

# Assessing the impact of PPWR's reuse targets



## Overview

As the EU looks to adopt the Packaging and Packaging Waste Regulation (PPWR), one of the most ambitious and far-reaching proposals of the EU Green Deal, a **new report finds that imposing strict reusable packaging targets by 2030 will severely impact the EU's environmental footprint and the competitiveness and resilience of the European economy.**

Reviewing several existing studies on packaging and drawing on two separate **case studies** analysing the impact of switching to reuse in the takeaway foodservice sector in Belgium and for non-food e-commerce sector in Germany, the report analyses the impact of the 2030 reuse targets versus alternatives across three dimensions:



THE ECONOMIC IMPACT of reuse solutions



THE ENVIRONMENTAL IMPACT of reuse materials and systems



THE SOCIETAL IMPLICATIONS for stakeholders resulting from the introduction of reuse systems

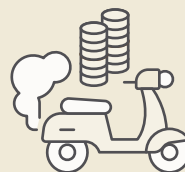
## THE CONCLUSIONS OF THE REPORT ARE CLEAR:



Reusable solutions would yield **higher CO<sub>2</sub> emissions**



Reusable solutions imply **higher cost**



**Transport is the main driver** for both CO<sub>2</sub> emissions and cost



Reusable options are **fossil-based**

# Considerable additional costs and CO<sub>2</sub> emissions: the reality of switching to reuse packaging for takeaway foodservice in Belgium

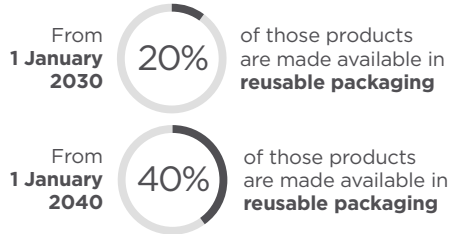


## PPWR targets:

Final distributors of cold or hot beverages for takeaway shall ensure:



Final distributors of takeaway ready-prepared food will also need to ensure that:



## Compared to single-use alternatives, introducing reusable packaging in Belgian takeaway foodservice by 2030 will lead to:

Assuming:  
 20 rotations per reuse item  
 30% recycling rate for both items

### +140-160% ADDITIONAL CO<sub>2</sub> EMISSIONS

- Increase of 5 to 5.5kt of CO<sub>2</sub> emissions on account of the higher share of fossil components in materials, transport and energy use
- The environmental impact is largely driven by **transport and cleaning**. Cleaning also leads to additional water consumption, energy usage and contamination by detergents

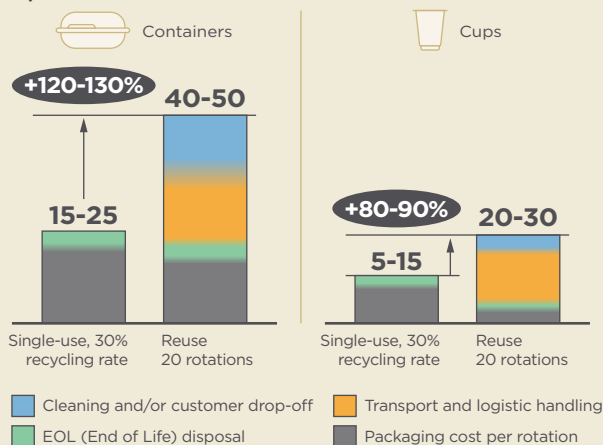
### COST INCREASES OF 80% TO 130%

- Reuse alternatives will be **more expensive compared to single-use alternatives due to increased transportation and cleaning costs**
- The increased cost of packaging will be **ultimately passed on to consumers**

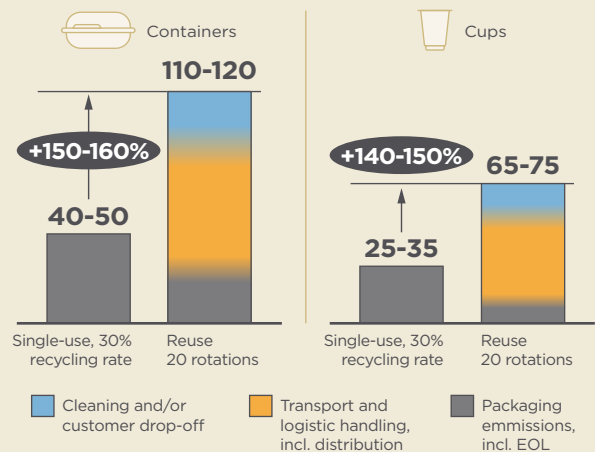
### CONSIDERABLE SOCIETAL IMPLICATIONS

- Shifting to reuse will raise the issue of **maintaining a high level of food safety**
- Consumers will need to **learn new behaviours**
- The implied reuse model will **require customers to store, potentially rinse and return the items to a collection point or reserve vending machine**

### FOODSERVICE COST, eurocent per item per cycle



### FOODSERVICE EMISSIONS, g CO<sub>2</sub> per item per cycle



Source: The potential impact of reusable packaging, McKinsey, April 4, 2023

There are additional costs associated with implementing reusables, such as:

### + EUR 20 MILLION ONE TIME COST

Main challenge will be to integrate the reusables into daily operations of employees and integrate the system into each merchant's IT, while educating both consumers and merchants on the use of reusables

### INCREASE WATER CONSUMPTION BY AT LEAST 20 MILLION LITRES BY 2030

Switching to reuse will add up to 0.5 litres of water per cycle consumed for central cleaning and an even higher water usage due to at home rinsing and production

# Soaring CO<sub>2</sub> emissions and costs: the case of e-commerce packaging in Germany



## PPWR targets:

E-commerce operators delivering non-food items shall ensure that:

From 1 January 2030 **10%** of such packaging used is **reusable packaging**

From 1 January 2040 **50%** of such packaging used is **reusable packaging**

**Packing 10% of e-commerce deliveries of non-food items in reuse boxes and bags by 2030 instead of single use alternatives will lead to:**

Assuming:

**20** rotations per reuse item

**90%** recycling rate for single use items



**+ 10% TO 40% CO<sub>2</sub> EMISSIONS**

- Switching to reuse will lead to 2.5 to 3 kt of additional CO<sub>2</sub> emissions
- Packaging, transport and storage facilities contribute to the CO<sub>2</sub> footprint



**+ 50% TO 200% OF DIRECT COST TO THE OVERALL SYSTEM**

- Switching to reusable packaging will cost €60 to €70 million more
- Transport and logistics are the biggest drivers for the cost increase

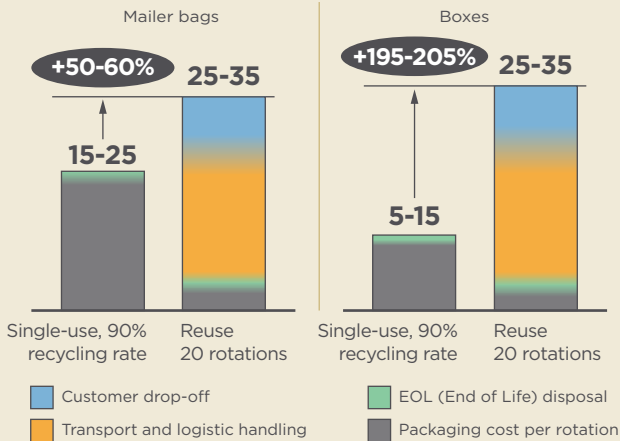


**+ €90 MILLION ONE-TIME COST**

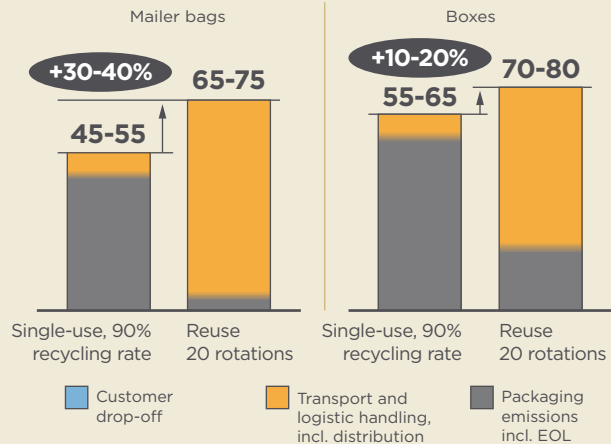
For e-commerce merchants, key challenge of implementing reusables will be additional need for infrastructure, space and logistic/transport capacity



**E-COMMERCE COSTS, eurocent per item per cycle**



**E-COMMERCE EMISSIONS, g CO<sub>2</sub> per item per cycle**



Source: The potential impact of reusable packaging, McKinsey, April 4, 2023

There are additional costs associated with implementing reusables which have not been quantified in the report, such as:



The first-time investment into reusable items as well as to source additional boxes to cover stagnant returns



IT, infrastructure and educational costs



Cleaning cost