

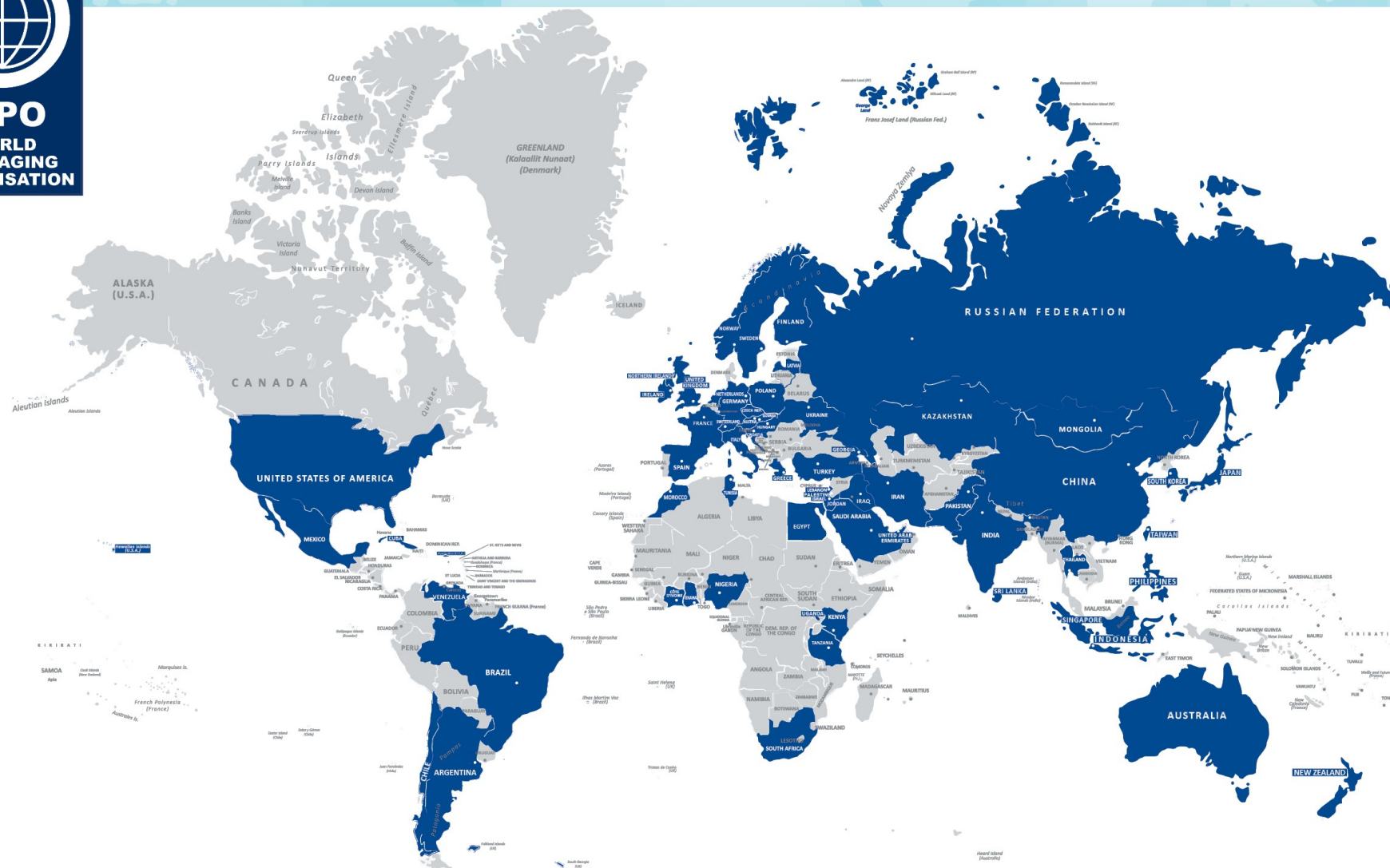


WPO
WORLD
PACKAGING
ORGANISATION

Better quality of life, through better
packaging, for more people



World Packaging Organisation (WPO) - 63 Member Countries



Better quality of life, through better packaging, for more people

Better quality of life, through better packaging, for more people



Circular Economy for Packaging

To create a circular economy for packaging we need to:

- Design out waste at the start
- Harmonise packaging design standards
- Ensure all packaging is recycle ready
- Eliminate Chemicals of Concern
- Reduce virgin materials as much as possible
- Eliminate problematic materials
- Re-use materials for as long as possible

The objective is keep all packaging out of landfill, the waterways and the environment and to ensure that we stay within our planetary boundaries.

**Global
Harmonised
Design
Standards**

**Global
Packaging
Design for
Recycling
Guideline**

Global Packaging Design for Recycling Guide



BOTTLES

PET

MATERIAL



CLOSURE



DECORATION



2.3.3 Glass



- Standard colouring in green, brown, white (transparent) or related shades.
- Regular three-component packing glass (quartz sand, soda, **limestone**).
- Engravings and paper labels (wet-strength).



- No packaging glass, such as heat-resistant glass (e.g.: boro-silicate glass).
- Lead crystal, cryolite glass.
- Ceramic parts.
- Full-surface, colour-coated bottles.
- Full-surface **sleeves**.
- Permanently adhesive and large-area plastic labels.



2.3.5

Aluminium



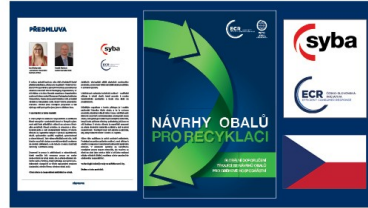
- **Non-ferrous metal parts**
- Direct printing process.
- Embossing or direct printing.
- Paint coating.
- Closures made of aluminium



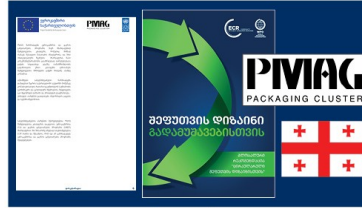
- Aluminium in material composite.⁶
- Non-compliant colours.
- Aerosol cans with hydrocarbon substance-based propellants and/or residual content.



Global Packaging Design for Recycling Guide



Czech



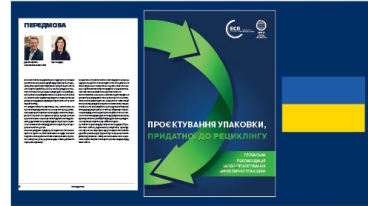
Georgian



Hungarian



Japanese



Ukrainian



Latvian



German



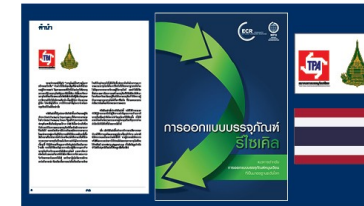
Arabic



Polish



Portuguese



Thai



Indonesian



Spanish



**WITH MORE TO
COME SOON**



English

Waste Stream Mapping Tools



31 COUNTRIES

	AUSTRALIA		GREECE		RUSSIA
	AUSTRIA		HUNGARY		SINGAPORE
	BELGIUM		IRELAND		SLOVAKIA
	BRAZIL		ISRAEL		SPAIN
	CHINA		ITALY		SWEDEN
	COTE D'IVOIRE		JAPAN		SWITZERLAND
	CZECHIA		KENYA		UNITED KINGDOM
	DENMARK		LATVIA		UNITED STATES OF AMERICA
	FINLAND		LUXEMBOURG		VANUATU
	FRANCE		NETHERLANDS		
	GERMANY		NEW ZEALAND		



EU Design Recommendations

Methodology to assess recyclability of packaging in the framework of the PPPWR



**Global
Packaging
Design for
Recycling
Guideline**

**Waste
Stream
Mapping
Tools**

**WPO
Sustainability
Position
Papers**

**WPO
Sustainability
Survey**



**WPO
Sustainability
case studies**

**WPO
Save Food
Packaging
case studies**

**WorldStar
Save Food
Packaging
Special Award**

**WorldStar
Sustainability
Special Award**

**WPO
Sustainability &
Save Food
Working Group**



NEW Sustainability & Save Food Case Studies

WORLDSTAR
WINNER



IceCoat - Mini fridge without electricity
WINS 2022 WORLDSTAR SUSTAINABLE PACKAGING SPECIAL AWARD

IceCoat - Mini fridge without electricity
STREIFF Group - Sven Holger Striiff and Mark Bernellinger

KEY FEATURES

- Minimises food waste
- Developed with renewable and recyclable materials
- Mono Material FSC Certified Materials
- Ideal for E-Commerce
- Withstands the rigours of transport
- Protects the product
- The unique ice jacket maintains the temperature

STREIFF Gruppe
STREIFF Gruppe specialises in high-quality packaging, tailor-made packaging solutions and on-site packaging developments. They are committed to sustainability and environmental friendliness. They are characterised by creativity and innovative strength. They are characterised by creativity and innovative strength. They are characterised by creativity and innovative strength.

As a recognised specialist in logistics and fulfilment, they can offer you the advantages of real one-stop shopping: high-quality packaging, individual industrial packaging and fully automated packaging. The STREIFF Group includes the packaging companies Striiff & Bernellinger GmbH and Striiff & Bernellinger GmbH.

AWARDS
WORLDSTAR WINNER 2022
WORLDSTAR WINNER 2022
WORLDSTAR WINNER 2022
WORLDSTAR WINNER 2022

Junee Prime Lamb
WINS 2022 WORLDSTAR SUSTAINABLE PACKAGING SPECIAL AWARD

Junee Prime Lamb
Junee Prime Lamb & SEE

KEY FEATURES

- Meat contributes 20% of the carbon footprint in lamb
- No more leaking packs
- No more food & water waste due to leaks
- Withstand rigorous storage & transport
- Packaging ratio is improved
- Australian Recycling Label (ARL) compliant
- Vacuum, shrink barrier bags increase shelf life to 90 days
- Tear puncture, tear and abrasion resistant designs
- High oxygen barrier properties
- Built-in bone guard protection in areas that need it the most
- Bone Guard can be purposefully positioned in bag

Family owned and operated since 1987, Junee Prime Lamb has quickly grown to become one of the leading producers of premium quality Australian lamb. From humble beginnings processing lamb, beef and pork for local customers, they now specialise exclusively in prime Australian lamb and supply to many parts of the world.

SEE partners with its customers to solve their most pressing challenges by delivering new solutions derived from its unmatched industry knowledge and expertise. These solutions create a more efficient, secure and less wasteful global food supply chain and enhance e-commerce through fulfillment and packaging solutions that address the worldwide movement of goods.

AWARDS
WORLDSTAR WINNER 2022
WORLDSTAR WINNER 2022
WORLDSTAR WINNER 2022
WORLDSTAR WINNER 2022

PAPACKS® Fiber Bottle
WINS 2022 WORLDSTAR SUSTAINABLE PACKAGING SPECIAL AWARD

PAPACKS® Fiber Bottle
PAPACKS® Sales GmbH.

KEY FEATURES

- Unique Fiber Bottle
- Plastic Free Bottle neck
- Renewable Materials
- Moulded Fiber Solution
- PAPACKS® Plant-Based Coating to line the inside
- Recyclable and Recoverable
- Eliminates Single Use Plastic

PAPACKS® is a sustainable packaging company specialising in environmentally friendly moulded fiber packaging solutions made from virgin fibre. With its current focus on PET, PAPACKS® is pioneering as the innovator of the moulded fiber industry, introducing renewable raw materials, plant-based coatings and unique solutions which are directly applicable in modern circular economy concepts.

AWARDS
WORLDSTAR WINNER 2022
WORLDSTAR WINNER 2022
WORLDSTAR WINNER 2022
WORLDSTAR WINNER 2022

PAPACKS® Refill Caps
WINS 2022 WORLDSTAR SUSTAINABLE PACKAGING SPECIAL AWARD

PAPACKS® Refill Caps
PAPACKS® Sales GmbH.

KEY FEATURES

- Refillable & Reusable Design
- Moulded Fiber Renewable Material
- Closed Loop Collection Program
- Eliminates Problematic Materials
- Reduces Single Use Plastics
- Minimises Product Waste
- Recyclable Tube

PAPACKS® is a sustainable packaging company specialising in environmentally friendly moulded fiber packaging solutions made from virgin fibre. With its current focus on PET, PAPACKS® is pioneering as the innovator of the moulded fiber industry, introducing renewable raw materials, plant-based coatings and unique solutions which are directly applicable in modern circular economy concepts.

AWARDS
WORLDSTAR WINNER 2022
WORLDSTAR WINNER 2022
WORLDSTAR WINNER 2022
WORLDSTAR WINNER 2022

rPET SCHOOL MILK CUP
WINS 2022 WORLDSTAR SUSTAINABLE PACKAGING SPECIAL AWARD

rPET school milk cup
PET-MAN, Starlinger viscotec, Gester Packaging, Schulmilchbauern Oberösterreich

KEY FEATURES

- Closed Loop Collection program
- Unique solution for fresh milk for schools
- Recycled PET that is Food Safety Approved
- Can be recycled over and over again into more school milk cups
- Mono Material Recyclable Design
- Minimises Food & Product Waste
- Minimises the use of single use plastics
- Collaborative solution for the wider industry

The packaging solution and recycling loop have been realised in a cooperation between three companies (injecting technology provider, sheet producer packaging producer) and Austria school milk producers, who established a closed recycling loop for project cups.

Starlinger viscotec is an Austrian technology and machinery provider, that produces machines and plants for the replacement of recycled PET for food content and extrusion lines for PET sheet made from up to 100% rPET. www.starlinger.at

PET-MAN is a converter who supplies food grade and environmentally friendly PET sheet made from post-consumer material. www.pet-man.at

Gester Packaging is a leading European manufacturer of plastic packaging in the food and non-food sectors. www.gester-pack.com

The dairy food sector partners are the Upper Austrian school milk producers, who provide children with fresh products collected directly to schools and kindergartens.

AWARDS
WORLDSTAR WINNER 2022
WORLDSTAR WINNER 2022
WORLDSTAR WINNER 2022
WORLDSTAR WINNER 2022

SeaStretch Paper stretch film
WINS 2023 WORLDSTAR SUSTAINABLE PACKAGING SPECIAL AWARD

SeaStretch Paper stretch film
RAJA

KEY FEATURES

- 100% Recyclable pellet wrap
- Fibre based Renewable Material
- PEFC Certified Kraft Paper
- Stretch up to 30% more in length
- No need for a wrapping machine
- Can be wrapped by hand with ease
- Alternative to plastic stretch film & wrap

RAJA
RAJA is the European leader in B2B distribution of packaging, office supplies and industrial equipment. Founded in 1994, RAJA is an independent, family-owned company, made of 49 companies located in 19 different European countries. The company's multi-channel expertise and customer mindset, focus on quality and customer experience, unrivalled product offerings of over 200,000 items and a strong CSR leadership position, make RAJA an ever-growing leader in the B2B world.

AWARDS
WORLDSTAR WINNER 2023
WORLDSTAR WINNER 2023
WORLDSTAR WINNER 2023
WORLDSTAR WINNER 2023

LifeSpan Copper Based Film
WINS 2023 WORLDSTAR SUSTAINABLE PACKAGING SPECIAL AWARD

LifeSpan copper based film - Amcor Chile - Copperprotek

KEY FEATURES

- Contains Copper microparticles
- The microparticles inhibit the development of microorganisms
- Extends shelf life by up to 250%
- Ideally suited for cheese and fresh processed meat such as ham, bacon and fresh chicken
- Preserves and protects products through the all value chain

amcor
Amcor is a global leader in developing and producing responsible packaging solutions for food, beverage, pharmaceutical, medical, home and personal care, and other products. Amcor works with leading companies around the world to protect their products and the people who rely on them, efficient brands, and improve supply chains through a range of flexible and rigid packaging, specialty cartons, closures, and materials. The company is focused on helping packaging that is increasingly lighter weight, recyclable and reusable, and made using an increasing amount of recycled content.

COPPERPROTEK
Copperprotek is a leading Chilean biotechnology company in the use of biomaterials to streamline the food production and marketing chain. They believe that their technological developments are a scalable and cost-efficient solution to ensure that your food reaches your markets and consumers in the best possible condition.

AWARDS
WORLDSTAR WINNER 2023
WORLDSTAR WINNER 2023
WORLDSTAR WINNER 2023
WORLDSTAR WINNER 2023

Plant Fibre Pulp Hot & Cold Lids
WINS 2023 WORLDSTAR SUSTAINABLE PACKAGING SPECIAL AWARD

Plant Fibre Pulp Hot & Cold Lids
BioPak

KEY FEATURES

- Meets 2025 National Packaging Targets & Sustainable Packaging Design Principles
- Eliminate Hazardous Materials
- Design for Recovery
- Provide Consumer Information on Sustainability
- Hot & Cold Lids
- Home & Commercially Compatible
- AS736 certifications (Commercial) & AS6810 (Home)
- Plant-based renewable materials
- No Added PFAs
- Shap test to hold the lid firmly
- Unique lid design

Based in Sydney, BioPak specialises in designing, producing and distributing packaging made from rapidly renewable plant-based materials. They are committed to adapting and promoting best practices aligned with the triple bottom line: People, Planet, Profit.

AWARDS
WORLDSTAR WINNER 2023
WORLDSTAR WINNER 2023
WORLDSTAR WINNER 2023
WORLDSTAR WINNER 2023

Coca-Cola Label-Free PET Bottle
WINS 2023 WORLDSTAR SUSTAINABLE PACKAGING SPECIAL AWARD

Coca-Cola Label-Free PET Bottle
Coca-Cola Tokyo Research & Development Company, Limited

KEY FEATURES

- 100% recycled PET materials
- Label-free
- Attractive bottle shape having brand equity
- Use-friendly; no hassles to peel label off and easy to crush bottles for disposal
- Ideal for food loss & waste
- Tracking via cold chain
- Colour determines when temperature rise above set parameters
- Drinkable size of 350ml
- Lightweight bottle

Coca-Cola Tokyo Research & Development Company, Limited is a research and development subsidiary in Japan of The Coca-Cola Company whose headquarters are located in Atlanta, U.S.A. The Company's business is the development of products oriented to the market in Japan and research into quality control methods.

AWARDS
WORLDSTAR WINNER 2023
WORLDSTAR WINNER 2023
WORLDSTAR WINNER 2023
WORLDSTAR WINNER 2023

ThermoShield Temperature Monitoring System - Food Caps & Closures
WINS 2023 WORLDSTAR SUSTAINABLE PACKAGING SPECIAL AWARD

ThermoShield Temperature Monitoring System - Food Caps & Closures

KEY FEATURES

- Design for Product Waste
- Design for Accessibility
- Design for Transport Efficiency
- Ideal for food loss & waste
- Tracking via cold chain
- Colour determines when temperature rise above set parameters
- Thermochromic dye technology
- Changes colour as environment changes
- Optical system - dynamically changes appearance at preselected temperatures
- Allows for colour changes - black to orange to red as pack gets warmer
- Extends Shelf Life

CAPS & CLOSURES
Caps and Closures is an Australian owned and operated company that has been designing and manufacturing award-winning innovative plastic packaging solutions for over 35 years. Caps & Closures maintains a global industry and research capabilities network to ensure that their in-house design team is in tune with the packaging industry's latest developments.

AWARDS
WORLDSTAR WINNER 2023
WORLDSTAR WINNER 2023
WORLDSTAR WINNER 2023
WORLDSTAR WINNER 2023

Modified Atmosphere Technology
WINS 2023 WORLDSTAR SUSTAINABLE PACKAGING SPECIAL AWARD

Modified Atmosphere Technology
Masterpack Group/Somax

KEY FEATURES

- Modified Atmosphere material solution
- Smart Sensor Technology to measure oxygen, humidity & temperature
- Transforms Flexible Intermediate Bulk Containers
- Extends shelf life of products
- Optimises storage
- Improves shipping efficiencies
- Live tracking and trace of products

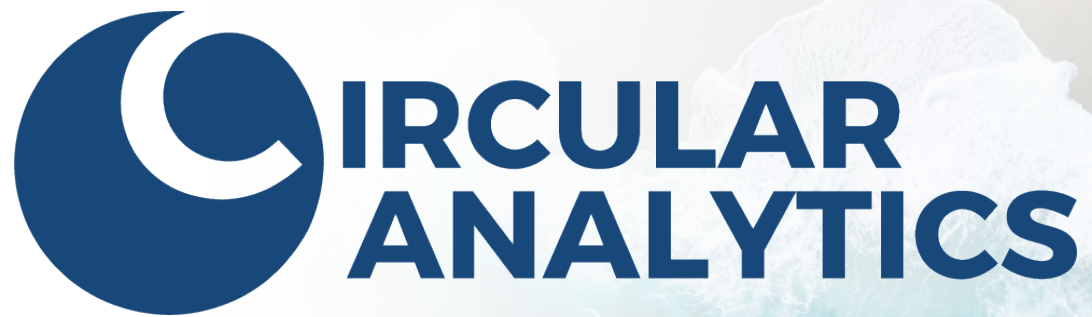
MASTERPACK GROUP
Masterpack is the leading expert in innovative packaging solutions. With their unique and fully integrated solution to create Modified or Controlled Atmosphere in FIBC's, they provide increased protection and extended shelf life of products, decreasing waste and loss of product and improving the quality of products.

AWARDS
WORLDSTAR WINNER 2023
WORLDSTAR WINNER 2023
WORLDSTAR WINNER 2023
WORLDSTAR WINNER 2023



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Better quality of life, through better
packaging, for more people



**Strategies for a Transition to
Circular Economy**

**Navigating the final PPWR version
– key measures and latest changes**

Lina Wimmer

Packaging and Packaging Waste Regulation (PPWR)



**1st reading in Parliament:
24 April 2024**

**Provisional Agreement: 04
March 2024**

Council Proposal: 18.12.2023

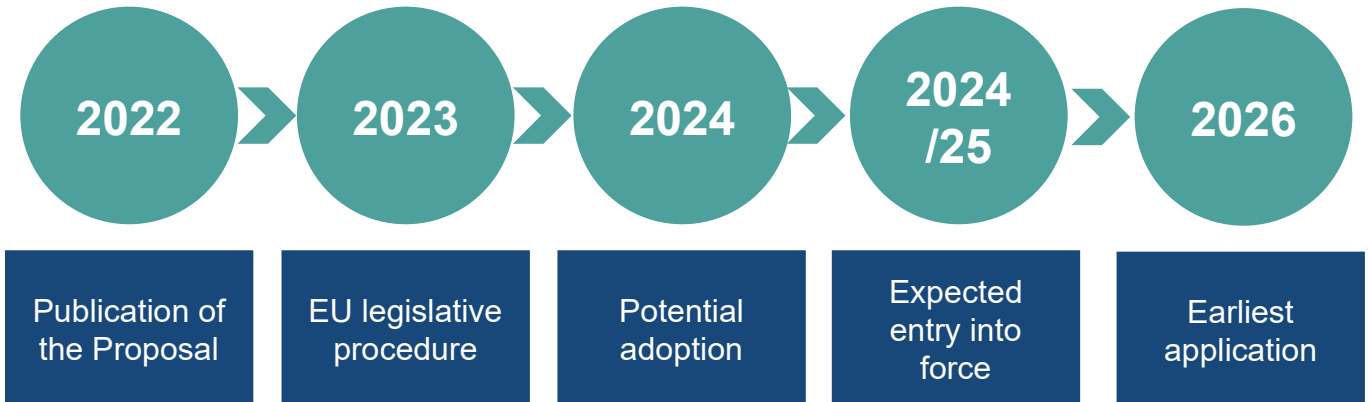
Parliament Proposal: 22.11.2023

Commission Proposal: 30.11.2022

Planned as a regulation

→ **NO transposition into national law**

→ **Enters into force with immediate effect**



Waste Prevention (Art. 43)

Member States' packaging waste reduction targets (per capita, base year 2018*):

- 5% until 2030 (→ effective reduction by **19%**)
- 10% until 2035 (→ effective reduction by **29%**)
- 15% until 2040 (→ effective reduction by **37%**)

* Member States can apply to the Commission until 2025 that a base year other than 2018 is used for the calculation

→ 7 years after entry into force, the need to set specific targets for certain packaging materials will be reviewed.

Recyclable Packaging (Art. 6/ Annex II)

- **All packaging placed on the European market must be recyclable!**
- 2-stage approach:
 - packaging is designed for material recycling (DfR) (secondary material of sufficient quality)
→ at the earliest in **2030** or 2 years after the delegated acts enter into force (planned for 2028)
 - packaging must be additionally effectively collected, sorted and recovered (**„recycled at scale“**)
→ at the earliest from **2035** or 5 years after the implementing acts enter into force (planned for 2030)
- Exemptions: until 2035 special packaging (e.g. medicinal products)
 from 2030 innovative packaging (max. 5 years)

Recyclable Packaging (Art. 6/ Annex II)

- recyclability **<70%**: technically non-recyclable → **cannot be placed on the market**
- **2038: Grade C** can no longer be placed on the market

Recyclability Performance Grades	Assessment of recyclability per unit, in weight
Grade A	95%
Grade B	80%
Grade C	70%
Technically non-recyclable	70%

Annex II, Table 2

Minimum Recycled Content in Plastic Packaging

(Art. 7)

- From **2030** (or 3 years after the implementing act comes into force) all plastic components of packaging placed on the market must contain **a minimum recycled content (PCR)**
- Per packaging type and format** (see Annex II, Table 1) **calculated as an average per manufacturing plant and year**

Packaging Type	2030	2040
Contact sensitive packaging with PET as main component	30%	50%
Contact sensitive packaging (except for PET and single-use plastic beverage bottles)	10%	25%
Single-use plastic beverage bottles	30%	65%
other plastic packaging	35%	65%

Not applicable for

- plastic packaging intended to come into **contact** with **food**, if the amount **of recycled content poses a risk to human health** and results in the packaged products not complying with Regulation (EC) 1935/2004
- for each **plastic part** that accounts for **less than 5%** of the total weight of the entire packaging unit.
- Packaging of medical products
- Compostable plastic packaging**
- hazardous goods
- Packaging for infant formula

Reuse (Art. 11, Art. 26 und Art. 27)

Reusable packaging must be conceived, designed and placed on the market in such a way that it can be reused **several times**

Product	2030	2040
Non-alcoholic and alcoholic beverages (excl. milk, wine and spirits)	10%	40%
Transport and sales packaging* for transport within the territory of the Union, intercompany and (including e-commerce)	at least 40%	at least 70%
Transport packaging/ sales packaging used for transport within the EU for intercompany and linked/partner companies	100%	
B2B transport packaging within a Member State	100%	

*Pallets, collapsible plastic crates, cartons, trays, plastic boxes, bulk containers, buckets, drums and canisters of all sizes and materials, including flexible formats or pallet wraps or straps to stabilise and protect the products carried on the pallets during transport

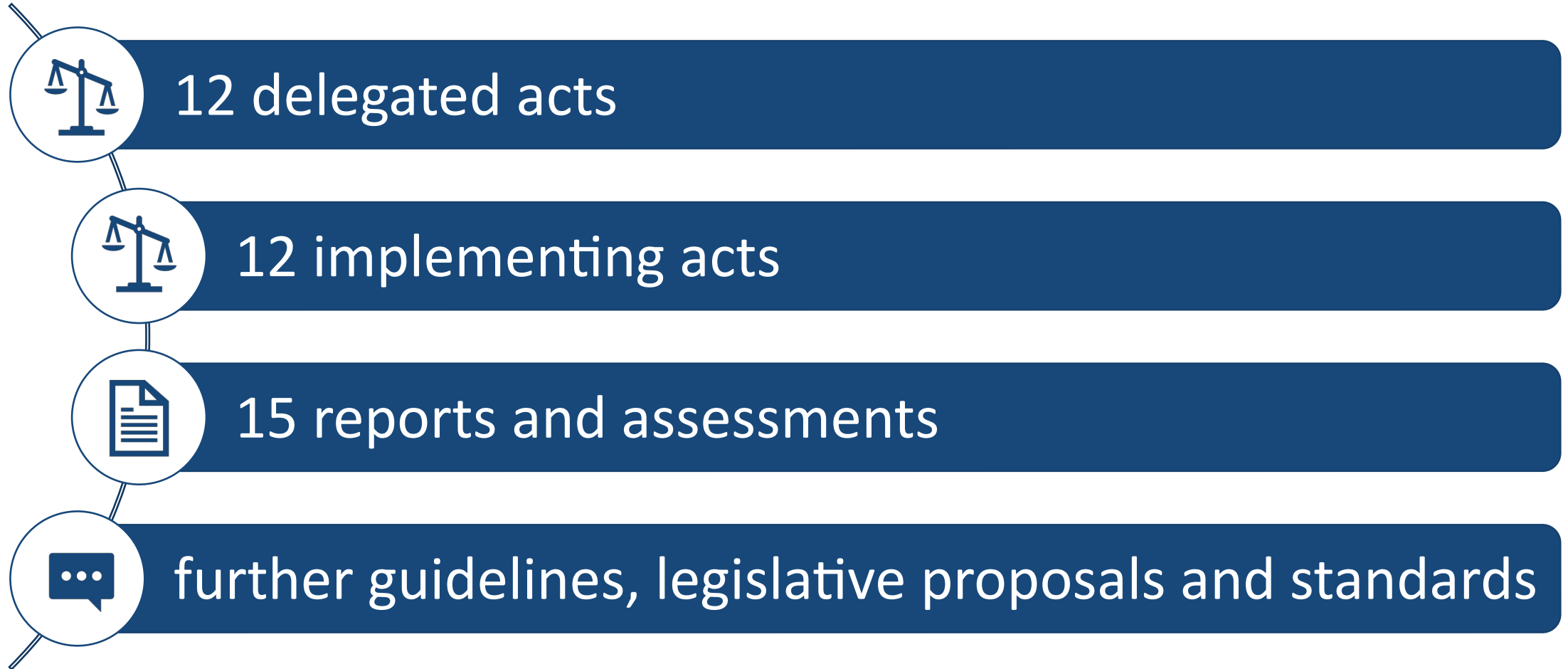
Packaging Minimisation (Art. 10/ Art. 24/ Annex IV)

By 01 January 2030

- Packaging **weight** and **volume** as **low** as necessary
- The safety and functionality of the packaging must continue to be guaranteed
- **Prohibition** of misleading packaging (double walls, double bottoms...)
- **Reusability** of the packaging must be considered
- e-commerce, transport and collective packaging:
 - Empty space must be reduced to the necessary minimum (**empty space ratio 50%** - per packaging unit)



What is still missing?



Next Steps



April – June 2024

- Linguistic-legal examination
- Translation to all 24 official languages of the EU



Autumn 2024

ENVI Committee and (new) EU Parliament must adopt the final version after the corrigendum procedure (only a formality, but the new Parliament is not bound)



Autumn 2024

Adoption of the final version by the European Council



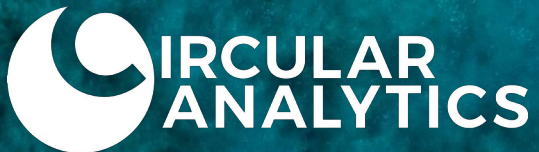
- Subsequent publication
- Earliest application (18M) → **mid 2026**



Sustainable Packaging Design

Impacts and Indicators

Manfred Tacker

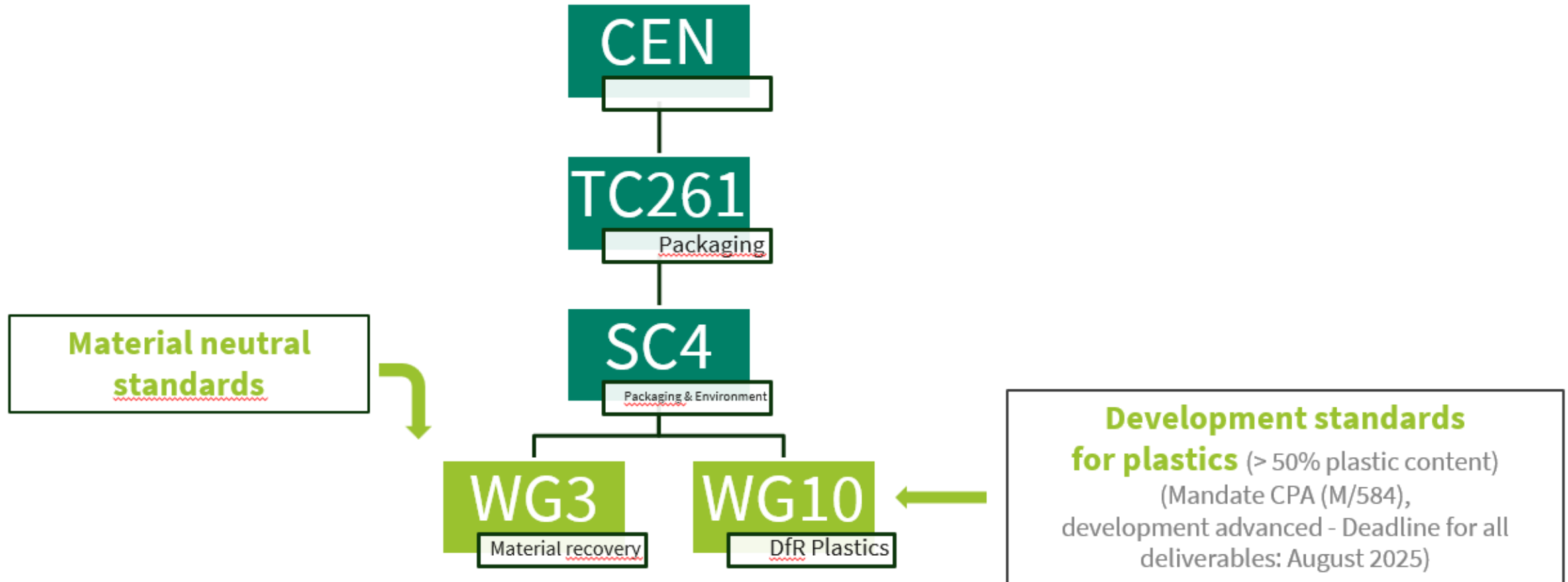


PPWR – KPIs & Design - Impacts

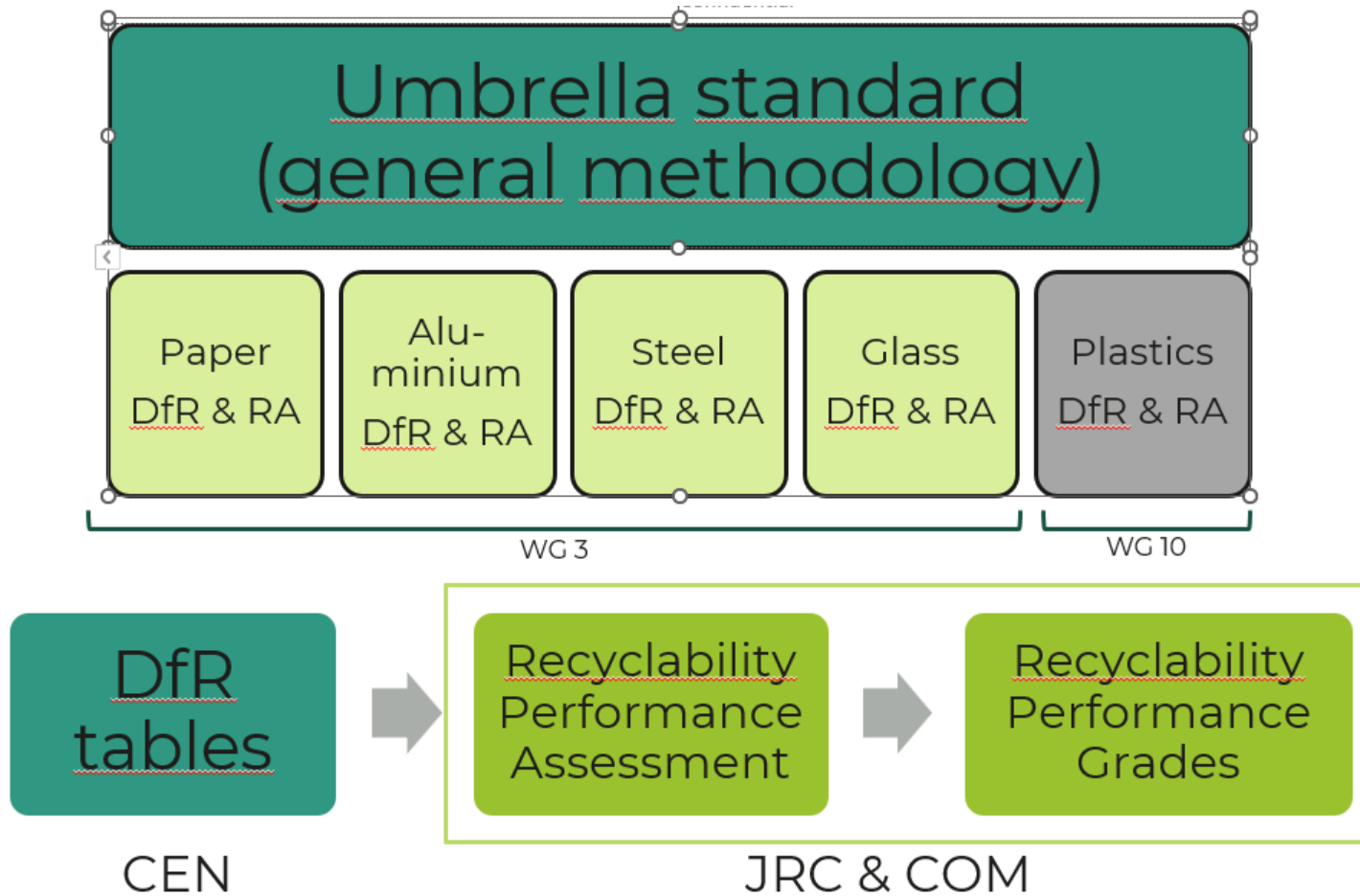
NEW SET OF KPIs

- ✓ Weight
- ✓ Recyclability (70% min)
- ✓ DfR criteria fulfilled -> exact composition
- ✓ Carbon footprint
- ✓ Recyclate quality (circularity vs. recyclability)
- ✓ Recyclate content
- ✓ Emptiability of packaging

Standards Development CEN



Standardisation Recyclability CEN TC 261/SC4



Design for Sustainability - Rules

1. Ensure product protection
2. Calculate packaging - KPIs for packaging (holistic sustainability assessment)
 - Recyclability
 - Packaging weight
 - Carbon Footprint
 - Emptiability
 - Others: recycle content, renewables content ...
3. Benchmark – calculate against competitive packaging
4. Optimize packaging KPIs

Conclusion

PPWR – requires set of sustainability indicators

- Sustainable packaging – holistic concept
 - Recyclability + Minimisation of environmental footprint (LCA)
- Packaging minimisation
- Harmonisation of recyclability assessment (CEN)
- Data flow along the whole supply chain



A Roadmap to Compliance

Guidance on ensuring fitness for PPWR

Charlotte Werner

New legal requirements: challenges and opportunities for the European industry

REPORT

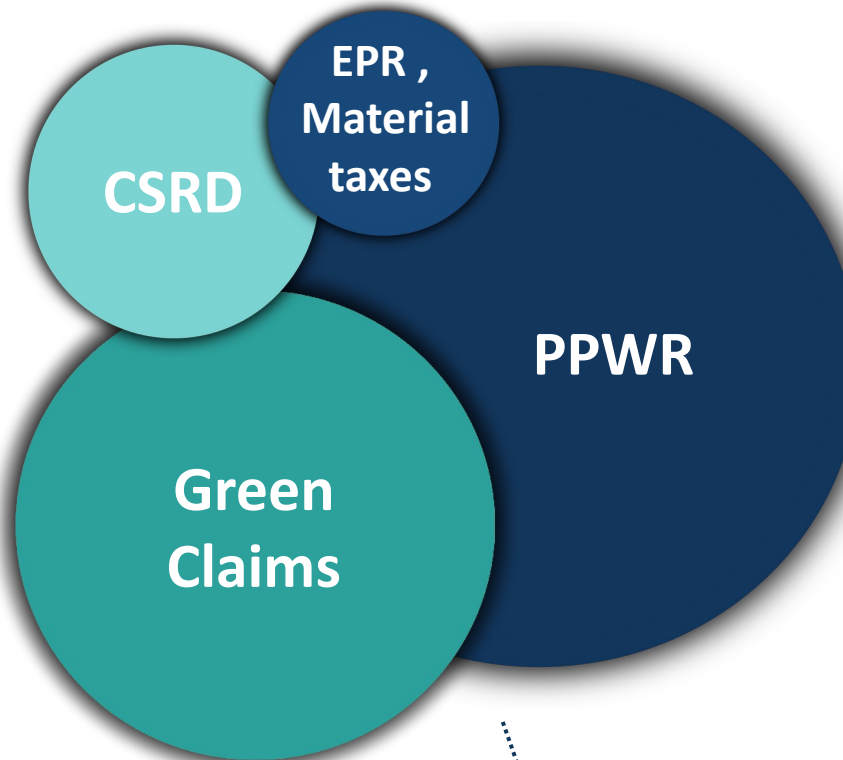
Data collection and sustainability reporting becomes mandatory and extends beyond the boundaries of your own company.

- **Sustainable corporate management**
- **Environmental aspects**
- **Double materiality and due diligence**

RETHINK

No environmental claim shall be unsubstantiated or of unspecific origin.

Marketing with environmental benefits must be as specific as possible



REDUCE

Focus on the reduction of virgin materials and incentivizing recyclable packaging.

RECYCLE

Revision of the packaging strategy and actualization of targets in accordance with the PPWR.

Assessment of the packaging portfolio based on sustainability indicators will be necessary.

- **Recyclability**
- **Recyclate content**
- **Minimisation requirement**
- **Reuse/-filling**

Consequences for the Packaging Value Chain

A new set of packaging management parameters

- ✓ Packaging weight
- ✓ Recyclability (minimum 70%)
- ✓ Fulfillment of DfR criteria → packaging composition
- ✓ Carbon footprint/ CO₂ balance
- ✓ Quality of recyclates (circularity vs. recyclability)
- ✓ Recyclate content
- ✓ Emptiability

Compliance with PPWR



PPWR

Evaluation of the **performance of packaging** based on the required sustainability indicators.

Comprehensive optimisation of packaging

- Minimisation of resource consumption
- Improvement of recyclability

Continuous monitoring of sustainability parameters will become essential.

Check of the current situation – Packaging Benchmarking

PACKAGING BENCHMARKING

Dairy and Cosmetics
Germany, Switzerland, Austria



1. Project partners

- University of Applied Science Campus Vienna
- Circular Analytics

2. Project content & objectives

- Packaging Assessment based on ecological criteria
- Methodology: Holistic Sustainability Assessment
- Compliance with PPWR

3. Participating companies

- Dairy and cosmetics producers
- Retailers
- Associations

4. Other information

- Project periode: 2023
- 9 product categories
- 440 packaging
- Next: convenience food

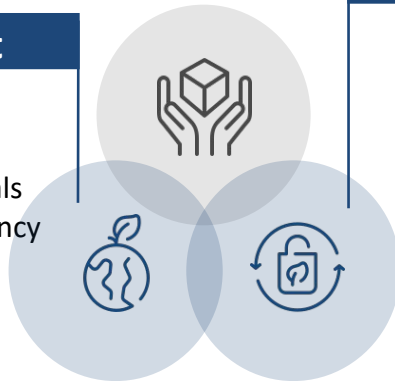
Packaging Benchmarking

Environment

- Direct impact
- Indirect Impact
- Certified materials
- Packaging Efficiency

Circularity

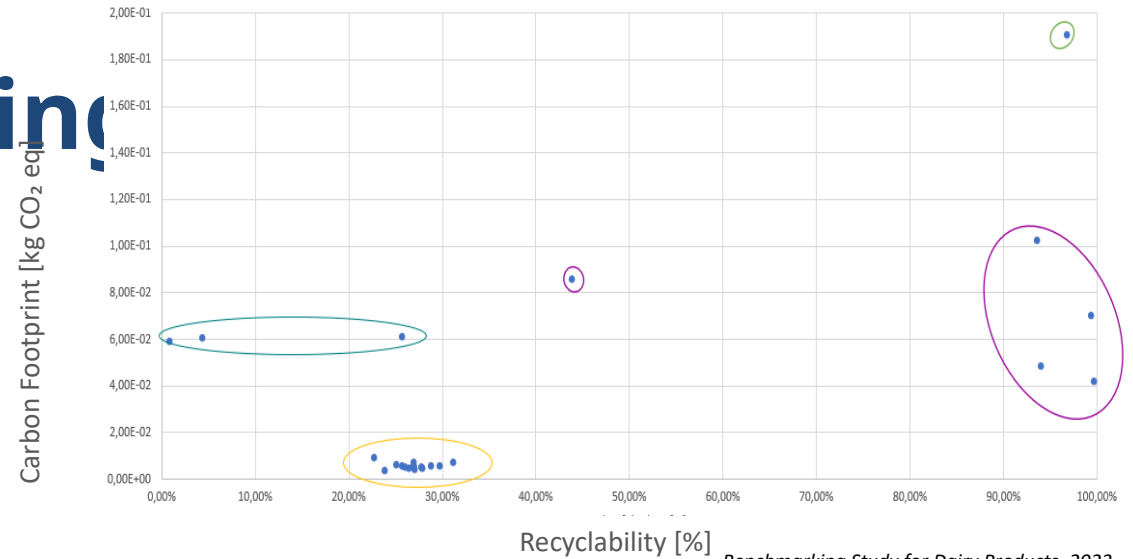
- Consumer action
- Recyclability
- Recycling content
- Renewable materials



PACKAGING BENCHMARKING APPROACH

By implementing this benchmarking approach, the industry can gain insights into its sustainability performance, facilitating compliance with the new regulation and contributing to a circular future.

Butter-packaging: juxtaposition Recyclability / Carbon Footprint



Fibre-based aluminium compounds

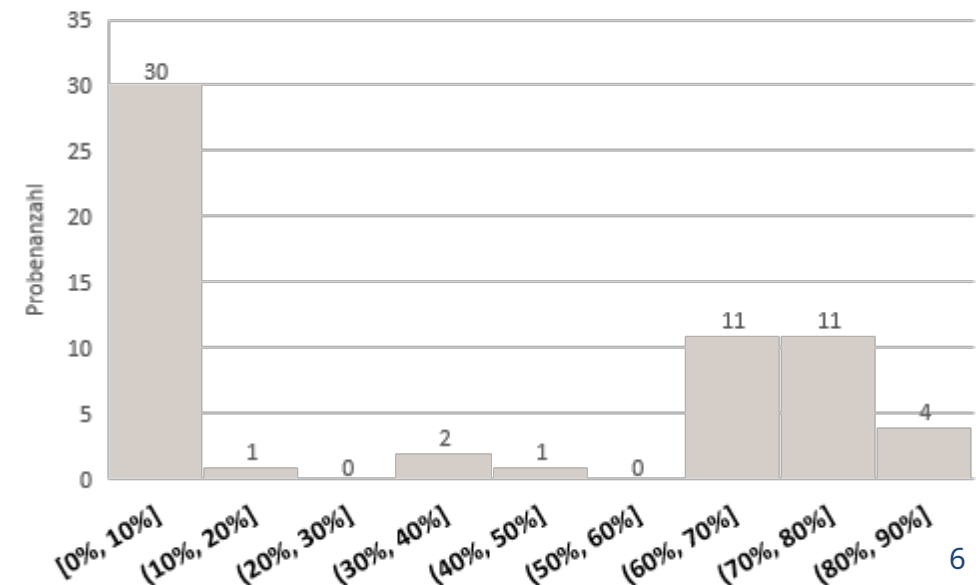
Rigid PP-Trays

Glass

Rigid plastic trays with cardboard decoration

Benchmarking Study for Dairy Products, 2023
© Circular Analytics

Shampoo: secondary material [%]



Are you ready for the PPWR transition?

Awareness of the implications of the current legislation for your company and do you know what obligations you will face?

Requirements from your customers to prove the recyclability or carbon footprint of the packaging?

Are relevant packaging sustainability parameters of each packaging in the packaging portfolio known?

Are you planning to adapt your packaging management to the new market requirements and by when?

How to act now?



Assessing the **current status of packaging** using key sustainability parameters



Reviewing the materiality of packaging
- is so much needed for product protection?



Continuous evaluation of sustainability parameters to ensure alignment with regulatory demands

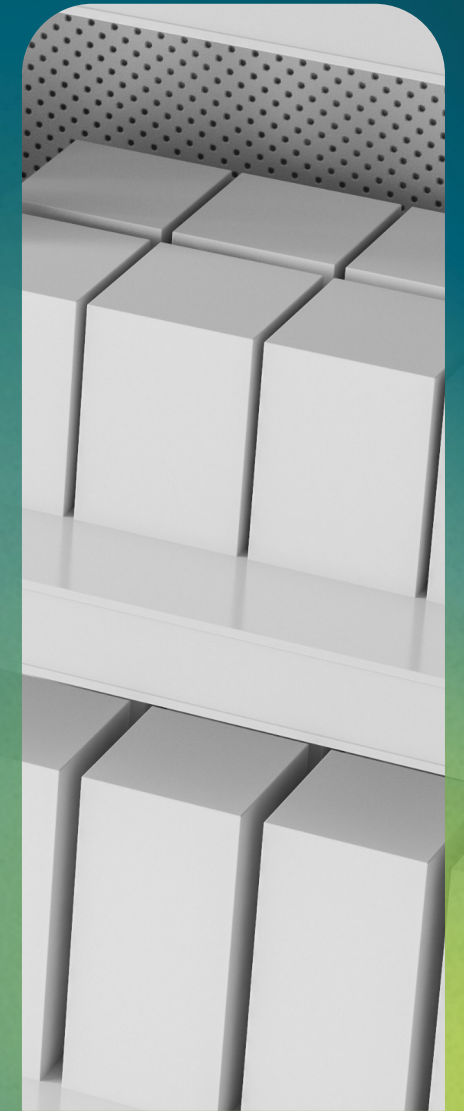
Challenges for Data Management and Material Security

What PPWR Means for Retailers and Brand Owners

27.5.2024



Sustainable Packaging **pre zero**



A background image for the 'Material Security' section. It features a close-up of dark, irregularly shaped granules, possibly coffee beans, on a light-colored surface. A green line and a dark blue rounded rectangle are overlaid on the image.

Material Security

A background image for the 'Packaging Data' section. It shows a laptop screen displaying the 'PreZero SPOT' login interface. The screen has a teal background with product images and a login form. A hand is visible at the bottom, typing on the keyboard.

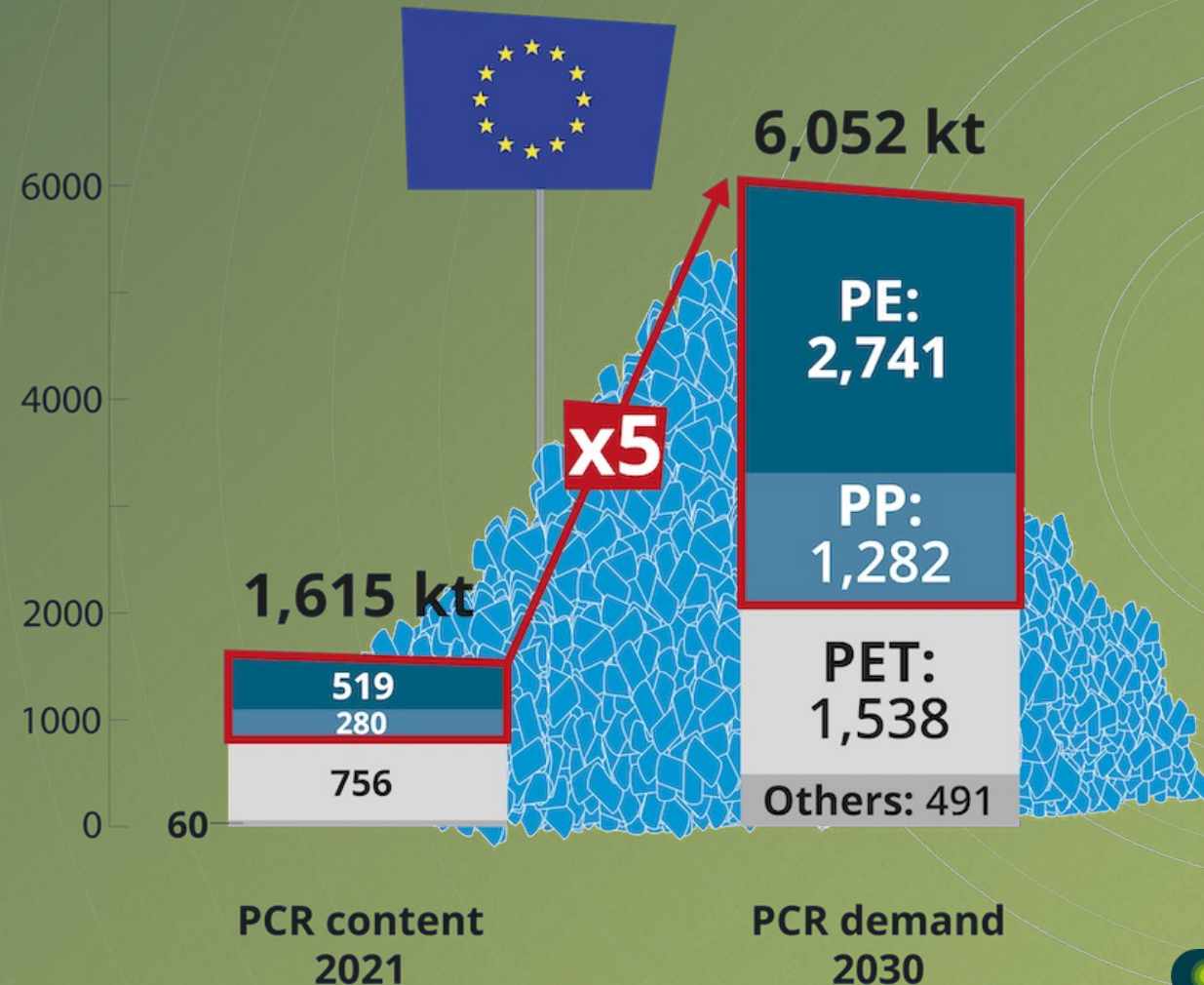
Packaging Data




Material Security

Expected market changes

- Demand will increase massively
- Recycling capacity / supply in Europe will increase, but probably not fast enough
- Limiting factors: time, quality and material access
- Market development regarding imports unclear
- Increased substitution of plastic packaging by fiber-based packaging with plastic content <5%





pre zero | packaging cockpit

PreZero^{SPOT}

Analyze your packaging
in cooperation with Packaging Cockpit



Determine quality requirements



Get in contact with suppliers



Secure material

Circular Insurance



1



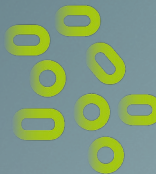
Packaging licensing at
PreZero Dual

2



Increase production of
suitable **PCR**

3



Secure supply of
optimized packaging



Goal: PPWR proof
Packaging in cooperation
with PreZero

PreZero^{SPOT}

in cooperation with Packaging Cockpit

Packaging Sustainability

No longer optional

PPWR

Ban on non-recyclable packaging, use of recyclates, re-use and minimization

Additional Costs

Eco-modulation and plastic taxes

Net Zero

Focus on CO₂ reduction in CSR strategies

Additional Costs

Example for Germany

- ☒ EPR-Fees
- ☒ SUPD: Littering Costs
- ☒ Plastic Tax
- ☒ Eco-Modulation
- ☐ Total



€-Cent per Packaging

2022

2024

2026f

0,4

0,5

0,5

0,6

0,6

Tbd.

0,4

1,0

>1,3

+136,2%

> 189,9%

Costs for 2026: §stimated forecast. Plastic tax in 2026is likely but cannot be quantified yet.

pre
zero

packaging
cockpit

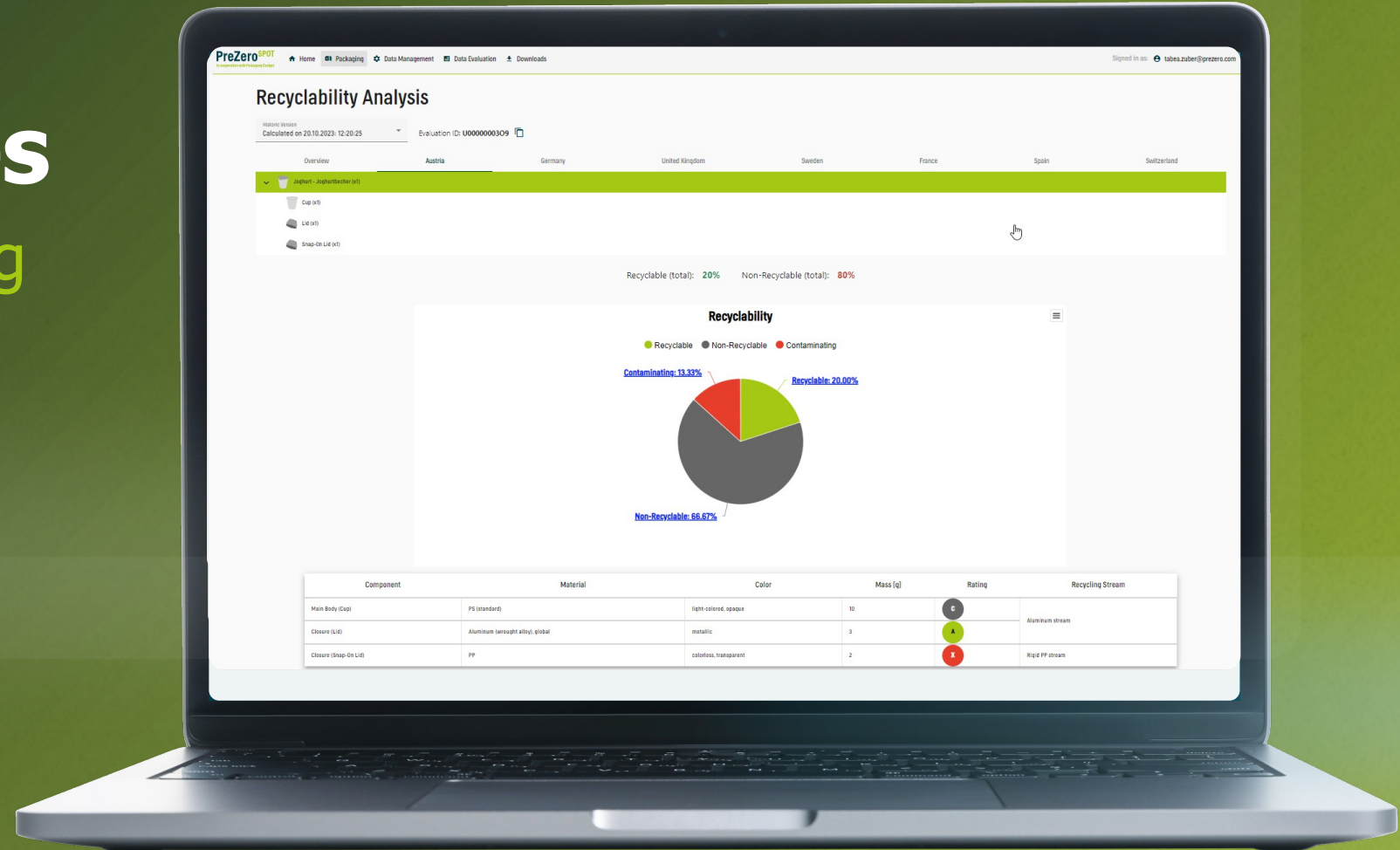
PPWR

=

More Data to manage

Key Features

for your packaging
optimization



Key Features

Overview



ALL RELEVANT PACKAGING KPIs

- Recyclability in Europe
- Licensing & Taxes
- LCA: Carbon Footprint

MODULAR PACKAGING- STRUCTURE

- Maximum user-friendliness through building block systems
- Packaging components, units and systems
- Specific material-compositions

SMART REPORTS

- Custom report-Templates
- For user-defined transfer in the supply chain

EFFICIENT DATA- MANAGEMENT

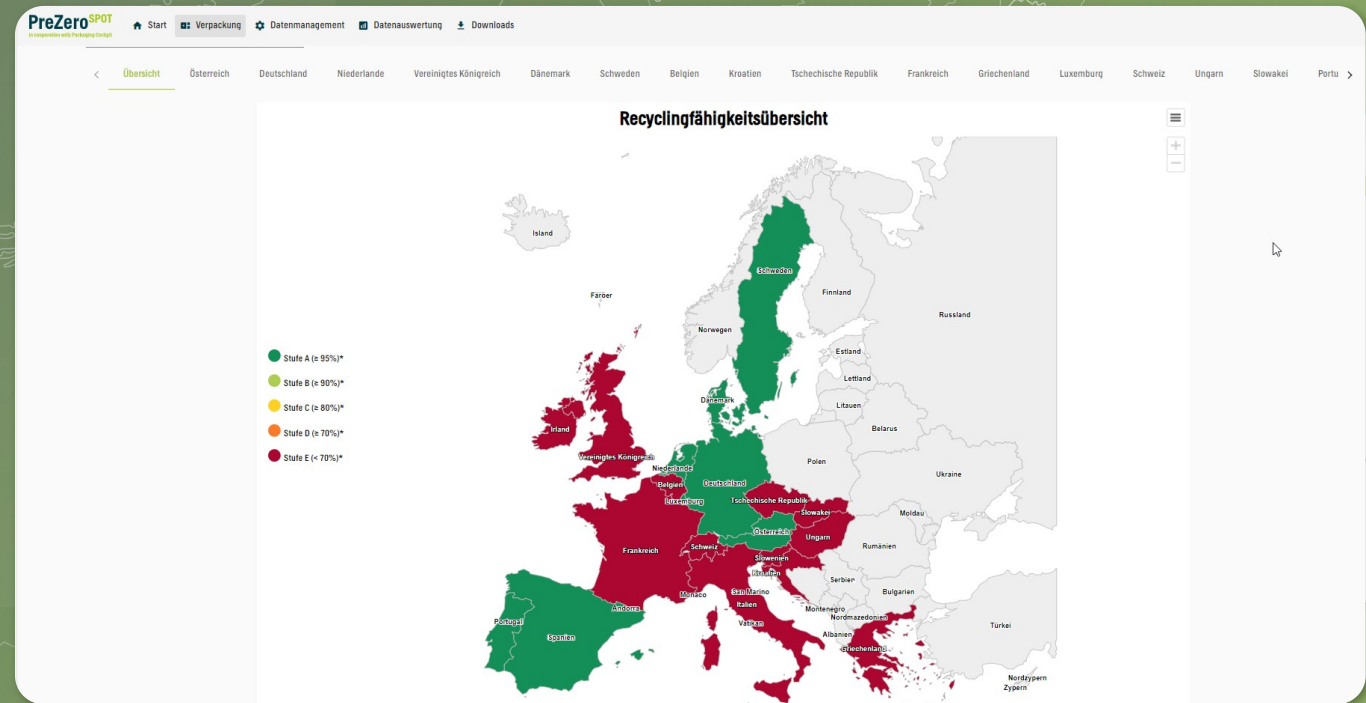
- Imports, Exports, Tags, Filters und User profiles
- Datatransfer along the Supply Chain

All Relevant Packaging KPIs



Recyclability in Europe

Get an overview of the different regulations and **infrastructures** of all EU countries

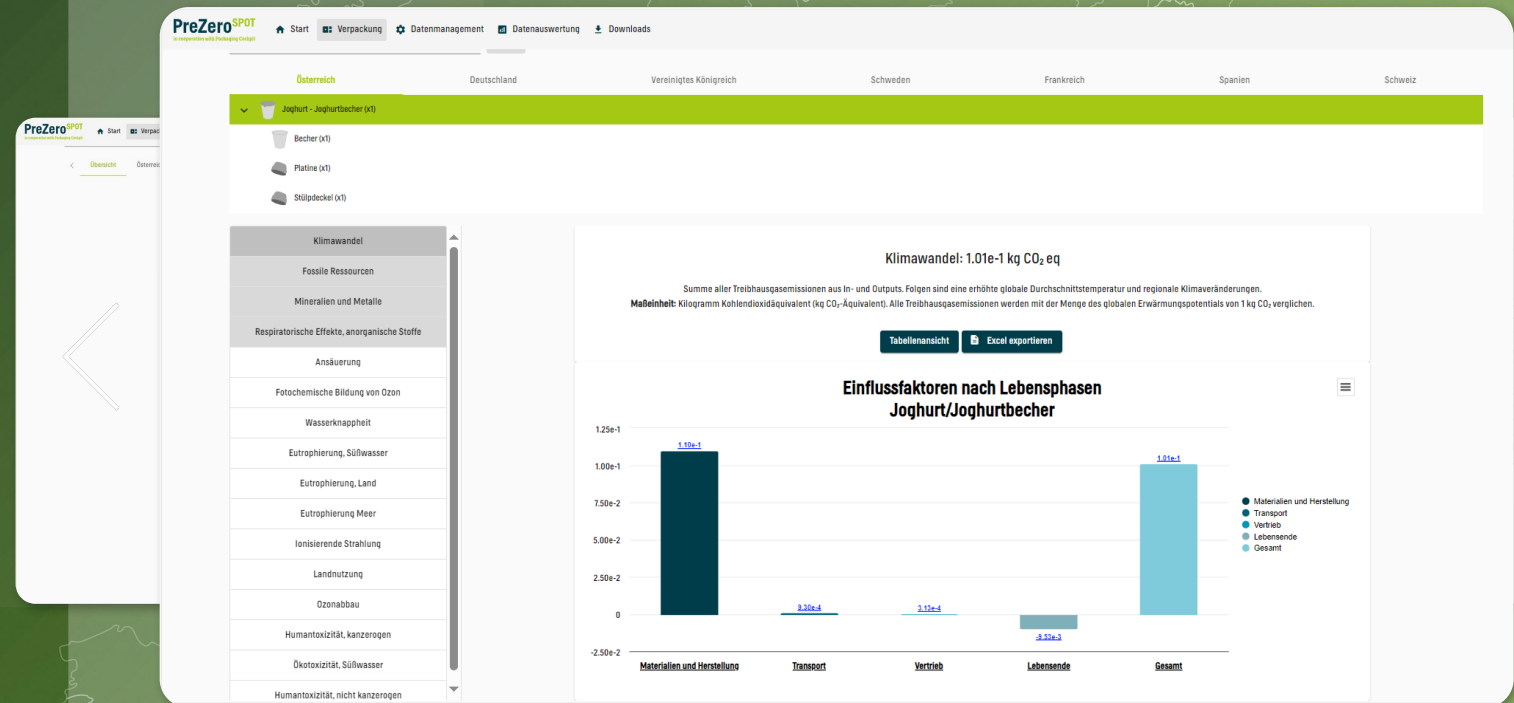


All Relevant Packaging KPIs



LCA: Carbon Footprint

Calculate the **CO₂-footprint** of your packaging and get a **comprehensive overview** of other relevant impact categories

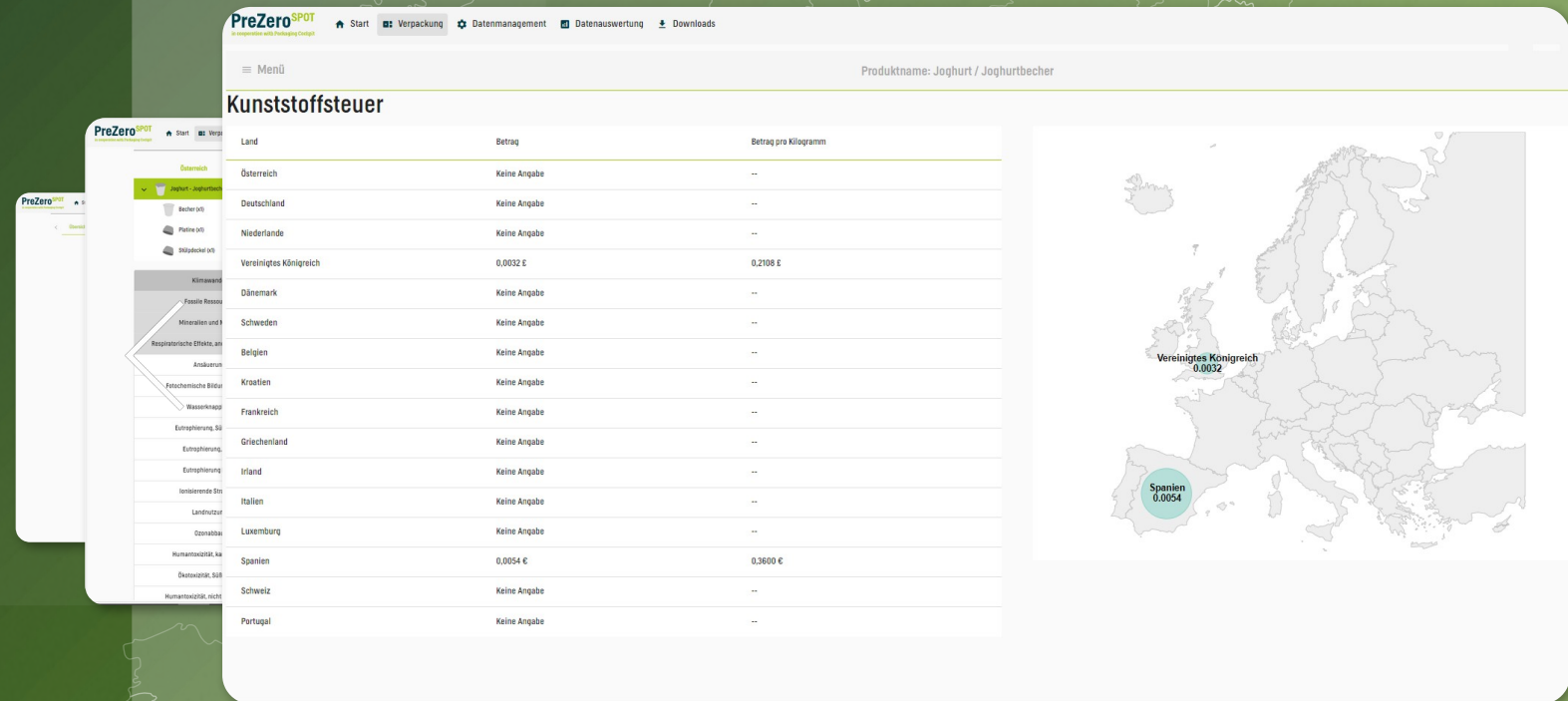


All Relevant Packaging KPIs



Fees and Taxes

Analyze **relevant costs** for packaging such as plastic taxes and license fees



VERPACKUNGSSYSTEME

VERPACKUNGSEINHEIT

VERPACKUNGSKOMPONENTEN

MATERIALZUSAMMENSETZUNG



Modular Packaging Structure

Assemble & reuse complex packaging systems consisting of primary and shipping packaging in a modular system in a time-efficient manner

Modular Packaging Structure

Assemble & reuse complex packaging systems consisting of primary and shipping packaging in a modular system in a time-efficient manner

The screenshot displays the PreZero SPOT web application interface, which is used for managing packaging systems. The interface is organized into several panels, each representing a different level of the packaging hierarchy.

Verpackungssystem (ID: 188, Erstelldatum: 9.4.2024)

This panel shows the top-level packaging system. It includes a dropdown menu for 'Ältere Version' (Older Version) and a 'Tags' field. Below this is a 'Kommentar' (Comment) field. At the bottom, there are buttons for 'Verpackungssystem importieren' (Import Packaging System) and 'Verpackungseinheit importieren' (Import Packaging Unit).

Becher (ID: 11926, Erstelldatum: 9.4.2024)

This panel shows the 'Becher' (Cup) component. It includes a dropdown menu for 'Ältere Version' (Older Version) and a 'Tags' field. Below this is a 'Kommentar' (Comment) field. A table lists the 'Hauptkörper' (Main Body) components, showing columns for 'Nachverfolgung' (Tracking), 'Art des Hauptkörpers' (Type of Main Body), 'Hersteller' (Manufacturer), 'Artikelname' (Article Name), 'Materialausprägung' (Material Specification), and 'Aktionen' (Actions).

Hauptkörper (ID: 29400, Erstelldatum: 9.4.2024)

This panel shows the 'Hauptkörper' (Main Body) component. It includes a dropdown menu for 'Ältere Version' (Older Version) and a 'Tags' field. Below this is a 'Kommentar' (Comment) field. A table lists the 'Materialzusammensetzung' (Material Composition) components, showing columns for 'Spezifikationskriterium' (Specification Criterion), 'Funktion' (Function), 'Materialausprägung' (Material Specification), 'Masse (g)' (Mass (g)), 'Farbe' (Color), and 'Aktionen' (Actions).

Materialzusammensetzung (ID: 55373, Erstelldatum: 9.4.2024)

This panel shows the 'Materialzusammensetzung' (Material Composition) component. It includes a dropdown menu for 'Ältere Version' (Older Version) and a 'Tags' field. Below this is a 'Kommentar' (Comment) field. A table lists the 'Materialzusammensetzung' (Material Composition) components, showing columns for 'Spezifikationskriterium' (Specification Criterion), 'Funktion' (Function), 'Materialausprägung' (Material Specification), 'Masse (g)' (Mass (g)), 'Farbe' (Color), and 'Aktionen' (Actions).

Easy Creation

Customize the reports individually to your needs with the smart Template Wizard

Comprehensive reports with different levels of detail can be created

- ☒ Packaging Unit Information
- ☒ Images
- ☒ Documents (Annex)
- ☒ Master Data
- ☒ Components Summary

 Main Body Fields

- ✓ Master Data
- ✓ Material Layers

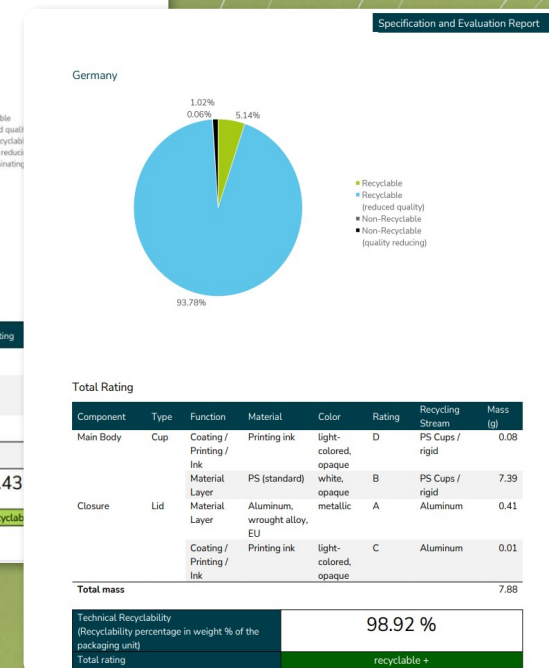
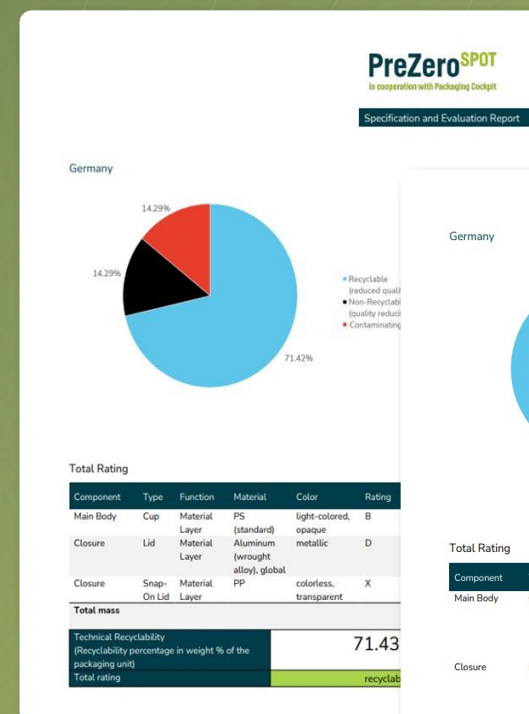
✓ Closure Fields

- ✓ Master Data
- ✓ Material Layers

✓ Decoration Fields

- ✓ Master Data
- ✓ Material Layers

☒ Inlay Fields



Easy Data Management

Entire value chain

Imports, exports, tags, portfolio analyzes and user profiles: the management of your packaging data and the cooperation in the value chain becomes much easier.

The screenshot displays the PreZeroSPOT Data Management interface. On the left, a sidebar menu lists various management options: Manage Directories, Import Packaging Systems, Import Packaging Units, Import Packaging Components, Import Composite Materials, Tags, User Data, Export Profiles, Reports, Dependencies, and UI Changelog. The main area shows a table with columns for Brand Name, Product Name, and Article Number. A 'Select all (4 Selected)' checkbox is visible on the right. A 'Create Tag' modal is open in the foreground, allowing users to select a tag color (Open) or define a custom color. The modal includes fields for 'Tag Name*' (with 'Promotion' entered) and 'Description' (with 'special promotions in the product range' entered). Buttons for 'Create Tag' and 'Cancel' are at the bottom.

Brand Name	Product Name	Article Number	Select all (4 Selected)
Joghurtmarke	Joghurtbecher		<input checked="" type="checkbox"/>
Joghurtmarke	Joghurt Tray		<input checked="" type="checkbox"/>
Pringles Cheese & Onions, 185 g	Pringles Cheese & Onions, 185 g		<input checked="" type="checkbox"/>
Yoghurt	Yoghurt pot	325431	<input checked="" type="checkbox"/>
Noodledine	1-min-Pasta	123678	<input type="checkbox"/>
Mr. Washi	Waschmittel Rose	12345	<input type="checkbox"/>
JoghLife	Brombeere Joghurt 100	543854	<input type="checkbox"/>
DS Meier	Light Bowl A-PET	543862	<input type="checkbox"/>
Molky	Gouda Scherben 48%, 400g	654323	<input type="checkbox"/>
Molky	Milk in a Pouch	123455	<input type="checkbox"/>
Puzzle	Waschmittel-Flüder	597245	<input type="checkbox"/>
SpaTime	Schaumbad Trüben Süß	436272	<input type="checkbox"/>
JoghLife	Himbeer Joghurt 100	123246	<input type="checkbox"/>
PreZero Test 1	Name Fettarmer Joghurt 0,1%		<input type="checkbox"/>
Sourfit	Schale		<input type="checkbox"/>
Hindjosa	Schale		<input type="checkbox"/>
Weißblech-Dose			<input type="checkbox"/>
Gesüßkleebrunnenkarton			<input type="checkbox"/>
Kombi-Dose			<input type="checkbox"/>

Reliable Standards

PreZero SPOT is based on the standards of

- the [Circular Packaging Design Guidelines](#) of the FH Campus Wien and
- the [Packaging Design for Recycling Guideline](#) of the World Packaging Organization and ECR.

- The analysis considers **country-specific disposal structures**, making the standard compliant with the German Minimum Standard for the recyclability of packaging, issued by the Central Office Packaging Register
- Easy identification of differences from country to country.
- Calculation of **Life Cycle Assessments** is based on data from EcoInvent and has been checked by Fraunhofer UMSICHT

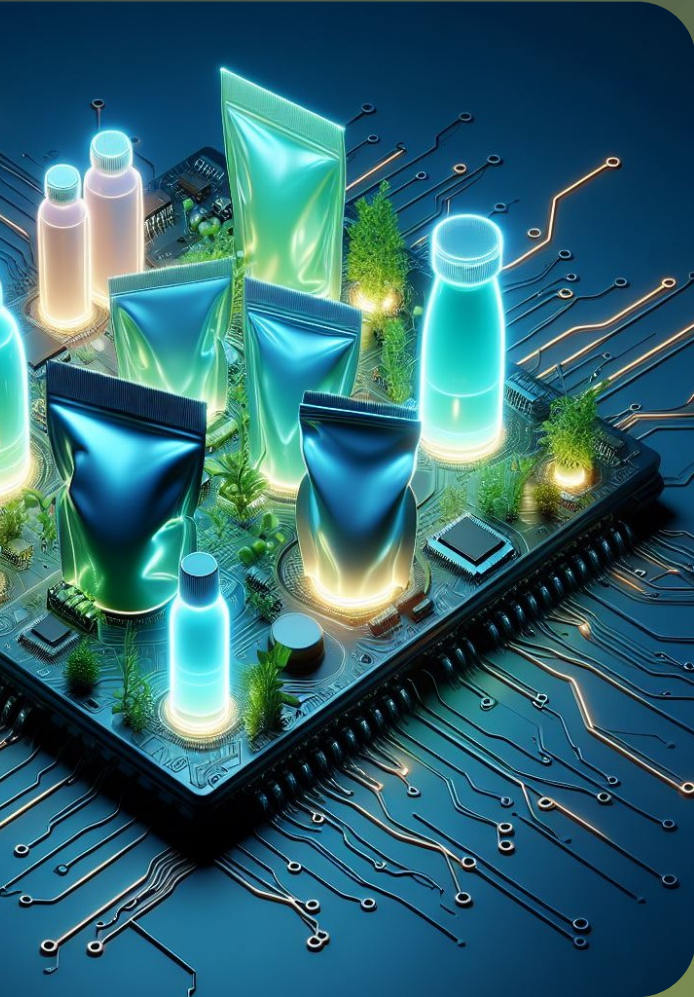


WPO
WORLD
PACKAGING
ORGANISATION



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Questions?

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