Zero Waste Live!

ZERO WASTE EUROPE

#WeChooseReuse

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CREATING EFFECTIVE SYSTEMS FOR REUSE

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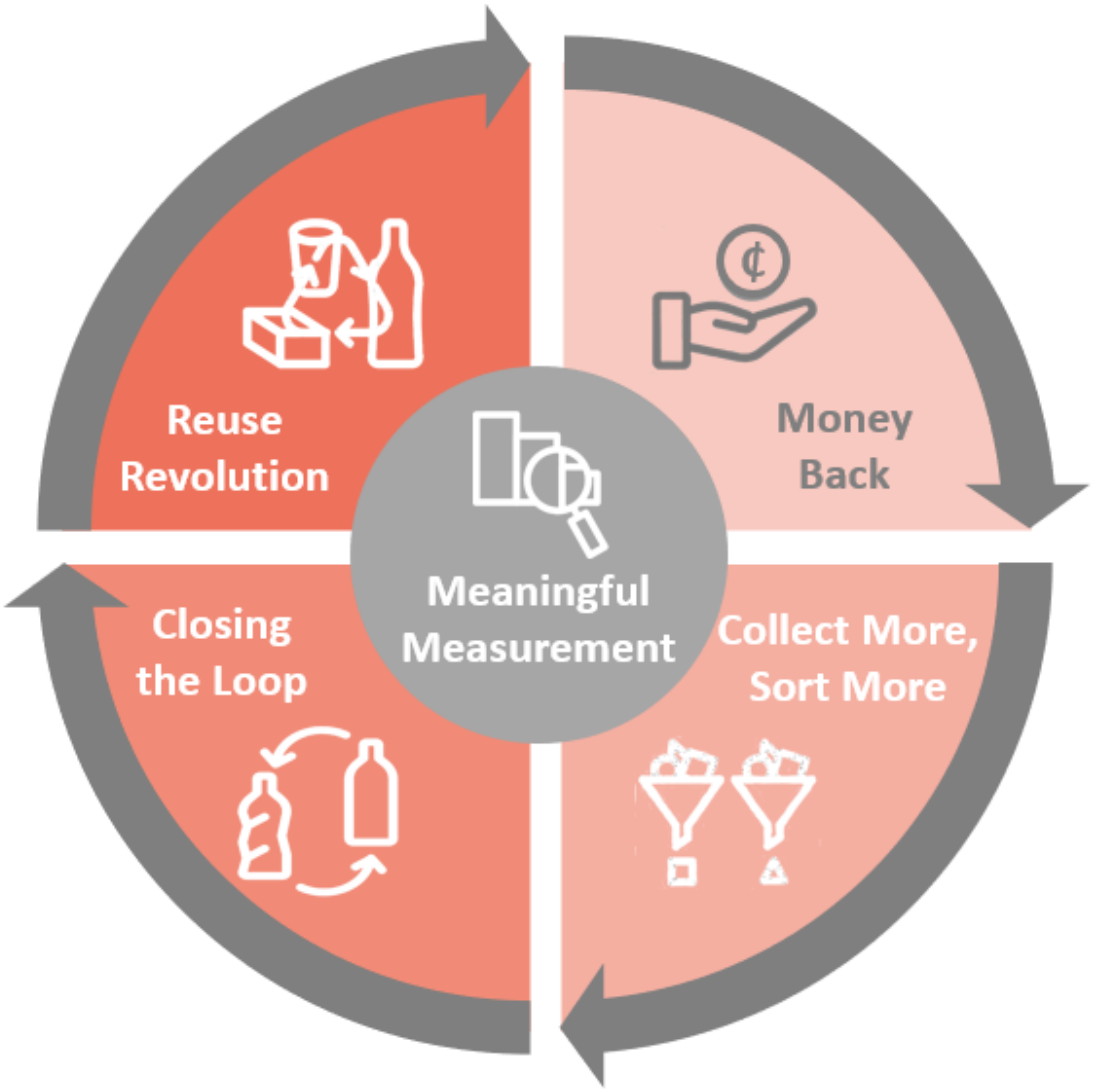
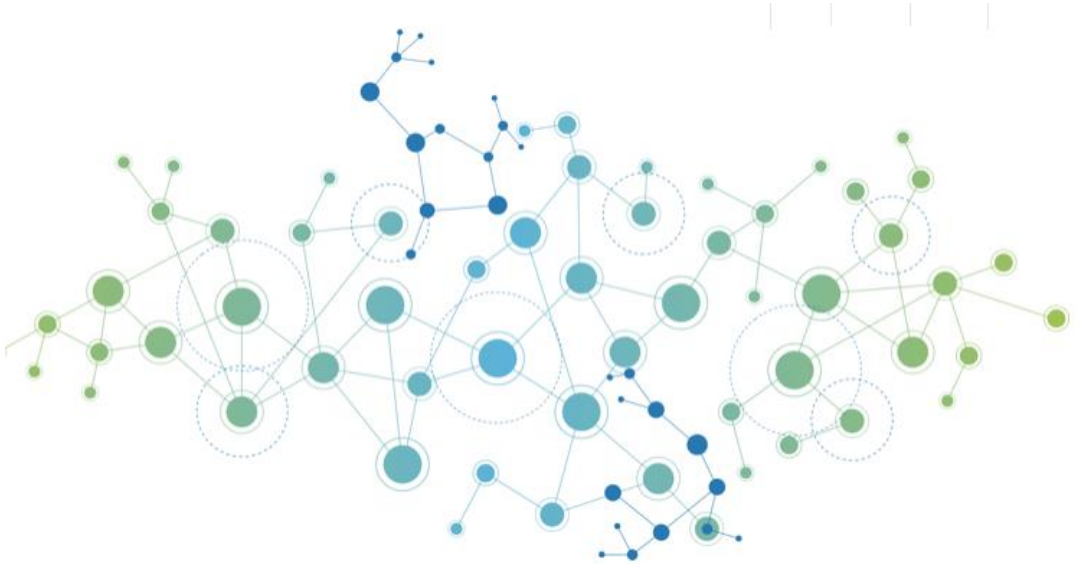
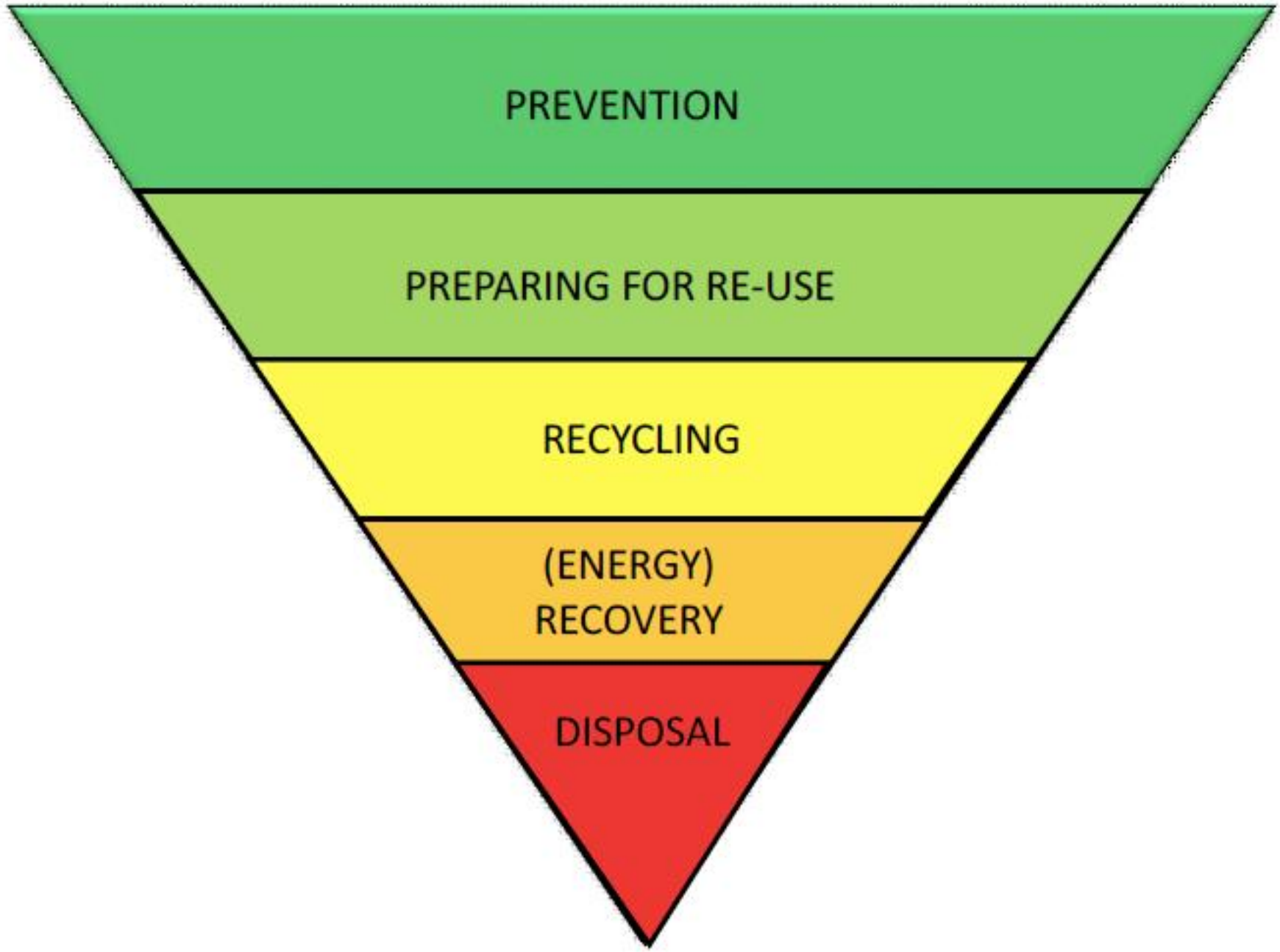
What about refillables?


Reuse Revolution
Money Back
Meaningful Measurement
Closing the Loop
Collect More, Sort More




PREVENTION
PREPARING FOR RE-USE
RECYCLING
(ENERGY)
RECOVERY
DISPOSAL

REUSABLE VS SINGLE-USE PACKAGING

A review of environmental impacts

Type of Packaging	Packaging Description	Product Examples
Refillable by Bulk Dispenser	Container, bottle, cup. Customers use their own reusable packaging or the branded refillable packaging provided in-store or at a mobile truck thereby avoiding the need to produce new packaging.	Cereals, grains, candy, wine, juice, mineral water, beer, olive oil, vinegar, detergent, soap, hair care products, perfume, body and face lotion
Parent Packaging Refill	Bottle, container, pouch, pod, tablet, powder. The refill packaging is made with less material than the parent packaging. Parent packaging can be refilled by: • Pouring product inside parent packaging; • Placing container inside of parent packaging; • Diluting concentrated product in water inside parent packaging.	Makeup, dental floss, tooth and mouthwash tabs, deodorant, perfume, cosmetics, cleaning products, hair care products, flavoured water

Returnable Packaging	Container, bottle, cup, plate, bowl Customers return empty packaging that will be cleaned and refilled for future use by the retailer/producer (can be combined with a deposit system to provide a financial incentive).	Beer, soft drinks, mineral water, perishables, detergent, soap, cosmetics, hair care products Reusable cups, containers, plates (for events, cafes, restaurants)

Transit Packaging	Boxes, containers, soft packages. Customers receive the product in reusable packaging, which is returned by door delivery/pick up, or through the post office. Crates, pallets, wrappers Customer reuses packaging multiple times before being returned to the producer or disposed of.	Reusable packaging for transport or shipping of perishables or non-perishables. B2C: for moving home or office location or e-commerce delivery of apparel, furniture or perishables B2B: transport from producer-warehouse-store

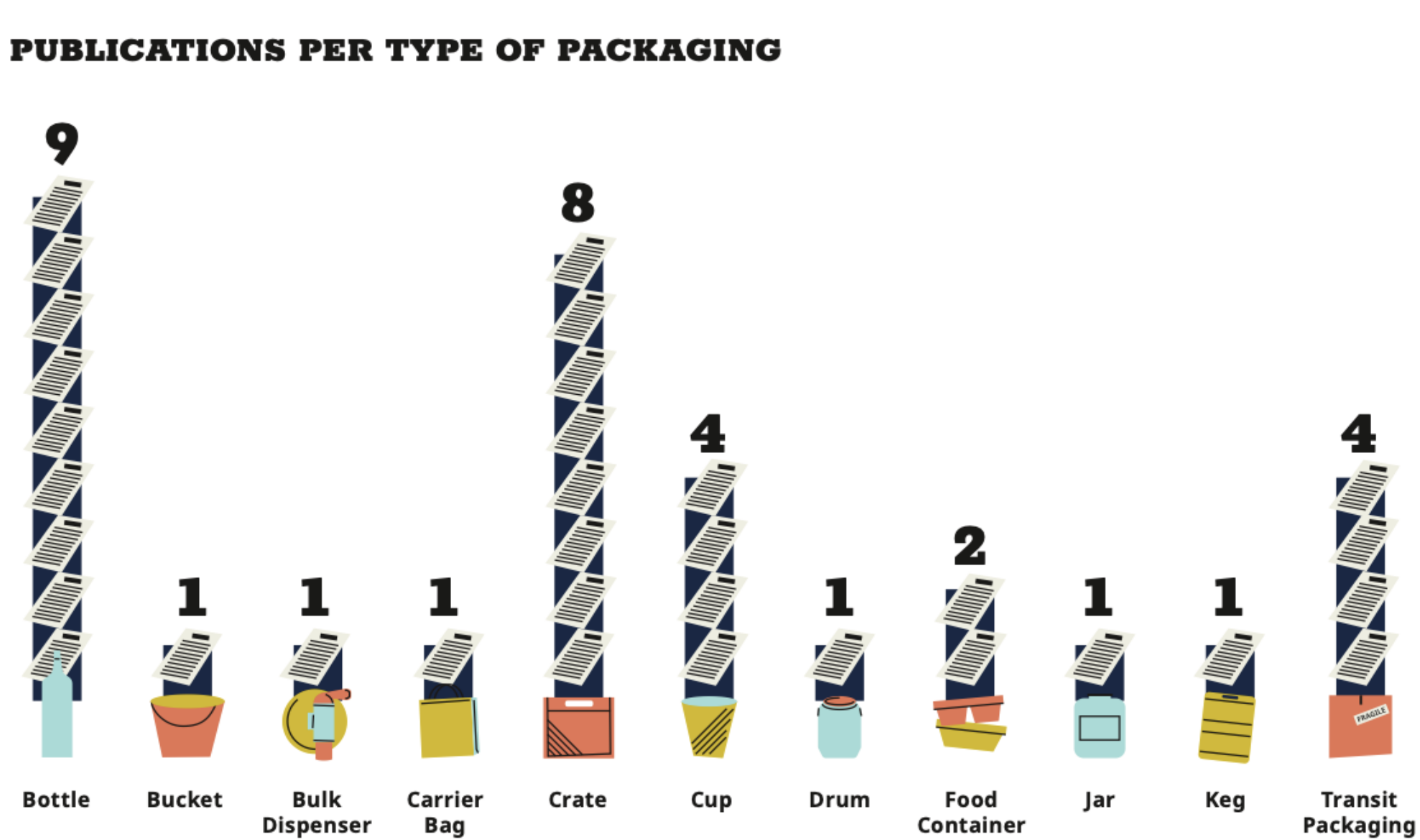


Figure 1: Selected papers by the types of packaging analysed.

The production of packaging materials accounts for the largest environmental impact, this is especially the case for glass bottles, which demand a lot of energy to be produced.

Environmental impact at the production stage can be greatly reduced by increasing the number of cycles (reuses) as well as ensuring the packaging is effectively recycled at the end-of-life and increasing recycled content.

Packaging designed to be used only once has the highest impact as the overall environmental impacts are condensed in only one cycle. The lower the life cycle of a product the higher is its environmental impact.

Well designed reusable packaging can withstand more cycles (reuses), which can halve the potential environmental impact of a packaging.


Number of times a bottle is reused
GWP (g CO² EQ./L)
0
100
200
300
400
500
600
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18

Transport of packaging items can have high environmental impacts due to distance, volume and weight, these items are required to be transported.

Using a **different mode of transport or decentralised logistic model** can help reduce transport emissions.

End of life for single-use packaging often means ending up in landfill or incineration rather than recycled.

END-OF-LIFE

Making sure the packaging is effectively recycled at the end-of its life, at its highest quality and within a closed loop system, can further reduce the environmental impacts of packaging.

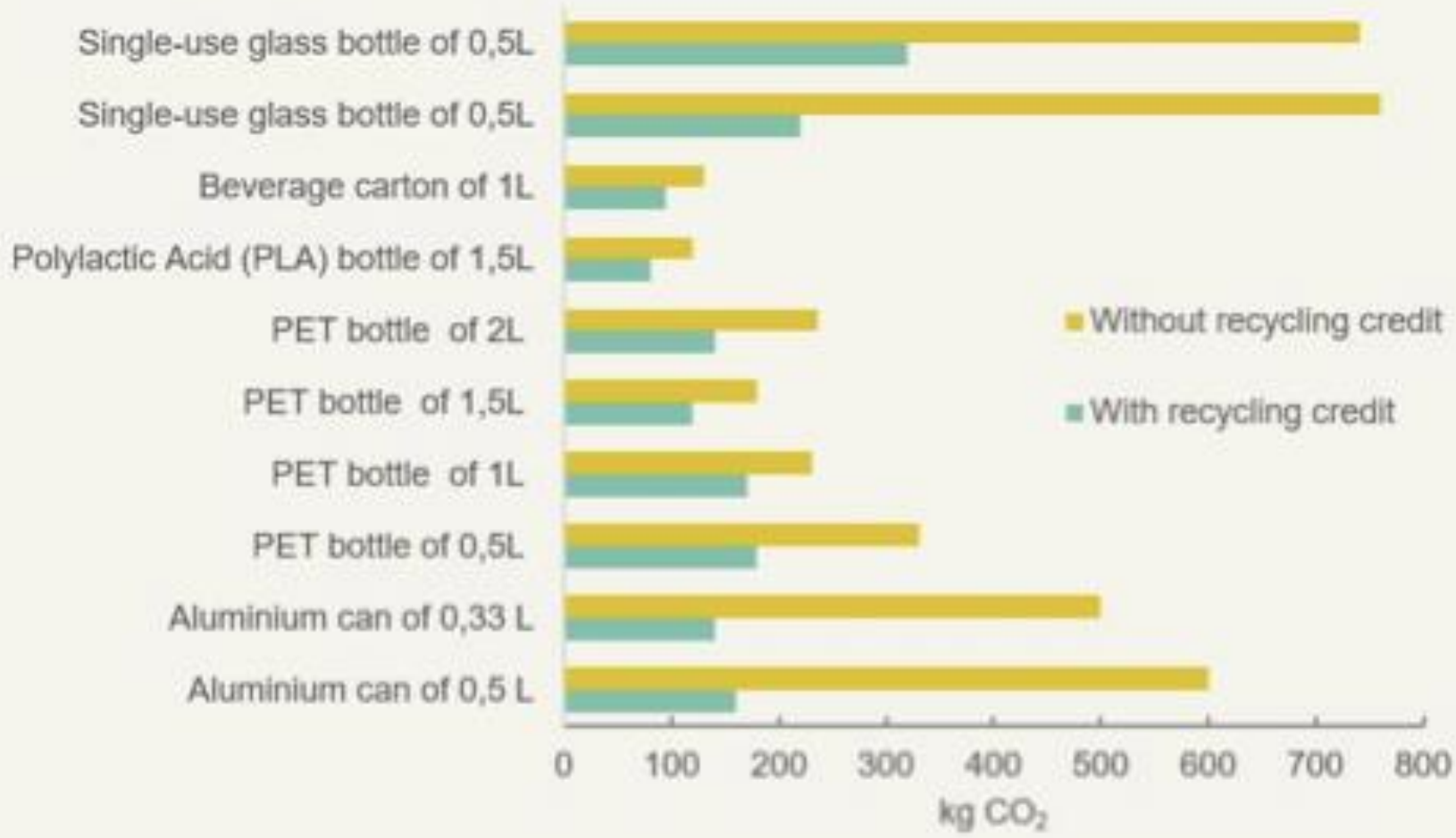
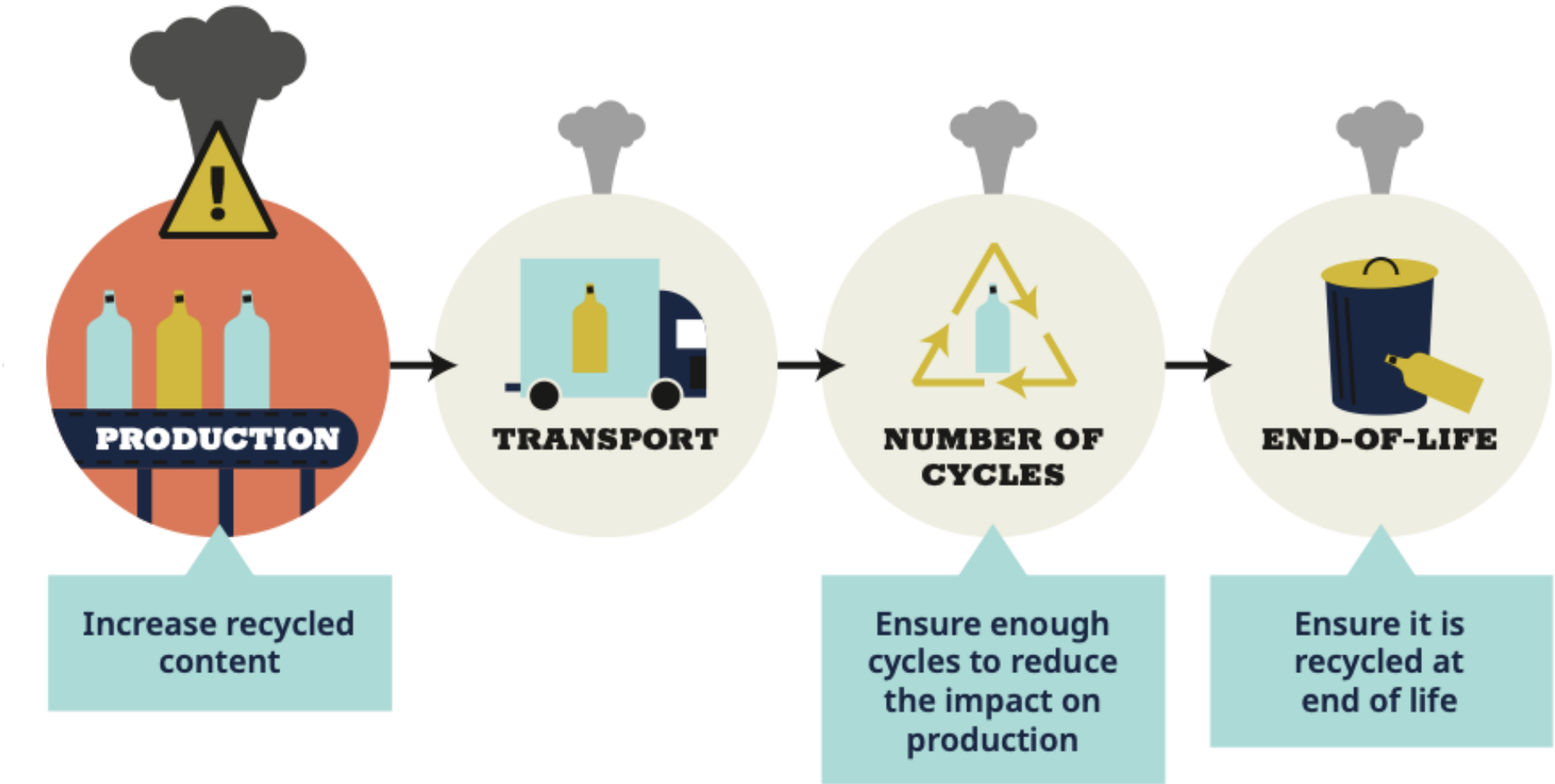
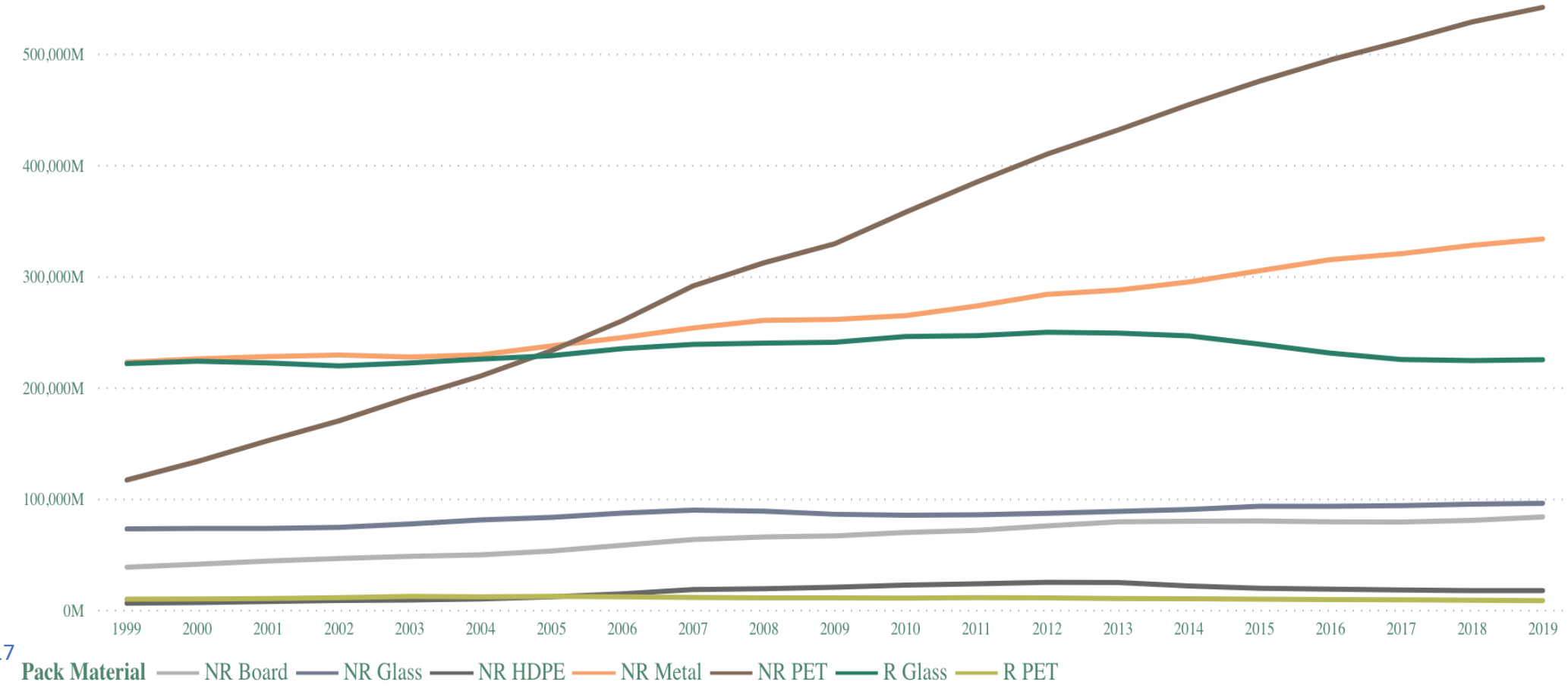


Figure 21: Variation in the CO_2 emissions of beverage packaging when including or excluding the credits of secondary materials. Adapted from [30].


PRODUCTION
TRANSPORT
NUMBER OF CYCLES
END-OF-LIFE
Increase recycled content
Ensure enough cycles to reduce the impact on production
Ensure it is recycled at end of life

The Top Line Findings:

Worldwide, sales of beverages in refillables are falling, but not sharply. At the same time though, sales in single use containers have escalated rapidly, causing the market share for refillables to fall.



Deposit Return Programs

Determining how many DRS programs will be introduced in Europe

Currently, there are 9 European Countries with active DRS programs.

- Croatia
- Denmark
- Estonia
- Finland
- Germany
- Lithuania
- The Netherlands
- Norway
- Sweden

4 Countries have currently signed into law initiating DRS programs by 2022.

- Romania
- Portugal
- Latvia
- Malta

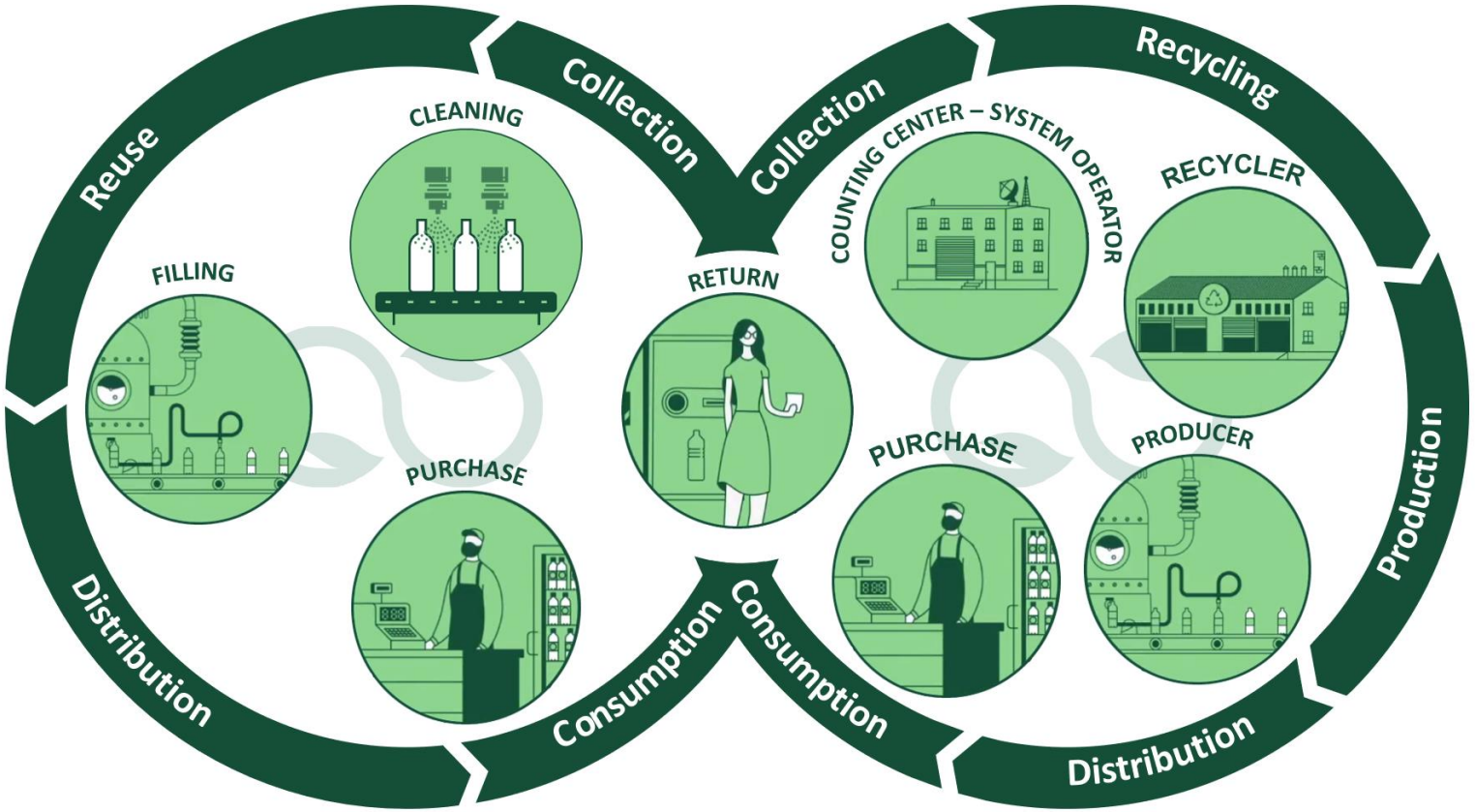
6 more countries have either signed laws or announced intention to begin a DRS program in 2023

- The Slovak Republic
- Austria
- Turkey
- The United Kingdom
- Greece
- Republic of Ireland

France has not announced adoption of DRS, but has signalled intention to do so by 2025

Collection infrastructure

In modern deposit systems, collection infrastructure is the same for one way and refillable containers.



One way and refillables?

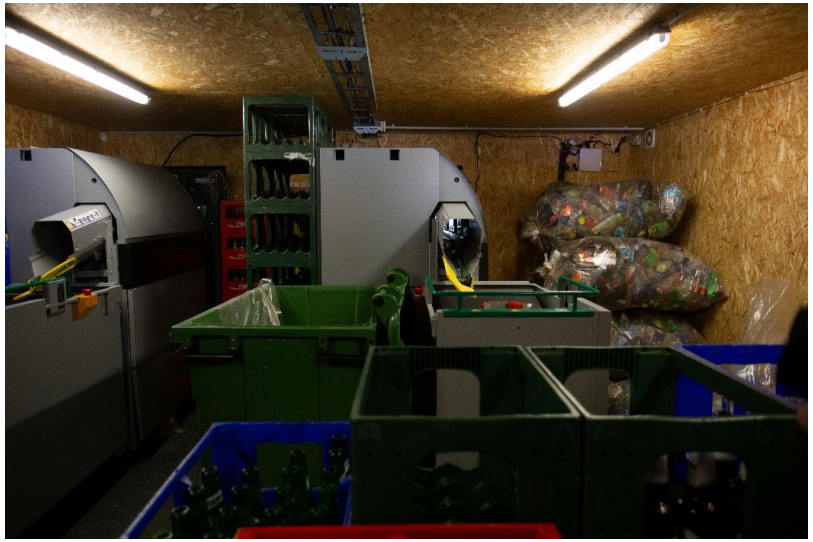
Collection infrastructure and other DRS functionalities are easily integrated

(like in Estonia, Lithuania, Finland, Denmark, Sweden)

Advantages of the approach:

- **Lower costs** (as same automated or manual collection infrastructure is used)
- **User friendly** for the consumers (single point of return)
- Possible CO_2 emissions decrease in logistics (rural area combined collection)
- Easier for retailers

Estonia



Finland

Thank you!