



packaging
cockpit

Circularity Assessment

SUSTAINABILITY OF PACKAGING EUROPEAN SCENARIO



- „Legal Tsunami“
- Rising costs: ecomodulation - licensing fees - carbon pricing
- Retailers & Brands: ambitious sustainability goals - 2025
 - All packaging must be recyclable
 - Plastic reduction
 - Packaging weight reduction
- Country specific infrastructure
- No standardized assessment methods & guidelines

CHALLENGES



- Standardized sustainability assessment
- Data flow along the supply chain
- Digitalisation and automatization



Specification Data of Packaging

Problem Areas



- There is no packaging specification standard
 - Data exchange often takes place on a case-by-case basis via email, Dropbox...
 - Data is often managed in excel sheets, which are structured differently again and again
 - Storage in project folders, in Outlook,... -> difficult to find again
- **Result: Databases of CPG producers and retailers are often not up to date**



Lack of Definition of Standards

Problem Areas

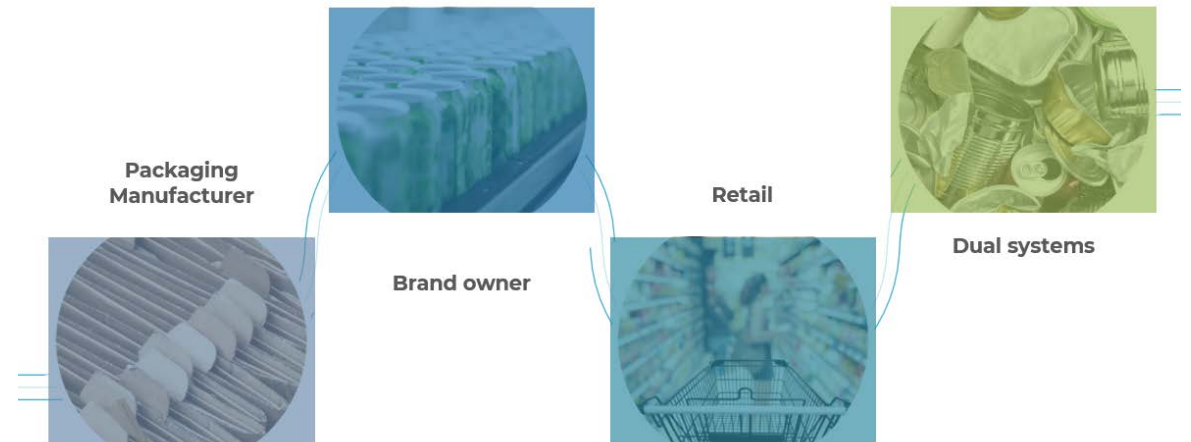
- Many initiatives for specific materials or topics, (Forum Rezyklat, RecyClass, 4evergreen)
 - Some retailers define their own guidelines
 - National standards such as the German Minimum Standard
 - Different standards and methods for the calculation of recyclability
- Difficult to decide which way to go
- Merging local results to an overview is backbreaking work



PACKAGING COCKPIT – SCOPE



- o Management of packaging specifications
 - o Standardized specifications
 - o Integration with GS1
- o Data interface
 - o Data import / export
 - o Data flow along the supply chain
- o Sustainability indicators
 - o Recyclability
 - o LCA – Carbon footprint





Packaging Cockpit Scope

2/2



CALCULATIONS

- Recyclability
- Life cycle assessment, e.g., CO₂eq
- International scientific community
- Nationally adapted calculations for 11 countries (growing monthly)
- Ongoing adaption

MASTER DATA FROM SUPPLY SERVICE

- All required master data
- Continuous updating
- Mapping of national material flows
- Regulatory research impacts
- Innovations
- Synchronized release management



Recyclingfähigkeitsanalyse

Österreich

Estland

Deutschland

Schweden

Niederlande

Recyclingfähig (gesamt): 81.31% Nicht recyclingfähig (gesamt): 18.69%

Nicht recyclingfähig (qualifizierend) (2.79%)

Nicht recyclingfähig (15.91%)



Recyclingfähig (reduzierte Qualität) (81.31%)

Komponente	Material	Farbe	Masse [g]	Bewertung
Haupthörer (Hauptbestandteil)	Aluminium, Gusslegierung	metallisch	9.001	B
	Druckteile	dunkel gelblich, opak	0.4	D
	EVOH	hellgelb, transparent	0.28	C
Detektor (Zusatz)	PP	dunkel gelblich, opak	11.7	B
	APET	dunkel gelblich, opak	2	C

Klimaveränderung

Fossile Brennstoffe

Mineralien und Metalle

Respiratorische Effekte, anorganische Stoffe

Ansäuerung von Trinkwasser / Festland

Potential zur photochemische Ozonbildung

Eutrophisierung Festland

Eutrophisierung Trinkwasser

Wasserverbrauch

Eutrophisierung Meerwasser

Flächennutzung

Ionisierende Strahlung

Abbau der Ozonschicht

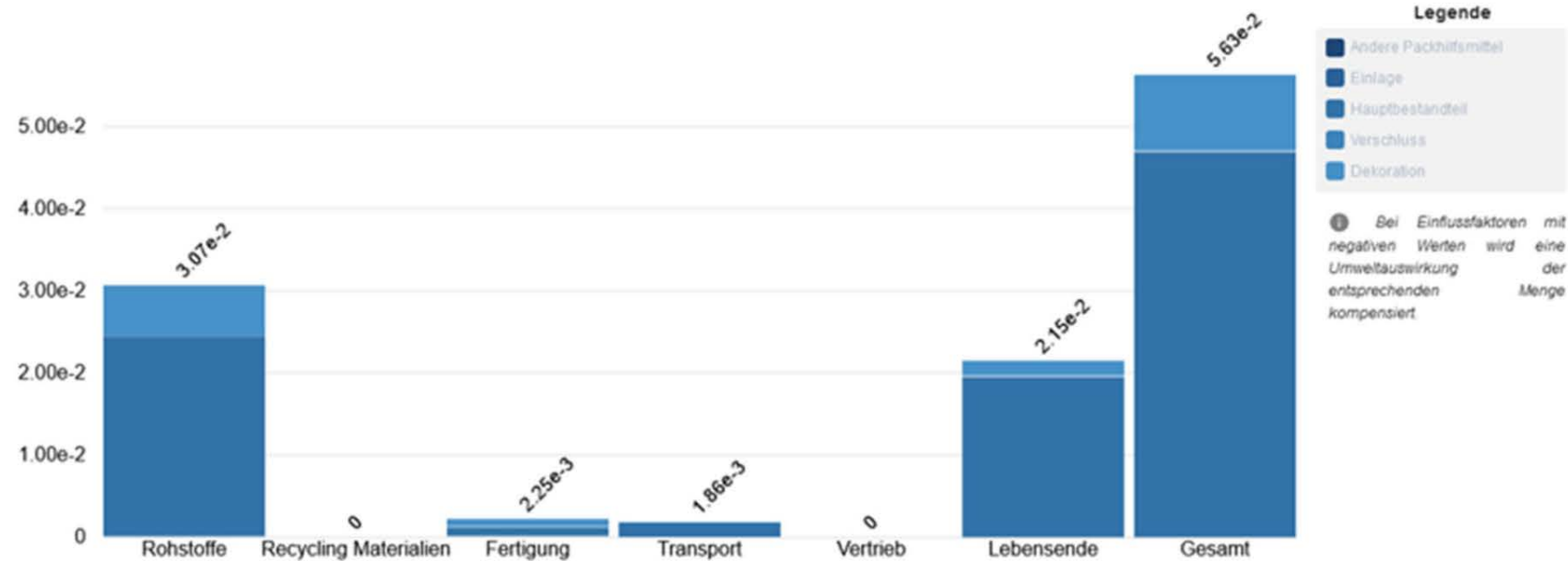
Wertschöpfung

Nicht-kanzerogene Effekte

Klimaveränderung: $5.63e-2$ kg CO₂ eq

Summe aller Treibhausgasemissionen aus In- und Outputs. Folgen sind eine erhöhte globale Durchschnittstemperatur und regionale Klimaveränderungen.
Maßeinheit: Kilogramm Kohlendioxidäquivalent (kg CO₂-Äquivalent). Alle Treibhausgasemissionen werden mit der Menge des globalen Erwärmungspotentials von 1 kg CO₂ verglichen.

Einflussfaktoren nach Lebensphase



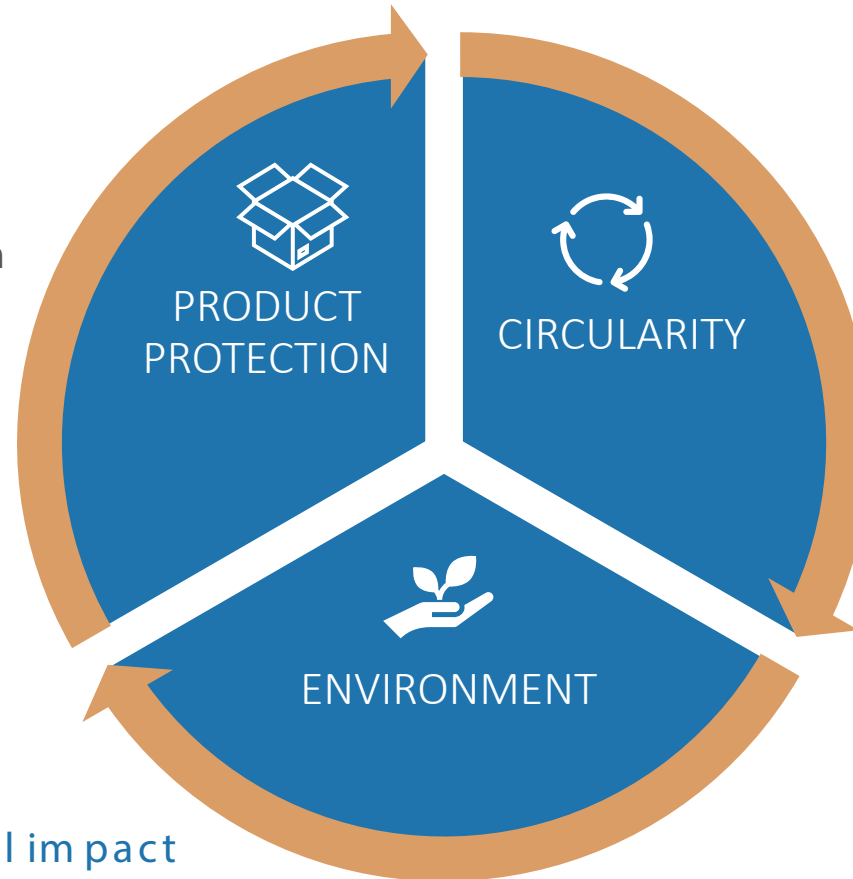


Holistic Sustainability Assessment

The Packaging Cockpit And Our Consulting Services Cover All Its Aspects



- Mechanical protection
- Non-mechanical protection
- Migration potential
- Resealability



- Consumer behavior
- Recyclability
- Recycling rate
- Use of renewable raw materials
- Reusability

- Direct environmental impact
- Indirect environmental impact
- Use of certified materials
- Littering

Legend:
Blue: Scope Packaging Cockpit
Grey: Scope for consulting

Apple Packaging



		1	2	3	4	5
paper / carton	[g]	40,19	31,23	0	0,33	0,03
plastic	[g]	0	4,13	6,39	8,61	1,56
metal	[g]	0	0	0	0	0,22
total packaging weight	[g]	40,19	35,36	6,39	8,94	1,81





1



2



3



5



4

		1	2	3	4	5
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		1	2	3	4	5
Recycla- bility	[%]	98%	84%	98%	0%	7%
Recycling rate	[%]	82%	71%	19%	0%	5%
Recyclate content	[%]	0%	0%	0%	0%	0%
Renew- ables content	[%]	98%	78%	0%	4%	88%
GHG- potential	[g CO ₂ - eq.]	43,4	50,9	21,3	31,1	9,1
Packaging efficiency		25	28	156	112	552
Material loss / trip	[g]	7,2	10,3	5,2	8,9	1,7

CONCLUSION



- **SUSTAINABILITY – THE WHOLE PICTURE IS NEEDED**
 - Holistic Assessment necessary that includes KPIs for
 - Product Protection
 - Circularity (Recyclability alone is not enough)
 - Environmental impacts (LCA – Carbon Footprint is not enough)
 - *Make sustainability measurable*
- **DATA FLOW ALONG THE SUPPLY CHAIN**
 - High data transparency
 - Easy sustainability comparisons
 - Automatisatisation & standardisation

CONTACT

PACKAGING COCKPIT GMBH

Canovagasse 7/13, A-1010 Vienna

+43 1 503 1073 0

mta@packaging-cockpit.com

www.packaging-cockpit.com