Creating less waste with smart designs

Re-Pax

Packaging solutions

Re-Pax Click-Pax

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Introduction

The packaging

Click-PAX has patented the closure system that makes reusable packaging so efficient.

Re-Pax
Click-PAX has patented the closure system that makes reusable packaging so efficient. This allows you to fold or unfold the box in seconds. This reusable packaging can be folded and unfolded over hundreds of times, and the latest version uses no Velcro closures which makes it very durable.

The following pages show the first design and the latest prototype. As you can see, many different sizes are possible. The latest prototype, shown on page 5, is a 40×30×50 cm euro box.

Product use cylce

Re-usability

‘This reusable packaging can be folded and unfolded over hundreds of times’

Use cycle

Click-PAX reusable packaging is estimated to last 100 times. The production of the packaging produces only 5.42% the CO2 from the cardboard option (based on IDEmat2021).

Smartly returning the packaging in Cluster packaging also minimises the environmental impact of the return process.

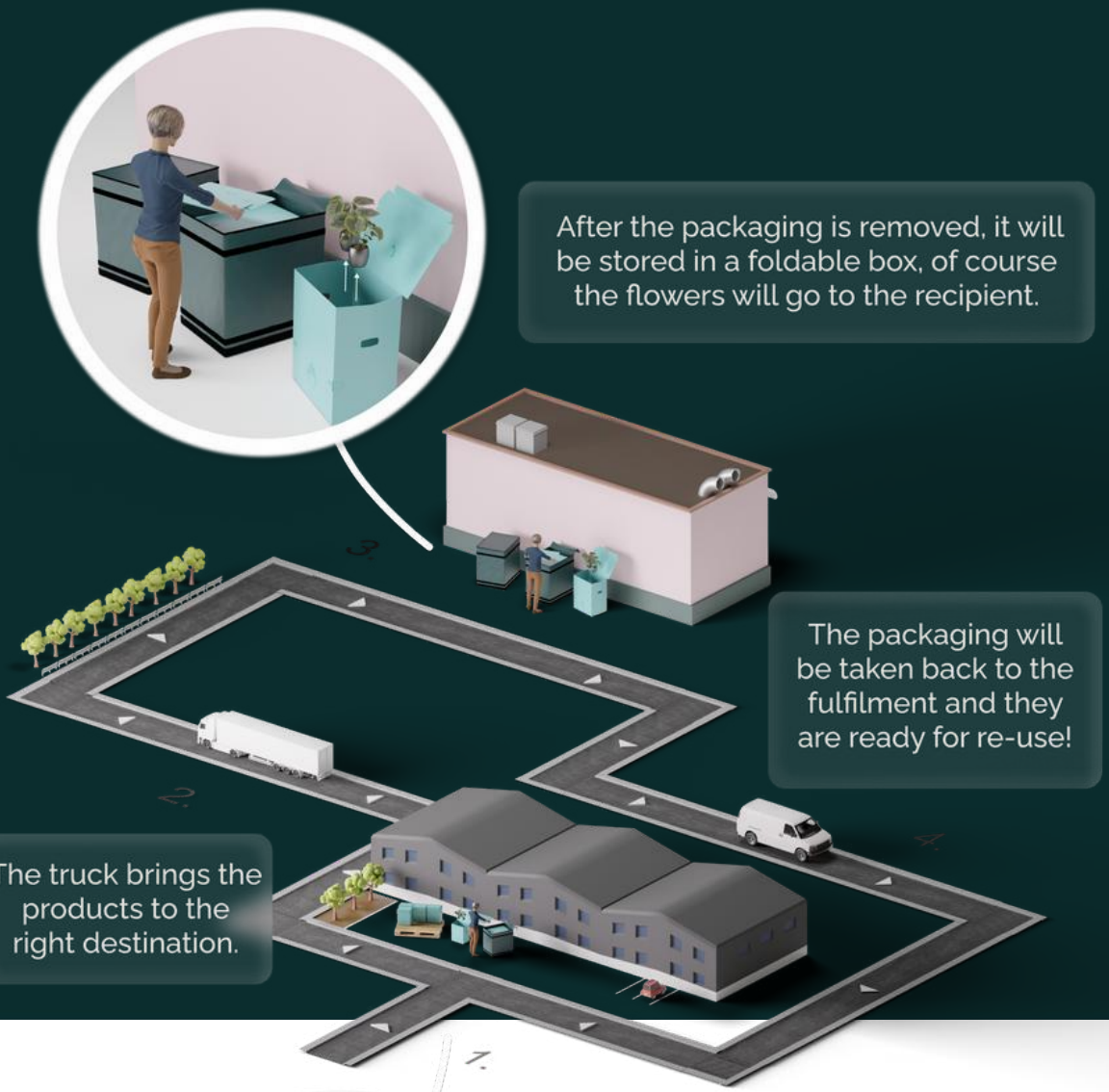
The usage cycle works as follows (see also page **7**):

The packaging goes from the packer to the sorting centre, the contents are then delivered to the customer and the delivery driver easily takes the packaging back. The packaging is clustered and sent back to fulfilment on pallets.

Once back at the fulfilment location, the packer can easily set up and pack the packaging again to start the next cycle.

Product use cylce

Re-usability



After the packaging is removed, it will be stored in a foldable box, of course the flowers will go to the recipient.

The packaging will be taken back to the fulfilment and they are ready for re-use!

The truck brings the products to the right destination.

Pack the plants into the boxes, just as you're used to now.

Re-Pax

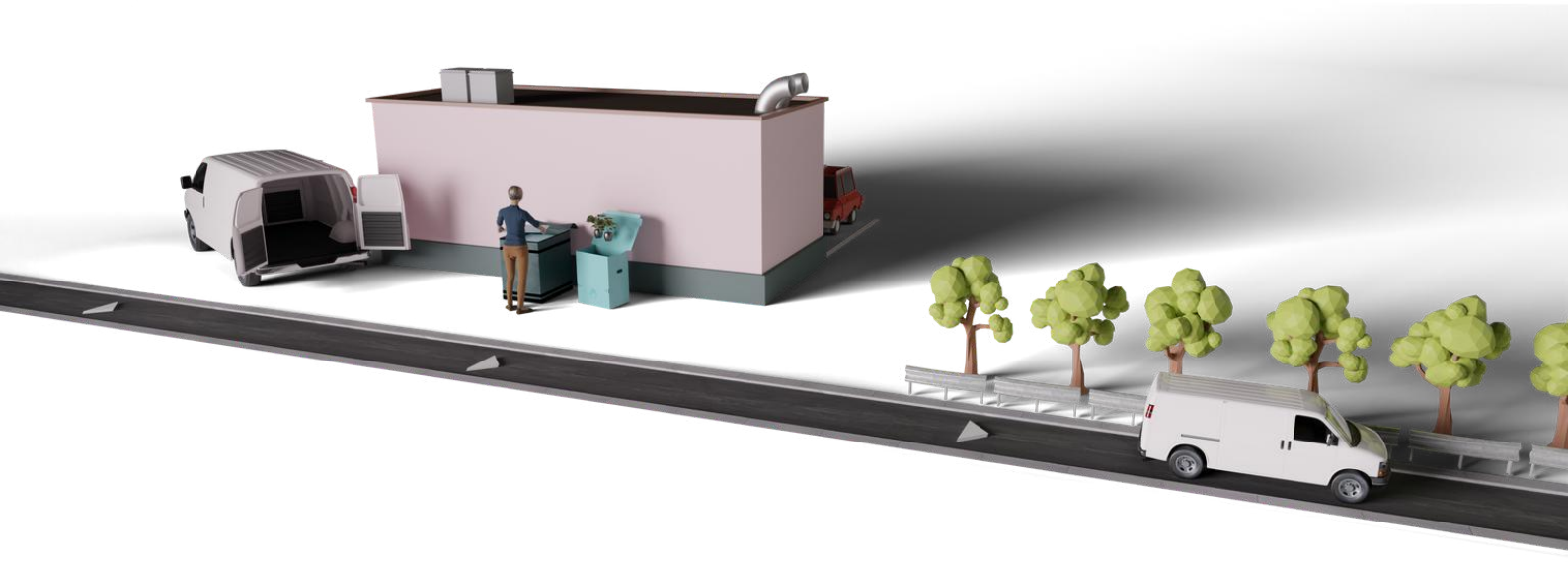
Product use cylce

Return option 1

‘return cluster packs with Re-Pax packaging via DPD.’

Small numbers

Return option 1 is to return cluster packs with Re-Pax packaging via DPD. This is advantageous for small numbers of cluster packs. When the packaging is empty, folded and clustered, you can request a 'pick-up' via DPD. DPD will then pick up the packages and bring them back to the fulfilment centre, for example.

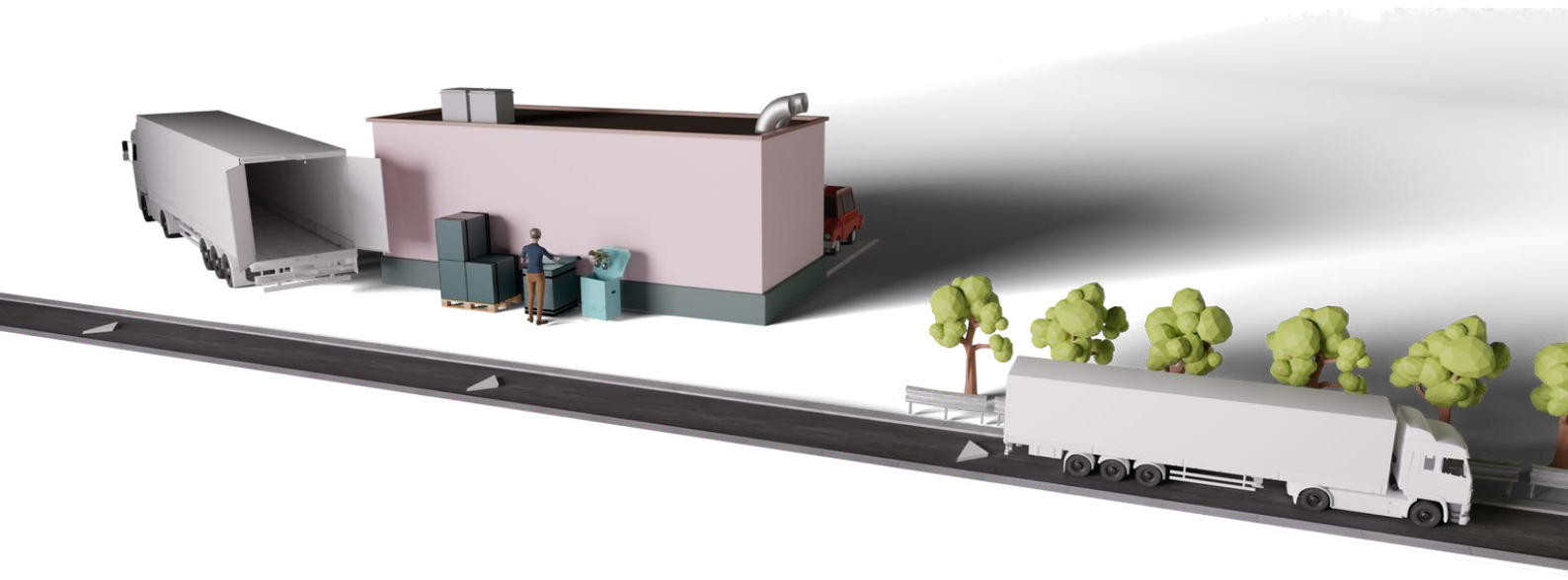


Product use cylce

Return option 2

‘the pallet is collected by a transport company of your choice.’

Large numbers
Return option 2 is suitable for returning larger numbers of cluster packs. The cluster packs are loaded onto a pallet and then the pallet is collected by a transport company of your choice. Per cluster packaging, it is generally cheaper to send a full pallet than individual cluster packaging via DPD as described in option 1.



Cluster packaging

Collecting packaging

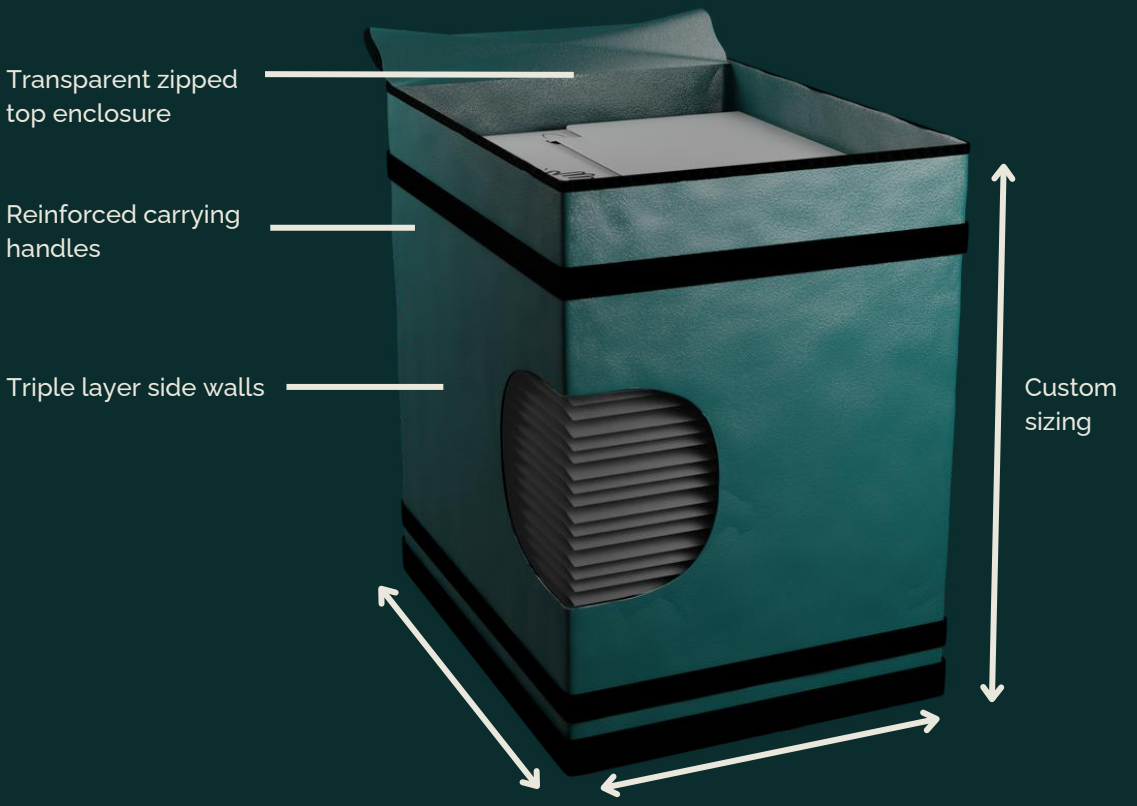
‘ they fit stably on a pallet in the return process.’

Large numbers

For clustering reusable packaging, we are in talks with a cluster packaging manufacturer. They make a kind of bags in which we can cluster 50 reusable packages safely and easily. This way, they fit stably on a pallet in the return process. Our custom-made cluster packs are still under development but we expect these cluster packs to last about 600 cycles based on similar products in the parcel industry.

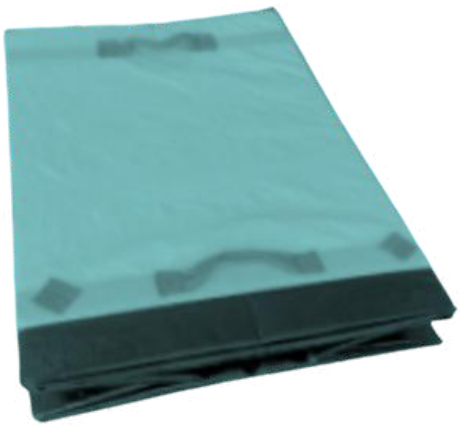
Cluster packaging

Collecting packaging



Strong & sturdy lightweight designs
Freestanding / collapsible
Anchor points for safe storage in transit
Heavy duty base with bumper system

Range of colors, printing & sizes available
Printing available
Fully recyclable
Weight: Approximately 3kg



Re-Pax

Material

Polypropylene

‘As we only use PP, the packaging is 100 percent recyclable.’

Recyclability
From a study conducted by the Rotterdam University of Applied Sciences, we developed our reusable packaging in polypropylene with a percentage of recycled material of up to 30%. This material is available in (almost) every conceivable colour. (On request, the percentage of recycled material can be increased to 50%, which limits the available colours).

In principle, all colours are possible, but there are two advantages to neutral colours such as grey. Firstly, this can be produced from a higher percentage of recycled material, and secondly, neutral colours are easier to recycle.

As we only use PP, the packaging is 100 percent recyclable.
To produce the packaging, we are in contact with two factories, which we select for each project based on their specialities.

Label adapters

Durable label solution

'This maintains a clean and professional impression for your customers.'

Label adapters

You can opt for label adapters on the packaging. These are a kind of under-label on which you can easily insert and remove shipping labels without leaving glue residue or tearing the old label.

This maintains a clean and professional impression for your customers.

The label adapters can be printed on request to keep it clear to everyone in the process how the label adapters work.

Traceability chips

Collecting data

‘Our vision is that these chips will ensure that packages remain traceable through the cycle.’

We are working with several manufacturers to develop chips for tracking packaging. Our vision is that these chips will ensure that packages remain traceable through the cycle. This prevents lost packages because it is immediately visible when a package goes out of reach of the delivery driver. The chip will be fixed in a hole in the packaging to keep the packaging as compact as possible.

There will also be a chip the cluster packaging,
so it will be clear at once which packages are in the cluster packaging.

As the chip is still under development, we do not yet have an exact image but on the next page you can see some similar options we are considering.

Traceability chips

Collecting data

The advantage the chips offer is, of course, traceability.

Location
You will be able to see the location of the chip during different times of the cycle. This ensures immediate intervention if a shipment goes the wrong way, gets left behind or is in danger of being late. This provides value that you can share with the recipient. Especially if the shipment is high-value or time-sensitive, this traceability adds a lot.

Insight
The chips are not only beneficial for real-time feedback per shipment, but also provide instant insight on your company's performance. For example, with the chips, you notice when a distribution center is slower than the rest or shipments to certain regions are consistently later or take the wrong route.
You can then rectify such obstacles.

Traceability chips

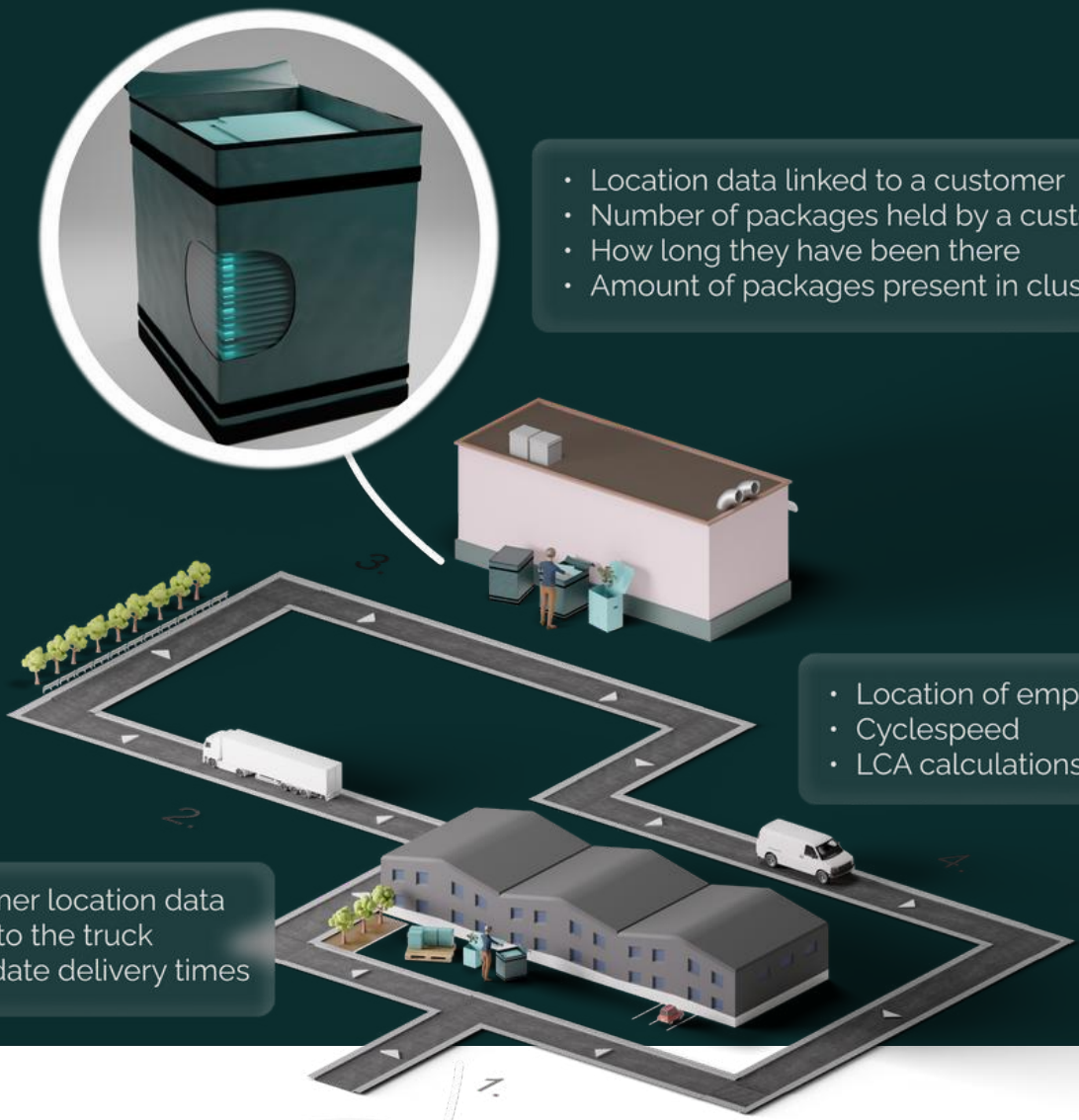
Collecting data

Possible option for the cluster packaging

Possible option for the individual shipping packaging

Traceability chips

Datastream



- Location data linked to a customer
- Number of packages held by a customer
- How long they have been there
- Amount of packages present in cluster packaging

- Location of empty packaging
- Cyclespeed
- LCA calculations

- Customer location data linked to the truck
- Up to date delivery times

- Specific order status
- Inventory overview
- Number of orders packed, ready, in transit, etc.

Re-Pax

Samples and trial

Implementing the system

As this project is still under development, we will first set up a trial

Depending on the preferred thickness of the material, we will order trial samples and label adapters to get ready for the trial. With this, we hope to discover information and problems of the whole process so that we can solve them before the real launch.

Timeline
□ Phase 1. Samples: Reviewing and assessing samples.

□ Phase 2. Trial: First production run, without chips but with cluster packaging. We recommend 2,500 units (this is more expensive per unit than 10,000 units but cheaper overall, so feedback can still be collected and processed).

□ Phase 3. Implementation: The final feedback has been processed and this batch is ready to be chipped if everything is satisfactory.

Costs

Price indication

The unit price that reusable packaging will eventually cost varies a lot

The main factors are listed below:

- chosen material thickness
- number of pieces per order
- chip functionality
- application label adapters.

We offer the packaging with a connectivity option. The packaging functions with or without the use of the chip.
We can offer customised products based on this chip connectivity so that the system can offer as much value as possible. In addition, you only pay for the system when you apply the connectivity in your organisation.

Of course, you can use the packaging without the chip.

Costs

Price indication

Example calculation:

250k cycles through 100 uses with DPD return transport with connected packaging:
For **250,000 uses**, the calculations are as follows:
2,500 Re-PAX reusable packaging: **9* x 2,500= 22,500€**
50 Cluster packages: **39 x 50= 1,950€**
5,000 full returns: **12* x 5,000= 60,000€**
Total cost of 250,000 used: **84,450€**
Thus, each cycle of the Re-PAX box costs: **0.34€** (0.3378 to be exact)
**This price depends on the return country and volume.*

250k cycles at 100 uses with return transport on pallet (possible when sending 300 boxes to the same location) with connected packaging:
For **250,000 uses**, the calculations are as follows:
2,500 Re-PAX reusable packaging: **9 x 2,500= 22,450€**
50 Cluster packaging: **39 x 50= 1,950€**
1,250 returns on pallets (6 clusters): **40 x 835= 33,400€**
Total cost of 250,000 used: **57,800€**
Thus, each cycle of the Re-PAX box costs: **0.23€**
(0.2312 to be exact)
**This price depends on the return country and volume.*

This is an indication and contains no guarantees on the actual final price.

Life Cycle Analysis

Sustainability

Comparing reusable packaging with traditional cardboard packaging

In this comparison, transport from the factory to Click-PAX or the customer has been omitted because we wanted to show the process of the packaging cycle. However included, this would produce additional CO2 emissions on the cardboard box side. This is because, despite being a lighter box, 100 shipments require transporting a box from the factory to the storage location 100 times compared to once with Re-PAX packaging.

This analysis assumes transport on a fully loaded carrier.

The 'use' frame of the LCA also remains empty because no energy or fuel is used during the use of the packaging.

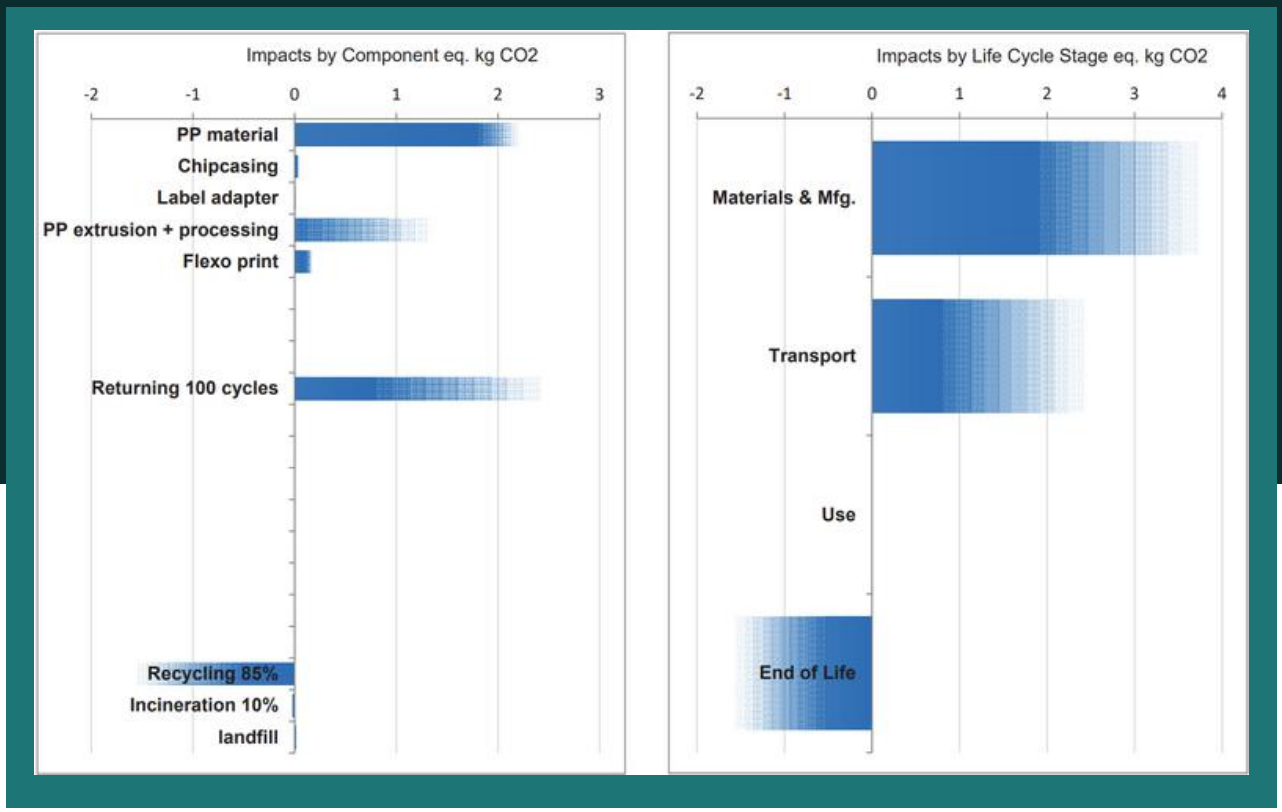
On the next page, you will find the analysis of reusable packaging, cardboard packaging and the comparison of the two based on 100 shipments.

Life Cycle Analysis

Sustainability

Comparing reusable packaging with traditional cardboard packaging

This is the LCA of reusable Re-PAX packaging based on 100 cycles shown in CO2 emissions.

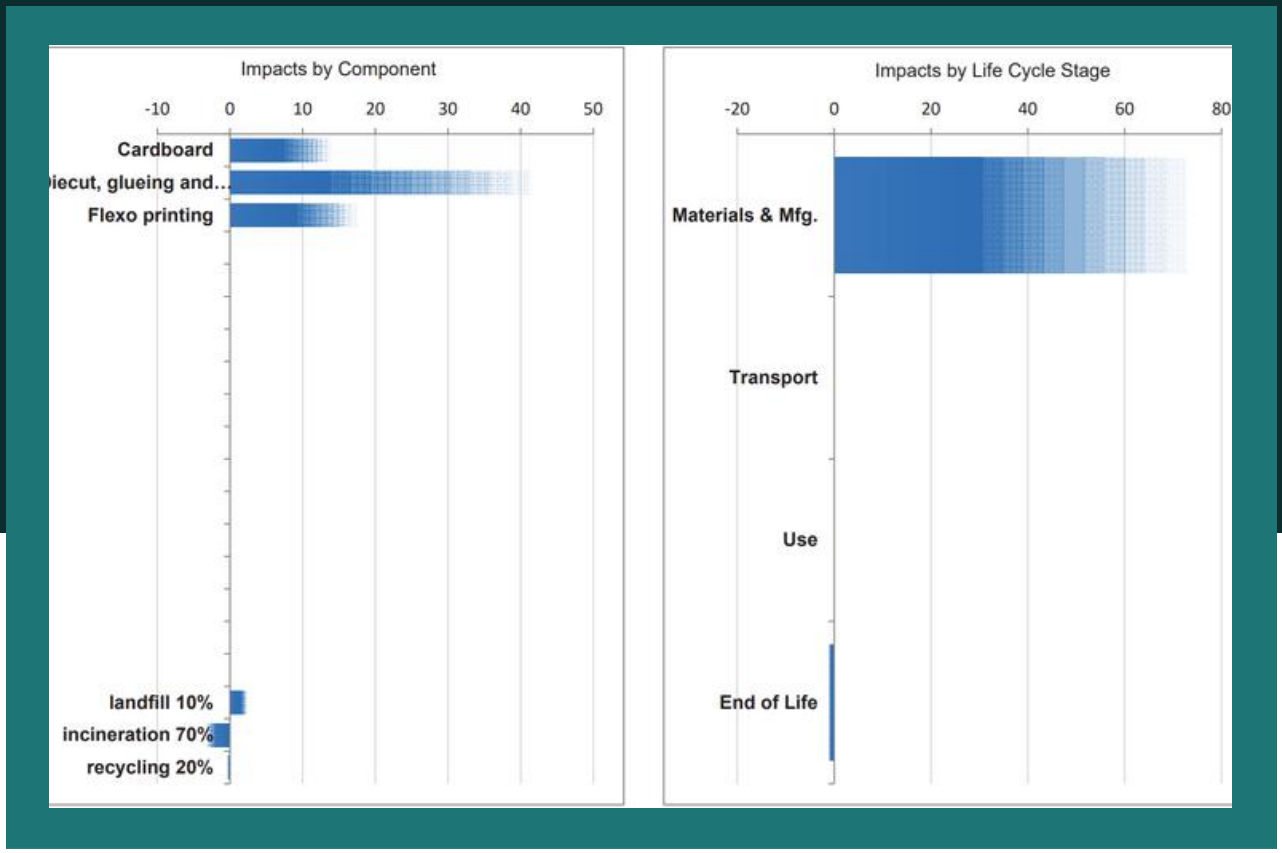


Life Cycle Analysis

Sustainability

Comparing reusable packaging with traditional cardboard packaging

This is the LCA of single-use cardboard packaging based on 100 cycles represented in CO2 emissions. The environmental impact is largely determined by the production of the packaging.

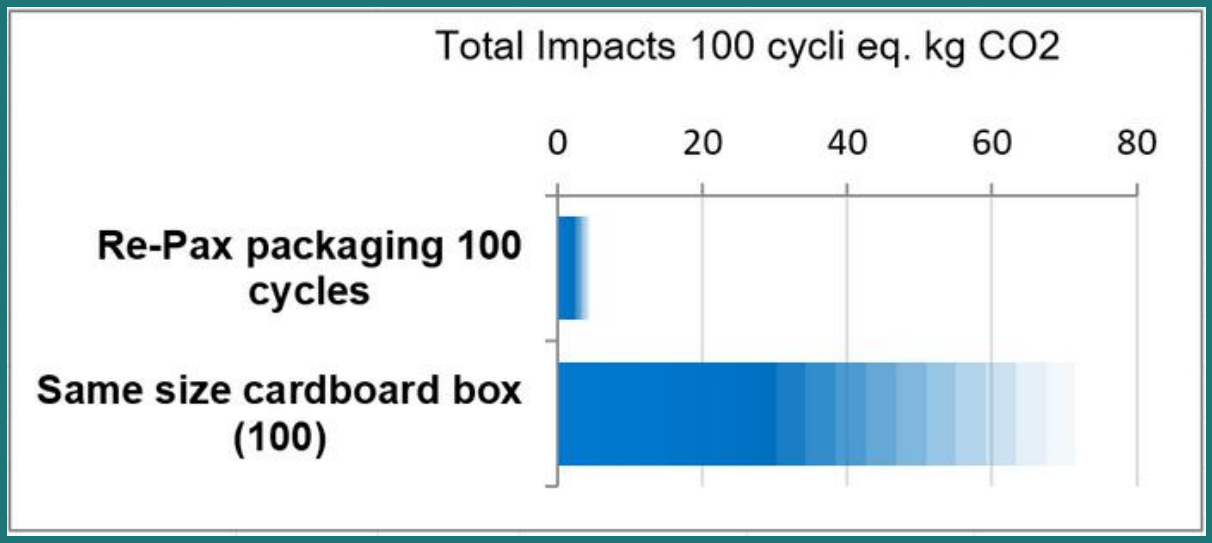


Life Cycle Analysis

Sustainability

Comparing reusable packaging with traditional cardboard packaging

This is the direct comparison of the total environmental impact measured in CO2 emissions of Re-PAX packaging versus cardboard packaging.



It is clear that 100 reusable packs have a greater environmental impact than 100 cycles with the Re-PAX packaging. This means that the difference is about 3-4 kg CO2 of Re-PAX against 35-70 kg CO2 of cardboard packaging. Taking the average of both, we arrive at 3.5 for Re-PAX packaging against 52.5 kg CO2 of single way cardboard packaging.

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