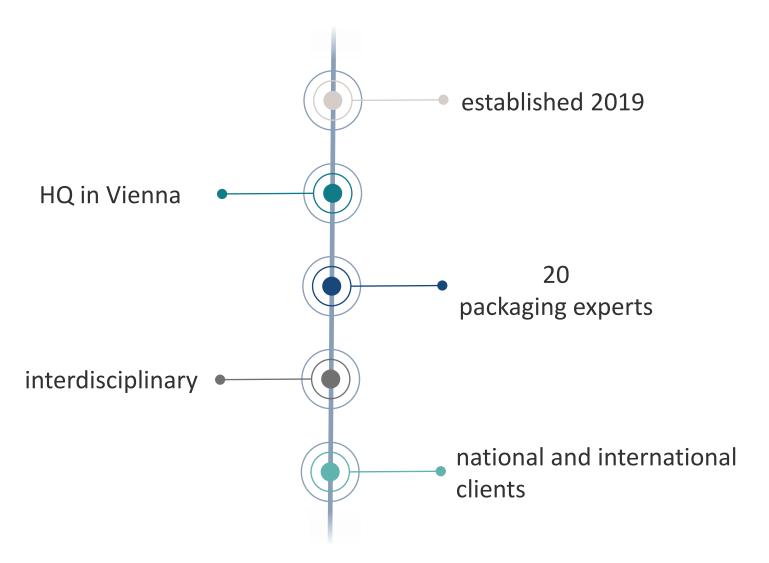


PPWR & sustainability:
What's next for pallets and wood packaging?

Manfred Tacker circular analytics TK gmbH

#### CIRCULAR ANALYTICS















## **Agenda**

Why is the European green transition needed?

Packaging and Packaging Waste Regulation (PPWR)

Standardisation & Delegated Acts

Summary and Q&A Session

# What is the European Green Deal?

The European Green Deal is the EU's growth strategy. Launched in 2019, it consists of a package of policy initiatives, which set the EU on the path to a green transition, with the ultimate goal of reaching climate neutrality by 2050.

#### Main goals:



#### **Climate neutrality**

Drastic reduction of greenhouse gas emissions for the EU to become the 1st climate-neutral area in the world



#### Circular economy

New economic model where products are reused, repaired and recycled, reducing waste and conserving resources



#### **Clean industry**

Push for cleaner, more sustainable and energy-efficient industries which thrive in the EU and global markets



#### **Healthier environment**

Plan to restore nature and work towards zero pollution to ensure a healthy environment for future generations



#### More sustainable farming

Greener farming practices to protect the environment while providing healthy and affordable food



#### Climate justice and fairness

Plan to make the transition fair and inclusive to help people most affected by the transition and leave no one behind

## **CEAP 2.0**Circular Economy Action Plan



#### **TARGETS:**

- Decoupling waste generation from economic growth
- High-quality recycling and creation of an EU market for secondary raw materials
- > Stricter packaging design and packaging volumes
- Expand and harmonize separate collection of waste

#### **REGULATORY FRAMEWORK WITHIN THE CEAP 2.0**

Three comprehensive packages of measure, including new regulatory requirements and updated legislations

Package 1 → Eco-Design Regulation

Package 2 → Packaging and Packaging Waste Regulation

Package 3 → Green Claims Directive

## Packaging Sustainability – Status Quo

189 kg packaging waste per capita (EU-average)

Packaging waste in EU grows faster than GDP

17% of all packaging are currently not recyclable

44% of all plastic packaging have major design issues

Drastic decline in reusable packaging in the last 10 years

CO2 emissions caused by packaging corresponding to Hungary

Packaging waste expected to increase by 19% by 2030

## 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.

#### **RFCYCLF**

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

<sup>1</sup>CSRD: Corporate Sustainability Reporting Directive; <sup>2</sup>PPWR. Packaging and Packaging Waste Regulation

## **Agenda**

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#### Packaging and Packaging Waste Regulation (PPWR)



Entry into Force: 18.2.2025

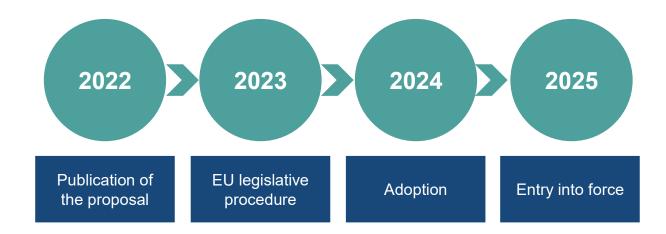
Final agreement: December 2024

Proposal of the European Parliament: 22.11.2023

Proposal of the European Commission: 30.11.2022

#### Planned as a regulation

- → NO transposition into national law necessary
- → Enters into force with immediate effect

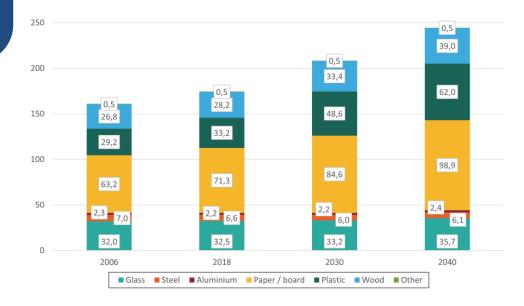


#### Waste Prevention (Art. 38)

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%**)

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



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

## Recyclable Packaging (Art. 6)

- All packaging placed on the European market must be recyclable!
- 2-stage approach:
  - packaging must meet Design for Recycling criteria
     → 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)

## Recyclable Packaging (Art. 6/ Annex II)

- recyclability <70%: technically nonrecyclable → 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%

#### Reuse (Art. 10, 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 beverages (excl. milk)	10%	40%
Alcoholic beverages (excl. wine and spirits)	10%	40%
Transport and sales packaging* for transport within the territory of the Union (including ecommerce)	at least 40%	at least 70%
Transport packaging for transport between locations/ within the same member state	part of a reuse system	

<sup>\*</sup>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

## EU recycling targets (Art. 52)

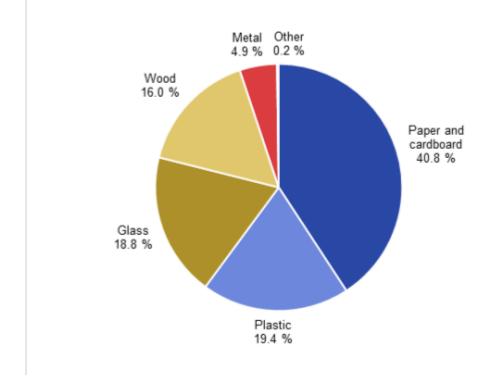
Material	Recycling target 2025 [%]	Recycling target 2030 [%]
Plastic	50	55
Wood	25	30
Ferrous metals	70	80
Aluminium	50	60
Glass	70	75
Paper/Board	75	85

## Wood packaging Recycling rates

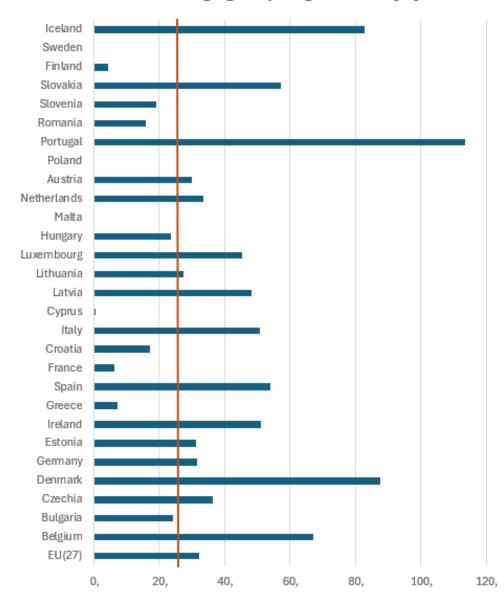
## 29,8 kg wood packaging waste / capita (2022)

Packaging waste generated, by packaging material, EU, 2022

(%)



#### Wood Packaging Recycling rate 2021 [%]



**Eurostat** 

### Packaging Minimisation (Art. 9/ Art. 21/ 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)



## Wood packaging

Exemption to recyclability requirement (Art. 6) of PPWR

- sales packaging made from lightweight wood, cork, textile, rubber, ceramic, porcelain or wax; however, paragraph 8 shall apply to such packaging
- Lightweight wood packaging: not yet clearly defined

#### Substances of concern

- Art. 5 (1)b PPWR prohibits use of substances of concern that may impede reuse or recycling or pose a risk to human health or environment
- PFAS are substances of very high concern banned from packaging
  - Absence of PFAS must be documented and included in conformity statement
- Possible sources in wood packaging:
  - Water repellent coatings
  - Lacquers
  - Barrier layers or liners
  - Adhesives
- End 2026: ECHA will prepare report on substances of concern in packaging and packaging components

## PPWR – Secondary legislation

#### PPWR delegated acts:

#### Recyclability (Art. 6 PPWR)

- Delegated acts should be ready 1.1.2028
- Based on CEN recyclability standards / technical specifications no harmonized standards
- Final delegated act formulated by JRC and Commission

#### Packaging Minimization (Art. 10 PPWR)

- Development of a harmonized standard by CEN
- No mandate yet

#### Reusability (Art. 11 PPWR)

- Development of a harmonized standard by CEN
- No mandate yet



## **Agenda**

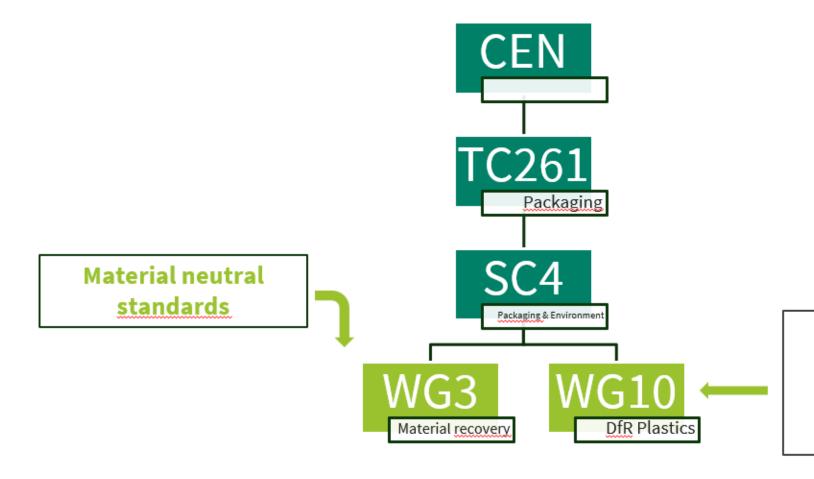
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## Standards Development CEN



#### **Development standards**

for plastics (> 50% plastic content) (Mandate CPA (M/584), development advanced - Deadline for all deliverables: August 2025)



## CEN – Recyclability assessment

### CEN TC 261/SC4/WG10 – Plastics

- December 2024: Final draft of standards accepted by national standardisation bodies (prEN 18120-1ff) with list of recommendations
- June 2025: Recommendations included -> CEN-final drafts ready
- November 2025: Publication of standards
- Structure:
  - General criteria and definitions
  - Sortability
  - DfR-tables (PE, PP, PET, PS rigid and flexible)
  - Recyclability test protocols



## CEN – Recyclability assessment

#### **CEN TC 261/SC4/WG3 – All materials except plastics**

- Development of technical specifications (TS) for
  - Paper/board
  - Glass
  - Aluminium
  - Steel
  - Wood / cork
  - Others
- Final drafts planned for Dezember 2025; publication of TS: June 2026
- Structure as plastics standards



## CEN – General criteria recyclability

### State-of-the-Art Collection, Sorting and Recycling

- 2030: Recyclability is conformity to DfR-criteria OR performs positively in a sortability- and recyclability test
- DfR criteria based on State-of-the-art (SoA)
  - "generally recognized good practice in the European market proven and commercially available, technology at TRL9 ... already in use in the European market, affordable ..."
- 2035: Additional criterium Recycling at scale
- SoA & DfR-tables will be regularly updated by CEN



## German Mindeststandard (1.9.2025) (DMS)

- DMS (partly) adapted to PPWR (in force from 12.8.2026)
  - Art. 6 PPWR considered
  - 22 packaging categories in annex 2 with detailed descriptions
- New structure
  - Short description for user
  - Basis of assessment of packaging
  - Annex 1: Assignment of to packaging categories
  - Annex 2: DfR tables for packaging categories
  - Annex 3: Test methods requirements



## DMS – wood packaging

#### Scope of application

- a. The following assessment bases, criteria, and provisions shall apply to packaging made of wood, including cork, such as pallets, crates, and boxes.
- b. Classification of design features, including testing and measurement requirements
- c. For sales packaging made of wood, including cork, which is subject to system participation, no recycling paths currently exist.
- Accordingly, requirements for recycling-compatible design, which could serve as an assessment basis, cannot be derived.
- c. Calculation of recyclability: The recyclability is 0 %, unless an individual proof (Einzelnachweis) is provided.



## PPWR checklist for wood packaging I

- Reuse obligation for transport packaging
  - At least 40% of *all* transport/sales-for-transport formats (including pallets and boxes/crates) must be reusable within a re-use system (Annex VI B PPWR)
  - 100% re-usable is required for intra-company flows
  - 100% re-usable is also required for deliveries within the same Member State between economic operators
  - Exemptions: dangerous goods; custom-designed packaging for large machinery/equipment; flexible transport packaging in direct food/feed contact; cardboard boxes. (Cardboard exemption means wooden boxes are *not* exempt)



## PPWR Checklist for wood packaging II

- Reusable packaging must carry a label identifying it as reusable and provide additional re-use info via a QR or other standardised, open digital data carrier
- The design-for-recycling (based on CEN TS) and recycled-at-scale tests/thresholds will be set by delegated acts (1 Jan 2028).
- For grouped, transport and e-commerce packaging, max empty-space ratio = 50% (methodology via implementing act). Filler materials count as empty space (incl. wood wool). Timeline: by 1 Jan 2030 or 3 years after the implementing act—whichever is later.
- PPWR sets minimum requirements for deposit-return systems for certain single-use beverage containers (not wood), and separate rules for re-use systems
- Conformity assessment: Technical documentation needed for all packaging put on the market / must be shared along the supply chain



## Summary

- Challenges ahead for wood packaging
  - New documentation and requirements for single use-wood packaging (conformity assessment, empty space ratio) and for reuse-systems (pools)
  - Digitalisation: Sharing of packaging specifications and KPIs along the supply chain
  - Time is short: Some PPWR requirements apply 18 months after entering into force (11.2.2025)
  - Many delegated acts still missing (DfR, minimisation criteria, reuse criteria etc.)
  - 2025 goals of minimum 25% recycling rates need additional efforts in a number of EU countries
  - Most wood sales packaging not considered as recyclable till new infrastructure is in place (collection and sorting) -> impact on EPR-fees?
  - Establishing separate collection and possibly sorting infrastructure could lead to higher EPR-fees exemption of light wood sales packaging expires 2035



## Summary

- Opportunities ahead for wood packaging
  - Strong fit with reuse-first policy especially for wood pallets in large pools.
  - Demand for standardised, reusable transport bins/crates will increase / but reusable plastic solutions are highly competetive (fruit and vegetable trays)
  - Reusable packaging can reduce waste tonnage BUT wood packaging is heavy compared to plastics and aluminium
  - Using LCA to prove the value of wooden packaging (not only pallets ...)
  - Collaboration across the supply-chain use digitalisation as a driver
  - Work together as an industry

Stay ahead with reusable solutions for transport and sales packaging and take part in the EU-wide creation of standards – because they will be the essential input into the EU-commissions delegated acts: Recyclability, Reuse, Minimisation ...



