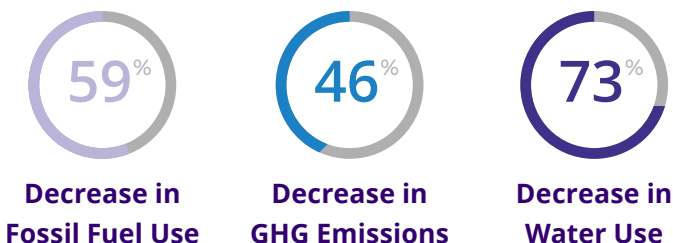


Environmental Benefits Of Reusable Shippers

Determining the environmental impact of shipping systems can be challenging to quantify. The origin, use, transport, and disposal of various components all must be considered to calculate the full impact. This can be further complicated when evaluating reusable shippers which have additional factors to consider. We know from the adage “Reduce, Reuse, Recycle,” that reusables are usually a good choice, but how do they measure up in real world applications?

To understand the real environmental benefits of reuse, Cold Chain Technologies (CCT) collaborated with Trayak, a sustainability consulting and software company, to conduct a Life Cycle Assessment (LCA) comparing CCT’s single-use and reusable shippers. Trayak used their Ecolmpact-COMPASS software to model CCT’s shippers and conduct the LCA according to the requirements of International Standard ISO 14044:2006. This work was then further reviewed by a 3rd party to confirm its conformance to relevant ISO standards.

The results showed that reusable options had lower environmental impact than the comparable single-use shipper, including for indicators such as Fossil Fuel Use and Greenhouse Gas (GHG) Emissions. Considering our reusable Ecoflex 96 6L shipper specifically, the improvement for a short-distance shipment over 20 shipments was:



Many factors are at play to keep the environmental impact low for a reusable fleet, and each real shipment’s impact is different depending on location and local infrastructure. From conducting this study, we have been able to identify some of the most important ways to lower impact in the field:

- **High Return Rates – There’s no reuse without returning the shipper**
- **Low Damage Rates – Robust design protects both the product and reusable components**
- **Shrink the Loop – Closer refurbishment sites cut unnecessary transport**

As you can see, lower environmental impact is a group effort! We depend on our external partners, customers, and internal team to make reuse feasible from both an environmental and business perspective.

**All values and figures presented here are taken from our LCA report prepared May 4, 2022. A copy of the report containing the study and the third-party attestation of ISO compliance is available upon request.*



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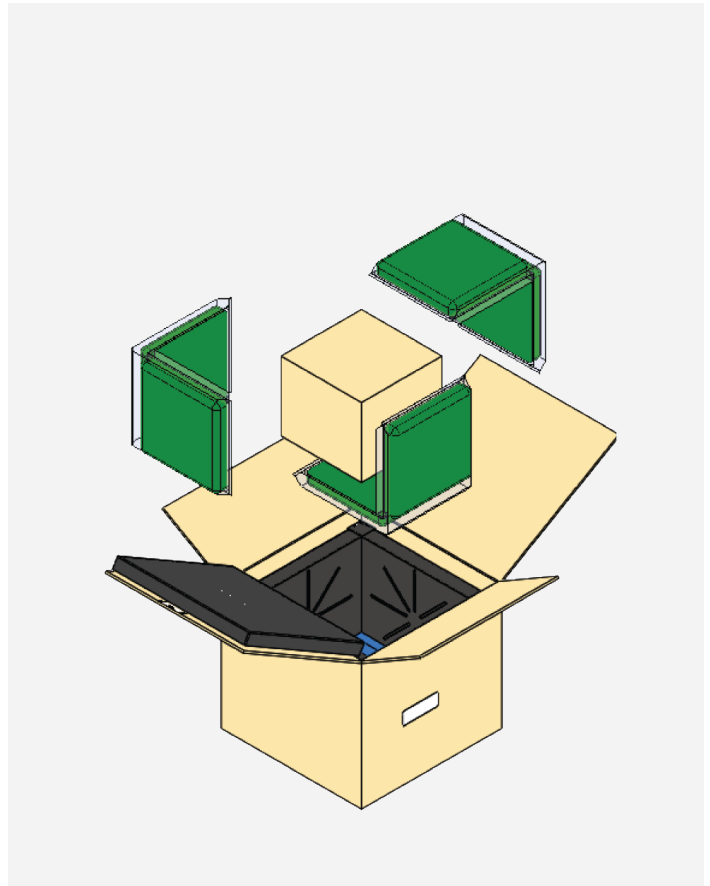
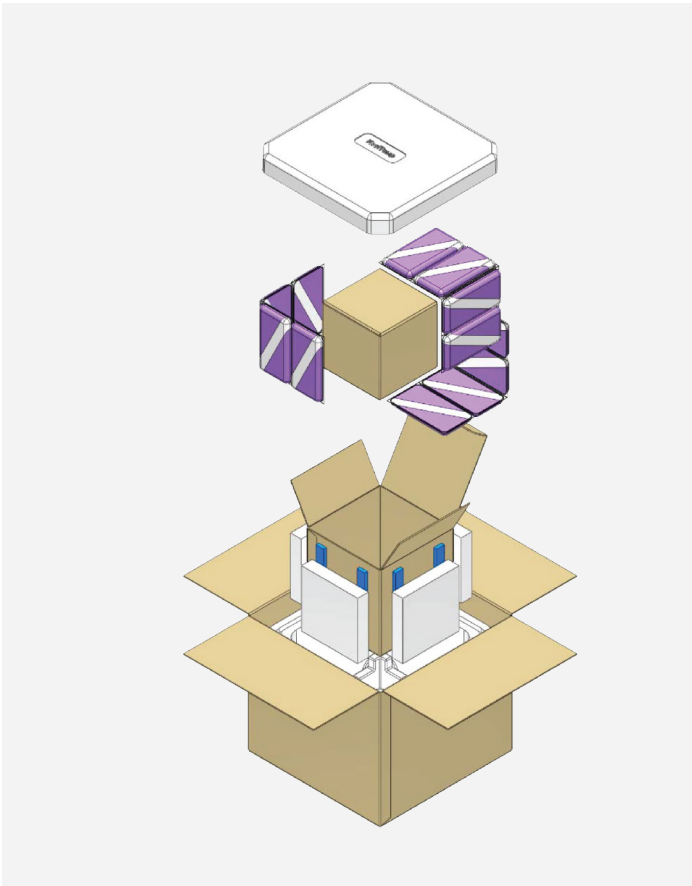


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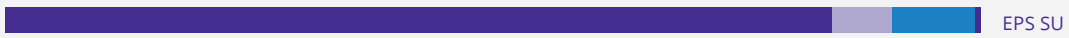
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Side-by-side picture of the two product lines compared in the report. Specifically, our Excel 6L (EPS) and Ecoflex 96 6L (VIP) shippers were modeled.

Fossil Fuel Use (GJ Deprived)

EPS SU



EPS - REUSABLE, PCM



VIP - REUSABLE LDR 95% RR



VIP - REUSABLE, HDR



- MATERIAL
- MANUFACTURING
- TRANSPORTATION
- END OF LIFE
- Use Phase

1 2 3 4 5

Detailed look into the Fossil Fuel Use indicator results for short distance transport.



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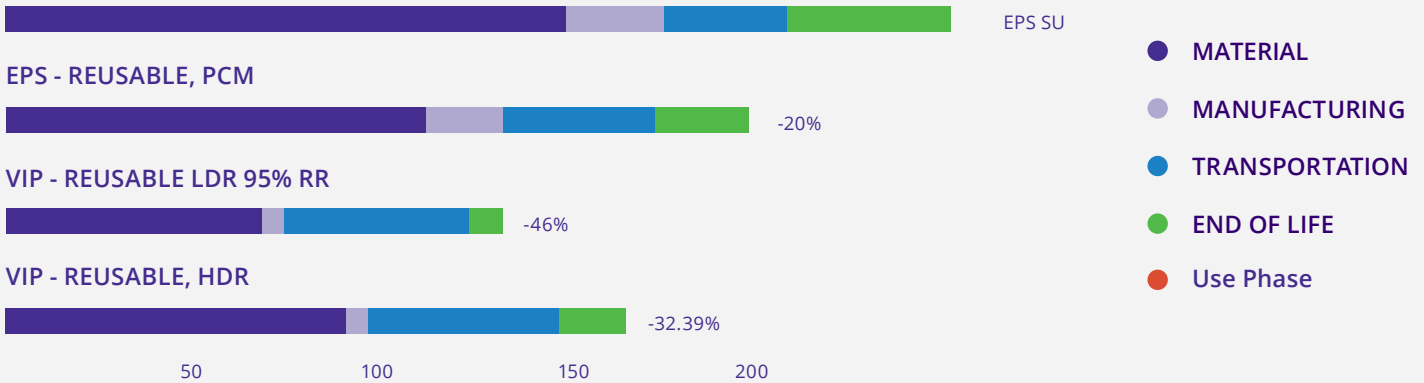
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GHG Emissions (kg CO₂ eg.)

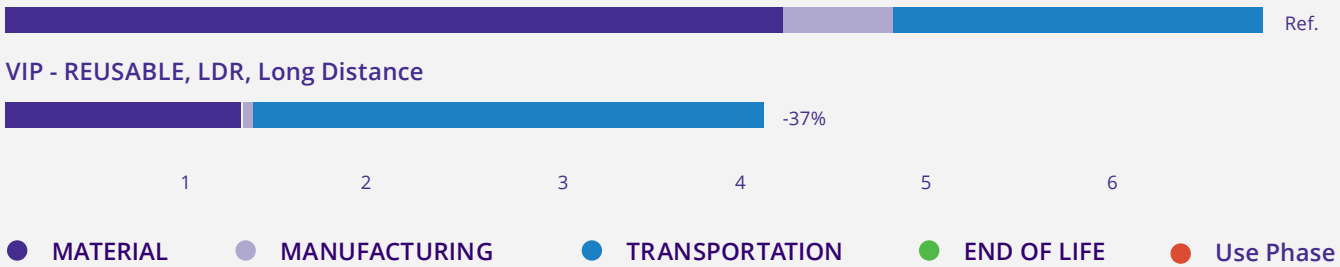
EPS SU



Detailed look into the GHG Emissions indicator for short distance transport.

Fossil Fuel Use (GJ Deprived)

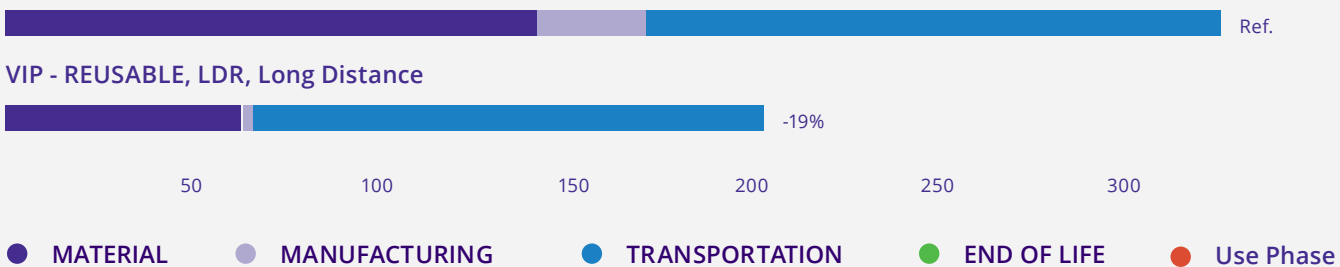
EPS - SU, Long Distance



Detailed look into the Fossil Fuel Use indicator results for short distance transport.

GHG Emissions (kg CO₂ eg.)

EPS-SU, Long Distance



Detailed look into the GHG Emissions indicator results for long distance transport.



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