

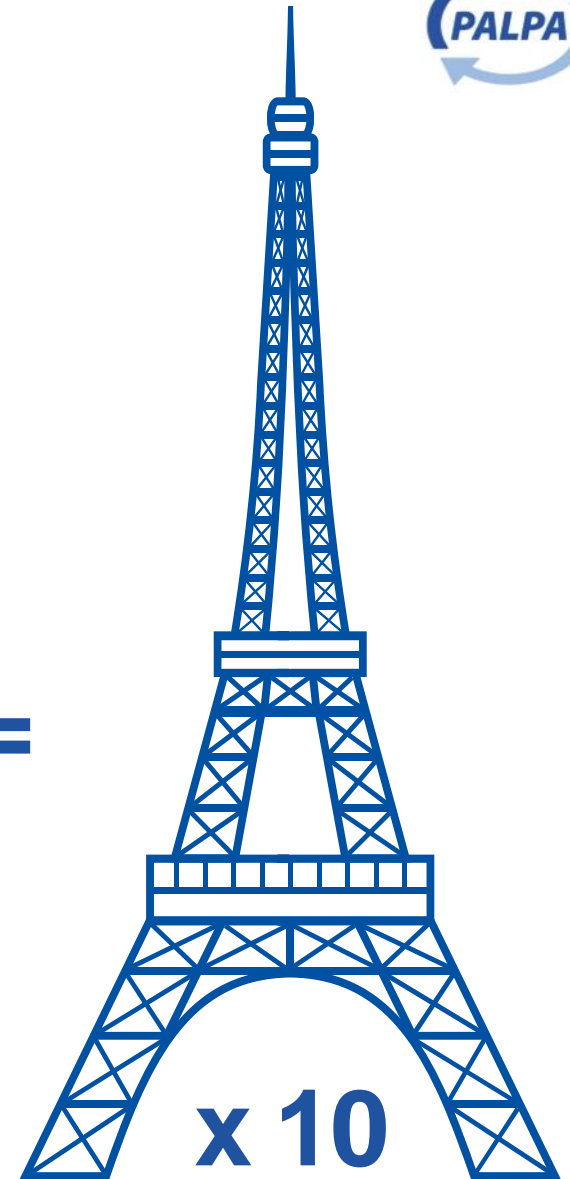


**2 Billion environmental
acts in a year**

**The yearly beverage
package returns in
Finland are over 2
Billion**



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**Return rate of beverage
packages is**

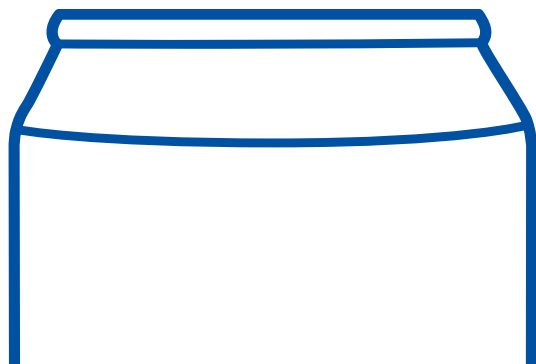
93%

Recycling is part of our nature

On average each Finnish citizen recycles Palpa packages in a year:

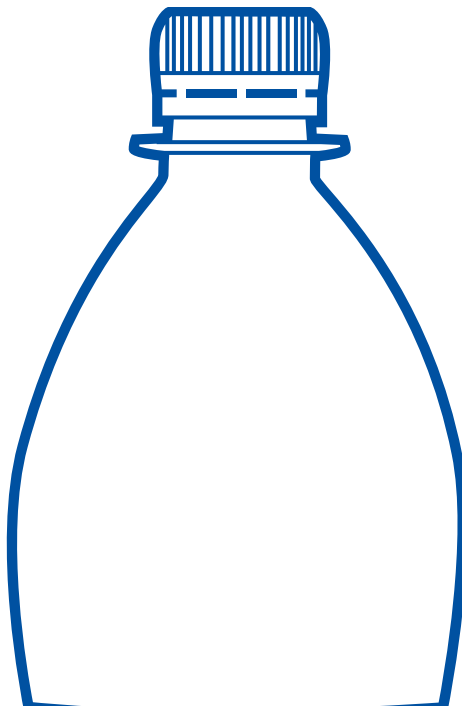
251

Beverage cans



98

Plastic bottles



24

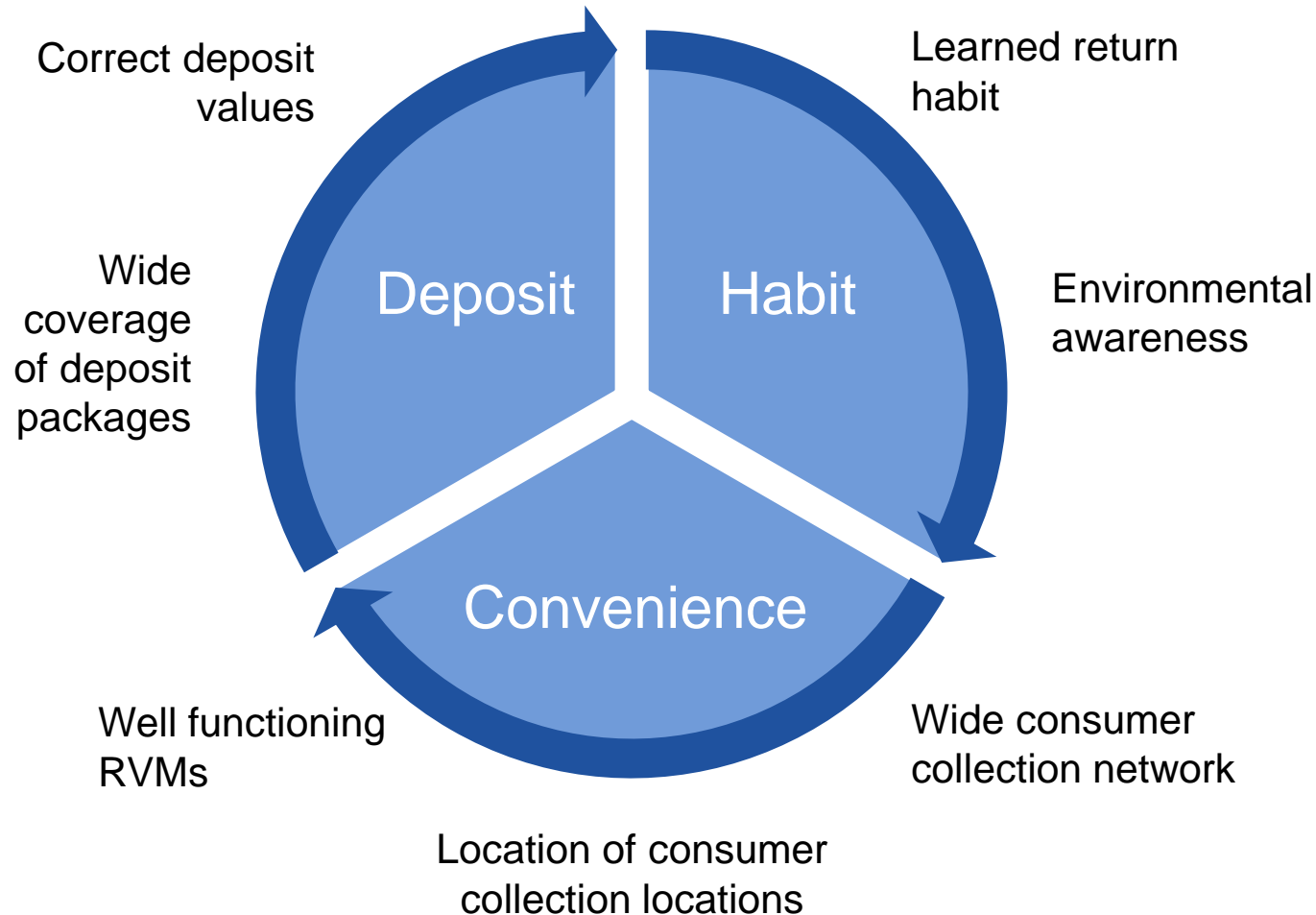
Glass bottles



373

Total packages
in a year

Factors of high return rates



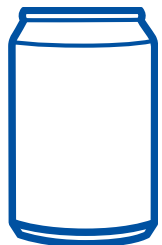


What Palpa?

Palpa in brief

- Suomen Palautuspakkaus Oy was established in 1996 to administrate return system for used beverage cans with deposit
- One-way PET bottle return system was introduced in 2008
- One-way glass bottle return system was introduced in 2011-12. The OWG-system is administered by Palpa Lasi Oy, a subsidiary of Palpa
- Group turnover appr. 80 M €
- 13 employees
- Palpa is a non-profit company

Palpa in 2020



2112

New packages (SKUs)
inspected and approved

2.06 Bn

Returned deposit
packages

360 M

€ worth of deposits
credited



19 700

Metric tons of UBC
aluminium recycled

15 400

Metric tons of PET recycled

52 900

Metric tons of glass
recycled



4 000

Reverse vending
machines (RVM)

4 600

Retail collection
locations for consumers

9 500

Collection locations in
hotels, restaurants,
catering (HoReCa)

Palpa's return systems 2020:

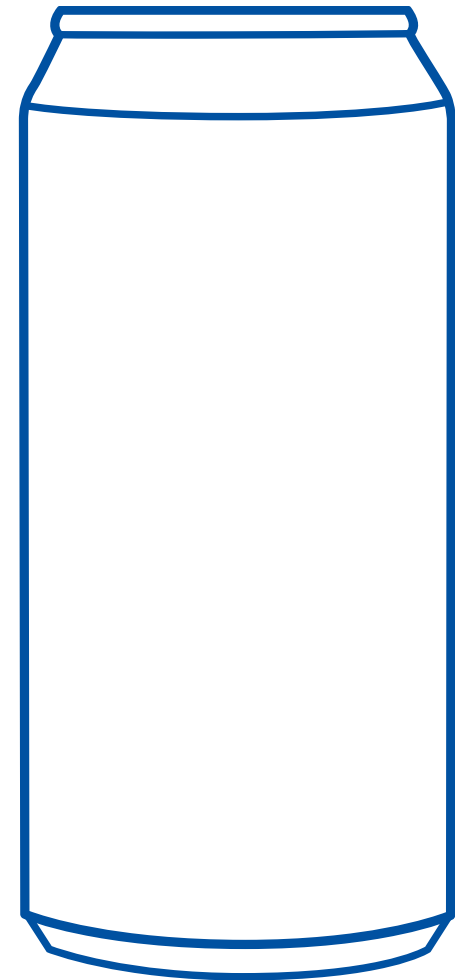
Beverage can

Return rate 94 %

Deposit value 0.15 €

Volume 1.4 Billion returned deposit cans.
19 700 MT of UBC-aluminium.
2 726 deposit products.

Benefit UBC aluminium is melted in recycling furnaces in UK and France and casted to aluminium ingots. The ingots are rolled to material of new beverage cans. The aluminium can be infinitely recycled and energy needed to recycle cans is only 5% compared to virgin aluminium material.



Palpa's return systems 2020:

Recyclable plastic bottle

Return rate

92 %

Deposit value

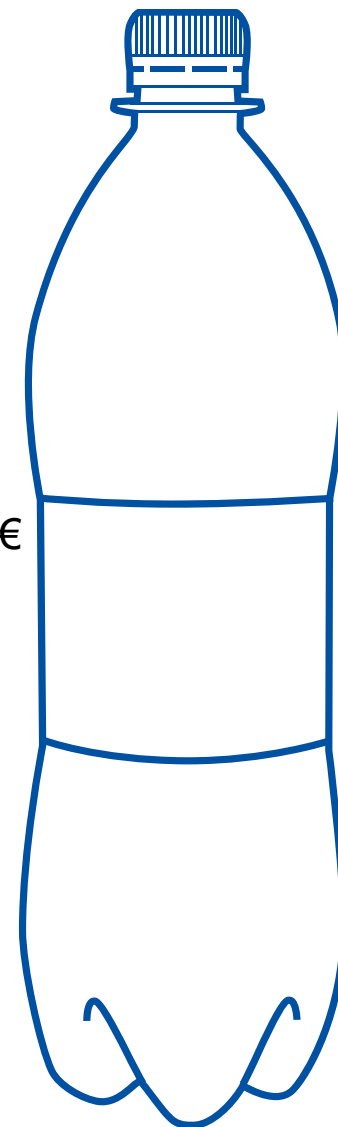
Depending on package size 0.10 €, 0.20 € or 0.40 €

Volume

540 Million returned deposit bottles.
15 400 MT of PET.
3 087 deposit products.

Benefit

Clear PET-bottles can be recycled to new bottles (B2B) and other food packages. Colored PET-bottles are recycled to raw material of packaging or textile industry.



Palpa's return systems 2020:

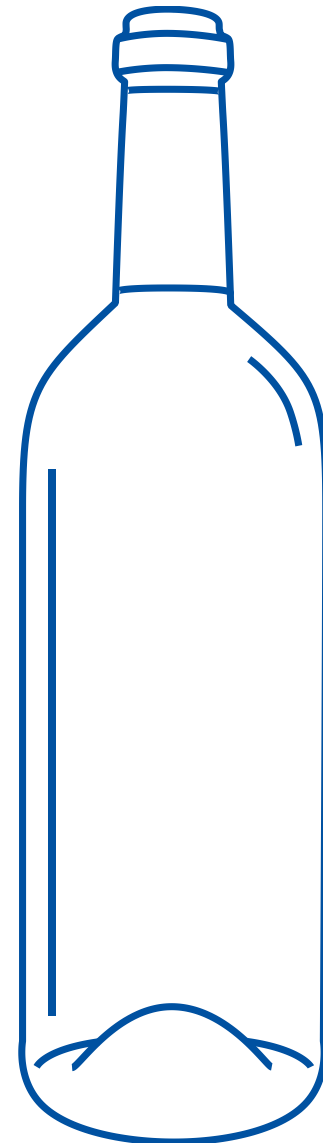
Recyclable glass bottle

Return rate 87 %

Deposit value 0.10 €

Volume 134 Million returned deposit bottles.
52 900 MT of recycled glass.
18 141 deposit products.

Benefit Glass bottles are recycled to new bottles or raw materials i.e. insulation products in construction industry.
Using recycled glass as raw material consumes 30 % less energy than virgin material.





Return systems and operations

Based on governmental steering

- Packaging tax for certain beverages
 - Importers and producers have to pay packaging tax of 0.51 € / ltr for packages in customs tariff group CN 22 (*Laki eräiden juomapakkausten valmisteverosta 2004*)
 - Importer or producer is allowed to tax exempt if the company and the products are registered in deposit return system approved by environmental authorities
- Joining in return system not mandatory
- Deposit return systems are approved and controlled by Environmental Authority under Ministry of Environment (Pirkanmaa Centre of Economic Development, Transport and Environment)

Beverage packaging tax

- Applies to companies > 50.000 liters of yearly production
- Applies to products in customs tariff 22 (CN22)

Customs tariff code	Product group
2201	Waters, including natural or artificial mineral waters and aerated waters, not containing added sugar or other sweetening matter or flavoured, ice and snow
2202	Waters, including mineral waters and aerated waters, containing added sugar or other sweetening matter or flavoured, and other non-alcoholic beverages, not including fruit or vegetable juices of heading 2009
2203	Malt beverages
2204	Wine from fresh grapes, including fortified wines; grape must other than that of heading 2009
2205	Vermouth and other wine from fresh grapes flavoured with plants or aromatic substances
2206	Other fermented beverages (e.g. cider, pear wine, sima); mixtures of fermented beverages and mixtures of fermented beverages and non-alcoholic beverages, not elsewhere specified or included
2208	Undenatured ethyl alcohol (ethanol) of an alcoholic strength by volume of under 80% volume, spirits, liqueurs and other alcoholic beverages

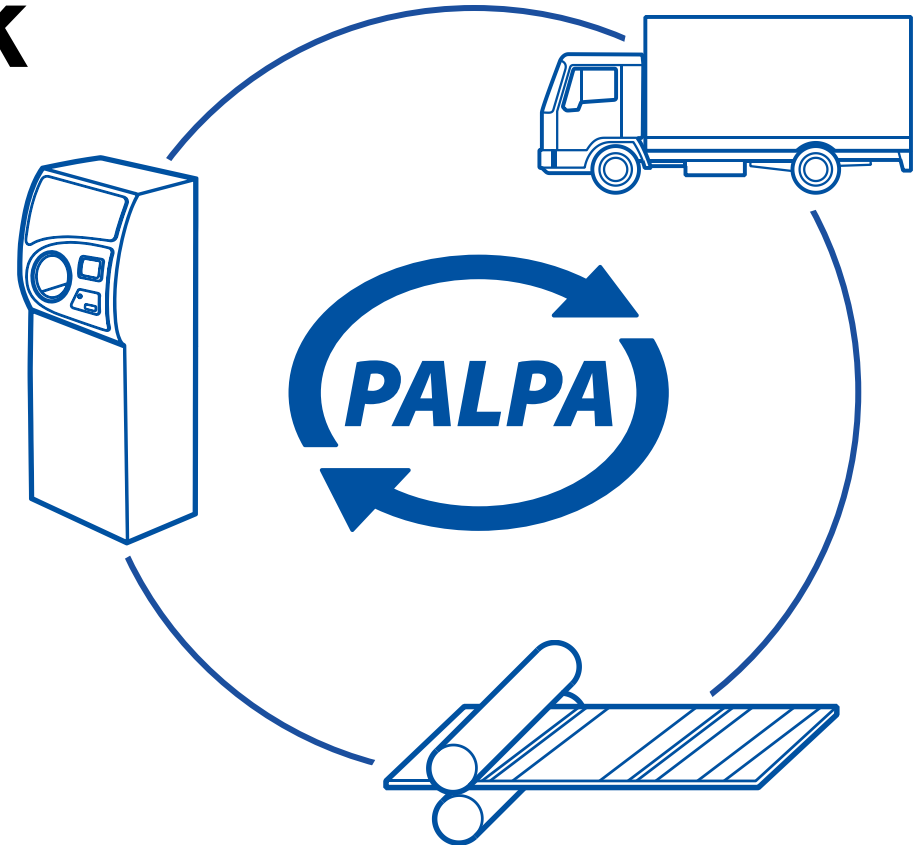
- Does not apply to liquid cardboard packaging

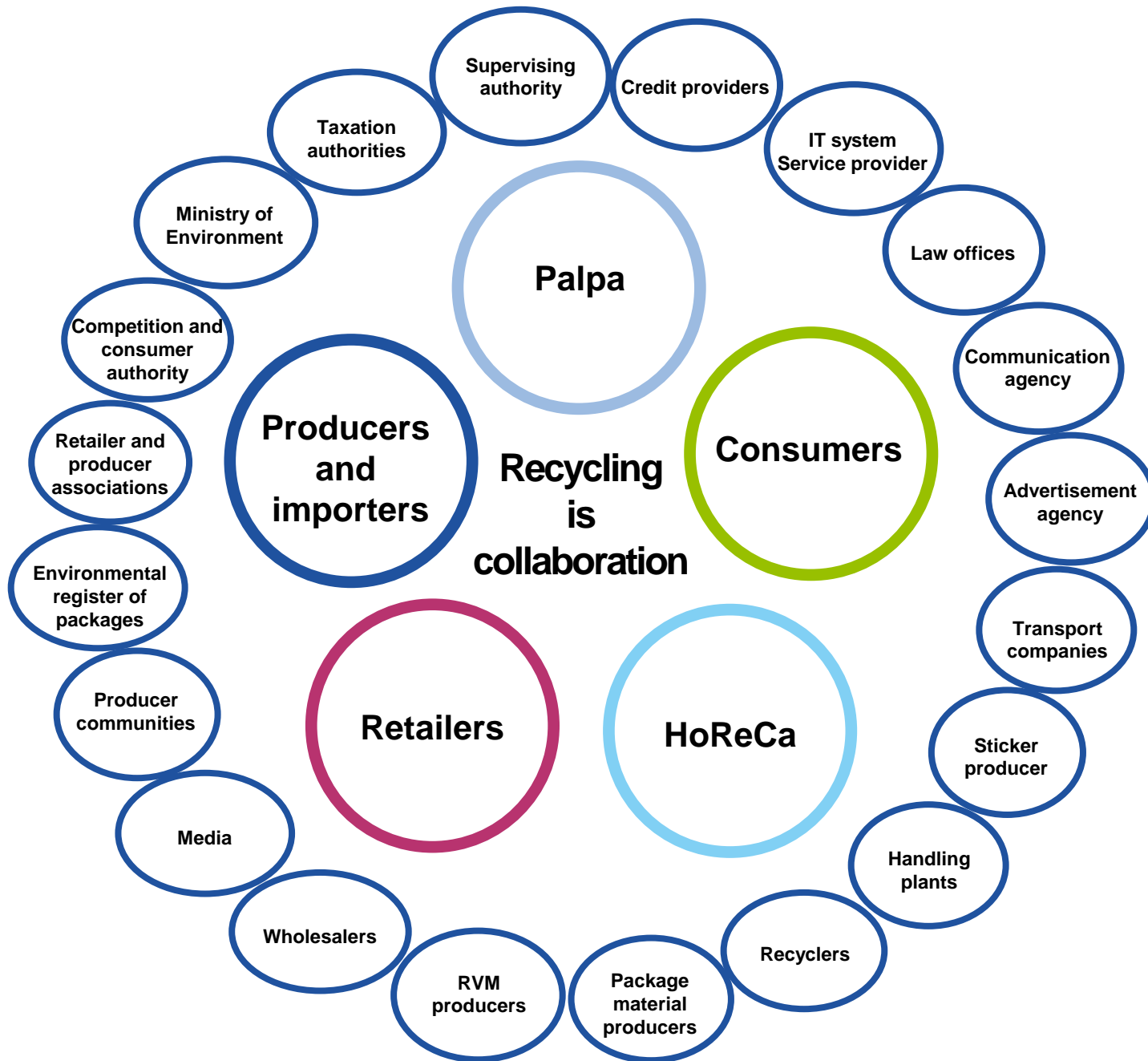
Government Decree on a return system for beverage containers

- Minimum deposit values
- Recycling targets (90 %)
- Requirements for approval in the producer register
- Reporting obligations to authorities
- <https://www.finlex.fi/en/laki/kaannokset/2013/en20130526.pdf>

Operating network

- Palpa's strategy is run the return system by network of companies and outsource all operations
- Operating with network allows flexibility and scalability





Package materials and markings

- Palpa inspects all the packages that are registered in recycling systems before they are accepted.
- Materials have to comply with specifications agreed with recycling plants
- Deposit value has to be clearly marked in product and comply with marking instructions
- Package has to be recognizable by all the reverse vending machines to secure reliable deposit payout to consumer



The system is based on package recognition

Recognition of packages is important



- To secure correct payment to consumer
- To support early sorting of material
- To make sure that system costs are correctly allocated to different recycling systems and companies

Recognition is made by reverse vending machine



- The RVM recognizes barcode and shape / dimensions
- Recognition information is compared with package database in RVM
- RVM database is updated 24 times a year
- The RVM prints out a receipt of deposits to the consumer, sorts the packages and in most cases compacts the packages
- The information of returns is collected and sent to Palpa in electronic mode

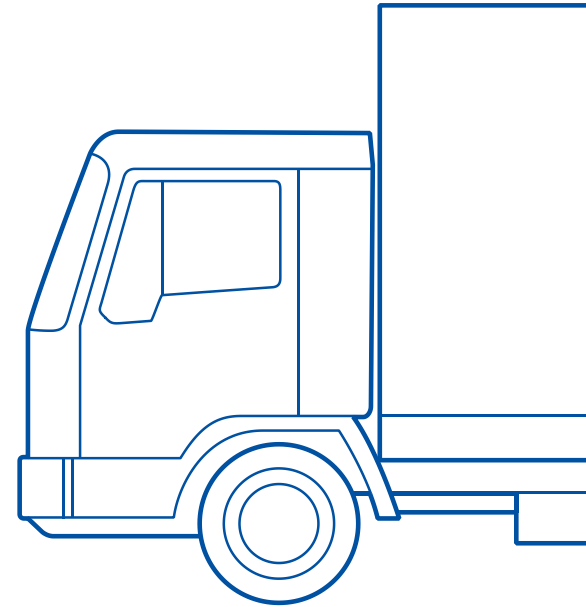
Majority of return system costs is related to handling and logistics

Challenge:

- Wide consumer collection network is one of major factors in reaching high return rates.
- The low population density in Finland affects the return volumes per collection location affect load sizes and transportation distances.

Solutions:

- Baling and counting operations have been decentralized to several locations in Finland.
- Material is compacted and sorted as early as possible after the collection.



Transportation and operators

Collecting transportation

- Backhaul
- From retail stores/horeca to transporters'/retailers' terminals (150)

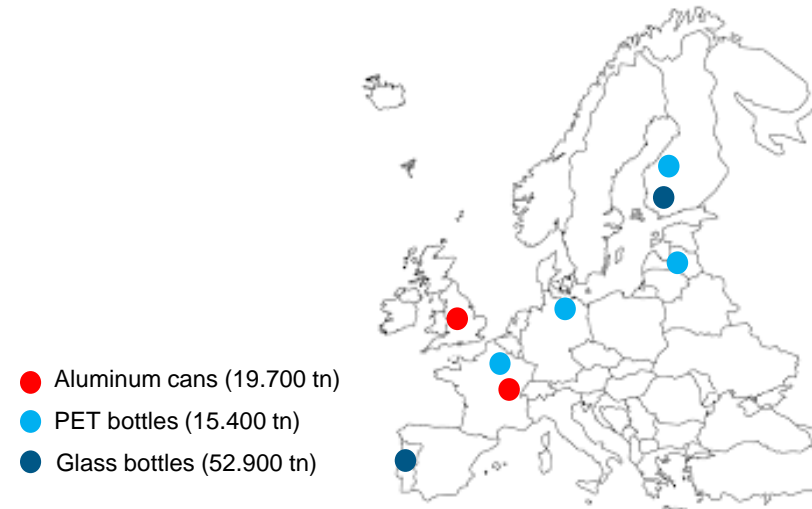
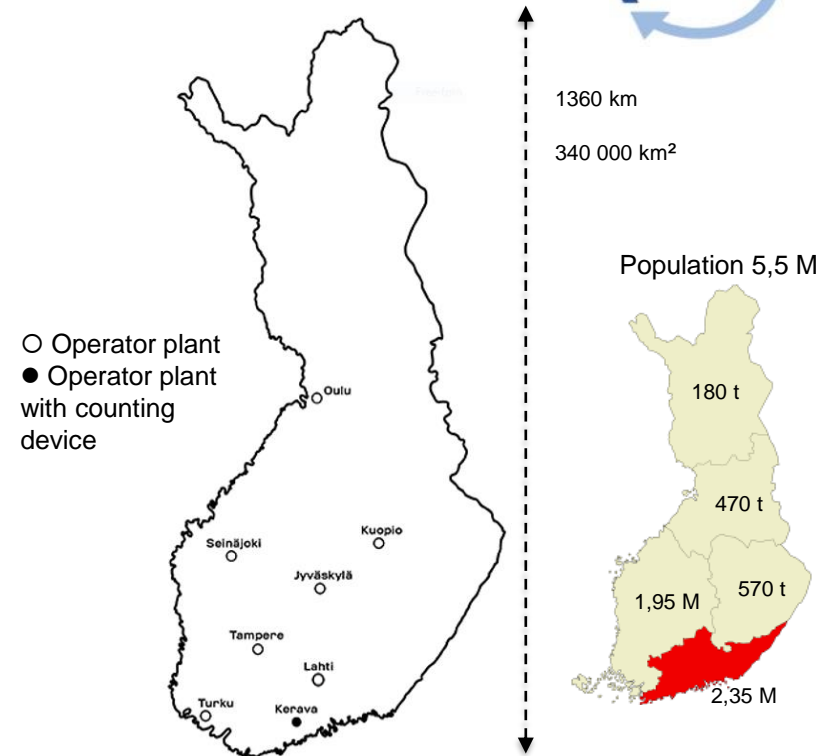
Frame transport

- From transporters' terminals to operators' plants (8)

Can/PET baling at operator plants

Emptying service (glass)

- Directly from retail stores and horeca points to operators' plants or to glass recycler in Finland



Financing the recycling systems

- Return system revenues come mainly from material sales and recycling fees
- Recycling fees are paid by beverage producers and importers
- All the fees and compensations are decided by Palpa board of directors
 - All the fees are based on real costs. Palpa is a non-profit company
 - All the return systems have their separate P&L and own pricing. No cross subvention between the systems is allowed.
 - All the fees and compensations are same for companies selling, collecting or transporting similar packages





Thank You!

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