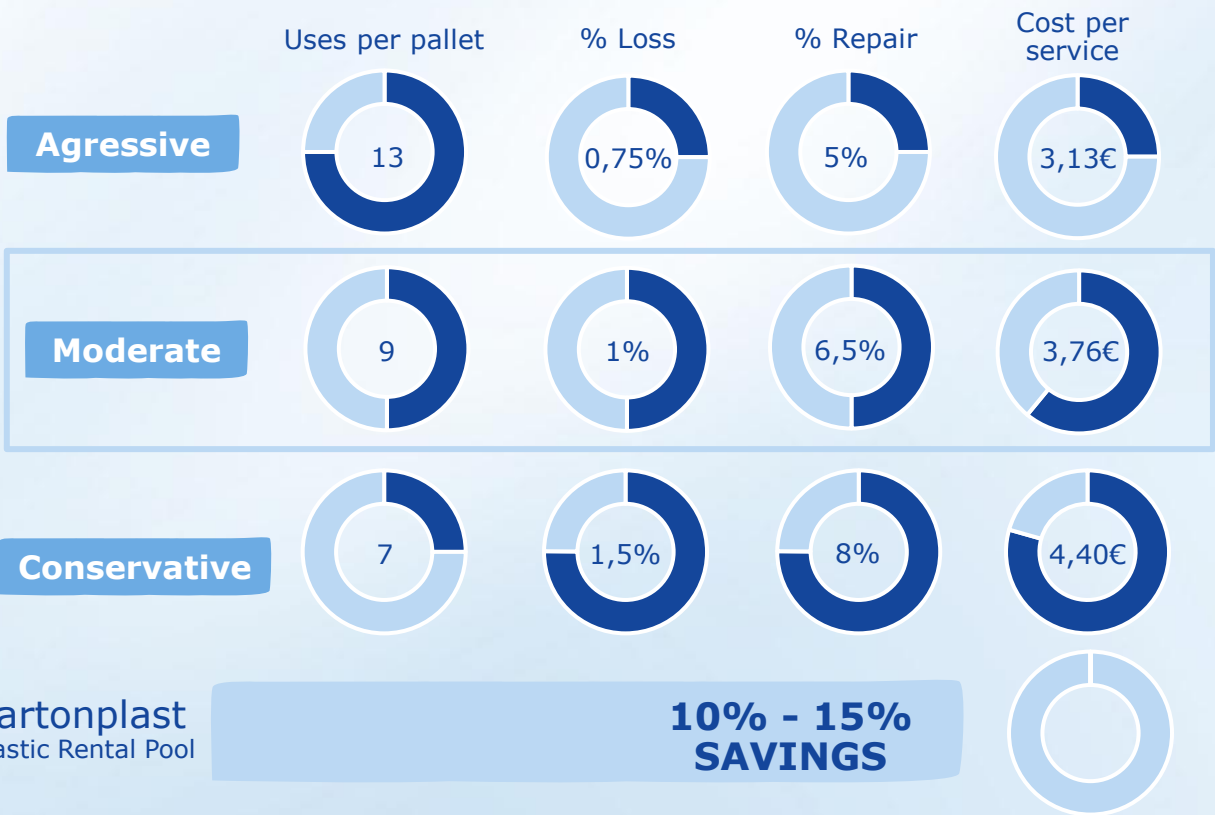


Cartonplast's Service Fee is compared with the actual cost of the wooden pallet paid by the glass manufacturers. The study includes costs based on the different circuits and scenarios.

Cost per pallet service in a Moderate Scenario



Sensitivity analysis – Wooden Pallet



(\*) Rotation assumption: 3-4 per year and 150 uses in Cartonplast plastic pallet.

# REDUCING ENVIRONMENTAL IMPACT WITH THE PLASTIC PALLET

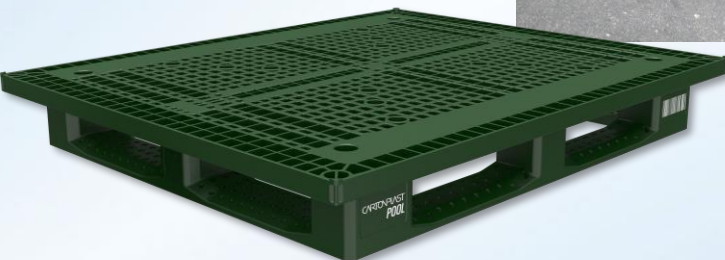


ITENE

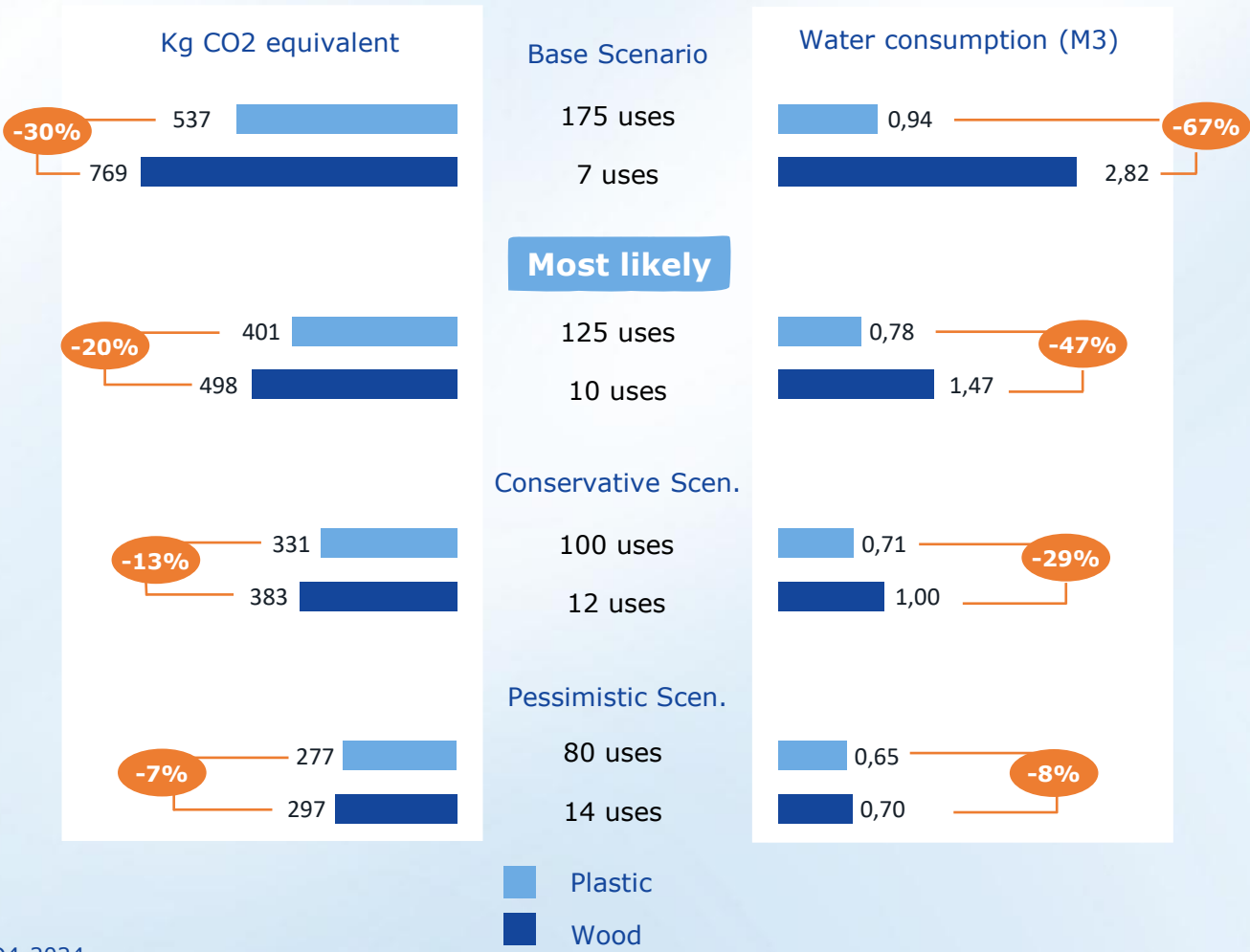
## LCA of the plastic and wooden pallet to calculate the carbon footprint and water consumption.

ITENE has developed a study of the life cycle of the ANIFE wooden pallet for different glass-filler logistics circuits in Spain (1).

The study considers different pallet reutilization scenarios. In all scenarios, the wooden pallet has a much higher environmental impact.



### Environmental comparison of the ANIFE wood and plastic pallet



(1) LCA - Life Cycle Assessment from cradle to grave, by ITENE with Simapro Software updated in Q4-2024  
The results presented refer to a specific Cartonplast case, based on particular logistics circuits within the glass industry in Spain.  
The detailed results (comprehensive LCA report) are available upon request from Cartonplast Ibérica, upon the prior execution of a Non-Disclosure Agreement (NDA) for the provision of the full report.

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# EVOLVE WITH CARTONPLAST PALLETS



1

## Savings and Efficiency

A more economical pool model, with lower breakage and loss ratio and higher turnover and efficiency in the logistics process.

3

## Control

Full traceability with RFID and QR.

5

## Simplicity

A model that simplifies the operation and allows glass manufacturers to focus on their core business.

7

## Future

A model that adapts to new local and EU legislation (PPWR)

2

## Sustainability and Circularity

A pallet with a higher reuse rate, recyclable and with a lower environmental impact.

4

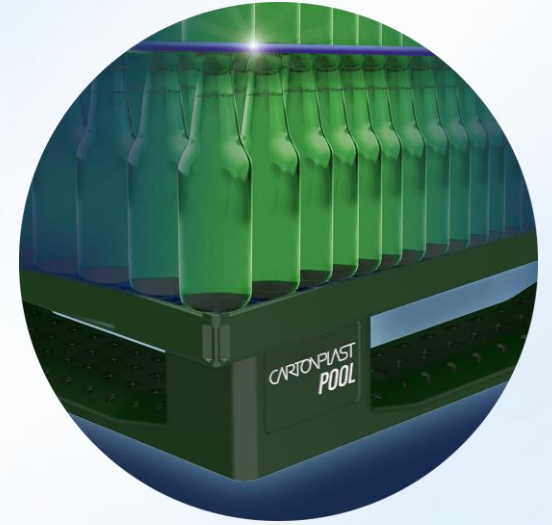
## Experience

Cartonplast has extensive experience and already has resources in a pool in the glass sector.

6

## Quality

A lighter, stronger and more hygienic pallet.







# THINK DIFFERENT, THINK GREEN.

## IT IS TIME FOR REUSABLE TRANSPORT PACKAGING.

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*The information contained in this presentation is provided for informational and comparative purposes only. It includes internal and third-party data deemed reliable; however, accuracy, completeness, or timeliness is not guaranteed. The advantages and improvements indicated are based on comparative analysis and may vary depending on the specific circumstances of each case.*



**WE KEEP YOUR  
BUSINESS**

**MOVING**

A white semi-truck is shown from a high-angle perspective, driving on a two-lane road that cuts through a dense green forest. The truck's trailer is white and features the word 'CARTONPLAST' in a blue, sans-serif font. The truck is moving away from the viewer, following the curve of the road.

**EFFICIENCY IN EVERY LAYER**