WPO

WORLD PACKAGING ORGANISATION

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

PPWR Update: Carbon Footprint & Packaging Minimisation

WPO WEBINAR

Partners

Open webinar. Prior registration required.
Webinar Registration - Zoom.

22 February 2024, 9.30am (UTC+01:00 – Central European Time)

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UNFOLD
consulting

ESG

Legislation & Regulatory

February 2024

Regulation and legislation

Sustainability Reporting

Drivers

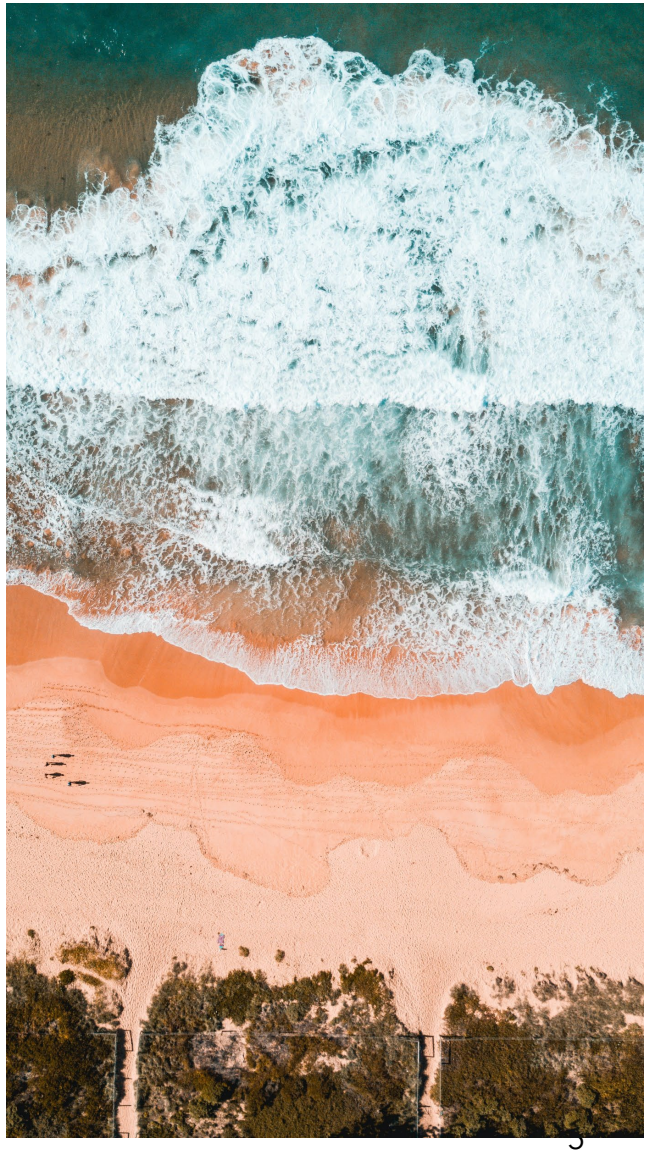
Regulatory | With the adoption of the EU Green Deal, the EU Taxonomy Regulation and the CSRD, the topic is moving further to the forefront of entrepreneurial activity.

Transparency | Effective sustainability reporting is one of the best for ensuring the increasing demand for transparency.

Stakeholders | Institutional investors, in particular, are attaching increasing importance to the topic of sustainability and are basing their investment decisions on the sustainability commitment of organizations.

Reputation | Transparency in communication and reporting on sustainability issues increases trust in companies. 46% of Austria's top companies, banks and insurance companies publish a sustainability report.*

Employee Retention | Last but not least, sustainability reports can contribute to employee retention and internal awareness-raising. They are also an advertisement for job, who increasingly attach importance to their employers' commitment to sustainability.



* Sustainability reporting of top Austrian companies, study 2022, EY

CSRD - Corporate Sustainability Reporting Directive

(Directive published on 16.12.2022 > transposition into national law by 06 June 2024)

What's new?

- Extension of the **reporting obligation** (also information according to EU taxonomy mandatory)
- Precise definition of materiality ("**double materiality**")
- **Mandatory disclosure**
- **External audit** (limited assurance)
- Introduction of uniform EU reporting standards **ESRS** - European Sustainability Reporting Standards

How do I have to report?

- Disclosure in the management report of the annual report based on the uniform EU reporting standard.

Period of application

- from 01.01.2024: Companies that are already subject to reporting obligations under the NaDiVeG 1
- from 01.01.2025: all large companies [2]
- from 01.01.2026: all capital market-oriented SMEs
- from 01.01.2027: Non-EU companies with EU branches or subsidiaries
- Opt-out option for capital market-oriented SMEs: Use of a two-year transition period, i.e. first application possible in the 2028 financial year

[1] all capital market-oriented companies > 500 employees

[2] Large companies (if 2 of the 3 criteria are met):

- Total assets > EUR 25 million
- Net revenue > EUR 50 million
- Employees > 250 on an annual average

ESRS - European Sustainability Reporting Standards

Cross-sectoral standards

(Drafts 11/22 released > delegated act COM June 9, 2023)

Cross-section standards

ESRS 1
General Requirements

ESRS 2
General Disclosures [1]

Topics-Standards

Environment	Social	Governance
Climate change	Own workforce	Business Conduct
Pollution	Workers in the value chain	
Water and marine resources	Affected commmunities	
Biodiversity and ecosystems	Consumers and end-users	
Resource Use and Circular Economy		

Mandatory to report

Coming later

Sector-specific standards
(Delegated act presumably Q2 2024)

SME-proportionate standards *

Standards for companies from third countries

* Reporting for listed SMEs from 2026 (with opt-out by 2028); proposal for voluntary ESRS developed by EFRAG in Jan 2024.

[1] Reporting areas in general disclosures:

- Basic Requirements
- Governance
- Strategy
- Managing impacts, risks and opportunities
- Key Figures & Targets

subject to change, as of Jan 2024
Source: https://www.efrag.org/lab6#subtitle3

Roadmap for CSRD Reporting

Example of the roadmap to the ESG Report 2026

2024

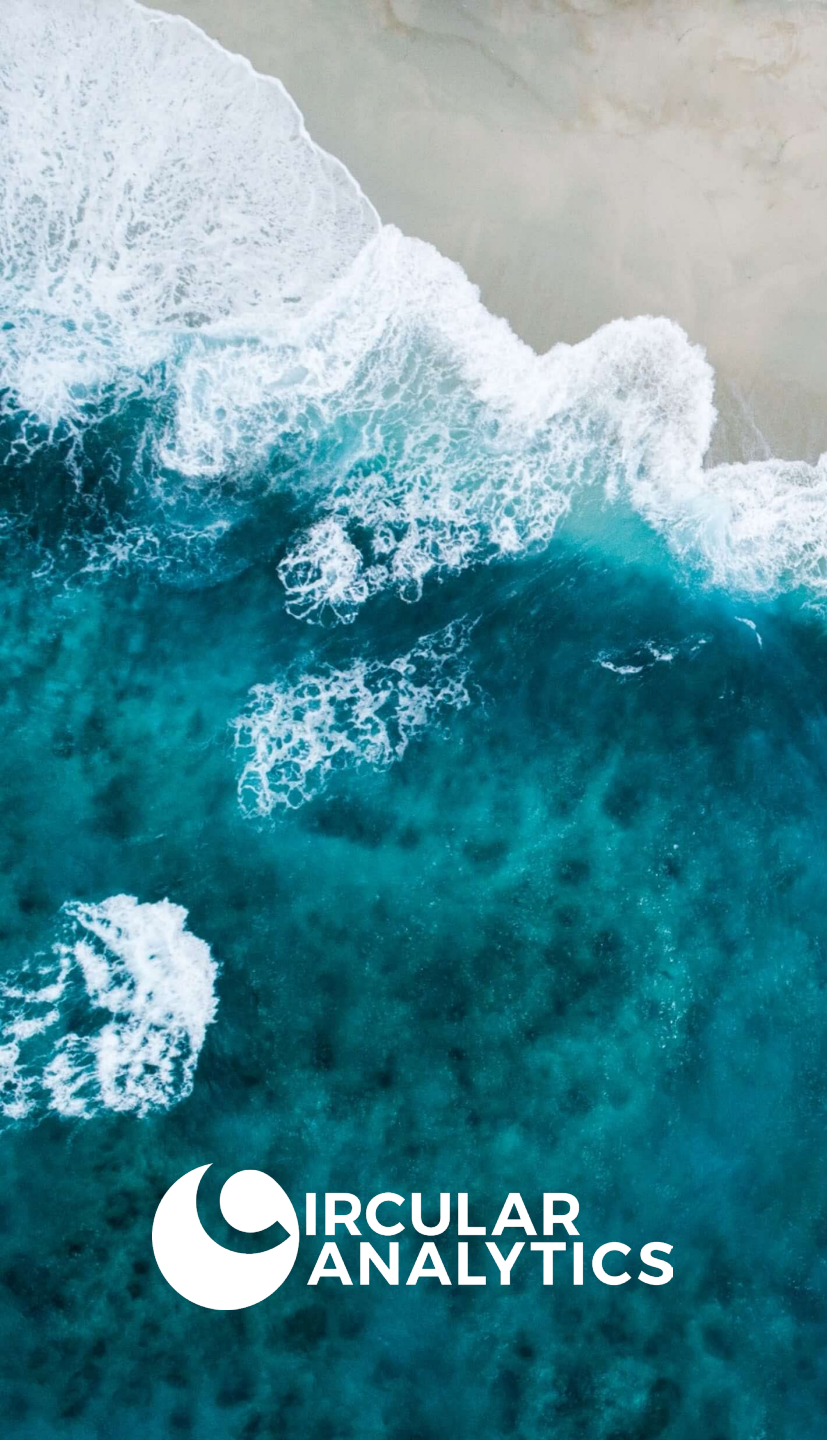
- Setting the level of ambition
- Creating awareness
  - Building a team
  - Involving relevant people
- Materiality analysis
  - High-level
  - Inside-out & outside-in impacts
- Gap analysis & readiness check
  - Collect available data and compare with CSRD requirements
  - Procedure for data preparation Prioritization of requirements

2025

- Double materiality analysis
  - Detailed analysis along the value chain
  - Identification of IROs
- Developing a CSRD-compliant strategy
  - Establish targets and KPIs
- Establish organization & processes
  - Roles and responsibilities
  - Adapt internal systems (data management software)
- Governance
  - Involve supervisory board
  - Set up internal control system

2026

- Reporting with the annual report
  - Implementing ESRS requirements
  - Implementation of formal requirements (digital tagging)
- Monitoring and continuous improvement
  - Improvement of data & information
  - Review reporting process & learnings

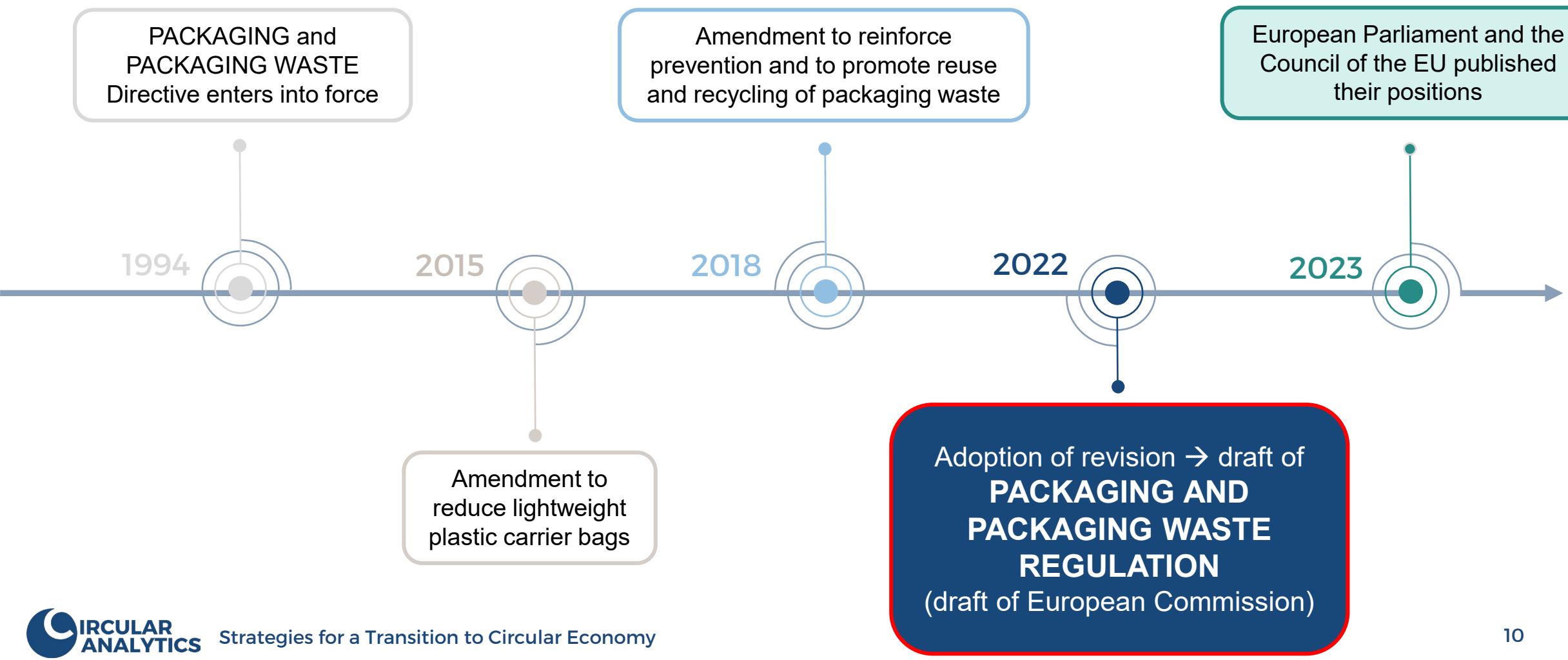


Navigating the Landscape:
General Requirements of PPWR with a Focus on Packaging Minimization

Lina Wimmer

PACKAGING AND PACKAGING WASTE

LEGISLATION IN EUROPE



Recyclable Packaging (Art. 6)

- All packaging has to be recyclable **by 2030**.
- 2-stage approach:
  - from **2030** packaging must meet **Design for Recycling** criteria
  - from **2035** packaging must be additionally effectively collected, sorted and recovered **(„recycled at scale“)**
- Exemptions: until 2035 special packaging
  from 2030 innovative packaging
  (max. 5 years)

Recyclability Performance Grades	Assessment of recyclability per unit, in weight
Grade A	≥ 95%
Grade B	≥ 90%
Grade C	≥ 80%
Grade D	≥ 70%
Grade E	< 70%

Annex II, Table 2

Minimum Recycled Content in Plastic Packaging (Art. 7)

- Plastic packaging must contain a minimum recycled content (PCR) starting in **2030**
- Per **packaging unit** (EC)
- Planned: Implementing act for the methodology of calculation and verification of percentage PCR recyclate.

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%	
Single-use plastic beverage bottles	30%	65%
other plastic packaging	35%	65%

Reuse and Refill (Art. 10, Art. 26 und Art. 27)

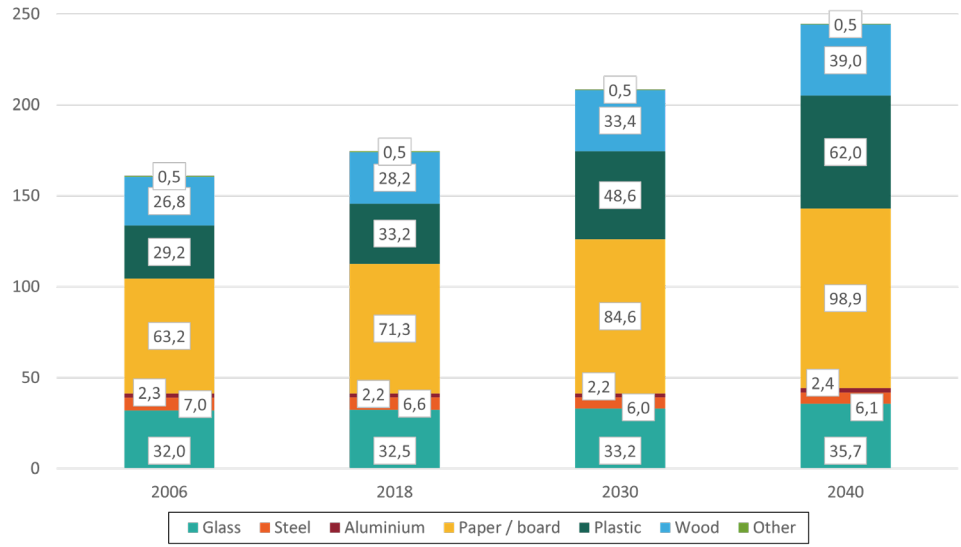
- reusable packaging must be conceived, designed and placed on the market in such a way that it can be reused or refilled
- has to be part of a reuse system

Product	2030	2040
Cold and Hot beverages	20%	80%
Take-away ready-prepared meals	10%	40%
Non-alcoholic beverages (excl. milk)	10%	25%
alcoholic beverages (excl. wine and spirits)	10%	25%
Transport and grouped packaging	10-30%	25-90%
Transport packaging for transport between **different sites/ the same Member State**	100%	

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%**)



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
- Empty space must be reduced to the necessary minimum (**empty space ratio 40%** - per packaging unit)
- **Prohibition** of misleading packaging (double walls, double bottoms...)
- **Reusability** of the packaging must be considered
- Applies also to e-commerce, transport and collective packaging

Packaging Minimisation (Annex IV part 1 and part 2)

PART 1 – Performance Criteria

- Product Protection
- Packaging manufacturing processes
- Logistics
- Information requirements
- Hygiene and safety
- Legal Requirements
- Recycled content, recyclability and re-use

PART 2 – Assessment methodology and determination of the minimum packaging volume and weight

- Must be explained in technical documentation
- Must include at least the following:
  - For each performance criterion, a list of design requirements → method of determination
  - Description of the results of the assessment
  - Any test results, market studies or investigations

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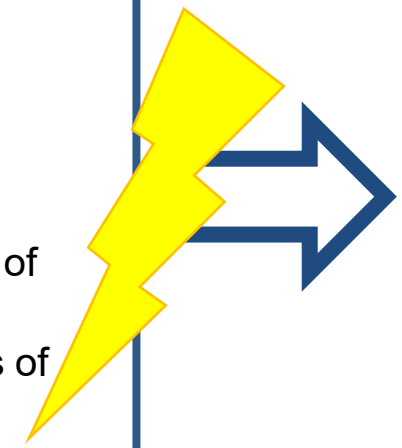


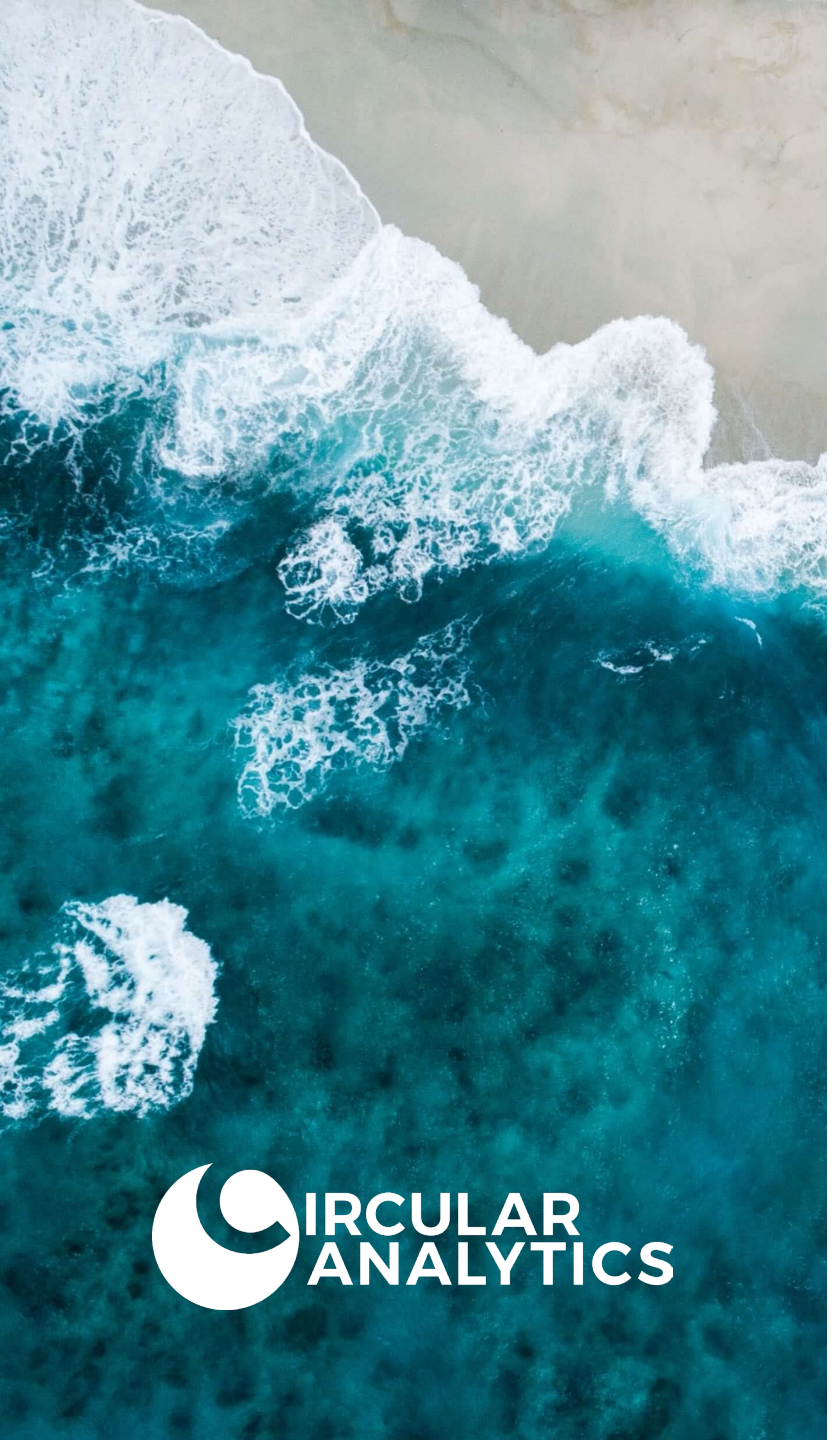
MINIMISATION METHODOLOGY: lowest weight, lowest CO2 footprint, etc.

NEXT STEPS - EU PPWR

06-09 June 2024
European election

22-25 April 2024
Last session of parliament before the election
(PPWR must be passed)

Currently: Trilogue Discussions
(Commission, Parliament, Council)



Sustainable Packaging:
Sustainability Indicators and Packaging Design

Manfred Tacker

Packaging and Packaging Waste Regulation

Packaging minimisation

- Weight and volume
- Empty space
- Ensure safety and functionality

Packaging waste reduction

- Reduction target (per capita, vs. 2018):
  - 5% till 2030
  - 10% till 2035
  - 15% till 2040

PPWR – KPIs & Design

NEW SET OF KPIs

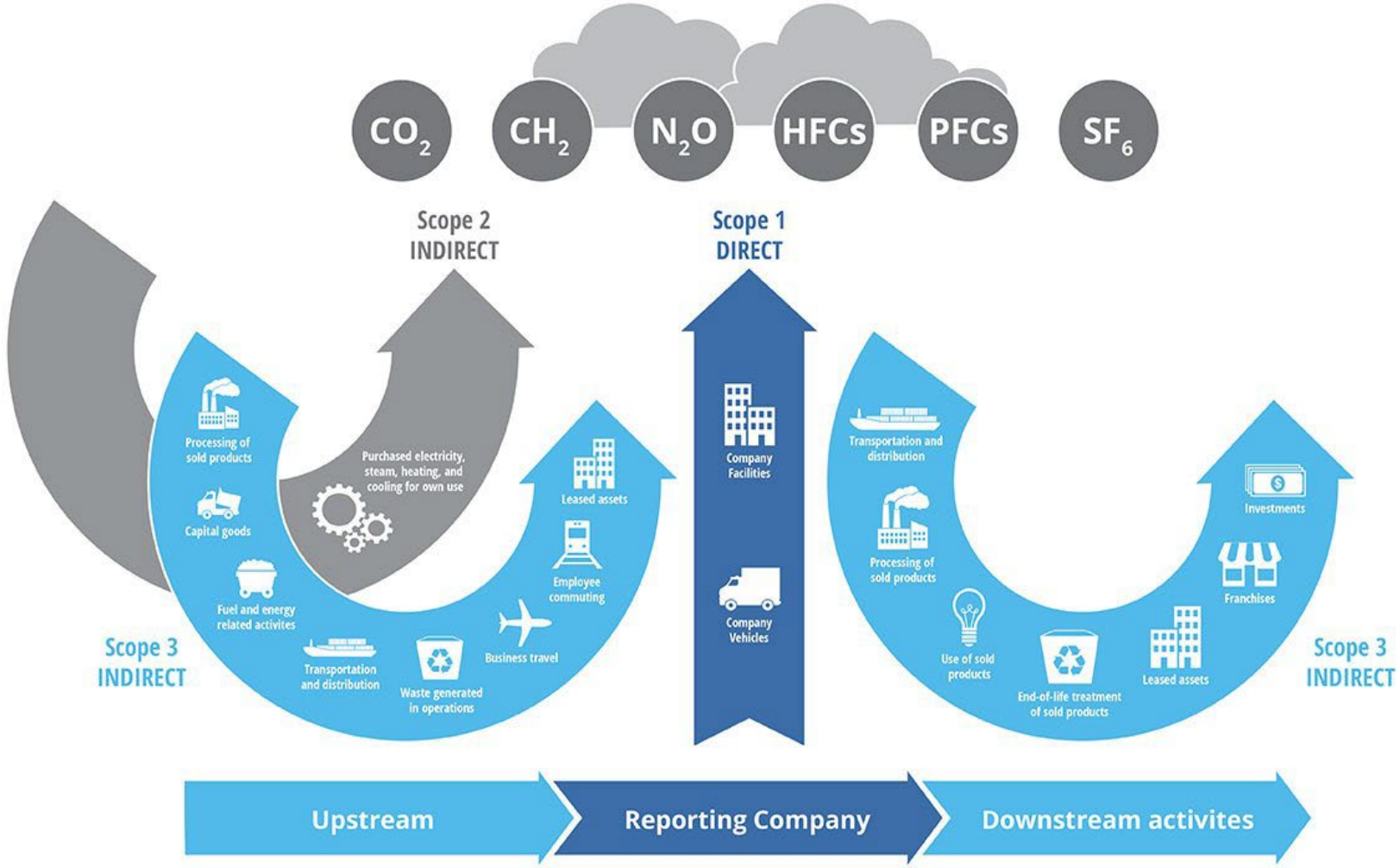
- ✓ Weight
- ✓ Recyclability (70% min)
- ✓ DfR criteria fulfilled -> exact composition
- ✓ Carbon footprint
- ✓ Recyclate quality (circularity vs. recyclability)
- ✓ Recyclate content
- ✓ Emptiability

CSRD – Impact

- Corporate Sustainability Reporting Guideline
  - Requirements
    - Carbon Footprint („cradle to gate“ – scope 1,2,3)
    - Waste reduction – Development of a packaging strategy
    - Set sustainability goals (emission and waste reduction) and communication
- Part of EU Green Deal
- Publication of sustainability information required with management report
- Timescale:
  - 2024: Large companies (> 500 MA)
  - 2025: Companies > 250 Employees / Sales > 40 Mio EUR

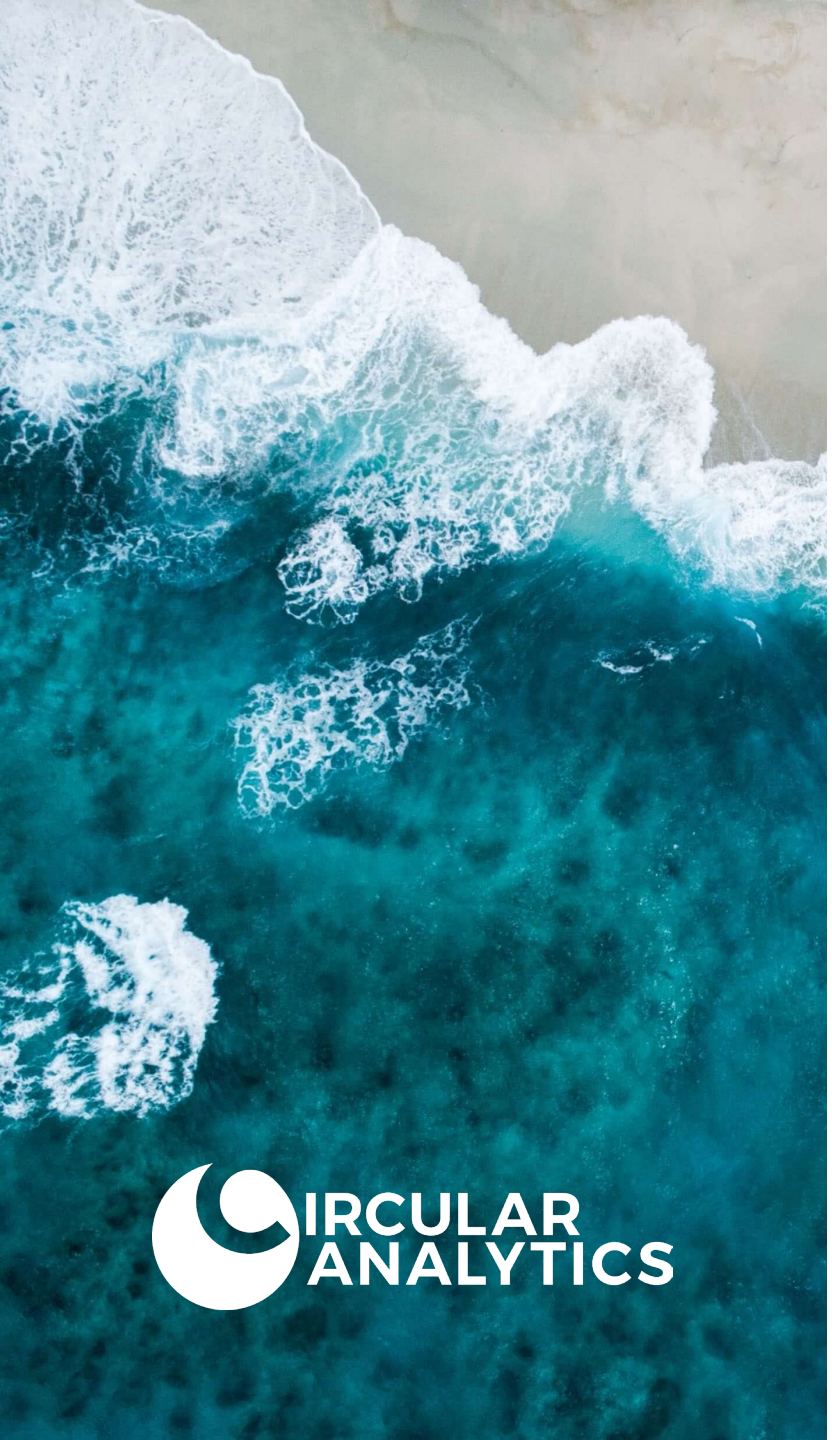
Scope 1-2-3

- **Scope 1:** Emissions that occur within the company's system boundaries.
- **Scope 2: :** Indirect emissions from purchased energy produced outside the system boundary.
- **Scope 3:** Indirect emissions that occur along the value chain: From facilities not owned or directly controlled by the company - upstream and downstream.



CSRD – Strategie

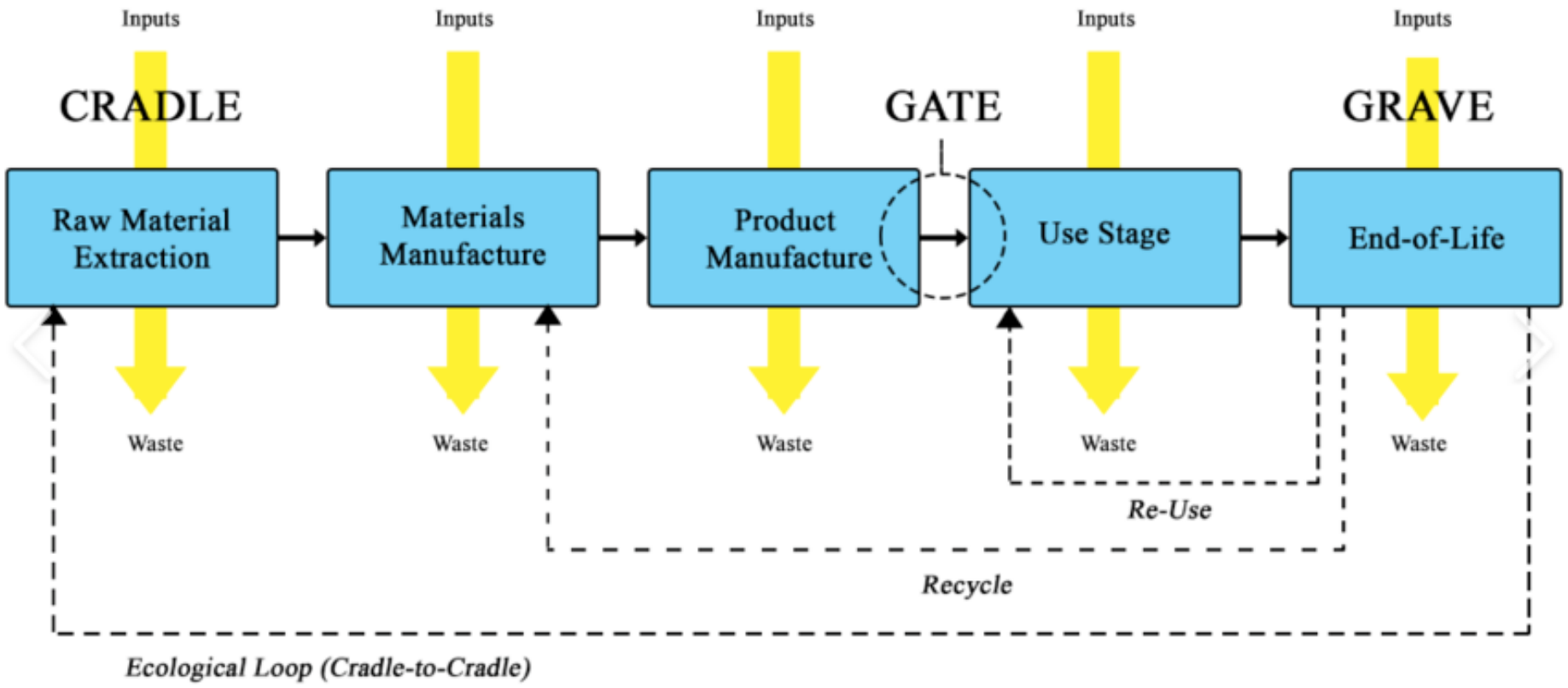
1. **Impact assessment (materiality assessment)**
   - Identify impacts, risks and opportunities
2. **Define strategy, targets, KPIs**
   - Reduction of GHG-emissions
   - Waste reduction
   - Reduction of water consumption…
3. **Measure and report**



Process optimisation:
Streamlined cradle-to-gate LCA

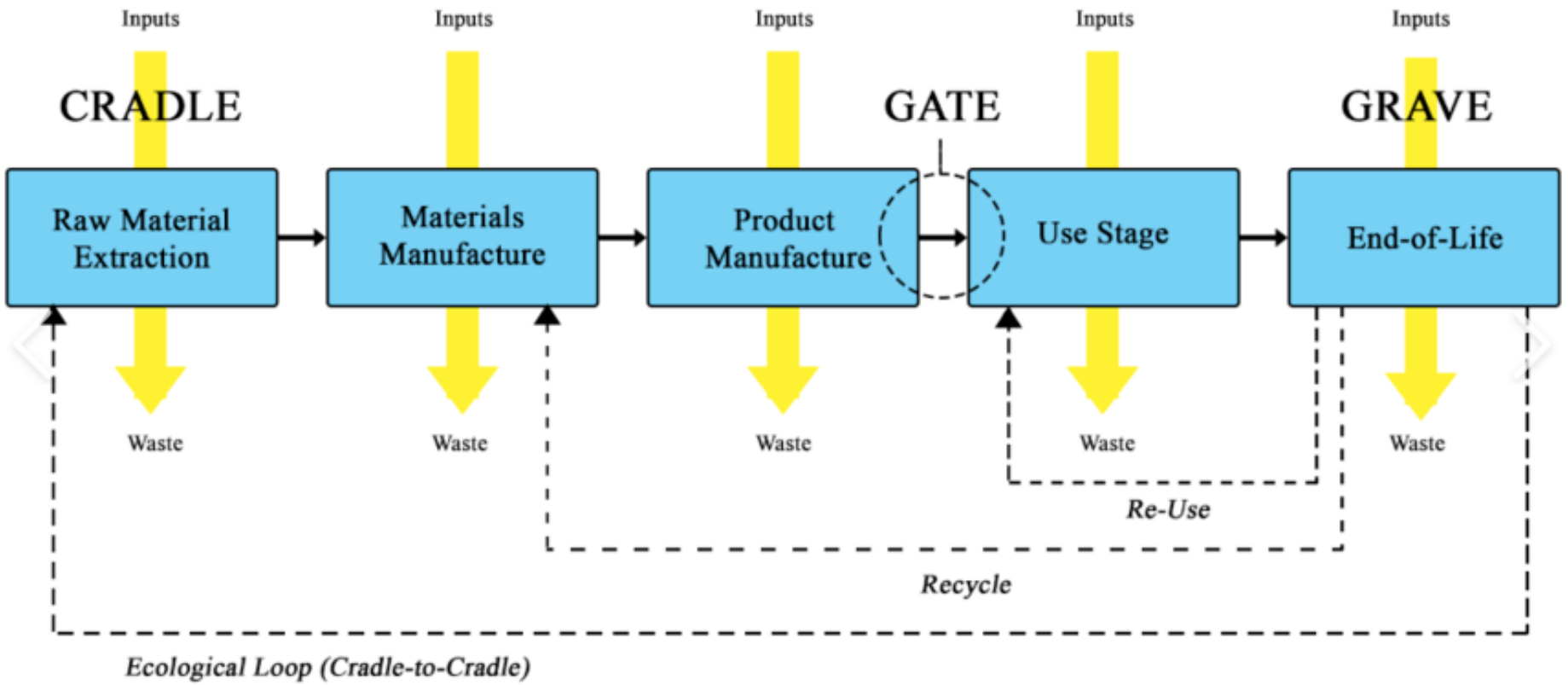
Manfred Tacker

Cradle-to-Gate vs. Cradle-to-Grave



Cradle-to-Gate vs. Cradle-to-Grave

Company specific Cradle-to-Gate-Tool

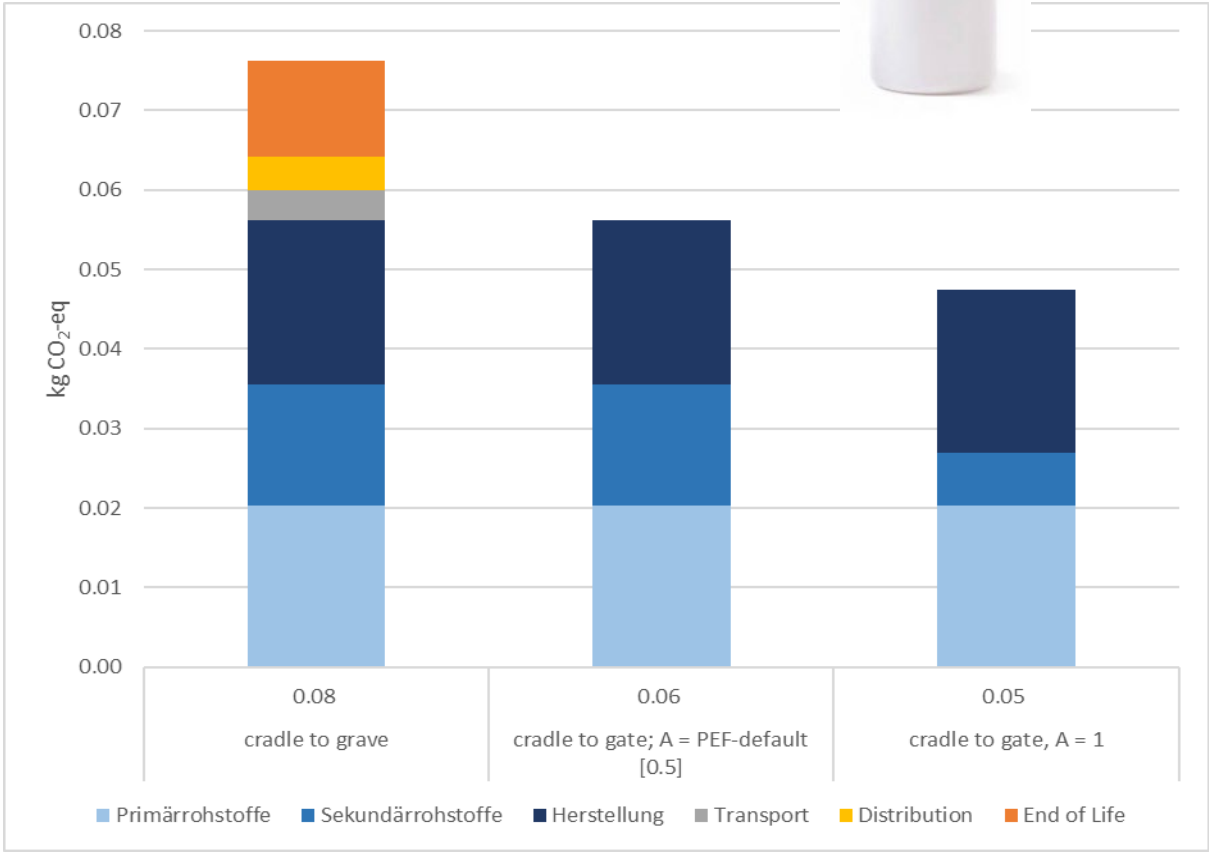


Packaging Cockpit

HDPE-bottle with PP closure

- 70% recyclate content HDPE
- 2 possiblities for A-faktor in CFF (PEF)
  - A = default
  - A = 1 (for hotspot-analysis)

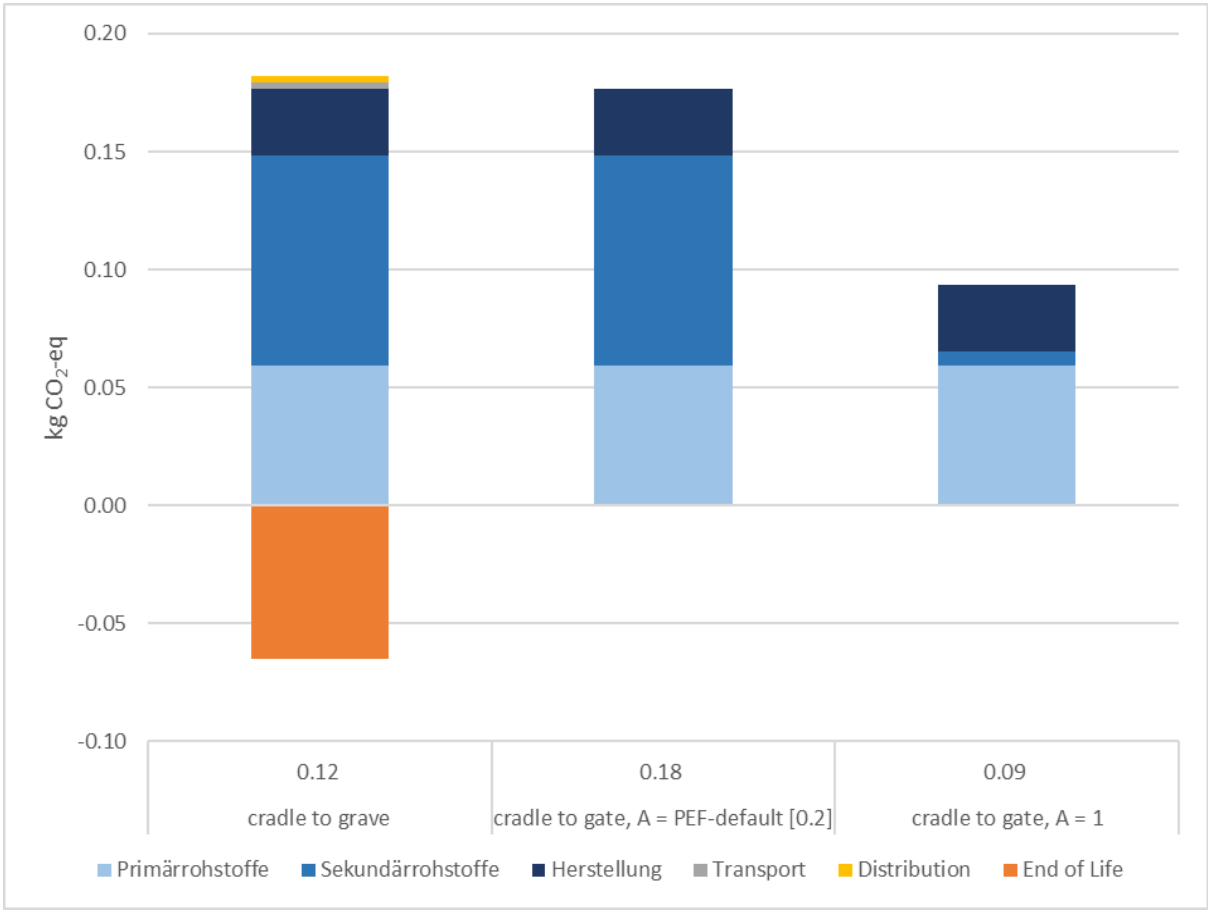
PEF-method and A-Faktor have to be provided



Aluminium tray

- 70% recyclate content
- 2 possiblities for A-faktor in CFF (PEF)
  - A = default
  - A = 1 (for hotspot-analysis)

PEF-method and A-Faktor have to be provided



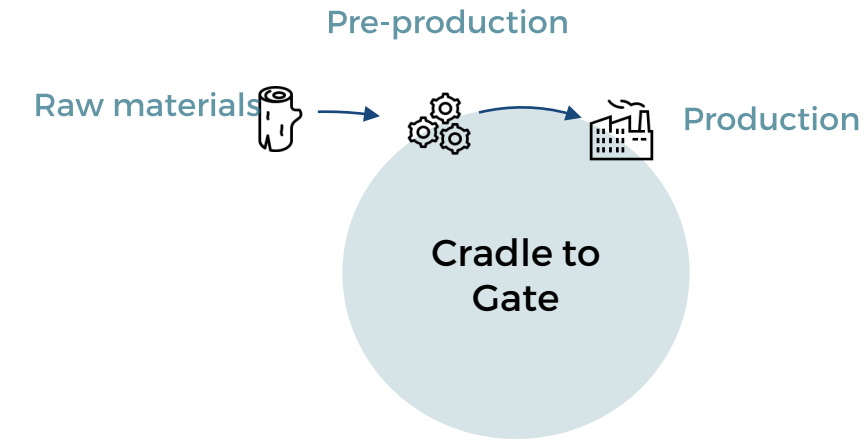
Cradle-to-Gate LCA for Packaging Manufacturers

Streamlined **cradle-to-gate** LCAs for packaging- and label manufacturers and printers – company specific

1. stage: Streamlined LCA with published data(ecoinvent)

2. stage: Refinement with company-specific data

- Energie mix (green electricity ...)
- Reduced energy consumption
- Low carbon materials
- Reduced scrap-rate
- Increased recycling rate ...



Improved efficiency / carbon footprint reduction made visible

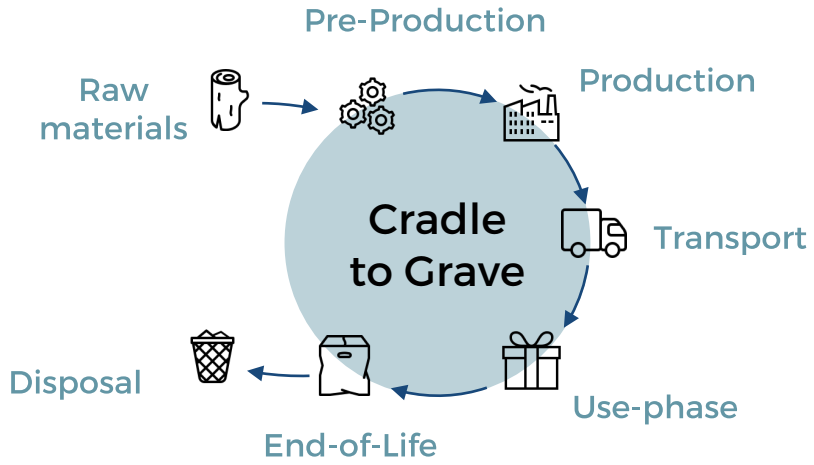
Cradle-to-Grave LCA for Brand Owners & Retailer

Streamlined **cradle-to-grave** LCAs

1. stage: Streamlined LCA with Packaging Cockpit (ecoinvent based)

2. stage: Refinement with company-specific data

- Energy mix (green energy ...)
- Reduced energy consumption
- Low carbon raw materials
- Reduced scrap rate
- Increased recycling rate…



Improved efficiency / carbon footprint reduction made visible

Design for Sustainability - Rules

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

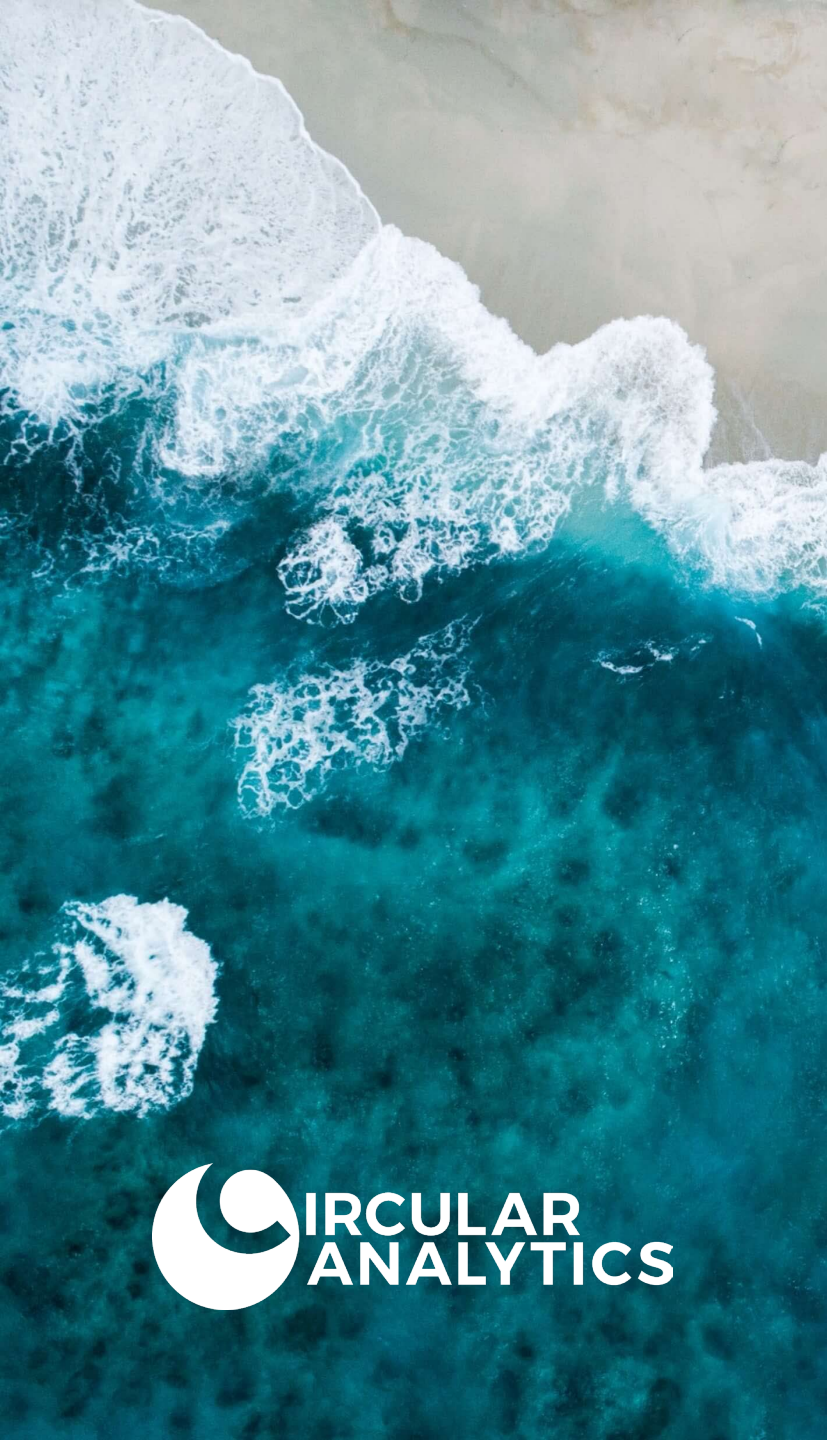
Conclusion

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

CSRD – new requirements for sustainability reporting

- Cradle-to-gate carbon-footprint for packaging manufacturers
- Cradle-to-grave carbon-footprint for brand owner / retailer
- Sustainability strategy – reduction of carbon-footprint / waste / water …
- LCA-methodology must be clearly defined!



A Roadmap to Compliance

Guidance on ensuring fitness for PPWR and CSRD

Charlotte Werner

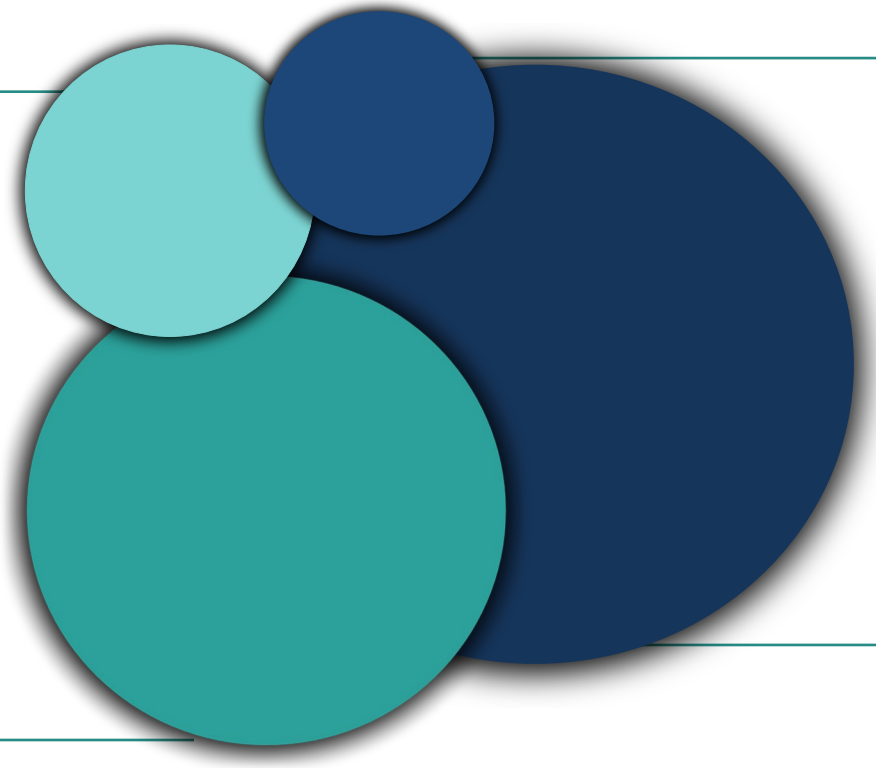
New legal requirements: challenges for the European industry

Expanision of sustainability reporting to a wider range of companies

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

Assessment of the packaging portfolio based on sustainability indicators.

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



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

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

Compliance with PPWR

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

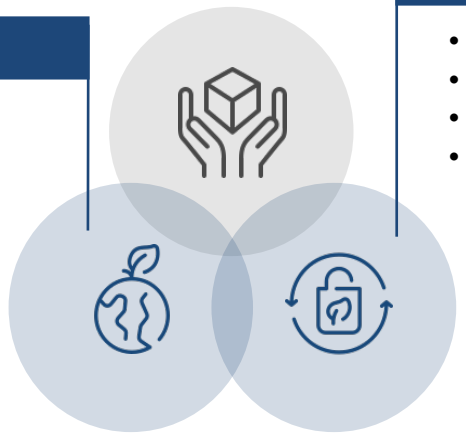
Comprehensive optimisation of packaging
- Minimisation of resource consumption
- Improvement of emptiability

Continuous monitoring of sustainability parameters will become essential.

Packaging Benchmarking

Environment

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



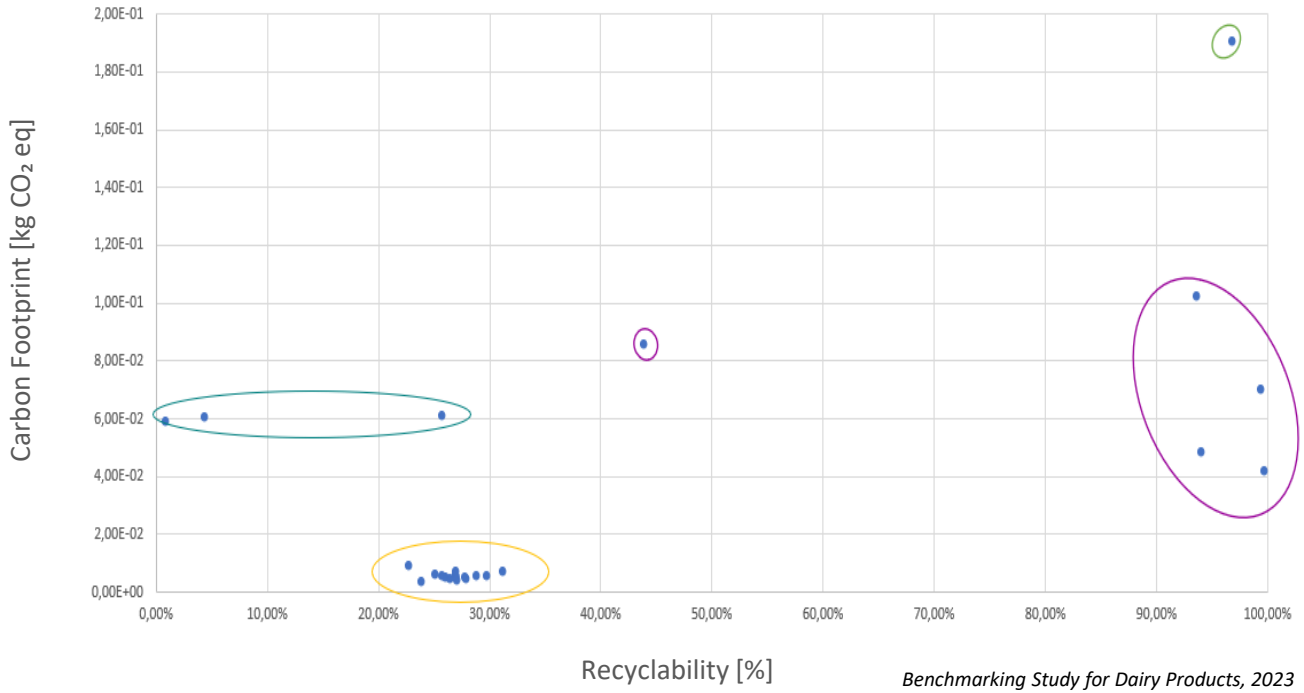
Circularity

- Consumer action
- Recyclability
- Recycling content
- Rewenable 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



Benchmarking Study for Dairy Products, 2023
© Circular Analytics

Fibre-based aluminium compounds

Rigid PP-Trays

Glass

Rigid plastic trays with cardboard decoration

Actions CSRD

2025

Large companies that fulfil 2 of the following 3 criteria:

- 40 million euros in net sales
- More than 20 million euros balance sheet total
- More than 250 employees

I

Evaluation of the environmental impact of suppliers' products.
Attention! Cradle-to-gate approach

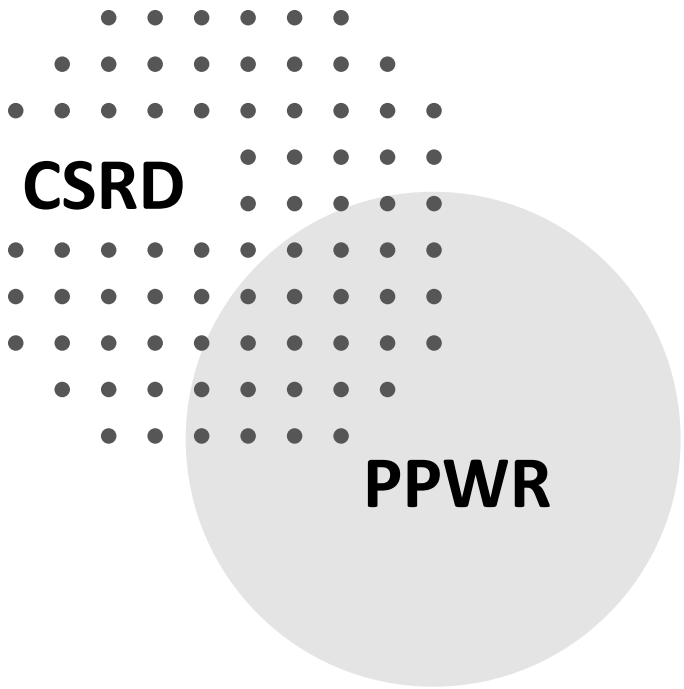
II

Evaluation of the carbon footprint of the entire company including the product portfolio (Scope 1-3)

III

Development of a sustainability strategy based on the CSRD requirements

How to act?



Unveiling and analyzing data

- Assessing the current status of packaging using sustainability KPIS for benchmarking
- Evaluating environmental impacts of supplier products

Reporting

- Calculating and interpreting key sustainability parameters (recyclability, carbon footprint)
- Conducting cradle-to-gate life cycle assessments (LCA) for supplier products

Strategy formation

Crafting a Sustainability Strategy Aligned with current European requirements

Monitoring

- Continuous evaluation of sustainability parameters
- Ensuring alignment with regulatory demands

Take Home Message

Transparency of environmental impacts is essential throughout the entire supply chain.

Holistic packaging optimization

- Minimizing ressources
- Enhancing circular eocnomy principals and easy of recyclability

Continuous monitoring of sustainability parameters will become essential over time.

WPO

WORLD PACKAGING ORGANISATION

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

https://worldpackaging.org/Uploads/2023-02/ResourcePDF51_1675967696.pdf

Global Packaging Design for Recycling Guide

- Increase recyclability and recycling rate of packaging
- Create a common understanding of Circular Packaging Design
- Provide a practical design tool - easy to use and understand
- International harmonisation of design standards
- Stimulate global education and training in Circular Packaging Design

Material-Specific recommendations

2.3.1 Plastics

- Use materials that are as widely available as possible (**PP, PE, PET**).
- Recyclable material combinations (ideally **mono-materials**).
- The surface area of the base material should, at best, be covered to a max. 50 %[2] with the sleeve/label/banderole.
- Easy mechanical separability of the individual components in the sorting process.
- If possible, use transparent materials.
- As few additives as possible.
- Adhesives recyclable or washable under certain conditions.
- No barrier layers, but if necessary: **carbon plasma coating**[3], **SiOx**- or **Al**[2]**O**[3] barrier.

- Avoid small parts that can be separated by the last consumer (**Littering**).
- Non-recyclable material composites (see specific design recommendations).
- Density-changing **additives** (for example, density-increasing additives in PE and PP packaging lead to problems in sorting).
- Use of **Carbon black** -based inks

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WORLD PACKAGING ORGANISATION

German

Arabic

Japanese

Spanish

Portuguese

English

Thai

Czech

Georgian

Hungarian

Latvian

WASTE STREAM MAPPING TOOLS

31 COUNTRIES

AUSTRALIA

AUSTRIA

BELGIUM

BRAZIL

CHINA

COTE D'IVOIRE

CZECHIA

DENMARK

FINLAND

FRANCE

GERMANY

GREECE

HUNGARY

IRELAND

ISRAEL

ITALY

JAPAN

KENYA

LATVIA

LUXEMBOURG

NETHERLANDS

NEW ZEALAND

NEW ZEALAND

RUSSIA

SINGAPORE

SLOVAKIA

SPAIN

SWEDEN

SWITZERLAND

UNITED KINGDOM

UNITED STATES OF AMERICA

VANUATU

Waste Stream Mapping Guides Available

WASTE STREAM MAPPING TOOLS

JAPAN

Packaging waste streams Japan		
Composite beverage carton		✓
Paper		✓
Aluminium		✓
Tin plate		✓
Glass		✓
PS	rigid	✓
	flexible	✓
PVC	rigid	X
	flexible	X
PE	rigid	✓
	flexible	✓
PP	rigid	✓
	flexible	✓
PET	blow moulded	✓
	thermoformed	✓
	flexible	✓

Legend

Packaging waste stream infrastructure	Rating	Description
available	✓	There is an area-wide collection of the material (> 50* %)
limited available	~	The material is collected in some regions or municipalities, but the total amount is 10 - 50* %
not available	X	In this country is no waste stream for that material available or the collected waste amount for that material is < 10 %.
No information	n.i.	No information is available for this country at the time. There will be further research.

*according to Plastic Recyclers Europe

For further information, please contact: info@worldpackaging.org

SINGAPORE

Packaging waste streams Singapore[1]		
Composite beverage carton		✓
Paper		✓
Aluminium		✓
Tin plate		✓
Glass		✓
PS	rigid	X[2]
	flexible	X
PVC	rigid	✓[3]
	flexible	✓[3]
PE	rigid	✓
	flexible	✓
PP	rigid	✓
	flexible	✓
PET	blow moulded	✓
	thermoformed	✓
	flexible	✓

[1] Singapore has a commingled recycling collection system, in which all its recyclables are collected together and sorted in a material recovery facility
[2] Rigid PS bottles are in the recyclables stream; foam PS food containers are not collected in the recyclables stream
[3] Not found in recyclables stream

CZECHIA

Packaging waste streams Czechia		
Composite beverage carton		✓
Paper		✓
Aluminium		✓
Tin plate		~
Glass		✓
PS	rigid	✓
	flexible	✓
PVC	rigid	X
	flexible	X
PE	rigid	✓
	flexible	✓
PP	rigid	✓
	flexible	✓
PET	blow moulded	✓
	thermoformed	✓
	flexible	✓

Legend

Packaging waste stream infrastructure	Rating	Description
available	✓	There is an area-wide collection of the material (> 50* %)
limited available	~	The material is collected in some regions or municipalities, but the total amount is 10 - 50* %
not available	X	In this country is no waste stream for that material available or the collected waste amount for that material is < 10 %.
No information	n.i.	No information is available for this country at the time. There will be further research.

*according to Plastic Recyclers Europe

For further information, please contact: info@worldpackaging.org

31 COUNTRIES

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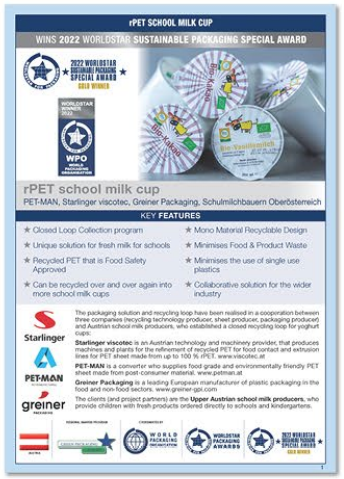

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