



# Everything circulates



**2 BILLION ENVIRONMENTAL ACTIONS IN A YEAR**

# BEVERAGE PACKAGE RECYCLING IS ABOUT COOPERATION

*The deposit system functions as an excellent incentive for recycling beverage packages.*

**B**everage manufacturers and importers, stores, logistic and recycling operators and, of course, the consumers – The Finnish beverage package recycling is a team effort.

The system is based on the deposit that circulates around together with the beverage packages. In the beginning, the beverage manufacturer or importer pays a deposit to Suomen Palautuspakkaus Oy, Palpa. When the beverage package is delivered to a store to be sold, the store pays a deposit in the product's price to the beverage manufacturer or importer. The consumer pays the deposit of the beverage package in the store and receives it back when returning the empty package to a return point.

Empty packages are delivered from the return point to the processing plant from which the material is delivered to the material recycler. The return point and the processing plant report the returned packages to Palpa and the driver reports the transported units. In the end, the deposit circle closes when Palpa pays the deposit to the return point.

A vast majority of beverage manufacturers and importers have joined the return system managed by Palpa, since this system exempts them from the beverage packaging tax.

The Finnish beverage package return system is an excellent example of the circular economy: almost all material from beverage packages returns to use in the form of new beverage packages or as other products. The most important contribution comes from the Finnish consumers who return over 90% of the bought beverage packages back to the circulation.

**Suomen Palautuspakkaus Oy's duty** is to manage and develop the return systems of deposit beverage packages in Finland. Palpa is owned by retail trade and beverage industry, fifty-fifty. This effective return system is based on great cooperation between Palpa, beverage industry, retail stores, horeca operators and an extensive partner network.



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**The deposit circulates with the beverage packages.**

### Everything circulates

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Four different kinds of beverage package types go through the deposit-return system in Finland: aluminium can, PET bottle, recyclable glass bottle and refillable glass bottle. All deposit packages go in a circle from return to a new beverage package or to another industrial use.

**PET plastic is utilized in beverage packages and,**   
for example, in the packaging and food industry.

#### PET BOTTLE

When a PET bottle is returned back into circulation, it continues its journey to a processing facility where plastic bottles are baled into big bales. Most of the returned bottles are made of transparent PET plastic, with the rest of the material being coloured plastic, caps and other miscellaneous material, mainly labels.

The bales are transported to material recycling plants where the materials are crushed, washed, dried and sorted according to the colour and material. This sorted PET plastic is produced into

clear and coloured chips which are converted into plastic granulates.

These clear granules are used to make bottle preforms by melting and casting them into a preform mold. The preforms are delivered to the bottle manufacturer or brewery where they are blown into their final shape of bottles. The bottles are filled, closed and labelled and transported to stores and restaurants.

In addition, plastic chips are utilised, for example, in the packaging and food industry.

#### RECYCLABLE GLASS BOTTLE

Recyclable glass is an excellent material for beverage packages, since it can be recycled almost indefinitely. The empty bottles are packaged to transportation units in the stores and restaurants and transported to processing plants where they are crushed, cleaned and sorted for recycling according to the colour.

When cleaning the package glass, all the extraneous matters are removed, such as metal, plastic, rubbish and other impurities. Brown, clear and green glass shards are

created at the glass processing plant and they are further processed to create different end products.

The recycled glass material from deposit bottles is perfectly suitable to be reused. New glass bottles can be made of this recycled glass as well as glass containers and jars. A ton of recycled glass consumes approximately 30% less energy than glass made of virgin raw materials. Recycled glass is also used in the construction industry to produce materials such as glass wool and foam glass granules.

 *Recyclable glass is an excellent material for beverage packages, since it can be recycled almost indefinitely.*

# FROM MATERIAL TO A BEVERAGE PACKAGE PACKAGE AND BACK

*Manufacturing a can from recycled aluminium consumes*   
**95% less energy than manufacturing it from virgin raw materials.**

#### ALUMINIUM CAN

Aluminium in cans can be recycled almost indefinitely.

The empty cans from return points or from restaurants are packed into transportation units and bags and delivered to processing plants where the cans are tightly baled.

Can bales are transported to an aluminium smelting facility where cans are melted and casted into ingots. This melted can aluminium is suitable as such to be used as a raw material for new cans. The ingots are rolled into sheets and delivered to the can manufacturer as big rolls weighing several tons.

The life of a new can starts from the can manufacturing plant where new cans are produced from the sheet rolls. The beverage brand prints, bar codes, deposit markings and possible surface patterns are also printed on the can at the plant.

The cans are then delivered from the plant to beverage manufacturers to be filled. In the end, they are closed with a lid. Filled cans are transported to restaurants and stores where the consumers can buy them.

100% of the collected aluminium is directly used to manufacture new cans.

 *A refillable glass bottle*

**is used approximately 33 times.**

#### REFILLABLE GLASS BOTTLE

A vast majority of refillable glass bottles are brown 0.33 liter beer bottles. The refillable glass bottle is the pioneer in deposit beverage packages because the refillable bottles have been returnable already since the 1950s.

The bottles returned by consumers are packed into cartons that the beverage industry transports back to breweries. The bottles are washed before reusing them in the brewery. Filled bottles are labelled and closed. Bottles are transported to stores and restaurants from where they end up first to consumers and

then, after the stores and restaurants return the bottles, back to be reused.

A refillable glass bottle is used approximately 33 times. Thereafter, the material is utilised as recycled glass.

# CIRCULATION OF BEVERAGE PACKAGES

Approximately 1.9 billion empty deposit beverage packages are returned yearly in Finland. After returning and processing, the package continues its journey back to stores or restaurants.

## RETURN

The consumer returns the empty beverage package to the return point and gets back the deposit paid in the price. Also restaurants return empty deposit packages.

1



## PACKAGING

Packages are packed in return bags, boxes or glass containers.

2



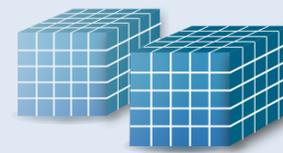
## TRANSPORTATION

Empty packages are collected at the same time when new packages are delivered to be sold. Additionally, a part of packages are collected directly to further processing.

3

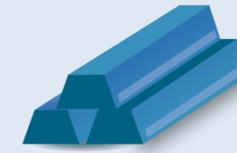


## ALUMINIUM CAN



1

In the processing plant, the contents of can boxes or bags is crushed into big bales.



2

In an aluminium smelter the bales are smelted into ingots.



3

Aluminium ingots are rolled into thin sheets that are used in making new cans.



## PLASTIC BOTTLE



1

The plastic bottles are crushed into big bales in the processing plant.



2

Bottles are ground and the resulting grain is granulated for further use.



3

Bottle preforms are made of clear recycled plastic. From these preforms the beverage industry blows new plastic bottles. The recycled plastic is also used to make, for example, food packages and packing material.



## RECYCLABLE GLASS BOTTLE



1

The glass is crushed, cleaned and sorted for recycling according to the colour in the recycling plants.



2

Recycled glass is used in making new packages and also in making, for example, glass wool and foam glass.



## REFILLABLE GLASS BOTTLE



1

Bottles are transported to breweries where they are washed and rinsed.



2

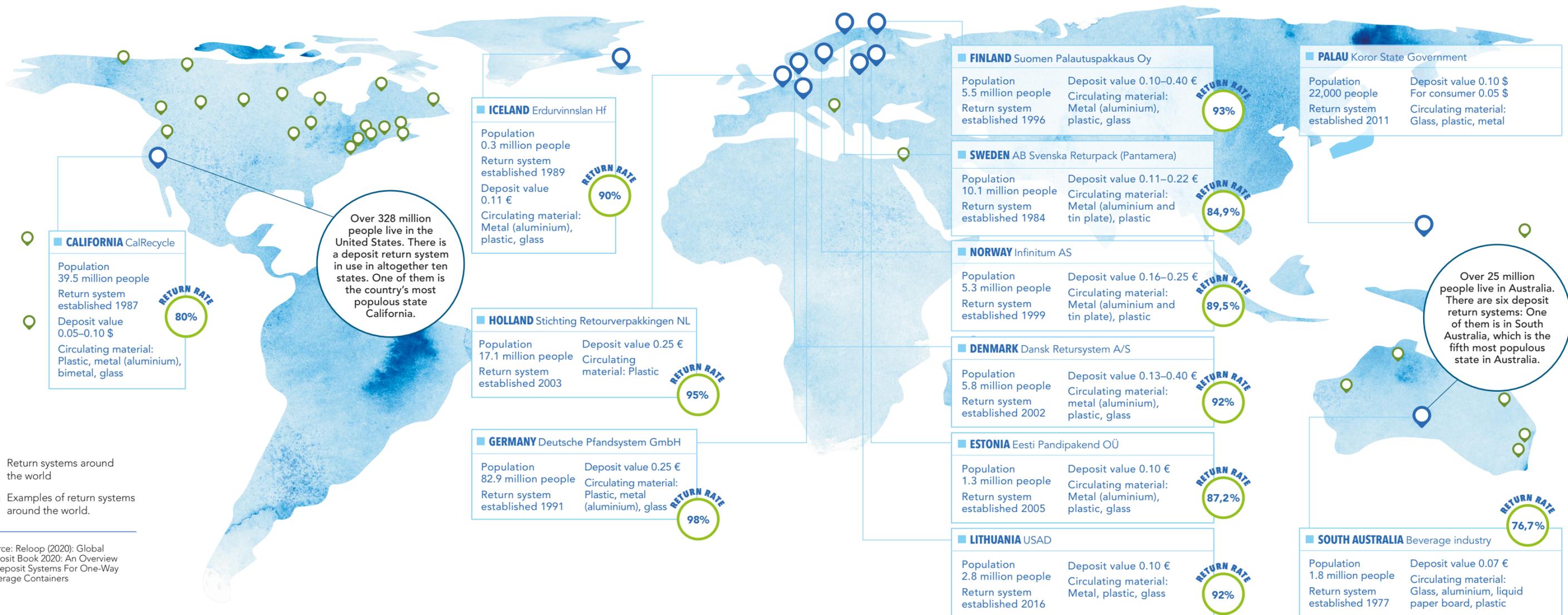
Cleaned bottles are refilled, closed and labelled.



3

Filled bottles are transported in boxes or cartons to stores and restaurants.





# BEVERAGE PACKAGE RETURN SYSTEMS IN FINLAND AND ABROAD

The Finnish Palpa has created a return system that has raised interest all around the world.

The effective nationwide return system managed by Palpa is based on a network of operations and full cooperation between the different parties using the return system. Palpa does not own, for example, the reverse vending machines, transportation equipment or processing plants, as these are handled by other operators. This means Palpa can concentrate on maintaining and developing the system.

The circular economy is a global megatrend that has created interest in recycling beverage packages and return systems globally. Palpa's functional system has been noted around the world, and visitors to explore the system have arrived from Europe and even from South America and Asia.

### The Finnish return system is working

Finns are pioneers in recycling beverage packages: over 90% of the bought beverage packages are put back into circulation. The deposit is one of the reasons for its functionality, but it is not the only reason. Finns are ecologically aware and

recycling comes naturally - daycare, schools and homes teach Finns to recycle and avoid unnecessary littering.

It is easy to recycle beverage packages in Finland. Reverse vending machines function well and consumers can find them easily while shopping. The returner puts the different beverage packages in through one hole and after that the consumer can trust that the bottles and cans are delivered through the logistic chain to further processing.

### There are differences in return systems

The deposit system is not the only functional system of recycling. Other ways to recycle beverage packages include, for example, individual deposit systems of store chains, optional sorting with other household waste and sorting at waste treatment plants.

There are dozens of examples of different deposit beverage systems in the world. The deposit systems in different countries differ, for example in the materials to be recycled, in the deposit values and in whether the deposit is compulsory.

# PALPA

## COMMUNICATION MATERIALS AND CHANNELS

### Palpa.fi: An extensive information package for all the operators in the sector

An extensive information package of deposit-based beverage packages return system and Palpa's operations is gathered at Palpa.fi. You can also find the current news, Palpa communication materials, videos of Palpa's operations, comprehensive Materials, contact information for beverage industry and return locations at this site.

For stores, other companies and associations this site offers information concerning operating as a return point and the operator's responsibilities, practices and procedures. Registration of a new return point is also carried out at this site.

For beverage industry professionals, this site offers information on the Palpa membership and instructions on how to become a member of the system. The material bank includes instructions on registering the products, marking the packages, material requirements and price lists.

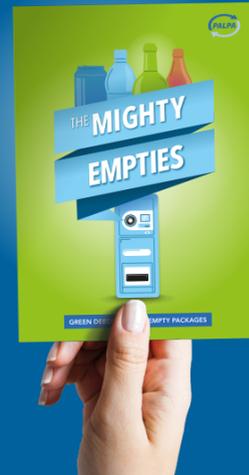


### Contact information

Consumers: info@palpa.fi  
Professionals: asiakaspalvelu@palpa.fi

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Photos: GraphicsFuel.com and Anthony Boyd Graphics (www.anthonyboyd.graphics)



### Palpa's educational materials for schools

Palpa has produced several popular educational materials to support educational work. These materials include different background and assignment materials and videos.

The educational material package **The Mighty Empties** aimed for primary schools, steers the children on a journey to a world of beverage package recycling and everyday ecological actions. It can be downloaded at palpa.fi from the Communication material section or from the educational material service at Subjectaid.fi. Palpa's annual publications for 2012–2015 can also be found at these addresses.

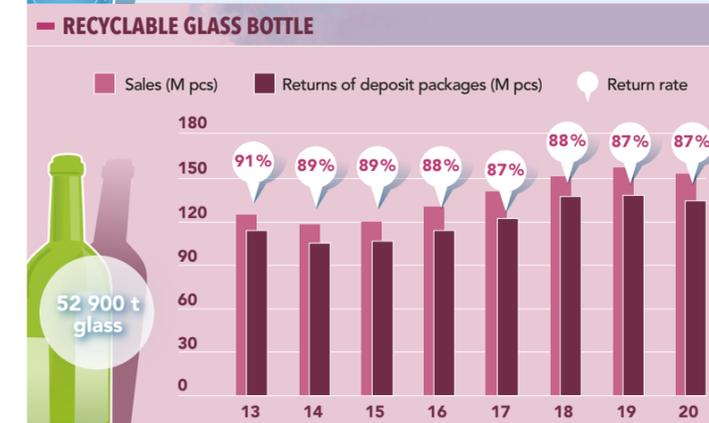
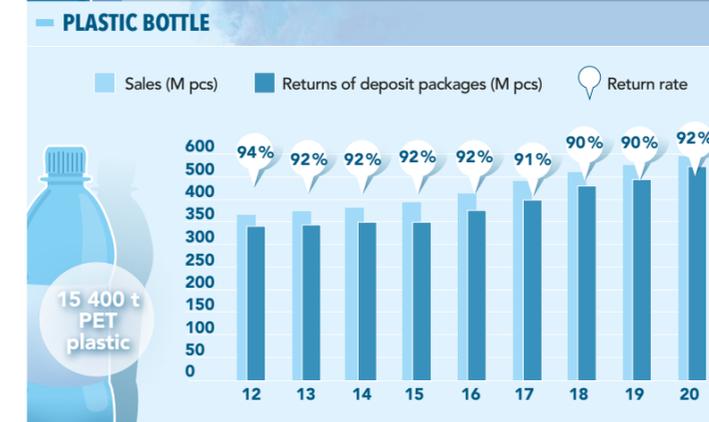
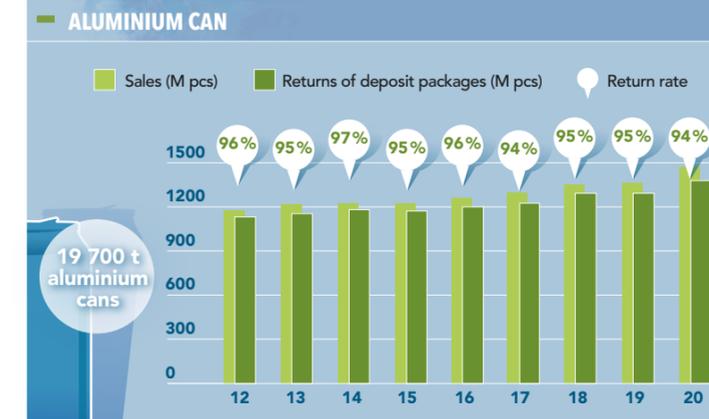
### Pantilliset.fi: Recycling information on deposit beverage packages for consumers

Pantilliset.fi includes general information about recycling deposit beverage packages and about Palpa. This site is perfectly suitable to be used as supporting educational material in schools.



Palpa is a non-profit company. The deposit fees are not included in the turnover.

### SALES AND RETURNS BY PACKAGE TYPE



# PALPA

## 2020

EACH YEAR, THE AVERAGE FINN RETURNS:

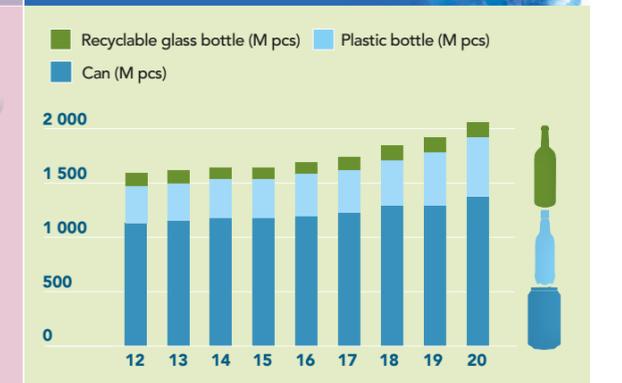
251 CANS

98 PLASTIC BOTTLES

24 GLASS BOTTLES



### TOTAL RETURNS OF DEPOSIT PACKAGES





Finns are the world's best beverage package recyclers. The return rate for deposit beverage packages is over 90%.

The deposit-based return system has been realised in cooperation with beverage manufacturers, retail stores and consumers.