Reverse logistics for reusable packaging

An exploration of what is needed to set up reverse logistics and encourage scaling up the usage of reusable packaging in the Netherlands

January 2023
Overview

1. Summary 3
2. Introduction 10
3. Background 14
4. Reverse Logistics Models 19
   4.1 Existing Reverse Logistics Models 20
   4.2 General Insights on Reverse Logistics Models 30
   4.3 Inspirational cases 37
   4.4 Collection Points 45
5. Recommendations for the Government 50
6. Annex: Interviews and Sources 54
1. Summary

What is needed to set up reverse logistics to further encourage the scaling up of reuse?
The following glossary provides definitions and explanations for the key terms and concepts mentioned in this report. Refer to this list for further understanding and clarity as you read through the document.

<table>
<thead>
<tr>
<th><strong>Reusable Asset</strong></th>
<th>Packaging which has been designed to accomplish, or proves its ability to accomplish, a minimum number of rotations in a system for reuse*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reverse Logistics</strong></td>
<td>The handling needed to get a used asset back at the beginning of the cycle. This includes processes such as collection, sorting, transport, cleaning, redistribution of the asset. In some cases it also includes the tracking of the asset</td>
</tr>
<tr>
<td><strong>Closed-Loop environment</strong></td>
<td>A closed environment in which the reusable asset is used and returned, this can be a company or a place (e.g. festival, university campus, office building, etc.)</td>
</tr>
<tr>
<td><strong>Open-Loop environment</strong></td>
<td>An open environment in which the reusable asset is used, meaning it can be used by different companies and/or consumers and can be returned at multiple return points (e.g. supermarkets, HoReCa, etc.)</td>
</tr>
<tr>
<td><strong>Return Incentive</strong></td>
<td>A monetary or other tool to incentivise the end-user of a reusable asset to return it, so it can go through another reuse cycle</td>
</tr>
<tr>
<td><strong>(Universal) Collection Point</strong></td>
<td>The point where a consumer can return reusable assets. It indicates the start of the reverse logistics. When collection points allow different kind of reusable assets (e.g. containers, cups, bottles etc) from different brands, they are called universal collection points</td>
</tr>
<tr>
<td><strong>Standards</strong></td>
<td>A standard or norm is a recognized agreement on specifications or criteria of a product or process. Standards can be formally (e.g. ISO-norms) or informally established (e.g. organically grown within a company)</td>
</tr>
<tr>
<td><strong>Managed Pooling Systems</strong></td>
<td>A shared system of reusable assets that adheres to certain standards defined by a central organisation in charge of organising and monitoring the shared system</td>
</tr>
<tr>
<td><strong>Unmanaged Pooling systems</strong></td>
<td>A shared system of reusable assets that uses some sort of standardized system or packaging but without central governance.</td>
</tr>
</tbody>
</table>

*ISO 18603:2013 - Packaging and the Environment-Reuse
The Dutch Ministry of Infrastructure and Water Management has requested Mission Reuse to conduct a study on the following research question:

‘What is needed to set up cost- and environmentally efficient reverse logistics in the Netherlands, in order to bring reusable packaging to scale?’

Mission Reuse has conducted several interviews with reuse experts from different domains to A) analyse existing reverse logistics models and their leverage points and, and B) give recommendations to the government in how to implement the learnings from existing reverse logistics models to bring reuse to scale in the Netherlands.

On the following pages, the key findings from this study will be summarized.
Below, the most important overall findings from this study are summarized.

- **Four reverse logistics models** emerged in the research. These four models are introduced on the following page.

- **There is not a single most suitable, efficient reverse logistics model**, since this strongly depends on the type of asset, user, asset provider as well as the context in which the assets are being used and returned.

- **Efficient reverse logistics** processes leverage existing logistics flows and use **space-efficient assets**.

- **Returns should be incentivized** and facilitated for the end-consumer to keep the reusable asset in the loop for multiple use-cycles, and actually make reuse more sustainable.

- Reusable assets are often used to **save on raw material and packaging costs**, rather than generating revenue.

- **Managed pooling systems**, involving multiple parties jointly owning and using universal assets, are **effective to minimize environmental impact**.

- **Standardizing assets is crucial for reducing cleaning and logistics costs**. A diverse range of packaging requires sorting and the adjustment of cleaning programs.
Summary | Existing Reverse Logistics Models

Four existing reverse logistics models emerged from the study (see below). All four models, which are briefly introduced below, have their own way of creating efficiency, ranging from utilizing existing logistics flows, to collapsible assets.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ownership</strong></td>
<td>One party (system operator)</td>
<td>All participating parties</td>
<td>One party (asset provider)</td>
<td>One party (asset provider)</td>
</tr>
<tr>
<td><strong>Transportation</strong></td>
<td>Logistical party</td>
<td>Logistical party</td>
<td>Asset provider</td>
<td>Third-party service</td>
</tr>
<tr>
<td><strong>Infrastructure</strong></td>
<td>Leveraging existing</td>
<td>Leveraging existing</td>
<td>New, operated by asset owner</td>
<td>Leveraging existing</td>
</tr>
<tr>
<td><strong>Efficient because</strong></td>
<td>Assets foldable when empty for efficient use of space, using existing logistical streams</td>
<td>Assets are collected and reused by all parties, using existing logistical streams</td>
<td>Independent and optimized logistics in terms of time</td>
<td>Assets foldable when empty for efficient use of space, using existing logistical streams</td>
</tr>
</tbody>
</table>
Summary | Best Practices of Reverse Logistics

Below, the main findings from the research on innovative reverse logistics models and collection machines for reusable assets are summarized.

• **Leveraging reverse logistics processes of home-delivery parties to return reusable packaging** can make reuse more appealing to customers and create potential additional revenue streams for logistics companies.

• **The point at which a reusable asset is returned by the consumer is crucial in making the asset more sustainable than single use.** A high return rate can be promoted with the right incentives as well as an easy return process (e.g. by using collection machines).

• **Transaction costs for returning deposits can be a significant expense.** These transaction costs can be avoided by offering alternative return incentives, such as vouchers, discounts on future purchases or depositing funds onto a card.

• **Collection machines for reusable packaging exist in many forms and can offer fast service and a wide variety of return incentives** to fit the context. These machines can offer on-site sorting of waste streams to simplify reverse logistics and, if located in frequently visited areas, increase return willingness.

• **Bundling delivery services with special requirements,** such as food products, can create economies of scale and achieve logistical and financial efficiency.

• **Central drop-off locations** for the delivery and pick-up of e-commerce packaging reduces the environmental impact of last-mile transportation, while also making pick-up convenient for the consumer.
Governments can play a role in bringing reuse to scale in three ways, being facilitating, funding and incentivizing these reverse logistics infrastructure. Below, the main findings are summarized.

- **Governments can to enable reverse logistics to grow and scale through policy measures**: policy makers can encourage using less disposable packaging and more reusable packaging by introducing prevention and reuse targets, take-back obligations and other incentives (possibly covered by an EPR scheme).

- **Governments can facilitate standardization processes with market players**: these type of models may need a neutral facilitator to be set up and have proven viability at scale, even on a European level. Pooling systems generally require minimal maintenance due to their self-regulating nature and standards and agreements that all participants have agreed upon.

- **Governments can financially support the market in making reverse logistics more viable**: by facilitating the convenient and efficient collection of reusable packaging, especially in B2C models in which collection often is a limiting factor in scaling up. This support can help B2C models scale up and encourage B2C reuse initiatives.

**Summary | Recommendations for Governments**
This chapter provides an overview of the motivation for the research, the research question, and key takeaways from previous relevant research.
The cause of the study

There is a rising demand in reusables across all sectors in the Netherlands, reasons include, non-exhaustively:

- **Legislation** obliging the industry to transition towards reuse, like the Dutch legislation for to-go and dine-in¹ or the implementation of reuse targets in the proposal of the Packaging and Packaging Waste Regulation (PPWR)²
- **Raw materials for packaging** becoming more expensive
- **Sustainable business mindset** gaining more momentum

We can observe a multitude of reuse solution providers being created, but also market players creating their own reuse solutions.

In order to make reusable solutions impactful and competitive with single-use, scale of the reuse solution is essential. Building the necessary infrastructure is crucial to achieve this. Collective and shared solutions for washing facilities and reverse logistics have been identified in previous research³ as vital to making reusable solutions competitive.

Main takeaways of these studies will be shortly discussed as introduction into this research study (see Chapter 3. Background).

---

¹ Ministerieel Besluit inzake de regeling kunststofproducten voor eenmalig gebruik (Staatscourant nr. 8376)
² Proposal for a Regulation on Packaging and Packaging Waste
The Dutch Ministry of Infrastructure and Water Management has tasked Mission Reuse with the research into existing reverse logistics models. This report will provide an answer to the following research question:

“What is needed to set up cost- and environmentally efficient reverse logistics to scale reuse in the Netherlands?”

The research is divided into two parts. The first A) is to identify what models already exist and determine what insights to deduct from the models to subsequently in the second part B) determine what the government can do to stimulate scale

In order to answer the research question, Mission Reuse conducted desk research and interviewed various organizations, ranging from start-ups and nonprofits to market leaders. The list of interviews conducted can be found in the annex.
How to read this report

The report starts with a short background, followed by two main chapters. Below you can find an overview of the different chapters in this report.

1. Background

Previous studies have determined that reverse logistics, cleaning facilities and collection points have a big influence on the environmental performance and costs of reuse systems.

In this chapter the main takeaways from previous research are summarised to provide an introduction into the subject.

2. Reverse Logistics models

The study identified four types of models. There may be additional models, but these did not emerge from the conducted research.

The models discussed can be distinguished on several aspects (e.g. B2B vs. B2C, centrally owned asset vs. shared ownership and leveraging existing logistics flows vs. new logistics flows).

Several insights can be deducted from the different models.

This chapter gives an overview of these insights and summarizes the best practices of these models.

This chapter introduces a number of unique and inspiring cases of reverse logistics models, as well as specific elements from these models that could be used as source of inspiration when establishing new models.

These cases are distributed over the four stages of the logistics journey, namely forward logistics, collection, reverse logistics and processing at the distribution hub.

(U)Universal) collection points are crucial to ensure the successful operation of a reusable packaging system. Several collection points are currently available on the market, ranging from no- to high-tech, and from tailored to one type of packaging or brand to suitable for a wide variety of brands and packagings.

Governments can play a role in bringing reuse to scale by facilitating, funding and incentivizing reverse logistics infrastructure.

This chapter gives an overview of the different elements in which the government can take action.

3. Recommendations for the Government

Governments can play a role in bringing reuse to scale by facilitating, funding and incentivizing reverse logistics infrastructure.

This chapter gives an overview of the different elements in which the government can take action.
3. Background

This chapter presents background information on research on reuse in the Netherlands and the factors required for scaling it up.
According to the research, collective solutions are necessary for individual projects involving reusable packaging to gain scale and become competitive, particularly in the areas with the greatest impact:

1. *(Universal)* Collection Points
2. Reverse Logistics
3. Cleaning Facilities

Research has been conducted on all of these topics. More information on these can be found on the following pages.
Background | 1. (Universal) collection points

A high return rate of reusable packaging is needed to reduce (environmental) costs of a reuse system. Collection points are a vital link to keep reusable assets in the value chain and to minimize losses, especially in an open environment. Main takeaways from research and pilots are the following:

1. Variety of collection points to fit various situations

   Different kinds of collection points already exist on the market. Distinction can be made on:
   - No-tech and High-tech
   - Manned and Unmanned
   - Specific and Universal

2. User friendliness is key

   Collection points need to as user-friendly as possible to get a high return rate.
   Simplicity of the collection points and clear indications help. Communication and logos are important to lead the consumer to the return point.

3. Acceptance of various assets impacts return rate

   Collection points that accept different kinds and sizes of reusable assets, allow the consumer to return all their reusables in one place, having a positive effect on the return rate.

Previous research shows that efficient reverse logistics are of great importance in getting reuse to scale:

1. Making the cost of reuse competitive with single-use plastics

2. Minimizing the emissions from reuse models

3. Minimizing transport and related nuisances in cities

## Background | 3. Cleaning Facilities

Also the cleaning of reusables has a significant impact on the environmental performance of a reuse system. For reusable packaging to work at scale, (shared) washing facilities are crucial for several reasons:

1. **Minimizing environmental impact**
   - At-home cleaning of a reusable by the consumer has one of the biggest environmental impact in the use cycle of a reusable.
   - Professional high volume cleaning facilities can lower the water usage by 50% compared to hand-washed.

2. **Reducing costs**
   - Cleaning of a reusable asset has a fixed cost per use-cycle of the reusable.
   - Professional, efficient and high-volume cleaning solutions limit those costs significantly.

3. **Minimising distance to washing facilities**
   - Transport distances do not influence the environmental impact of reusables.
   - A study showed that with a distance of 200 km, the reusable only needs to be reused twice to have a lower impact than the single use alternative.

4. **Ensuring health and safety**
   - Reusables need to adhere to strict health and safety standards, especially when they come in contact with food and beverages.
   - Depending on the material of the reusable, different cleaning processes are needed (e.g. plastics needs longer drying than glass).

---

4. Reverse logistics models

Crucial insights into reverse logistics models, inspirational cases and collection points for reusable packaging.
4.1 Existing models for organizing reverse logistics

An overview of the insights on reverse logistics and the models in markets that have been identified to be efficient and effective in the Netherlands and Europe
Four different reverse logistic models

On the following pages the four models below will be introduced in detail.

**B2B Pooling System**
- Characteristics: A rotating pool of standardized assets
- Ownership: One party (system operator)
- Transportation: Logistical party
- Infrastructure: Leveraging existing infrastructure
- Efficient because: Assets foldable when empty for efficient use of space, using existing logistical streams

**B2C Pooling System**
- Characteristics: A rotating pool of standardized assets
- Ownership: All participating parties
- Transportation: Logistical party
- Infrastructure: Leveraging existing infrastructure
- Efficient because: Assets are collected and reused by all parties, using existing logistical streams

**Independent B2C infrastructure**
- Characteristics: Assets owned and transported by one party, leased to third parties
- Ownership: One party (asset provider)
- Transportation: Asset provider
- Infrastructure: New, operated by asset owner
- Efficient because: Independent and optimized logistics in terms of time

**3rd party dependent B2C infrastructure**
- Characteristics: Assets exchanged (back and forth) through third-party mail service
- Ownership: One party (asset provider)
- Transportation: Third-party service
- Infrastructure: Leveraging existing infrastructure
- Efficient because: Assets foldable when empty for efficient use of space, using existing logistical streams
#1: B2B Pooling systems

“Within B2B pooling systems, end-users (e.g. supermarkets) are the main driver of the adoption of reusable products in the value chain.”

The B2B pooling systems model is characterized by a rotating pool of standardized assets, e.g. pallets or crates. The retailer is the main driver of the adoption of the system. The moment they decide to participate in a B2B-pooling system, their whole supply chain will need to adapt to returnable packaging. In all cases, the incentive to return the assets is a deposit, rotating between the asset-owner, the asset-user and the end-user.

The reverse logistics are usually performed by the asset-user, using existing forward logistics movements, making the logistics very efficient. Quality of the assets is ensured through recurring quality checks, either at a central depot or strategically placed in the existing logistics network of the asset-user (so-called Integrated Service Centres). Most common business models are pay per use (e.g. Euro Pool System). Another model that can be found is a one-time purchase, after which parties can participate in the pool (e.g. EPAL).

How this model works for Euro Pool System

Euro Pool System is the market leader in returnable packaging for the fresh supply chain in Europe. They offer customers returnable packaging solutions, such as foldable reusable crates, which as secondary packaging is in direct food contact. Key retainers are producers, transporters, processing companies and retailers. Euro Pool has 71 depots across Europe, and continuously works on the further standardization and integration of their solutions within their clients’ logistics processes.

The return rate of the crates is high, but depends highly on the chain they are used in.

Key characteristics of the model

- **Assets**: Standardized unbranded assets
- **Ownership of assets**: Most often the operator of the pooling system
- **Business model**: Fee per crate based on the dwelltime + deposit per crate
- **Collection point**: In-house at retailer
- **Cleaning facility**: Responsibility of Operator pooling system
- **Return incentive**: Deposit-based
- **Tracking technology**: Barcode and/or QR Code
- **Return rate**: High
- **Environmental impact:**
  - Reducing CO₂ emissions through optimised logistics and use of Integrated Service Centres at retailers
  - Reducing use of raw materials for new assets through longer life cycles and % of recycled content in new assets

Examples within this category
#1: B2B Pooling systems

- **Cleaning standards:** all according to standards: inspection of cleaning water (detergent level, temperature, etc.), frequent change of used water etc.
- **Technology used:** Barcode, Data matrix (incl. GS1-code, standard in logistics), some with RFID
- **Information collected:** Origin asset (produced when, where, by who), material and optional: content of asset
- **Used by:** asset owner (for inventory management, tracking unauthorized use, etc.), and users (product information through product passport)
- **Quality control standards:** Inspection of mechanism quality crates, physical condition, cleanliness (e.g. migration tests)
- **Broken assets:** Back in cycle after repair, Otherwise going to recycler. At recycler, separated into 3 types of plastics, granulated, sold OR used again as raw material for new assets
#2: B2C Pooling systems

“Within B2C pooling systems, all parties participating have to commit to certain rules, and thereby build and operate the infrastructure together.”

The B2C Pooling Systems model is a self-sustaining model characterized by standardized (branded) assets that rotate between suppliers, retailers and consumers (e.g. the Dutch beer bottle BNR or the German MMP glass containers). In all cases, the return incentive is a deposit, which rotates between the parties involved. The reverse logistics are usually handled by the supplier and are simultaneously accompanied by the delivery of new assets, making the logistics very efficient. Assets are collected at the retailer in available, suitable crates (regardless of brand) and returned to the supplier owning the crate. The latter cleans, checks quality, fills and relabels the assets, then transports them back to the retailer. Procedures and standards are all defined in contracts signed by all participants. This model was created because of shortage in raw materials for the production of glass. It does not generate extra revenue, but as a result - without being the main motive of adoption - it reduces the cost of raw materials needed for new assets.

How this model works for Nederlandse Brouwers (BNR)

Nederlandse Brouwers introduced BNR (Brown Dutch Return bottle), a pooling system of reusable standardized beer bottles with a large number of breweries participating. Rules regarding production, sale and use of the BNR are established by the Nederlandse Brouwers to ensure continuity and quality of the bottles. Breweries have to adhere to those rules and are responsible for cleaning, quality checks (inc. replacing damaged bottles) and relabelling of the bottles. Standardized bottles, self-regulation through a licencing system to produce, use and sell bottles, deposits, a high number of participating breweries and 35,000+ collection points leads to a high return rate (98.6% of bottles, 99.8% of crates), which makes the pooling system successful.

Key characteristics of the model

- **Assets**: Standardized assets with branded stickers
- **Asset owner**: Producer(s) content for the amount of assets licenced
- **Business model**: Reduction in costs of raw materials needed for new assets
- **Collection points**: Collection at any partner (retail, bar, restaurant, etc.) participating in pooling system
- **Cleaning facility**: Responsibility of Producer(s) content for the amount of assets licenced
- **Return incentive**: Deposit-based
- **Tracking technology**: often none
- **Return rate**: High
- **Environmental Impact**: 
  - Reducing CO₂ emissions through optimised logistics
  - Reducing the use of raw materials for new assets through longer life cycles and % of recycled content in new assets

Examples within this category
#2: B2C Pooling systems

**Producer of assets** (e.g. bottle manufacturer)
- Production of assets: Production license needed
- Quality inspection: yearly checks factory by content producers

**Logistics Partner**
- Transport assets (empty)
- Purchase price per asset

**End Consumer**
- Buying
- Returning
- Loss of assets:
  - Broken
  - Discarded in general waste stream

**Retailer**
- Selling assets
- Collecting used assets
- Sorting assets

**Distribution hub**
- Transport assets (filled in crates)
- Distributing to retailers (filled in crates)
- Transport assets (filled in crates)
- Deposit per asset

**Distribution hub (or return hub of retailer)**
- Transport assets (empty in crates, sorted per producer)
- Sorting crates per producer
- Transport assets (empty in crates)

**Producer content of assets** (e.g. brewery)
- Labeling + putting in crates on pallets
- Quality Control
- Cleaning assets
- Emptying crates
- Sorting
- New branding: paper label withitoluble glue, universal bottles, branded crates
- Crates: crates are standardized and can be easily stapled
- Pallets: are part of another B2B pool and stay in the loop

**Recycler**
- Rejected assets
- Returning branded crates + assets to other producers

**Efficient logistics**
- Distribution hub ensures optimal utilization space, used crates are always returned upon delivery of new crates (leverage empty returning space).
- Inventory of bottles and crates is shared every morning and transport is organised accordingly

**First level Sorting**
- Sorting out assets and non-assets based on agreement between retailer and producer.

**Surplus compensation**
- If retailers get more assets back than they sold, they get compensated for the extra assets they sort.
#3: Independent B2C Return Infrastructure

“An independent B2C return infrastructure means that reuse solutions are building their own infrastructure network. The asset owner is in this case solely responsible for the execution of the reverse logistics.”

The independent B2C Infrastructure model is characterized by the independence of both the forward and reverse logistics processes, as they are performed by the provider itself. This model makes the logistics as time-efficient and flexible as possible, although it is only at scale that it will also become cost-efficient.

In this model, assets rotate between provider, customer and end-consumer, and return incentives range from fines and deposits to goodwill. Quality control is entirely in the hands of the provider. The business model is often based on a pay per use model, where the customer pays per use cycle of the asset.

How this model works for SwapBox

SwapBox is a reusable packaging service that helps customers (e.g. workplaces and events) to eliminate packaging waste. They offer a modular service of reusable packaging, logistics, tracking technology and cleaning. Within Belgium and the Netherlands, 120 bars, restaurants, corporate catering, coffee suppliers and festivals use SwapBox and 5000+ people are swapping containers.

The customer provides their food and/or beverage to the end-consumer in SwapBox containers. Tracking happens through an app that links the end-consumer to the containers. The end-consumer has to bring the containers back to a partner location of SwapBox. The end-consumer will be charged a fee for every item not returned within 2 weeks. The return rate of the SwapBox system is high (98,5%).

In December 2022, RFID-tracking will be added, as well as smart return bins and unmanned packaging dispensers. In terms of quality inspection; cleaning standards are followed and standard ATP and allergy-tests are conducted.

Key characteristics of the model
- **Assets:** Reusable packaging
- **Asset owner:** Reuse system provider or brand owner (e.g. Loop)
- **Business model:** Pay per use (sometimes incl. pay per cleaning asset)
- **Collection point:** In-person collection (at customer locations) or return bins (customer locations/public space)
- **Cleaning facility:** Organized by provider, but can occur at customer’s location and under its care
- **Return incentive:** Depends on provider and use case: deposit, fine or goodwill customer
- **Tracking technology:** QR-code on packaging
- **Return rate:** High
- **Environmental impact:** Reduction in the use of raw materials due to the reduction of single-use packaging.

Examples within this category
The 3rd-Party Dependent B2C infrastructure model is characterized by its dependence on third parties for logistics ensuring efficiency when operating on a small scale, although it may result in relatively high costs when scaling up.

Assets rotate in this model between asset providers, customers, logistics parties and consumers. Also in this model a return incentive is used to encourage the consumer to return, which can vary from deposits and discounts to fines or goodwill. Quality of the assets is controlled by the provider. The business model is often based on a pay-per-asset, where the customer pays per cycle of assets used.

**Key characteristics of the model**

- **Assets**: Refillable food-, beverage- or retail packaging
- **Asset owner**: Reuse system provider
- **Business model**: Pay per use
- **Collection points**: Organised through existing logistical player: mailbox, drop-off point, at-home delivery, waste management or pick-up service
- **Cleaning facility**: Responsibility of asset provider
- **Return incentive**: Multiple possibilities: deposit, discount service or goodwill customer
- **Tracking technology**: Barcode, QR Code
- **Return rate**: Variable (RePack: 75% direct returns)
- **Environmental impact**: Reducing CO₂ emission through the reduction of single use packages and reduction in the use of raw materials for new assets

**Examples within this category**

RePack is a packaging service that enables take-back and reuse of delivery packaging for online retailers and consumers. A retailer rents RePacks per asset (min. 100), the consumer can opt for RePack packaging and pays a small additional cost. The consumer returns the empty RePack by depositing it in the nearest mailbox, and then receives a discount on a subsequent purchase in the retailer’s online store. RePack takes charge of reverse logistics, cleaning and (if necessary) repairing of the packaging before redistributing the packaging to retailers. In case of returning items, RePacks are sent directly to the retailer. In general, a RePack can be used at least 20 times.

RePack also offers tailored solutions for retailers, e.g. in the case of rental or take-back programs. The retailer pays RePack a monthly fee for a certain amount of packaging and branded sealing stickers, and is responsible for the reverse logistics and cleaning. In this case, RePack provides an extra 10% of the total amount of packaging each month to compensate for lost and damaged packaging.
#4: 3rd-Party dependent B2C infrastructure

- Logistical Player: Forward and return transport is executed by 3rd party logistical players. Transportation costs are mostly covered by the end-consumer, but depends on the specific use cases.
- Collecting assets: Different ways to collect assets: through an at-home pick-up service, simultaneously taking place with the delivery of a new order, dropping it off at a logistical point or mailbox.
- Direct exchanges or provider hub: depending on the use case, the asset is sent back to the customer: empty or filled with an item (exchanging items, item rental services...), or the asset is sent back to the Asset Provider.

---

**Asset Provider (e.g. RePack)**

- Cleaning & removing labels
- Cleaning process assets not in direct food contact: Assets checked on whether they are clean or not. If not, cleaned.
- Cleaning process assets in direct food contact: the cleaning happens according to health standards
- Quality Control process: Assets checked on damages.
- Damaged goods: Repaired where possible, otherwise sent to upcycling or recycling
- Return registration: Incoming assets registered, Customer gets notified of return and gives end-consumer a discount for next order.

---

**Producer of assets**

- Producing assets
- Transporting assets (empty)

---

**Asset provider (e.g. RePack)**

- Storing of assets
- Transporting assets (empty)

---

**Logistical Player (e.g. PostNL)**

- Sealing asset with branded sticker
- Filling assets with order items

---

**Customer (e.g. H&M, Cynho)**

- Selling order items + asset
- Pay per Shipping Order

---

**Logistical Player (e.g. PostNL)**

- Transporting assets (filled with order)

---

**End Consumer**

- Using asset
- Returning asset

---

**Logistical Player (e.g. PostNL)**

- Collection assets

---

**Recycler**

- Rejected assets

---

Ordering new asset

- Purchase price per asset
- Pay per batch assets
- Pay per Shipping Order

---

Request new batch assets

- New item order with request of asset

---

Start reverse logistics process
4.2 General insights on reverse logistics models

The following slides contain the key general insights regarding the four different reverse logistics models identified.
Different reverse logistics models are used in different contexts and are influenced by various factors. These factors include the type of industry, type of assets, geographical location, and power dynamic between different stakeholders. It is important to carefully consider these factors when designing or adapting a reverse logistics model. It may be necessary to tailor the model to fit the specific needs and constraints of the context to increase the likelihood of its success.

In general, there are some three elements that should be considered when adopting a reuse solution:

- **Achieving scale** is necessary to make reusable assets competitive with their single-use alternatives. This includes having a broad and diverse network of collection points, cost- and environmentally efficient professional washing facilities, and effective reverse logistics. It is important to note that it takes time to reach this level of efficiency and the reuse system will not be immediately competitive with the single-use system. There is a strong need for a long-time vision until maturity of the system is reached.

- **Standardization** of certain aspects of the reuse system can help to increase efficiency within the system. These standards can apply to the assets themselves and/or the processes used.

- **Environmental impact** of a model is highly dependent on a wide range of factors, making it difficult to compare the environmental impact of one model to another. However, certain high-level conclusions can be made on the environmental impact of certain aspects of models, compared to others (e.g. use of centralised cleaning facilities vs. integrated cleaning facilities, use of forward logistics as reverse logistics, etc.).
In the retail industry, the **end-user is the initiator** of the adoption of reusable assets. They request their supplier (e.g. supermarkets) to deliver new products in reusable packaging, and thereby drive the transition to reuse in the value chain.

In B2B models, **contracted logistics players** often combine returning used reusable assets with the delivery of new/filled assets (e.g. logistical players delivering to supermarkets).

**Asset providers** often have final responsibility for cleanliness and quality control of the assets, unless it is agreed that the customer is responsible for this (often at a discounted price per asset).

**Recyclers** are involved in the cycle to process broken assets into raw materials, which can be reused by the manufacturer to produce new assets.

Not returning an asset into the system has a negative environmental effect. Therefore, **consumers play a particularly crucial role**, since they can directly affect the amount of use-cycles. To achieve high use-cycles, consumers must be incentivized to return the asset.
Efficiency is increased by leveraging existing logistics flows and using space-efficient assets

- A common way of organizing (return) logistics processes efficiently is by leveraging existing reverse logistics flows. Some examples are: return flows of waste, or logistical parties delivering new stocks from wholesalers to horeca or supermarkets and that would normally drive back "empty."

- B2B value chains already have a higher level of traceability and transparency which allows for an easier and more resource efficient implementation of reuse packaging. Value chains with recurring flows of assets are ideal for reuse.

- Foldable assets are a good solution for making the most efficient use of space during logistics processes. Consider nestable or collapsible assets.

- By keeping the logistics process in-house, and thus not using the services of a third party, a logistics model can be made more time-efficient, although this process only becomes cost- and environmentally efficient with a certain scale. At a small scale it risks to create inefficient transportation streams and potentially put pressure on the inner-city mobility.

- Customer-integrated facilities where reusable assets are scanned, cleaned, inspected and immediately reused (e.g. at supermarket distribution centers) are often used to reduce asset dwell-time. This eliminates an additional stop at the asset owner's depot.
Pooling models make use of standardized assets to optimize processes, save resources and costs

• **Universal or standardized assets** allow multiple parties to share a pool of products, reducing the overall number of assets required. These assets do not necessarily need to be completely neutral - they can include features like washable branding to allow for customization by different parties.

• **Licenses** related to the production, use, and sale of assets help to facilitate agreements between competitors and serve as the internal standards of a pooling system. They ensure that pooling systems keep functioning well. Some examples of these standards can include:
  - Standard measurements and material of assets
  - Standards on processes (cleaning, filling, attaching labels, etc.)
  - Standards on quality control

• To ensure compliance with licenses and agreements, it is important to have a designated party responsible to monitor this. By following these guidelines, a pooling system can operate efficiently and sustain itself over time.

• **Return incentives** (preferably deposits) are an important leverage point in the various reverse logistics models, as they ensure the assets are returned to the owner and thus ensure the functioning of the system.

• The most efficient way to organize reverse logistics in a pooling system is to have the supplier take back used assets when delivering new ones. This approach integrates the reverse logistics process seamlessly into the forward logistics chain, further improving efficiency.
By leveraging existing logistics flows, the cost to return used reusable assets can be minimized.

Manufacturers can save on raw material costs for new packaging by using reusable packaging (e.g. beer brewers using reusable bottles), leading to significant long-term cost savings. Reusable packaging systems are already widely used in B2B market, particularly for transport packaging.

Retailers can save on secondary packaging expenses by adopting reusable assets, such as crates frequently used in the transportation of fresh products to supermarkets.

Reusable asset providers generate revenue through the leasing of assets to customers, frequently using a pay-per-use model combined with charges for dwell time and/or a monthly subscription fee. Additional income can also be generated by operating the logistics process and cleaning the assets.

In situations where customers pay a deposit for the use of assets, asset providers can generate additional (non-intended) revenue from unreturned assets for which they do not have to refund the deposit. To maximize environmental benefits, it is recommended to reinvest this revenue from unreturned deposits. This could be safe-guarded by e.g. an external non-profit organization managing deposit flows.

By jointly using a pool of universal assets, the number of assets needed is reduced and thereby also the amount of raw materials needed, hence minimizing their environmental impact.

CO₂ can be reduced by utilizing existing logistics flows and/or optimizing logistics flows.

In case of a high enough number of assets used frequently, introducing integrated sorting and cleaning facilities at the customer (leasing the assets), shortens the distance over which assets are transported, and thus reduces the CO₂ emission, by eliminating a stop at the asset owner. Important caveat: if the scale is too low, the costs and environmental impact can be higher than the impact of the extra transport.

The minimal amount of loops that need to be attained to out-compete single-use systems strongly varies with the systems compared, but often at least 10 loops need to be attained. This implies that the collection rate needs to be as high as possible and at least 90%.

Especially in B2B systems (in which consumers do not directly encounter the assets, and appearance plays a less important role), during the quality control rejected assets can in many cases still be repaired, allowing them to re-enter the cycle.

The amount of raw materials required for assets can be reduced by having rejected, non-repairable assets recycled into raw materials by the recycler, after which a part can be returned to the producer of the assets.

The use of reusable assets causes consumption of energy and water due to cleaning. However, only a fraction of water is used compared to the water used to produce new assets, and usage can be reduced through efficiency and use of professional facilities.
4.3 Inspirational cases of reverse logistics models

Six unique and inspiring examples of reverse logistics models or elements that could be learned from in establishing new models.
Six unique and inspiring examples of (elements of) reverse logistics models came forward from the study. These cases, which can be used as sources of inspiration when setting up new logistical models, can all cover one or more of the four phases of the logistics journey, as shown on the right.

On the following pages these cases will be introduced by discussing:

- How it works
- Type of products involved
- Scale
- Business model
- Environmental impact
- What we can learn from it
“Collecting a wide variety of (reusable) packaging through a variety of return incentives on a large scale.”

How it works
Lemon Tri is committed to innovative collection solutions in order to stop the dumping and burning of waste. They install various types of collection and compacting machines with different capacities and options such as rewards (e.g. vouchers, solidarity gifts and associative micro-donations) and deposit, at well-located small collection spots (offices, train stations, etc.). In addition to the installation of Reverse Vending machines, Lemon Tri takes care of the implementation of solutions for the recovery of recyclable waste in companies or on events: installation of bins, collection and treatment of flows operated by agents in professional reintegration. The machines use sensors and barcode scanners to achieve error-free collection and 100% material recycling. Lemon Tri collects, sorts, sanitizes and recycles the waste. Reuse packaging gets cleaned by the operator or a Lemon Tri partner.

Type of product(s) involved
Reverse vending machines collect and sort in 2 bags reusables (cups, foodboxes, PET bottles) and items to be recycled (paper cups and cans). For the waste side of the business, Lemon Tri collects, processes and recycles over 36 streams of recyclable materials.

Scale
Lemon Tri operates from four warehouses in France and installed over 500 machines in France

Business model
Lease model: paid by retailers, used by consumers.

Environmental Impact
Sorting and decontaminating at source achieves efficiency (great improvement over other waste sorting/recycling initiatives) + incentives encourage consumers to hand in resources

What we can learn from it
➔ Availability in a wide range of locations frequently visited by consumers increases return willingness by consumers
➔ Return of reuse packaging through machines can be fast (2 seconds)
➔ Offering a variety of return incentives helps to tailor to the needs of locations placing machines, and possibly avoids transaction costs (in case of cash returns)
➔ On-site sorting of different waste streams simplifies reverse logistics
"Reducing emissions and costs from transportation by bundling orders in e-commerce”

How it works
Boxobag provides reusable packaging for e-commerce companies. Lena is a fashion library where consumers can rent clothes. Lena offers its customers the opportunity to save shipping costs by packing the order in a Boxobag and having it sent to a “Swap Point” in larger cities in the Netherlands, where they can then pick up their clothing. In this case, Lena bundles multiple orders, packed in one Boxobag. This reduces shipping costs to the price of shipping one package, and prevents packages from having to be returned in case of the customer not being at home. Returning items works the same way, packed in the Boxobag via a Swap Point.

Type of product(s) involved
Reusable e-commerce packaging.

Scale
Established partnership Lena (one physical store in Amsterdam with webshop) and BOXO (start-up phase).

Business model
1) Reduction of packaging costs and 2) offering customers lower shipping costs, resulting in more sales.

Environmental Impact
Although less time-efficient, this way of organizing logistics makes delivery routes more efficient (send to one central point and prevents packages from not being delivered when consumers are not at home), reducing CO₂ emissions and transportation nuisances, and saves on raw materials needed for packaging.

What we can learn from it
➔ CO₂ emissions can be reduced by bundling packages and sending them back and forth between two central locations in reusable packaging
➔ Consumer returns can be encouraged by the expiration of a rental period of borrowed products

Source: Lena Fashion Library
Source: www.boxo.nu
How it works
Ordering fresh food online requires fast and cooled delivery. Benelux postal service provider Dynalogic offers the delivery of groceries fresh and safe to end-consumers for clients such as Pieter Pot. In partnership with Pieter Pot, disposable packaging-free supermarket, Dynalogic also returns used deposit jars to a collection point to be used again. Combining delivery and collection of deposit jars encourages return by consumers, and ensures that empty space in Dynalogic trucks is utilized in the Netherlands and Belgium.

Type of product(s) involved
Fresh food delivery service.

Scale
All of the Netherlands and Belgium

Business model
Fixed fee per item to be delivered

Environmental Impact
Rather than all companies running their own delivery service, Dynalogic performs delivery for multiple companies with this service. This results in a more efficient supply chain, leading to fewer nuisances and emissions from transportation.

What we can learn from it
Bundling delivery services with special requirements and therefore higher costs (e.g. refrigeration), can create economies of scale and achieve logistical and financial efficiency. However, delivering such products can also complicate the logistics (subject to requirements such as specific delivery times).

“Bundling delivery services with special requirements to create scale and efficiency”
How it works
Budbee and DHL are working with e-commerce platforms such as H&M where consumers can choose to have their order delivered to a central location (often a supermarket or a local store). The delivery driver places the order in one of the boxes. The consumer can pick up the order whenever is convenient for them by entering a code showed in the Budbee or DHL app, so the box with their package opens. The consumer can also return their e-commerce package by handing it in at the drop-off point, Budbee or DHL organise a pick-up at the drop-off point several times a week.

Type of product(s) involved
E-commerce products

Scale
Sweden, Finland, Denmark, the Netherlands and Belgium

Business model
Freemium model: free for basic delivery options. For more options such as preferred delivery times and the possibility to change delivery location, consumers pay extra. This premium membership costs €4.90 per month for consumer.

Environmental Impact
Central collection points allow for more efficient delivery routes and reduce the number of individual trips by delivery vehicles, hence it reduces the pressure on inner-city mobility and the environmental impact linked to last-mile transportation.

What we can learn from it
Central drop-off locations for the delivery and pick-up of e-commerce packaging reduces the environmental impact of last-mile transportation, while also making pick-up convenient for the consumer.
“Home pick-up of reusable packaging by a home delivery service in Germany”

How it works
Gorillas is a German on demand grocery delivery company promising to deliver groceries to consumers within 10 minutes of ordering using riders on electric bikes. Vytał offers reusable containers with an app based system to encourage returns. Containers can be used for free by consumers, if returned to one of the return locations within 14 days. Users not returning their packaging automatically buy them for up to 10€. The partnership between Gorillas and Vytał is based on Gorillas reverse logistics, with riders taking back used Vytał containers free of charge upon delivery of items ordered through the Gorillas shop.

Type of product(s) involved
Reusable Vytał packaging (cups and containers).

Scale
Although Gorillas operates in six countries in Europe and Vytał in eight, this collaboration is taking place only in Germany at this moment.

Business model
This collaboration allows Vytał to offer consumers more convenient return options, encouraging adoption of the product by both retailers and consumers. Gorillas generates additional revenues through this partnership, as consumers can only return Vytał containers upon delivery of an order.

Environmental Impact
Transport emissions are reduced through this partnership as Gorillas riders take back used containers after delivery of ordered products, utilizing free space in their backpacks.

What we can learn from it
Leveraging existing reverse logistics processes of home-delivery parties to return reusable packaging can 1) make reuse more attractive for customers and 2) create additional potential sales opportunities for those home-delivery parties.
How it works
Picnic is an end-to-end food supplier without physical stores. The business model is based on an app-only approach: consumers order their items online in the app, Picnic delivers the items through privately owned logistics (see the Picnic vehicle in the picture on the right). When delivering the ordered goods to the consumer, Picnic takes back some of the used products and packaging on the way back.

Type of product(s) involved
Picnic takes back among others used Nespresso cups, deposit (PET) bottles, batteries and DHL packaging.

Scale
Picnic serves over 60 cities in both the Netherlands and Germany with more than 1000 Picnic vehicles.

Business model
Returning the above products does not in all cases generate an additional revenue stream for Picnic. For e.g. Nespresso cups and coffee grounds, Picnic receives an additional fee from Nespresso and De Clique respectively. In the case of PET bottles and batteries, however, Picnic is obliged by Dutch legislation to return them since it also sells them.

Environmental Impact
Picnic makes the most of every ride by never driving without goods.

“Cooperation between parties to combine forward logistics of one party, with reverse logistics of the other, to reduce the amount of logistical flows.”

What we can learn from it
Reasons for logistical parties to take back products vary from creating an additional revenue stream (e.g. in the case of Nespresso cups), to legislation (e.g. PET-bottles, batteries).
4.4 Collection points for reusable packaging
An overview of available collection solutions for reusable packaging around the world
The Different Collection Points

Especially in open loop systems involving customers, collection points play a crucial role in logistics processes, as they are the starting point for the actual reverse logistics. Various collection points for reusable packaging were detected during the study. In this, two categories have been distinguished: no-tech and high-tech collection points, both suitable for different situations. Within those two categories, a number of different machines will be presented in the coming slides. Also, opportunities and challenges per category will be discussed.

The following aspects concerning each machine will be discussed:

➔ Name & location: name of the venture
➔ Description: how it works in a nutshell
➔ Characterized by: what makes it special
➔ Scale: scale on which bins can be found; from proof of concept to worldwide usage
➔ Return incentive: customer incentive to hand in reusables
No-tech Bins: significantly cheaper, independent and easy to interact with

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Characterized by</th>
<th>Scale &amp; location</th>
<th>Return incentive</th>
</tr>
</thead>
<tbody>
<tr>
<td>ClubZero</td>
<td>Low-cost and space efficient crate to collect cups, fully adapted to reverse logistics infrastructure.</td>
<td>Independent placement (no electricity etc.), collects cups nested.</td>
<td>19 installed return points in the UK</td>
<td>Consumer scans QR-code with ClubZero app, receives back deposit after return.</td>
</tr>
<tr>
<td>Vytal</td>
<td>Low-cost, independent bin. Handed in cups scanned with Vytal-Partner app for return registration.</td>
<td>Independent placement (no electricity etc.), no extra costs for consumer; max. return time is 14 days.</td>
<td>3,200+ affiliated partners where assets can be returned in Europe.</td>
<td>Consumer scans QR-code with Vytal app, no fine in case of return within 14 days.</td>
</tr>
<tr>
<td>Ikea x ReCup/ReBowl</td>
<td>Return of cups and bowls with deposit tech bins at IKEA stores in Germany.</td>
<td>Handing in using machines (refund with cash, voucher or employee card) or at one of the 12,000 affiliated partners (at the counter, cash). Capacity: 250 bowls and 500 cups.</td>
<td>Bins at restaurants, bistros and staff restaurants in all 54 IKEA stores in Germany</td>
<td>Consumer receives back 1€ deposit per cup; 5€ deposit per bowl after return.</td>
</tr>
<tr>
<td>Name</td>
<td>Description</td>
<td>Characterized by</td>
<td>Scale</td>
<td>Return incentive</td>
</tr>
<tr>
<td>--------------</td>
<td>--------------------------------------------------------------</td>
<td>-------------------------------------------------------</td>
<td>----------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Kooky2Go</td>
<td>Collection bin for reusable cups</td>
<td>Full-service offering: collecting, cleaning and redistribution</td>
<td>120 installed return points in Switzerland</td>
<td>Deposit, received back in Kooky-app wallet</td>
</tr>
<tr>
<td>Lemon Tri</td>
<td>Collection machines for i.a. deposit-bottles, using optical sorting technology</td>
<td>Collect, sort (and optional: shred) up to 5 different types of packaging and offers various incentives</td>
<td>100 installed return points in France</td>
<td>Deposit-based</td>
</tr>
<tr>
<td>Tomra</td>
<td>Collection machines for collecting, sorting and handling used bottles for recycling and reuse, using optical sorting technology</td>
<td>Accepts various types of products (PET bottles, beer bottles, crates)</td>
<td>80,000 return points for bottles installed internationally (Norway, New-Zealand, Holland etc.)</td>
<td>Deposit-based</td>
</tr>
<tr>
<td>CupLoop</td>
<td>Collection machine for reusables using RFID, direct deposit refund to using NFC (Near Field Communication)</td>
<td>Accepts reusable packaging items that are tagged with RFID</td>
<td>20 installed machines in Estonia, Holland, etc.</td>
<td>Deposit- or app-based (fine)</td>
</tr>
<tr>
<td>Loop</td>
<td>Collection machine for reusables using RFID (Radio-frequency identification), direct deposit refund to by NFC</td>
<td>Used to return Loop packaging and receive deposit through their app</td>
<td>Several machines installed in France, UK, Japan</td>
<td>Deposit, using NFC or received back in app</td>
</tr>
<tr>
<td>Goodless</td>
<td>Collection machines using RFID that can transfer deposit to wallet. Offers API for in-app integration of wallet.</td>
<td>Can collect cups stacked (capacity: 2000 cups, 25 per stack) or unstacked. Processes and sorts 2 sizes</td>
<td>12 machines installed locally in Ghent Belgium.</td>
<td>Deposit, received back through app/API</td>
</tr>
</tbody>
</table>

**Source:** Kooky2go, Lemon Tri, Tomra, CupLoop, Loop Industries, Goodless
# An Overview of Opportunities and Challenges

The selection of a return station for a certain situation can depend on certain factors, such as: the space and connections available, the audience, packaging and desired rewards, etc. Based on the study of the different return stations, the opportunities and challenges for each category are listed below.

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>High-tech bins</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No-tech bins</strong></td>
<td><strong>Automated feedback and data collection</strong></td>
</tr>
<tr>
<td><strong>Standalone</strong></td>
<td>- Instant feedback to user on returned goods and rewards to consumer</td>
</tr>
<tr>
<td>- No connection requirements such as power, internet, etc.</td>
<td>- instant feedback to logistics party when full</td>
</tr>
<tr>
<td>- Lower chance of software failure</td>
<td>- Scanning of the assets by the bin</td>
</tr>
<tr>
<td><strong>Budget-friendly</strong></td>
<td>- Automated data collecting when scanning asset</td>
</tr>
<tr>
<td>- Lower purchase cost than high-tech bins</td>
<td>- Ability to pre-sort returned assets/waste</td>
</tr>
<tr>
<td><strong>Easy to use</strong></td>
<td><strong>Customisation possible</strong></td>
</tr>
<tr>
<td>- No transaction fees for refund deposits</td>
<td>- Ability to offer different types of return incentives (refund to bank account, Tikkies, coupons, lottery, etc.)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Challenges</th>
<th>Specific locations requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No automated feedback and data collection</strong></td>
<td>- Usually dependent on infrastructural needs such as electricity, and stable wifi connection (can vary).</td>
</tr>
<tr>
<td>- No instant feedback to user on returned goods and rewards</td>
<td>- Space and placement requirements can be significant</td>
</tr>
<tr>
<td>- No signal to collecting party in case the bin is &quot;full&quot; and needs to be emptied</td>
<td><strong>High investment and costs</strong></td>
</tr>
<tr>
<td>- No automatic data collection on e.g. return rates, dwell time and use-cycles</td>
<td>- (High) Investment costs to get the bins</td>
</tr>
<tr>
<td><strong>Need for manned or managed environment</strong></td>
<td>- Operational costs</td>
</tr>
<tr>
<td>- Bins are easy to open and steal goods, so must be placed in a managed environment to prevent fraud</td>
<td>- Transaction fees may occur when working with a payment terminal to return deposits</td>
</tr>
<tr>
<td>- Deposit needs to be refunded by an employee</td>
<td><strong>High environmental impact</strong></td>
</tr>
<tr>
<td></td>
<td>- Resources needed to build</td>
</tr>
<tr>
<td></td>
<td>- Electricity needed to keep operational</td>
</tr>
</tbody>
</table>
5. Recommendations

Next section gives suggestions for governments to support the establishment and scaling of reverse logistics models for reuse through policy, financial support and standardization.
Governments could incentivize reuse by stimulating the market demand through:

- **Prevention targets**, limiting the quantity of allowed new packaging materials through avoiding unnecessary packaging, reducing oversized packaging and switching to reusables.

- **Reuse targets**, demanding new packaging to consist of reusables for a minimum percentage defined per product group such as crates and pallets: 50% reusables by 2030, and 90% by 2040. For beverages filled at location like a coffee-to-go, these targets can be used: 30% within a reuse system or with refill enabled by 2030 and 95% by 2040.

- **A take back obligation for points of sale** to ensure a fine-meshed network for consumers where they can **return their packaging and redeem their deposits** has proven to be essential in achieving high return rates. Possible exemptions can be made for smaller shops.

- **Financially incentivizing companies to make use of existing logistics networks** (such as postal services) through Extended Producer Responsibility (EPR) or taxes.

- **Incentivize retailers in the value chain** to use reusable packaging (e.g. regulatory measures, financial measures etc.), as they are the biggest driver for reusable packaging adoption in B2B.

Policy: Governments can encourage the growth of reverse logistic models for reuse through targets, regulations, take-back obligations and incentives.
Financially: Governments can support the development of efficient reverse logistics by investing in the necessary infrastructure and funding research needed.

From a financial perspective there are several things governments can do to support the development of efficient reverse logistics.

- **Investing in reverse logistics infrastructure, such as universal return machines** that accept a variety of packaging types at public indoor spaces such as libraries and metro stations.

- **Issuing grants to organizations with a focus on sustainable reverse logistics of reusable packaging.**

- **Encouraging the establishment of local and integrated sorting and cleaning facilities.** E.g. by limiting reverse logistics distances to 150-200 km, to minimize greenhouse gas emissions.

- **Financing research into transaction fees on deposit-refunds**, as these transaction costs challenge the successful return of deposit fees. The government should investigate ways to eliminate this obstacle, such as by prohibiting transaction fees on deposit refunds or by implementing a national or international deposit refund system, like using an alternative bank card.
Standardization: Governments can simplify reverse logistics by encouraging the introduction of uniform packaging standards, shared resources, and standardization of deposit values.

To set standards to help scale up reverse logistics models and thereby encourage (especially B2C) reuse initiatives, governments could, as a neutral party, strategically facilitate processes to:

- **Establish uniform dimensions and packaging standards** for reusables such as e-commerce packaging, to facilitate efficient European reverse logistics as already exists for crates and pallets.*

- **Encourage the use of universal and unbranded assets** (possibly with washable branding) shared by different parties through pooling systems, e.g. through Extended Producer Responsibility to optimize these types of systems in terms of cost and environmental impact.

- **Establish standardized deposit values for single use and reusable packaging**, after determining the ideal value through research in order to create a level playing field between reuse and single use. Additionally this prevents reusable packaging innovators to compete on deposit values.

* Other industries have shown the way forward: National standardization in Germany has allowed for the creation of a highly effective bottle-return system, which yields a consumer return rate of 99%. *(World Economic Forum, 2021)* Source: *The need to set essential criteria for setting up managed pool systems*, Zero Waste Europe (2022)
6. Annex: Interviews and Sources
## Interviews: The participants

<table>
<thead>
<tr>
<th>Existing logistical streams</th>
<th>Pooling systems</th>
<th>Reuse System Providers</th>
<th>Innovative return points</th>
<th>Municipalities</th>
<th>Global inspiration</th>
<th>Experts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Havi</td>
<td>Europool</td>
<td>Loop (US)</td>
<td>Picnic</td>
<td>Gent</td>
<td>PR3</td>
<td>Hobart</td>
</tr>
<tr>
<td>Groen-collect</td>
<td>Vereniging van</td>
<td>Kooky (CH)</td>
<td>TOMRA</td>
<td>Leiden</td>
<td></td>
<td>Statiegeld Nederland</td>
</tr>
<tr>
<td>Gorillas (DE)</td>
<td>Brouwerijen</td>
<td>SwapBox</td>
<td>Digital DRS</td>
<td>Rotterdam</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cargors</td>
<td>RePack</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Ministerieel Besluit inzake de regeling kunststofproducten voor eenmalig gebruik (Staatscourant nr. 8376)


"To change something, build a new model that makes the existing model obsolete."

- Buckminster Fuller

Emmy Van Daele  
Policy  
emmy.vandaele@recyclingnetwerk.org

Anne Poggenpohl  
Innovation  
anne@enviu.org

Nienke Nijholt  
Innovation  
nienke@enviu.org

Elise Lippens  
Innovation  
elise@enviu.org