

# RETURN TO THE FUTURE



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Hello, welcome to a journey into the future! Did you know that every time you return a bottle or can to a reverse vending machine, you can eventually find it on a store shelf far in the future – as a new bottle or can? So you can give beverage containers an eternal life!

The idea behind recycling beverage containers is closed loop recycling. This means that the material from the returned bottles and cans is used to make new bottles and cans. In this way, the raw materials used for beverage packaging are recycled, natural resources are saved and climate emissions are reduced.

In this booklet, you will find more information about the return system and how you can get involved in creating a better future.

HI!  
MY NAME IS D. EPOSIT.  
YOU CAN FIND ME ON  
THE PAGES OF THIS  
BOOKLET, ASKING  
YOU SOME TRICKY  
QUESTIONS!



This booklet was published by Suomen Palautuspakkaus Oy (PALPA), a company whose task it is to take care of recycling beverage containers with a deposit and promoting it in Finland.



# OVER TWO BILLION ENVIRONMENTAL ACTS IN A YEAR FOR THE FUTURE

Every year, Finns drink millions of litres of beverages, many of which are packaged in bottles and cans. Almost all of these bottles and cans carry a deposit marking. This means that when the drink is drunk and the container is empty, you get a deposit back when you return it to the shop. This is called a deposit return system of beverage containers, and it's the circular economy at its best!

Returning bottles and cans is not just for the benefit of the person returning them. They provide material for the manufacture of new bottles and cans. This saves valuable raw materials, such as aluminium and oil, as well as a lot of energy. Returning bottles and cans to the reverse vending machine is therefore an act for the environment and a better future.

Finns are environmentally conscious and recycling is natural. In kindergartens,

schools and at home, people learn to recycle and avoid unnecessary waste. In addition, protecting the environment, promoting recycling, reducing waste and saving energy has become more important to Finns every year.

In Finland, there are nearly 4,000 reverse vending machines where more than two billion beverage containers are returned every year. This means that each Finn returns an average of 400 bottles or cans every year. That's a huge number! In fact, we Finns are the world's most active recyclers of beverage containers: we return more than 90% of the beverage containers we buy for recycling.

However, the recycling of beverage containers is ultimately a joint effort between consumers, retailers and beverage producers, where all play an important role and all benefit.

HOW MANY CONTAINERS DO YOU ESTIMATE THAT YOU YOURSELF RETURN TO SHOPS IN A YEAR?

THINK ABOUT WHY YOU RETURN A BOTTLE OR CAN TO A REVERSE VENDING MACHINE? WHAT IS THE BENEFIT?

WHAT DOES A DEPOSIT MEAN?



## CONTAINERS WITH A DEPOSIT

# TRAVELLING COMPANIONS OF THE FUTURE

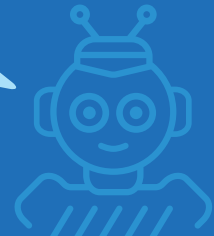
Return these products to a reverse vending machine and you can find them far into the future.



WHEN WAS THE LAST TIME YOU RETURNED BOTTLES OR CANS WITH DEPOSIT TO A STORE?

IF YOU PUT THE DEPOSITS OF THE YEAR'S RETURNS INTO SAVINGS, WHAT COULD YOU DO WITH THAT MONEY?

THINK ABOUT WHY DIFFERENT CONTAINERS HAVE DIFFERENT DEPOSIT VALUES?



### CAN

- Cans with a deposit are made of aluminium. A can is disposable, but the aluminium used for it can be reused almost infinitely.
- Making a new can from recycled aluminium consumes only 5% of the energy it would take to make a can from virgin raw material.
- Return the can intact and empty. No deposits are issued for crushed cans.

VALUE OF DEPOSIT:



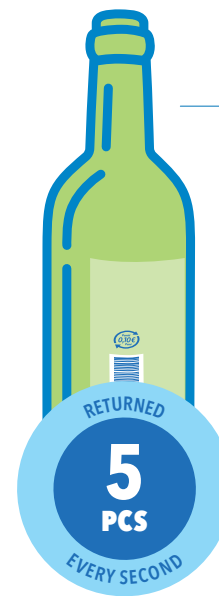
### PLASTIC BOTTLE

- The actual bottle is disposable, but the PET plastic used for it can be reused in a number of ways. The recycled raw material is mostly used to make new bottles, but also for packaging, clothes, backpacks and pens.
- Empty plastic bottles are returned with their caps on: this way the caps are also recycled.
- Return the bottle empty with a label intact.

VALUE OF DEPOSIT:



Depending on the size of the plastic bottle.



### GLASS BOTTLE

- The actual bottle is used only once, but the cullet obtained from it can be recycled almost infinitely.
- Recycled glass is used to make new glass bottles and jars. In addition, it is used to make glass wool and foam glass, which are used in construction.
- The production of glass from recycled glass consumes up to 30% less energy than from virgin raw materials.
- Don't tear the label, only bottles with a barcode on them can be redeemed for a deposit. Not all bottles have a deposit sign on the label, but you can see if the deposit is valid by looking at the price tag on the shelf or the receipt in the shop.

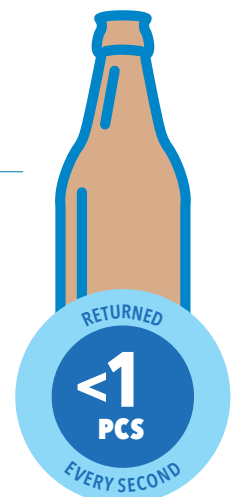
VALUE OF DEPOSIT:



### REFILLABLE GLASS BOTTLE

- The Finnish deposit-based return system was established in the 1950s specifically to recycle these bottles.
- You see fewer of these in shops as most refillable glass bottles are used for soft drinks and alcoholic beverages for restaurants.
- Each bottle is reused 33 times on average.

VALUE OF DEPOSIT:



## TOWARDS THE FUTURE!

# HOW BOTTLES AND CANS ARE RECYCLED?

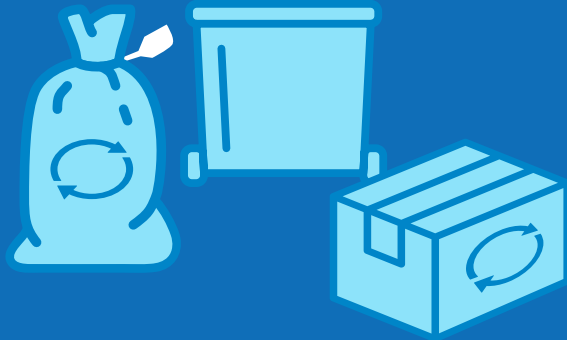
## 1 RETURNING

A beverage bottle or can is returned to the shop.



## 2 CONTAINER

First, the reverse vending machine sorts the beverage containers according to the material. Then they are packed ready for transport.



## 3 TRANSPORT

The bottles and cans are transported to the handling plant or brewery.

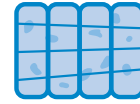


WHICH ITEMS YOU MAY HAVE OWNED IN THE PAST AS PLASTIC BOTTLES? PERHAPS YOUR BACKPACK OR UMBRELLA?

THINK ABOUT WHAT AND WHO IS NEEDED TO GET A BOTTLE OR CAN PURCHASED IN A STORE TO END UP BACK TO THE STORE SHELF.

## 4 PROCESSING

### CAN



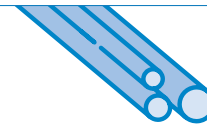
1

At the processing plant, the cans are compressed into large bales.



2

The bales are taken to an aluminium recycling plant where the aluminium is smelted into ingots.



3

The ingots are rolled into thin sheets that are used to manufacture new cans.

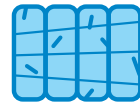


4

At the breweries, the cans are filled and sent back to the shops.



### PLASTIC BOTTLE



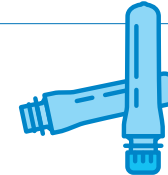
1

At the handling plant, the bottles are compressed into large bales and taken to the recycling plant.



2

The bottles are crushed and sorted by colour and granulated into small round pellets, i.e. granulate.



3

The clear granulate is used to make bottle shapes, i.e. preforms, which are blown into shape in bottle factories or breweries.

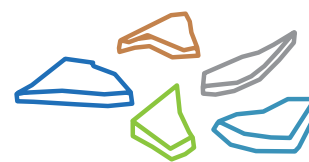


4

The bottles are filled and labelled. Then they are transported back to shops and restaurants.



### GLASS BOTTLE



1

At the recycling plant, glass bottles are crushed, cleaned and sorted by colour.



2

The glass material is taken to manufacturers of bottles, glass packaging and other products.



3

The glass bottles are filled and labelled. Then they are transported back to shops and restaurants.



### REFILLABLE GLASS BOTTLE



1

At the brewery, the bottles are washed.



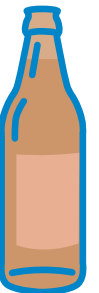
2

The bottles are refilled and relabelled.



3

The bottles are sent back to restaurants, for example.



# THIS IS HOW MANY BEVERAGE CONTAINERS ARE RETURNED TO THE FUTURE IN FINLAND

Finns are among the most eager recyclers of beverage containers in the world. Finland has a world record for return rates, i.e. the proportion of beverage containers sold that are returned.

THE RETURNING RATES IN FINLAND PER YEAR:



CANS  
**99%**  
1,450 MILLION CANS IN A YEAR



PLASTIC BOTTLES  
**90%**  
635 MILLION PLASTIC BOTTLES IN A YEAR



KIERRÄTYS-LASIPULLOT  
**98%**  
146 MILLION RECYCLABLE GLASS BOTTLES IN A YEAR



RECYCLABLE GLASS BOTTLES  
**>100%**

EACH YEAR, THE AVERAGE FINN RETURNS:

**251** cans  
**114** plastic bottles  
**24** glass bottles

IN TOTAL,  
MORE THAN

**2** billion bottles and cans are returned every year.

**~ 400** returns per Finn.

EACH YEAR, THE DEPOSIT SYSTEM PROVIDES:

**19,800** = **1,300 x**   
TONNES OF RECYCLED ALUMINIUM WEIGHT OF A BUS

**16,800** = **84 x**   
TONNES OF RECYCLED PLASTIC WEIGHT OF A JUMBO JET

**52,300** = **11 x**   
TONNES OF RECYCLED GLASS WEIGHT OF A CRUISE SHIP

# HERE IS HOW TO IDENTIFY A CONTAINER WITH A DEPOSIT

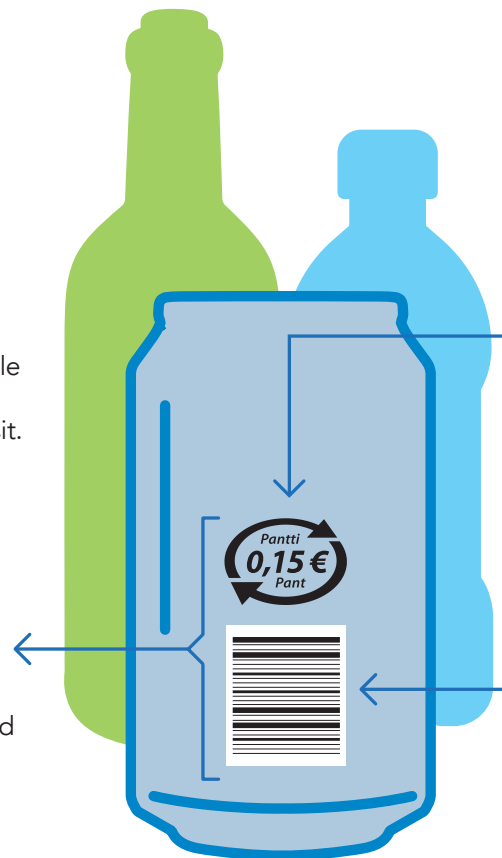
THE ANNUAL VOLUME OF DEPOSITS IN CIRCULATION IS OVER  
**EUR 360 MILLION**

**PURPOSE OF THE DEPOSIT MARKING:**

the deposit marking tells the buyer of the beverage that the bottle or can is a beverage container with a deposit.

**THE DEPOSIT MARKING CONSISTS OF TWO PARTS:**

deposit value and the surrounding arrow pattern. The deposit marking is usually found close to the barcode.



**DEPOSIT VALUE:**

the sum at the centre of the arrow symbol is the value of the deposit. Depending on the container, it is 10, 15, 20 or 40 cents.

**THE BARCODE HAS TWO FUNCTIONS:**

it is used for reading the price of the beverage container at the counter and the value of the deposit in the reverse vending machine. Therefore, it is important that the barcode is not torn, broken or smudged.



**DID YOU KNOW?** If all the cans and bottles returned in a year were placed in a row, there would be enough to cover nearly 300,000 kilometres – almost eight times around the world.

# ONLY INTACT AND EMPTY PACKAGES WILL BE ACCEPTED

To ensure that beverage containers are better preserved for the future, bottles and cans must be intact. But why? The reverse vending machine identifies the cans and bottles based on their barcode and shape. If a can has been crushed or the label of a bottle has become torn, identification is not possible.



Identification is needed so that the reverse vending machine knows how much money it needs to return. In addition, the reverse vending machine sorts the containers for recycling. If identification is not possible, sorting can go wrong.

## THE REVERSE VENDING MACHINE ONLY ACCEPTS A BOTTLE OR CAN THAT IS

- empty
- intact
- with a label that is not torn or smudged.

## THE REVERSE VENDING MACHINE WILL NOT ACCEPT A BOTTLE OR CAN THAT

- still contains liquid or debris
- is crushed or broken, or
- with a label that is badly torn or loose.

## SOMETIMES EVEN TIME MACHINES NEED MAINTENANCE

Sometimes, the bins in the machine are full in the middle of return or receipt roll has run out. Garbage and liquids left in cans and bottles, on the other hand, can mess up the return machine, so that it begins to malfunction.

## WHAT IF I HAVE A CONTAINER WITHOUT A DEPOSIT?

It is also worth recycling beverage containers without a deposit so that valuable material can be recycled.

- Cans that do not have a deposit can be returned to reverse vending machines or a metal collection point.
- Plastic bottles that do not have a deposit can be recycled as energy fraction or household waste.
- Glass bottles that do not have a deposit can be returned to a glass collection point.

**Small shops and kiosks also obliged to accept containers with a deposit, even if they do not have a reverse vending machine.**

HAVE YOU EVER TRIED TO RETURN A BEVERAGE CAN OR BOTTLE THAT WAS NOT ACCEPTED TO BE RETURNED? CAN YOU SAY WHY?



# RETURN TO THE FUTURE

## QUIZ

- How many beverage containers are returned each second in Finland on average?
  - about 7
  - about 70
  - about 700
- What percentage of all cans and bottles sold annually is recycled, or returned to the future, on average?
  - 50 %?
  - 70 %?
  - Over 90 %?
- What are the steps in the beverage container cycle before they can be found in the future?
- What kind of new life could the plastic bottle have in the future? Circle the right options.
  - New can
  - New glass bottle
  - New plastic bottle
  - Glass wool
  - Backpack
  - Umbrella
  - Shirt
- How can you know whether there is a deposit on the can or bottle?
- Where would you return these containers without a deposit? Connect the right options.
 

Plastic bottle	Mixed waste
Can	Reverse Vending Machine
Glass bottle	Glass collection point
	Energy fraction
	Metal collection point
- How does a reverse vending machine identify a bottle or can having a deposit?
- What condition do bottles and cans have to be in to be returned?
- What could be the problem when a reverse vending machine does not work? Mention three causes.
- You can get a deposit of different amounts for different beverage containers. What are the different deposit values in Finland?

SEE HERE ON WHICH PAGE YOU CAN FIND THE CORRECT ANSWER:  
1) 4-5 2) 2 3) 6-7 4) 4 5) 9 6) 10 7) 10 8) 10 9) 10 10) 9



**OVER 2 BILLION ENVIRONMENTAL ACTS IN A YEAR**