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Study on implementing Article 12 of the new Regulation on Packaging and packaging Waste (EU) 2025/40 – packaging labels for consumers

Meeting with the Expert Group on Waste

1 July 2026

Introduction to the study



Background and context

- **Expert Group Meeting on 18 March:** proposal for labelling of packaging and waste receptacles for waste sorting presented by the Joint Research Group to stakeholders
- **Today's Meeting:** final part of labelling for discussion with stakeholders before drafting implementing act for Articles 12 and 13 of the PPWR - additional labelling requirements under the PPWR
- Ramboll have developed the proposal for the additional labels for consideration, in line with the requirements of Art. 12 PPWR

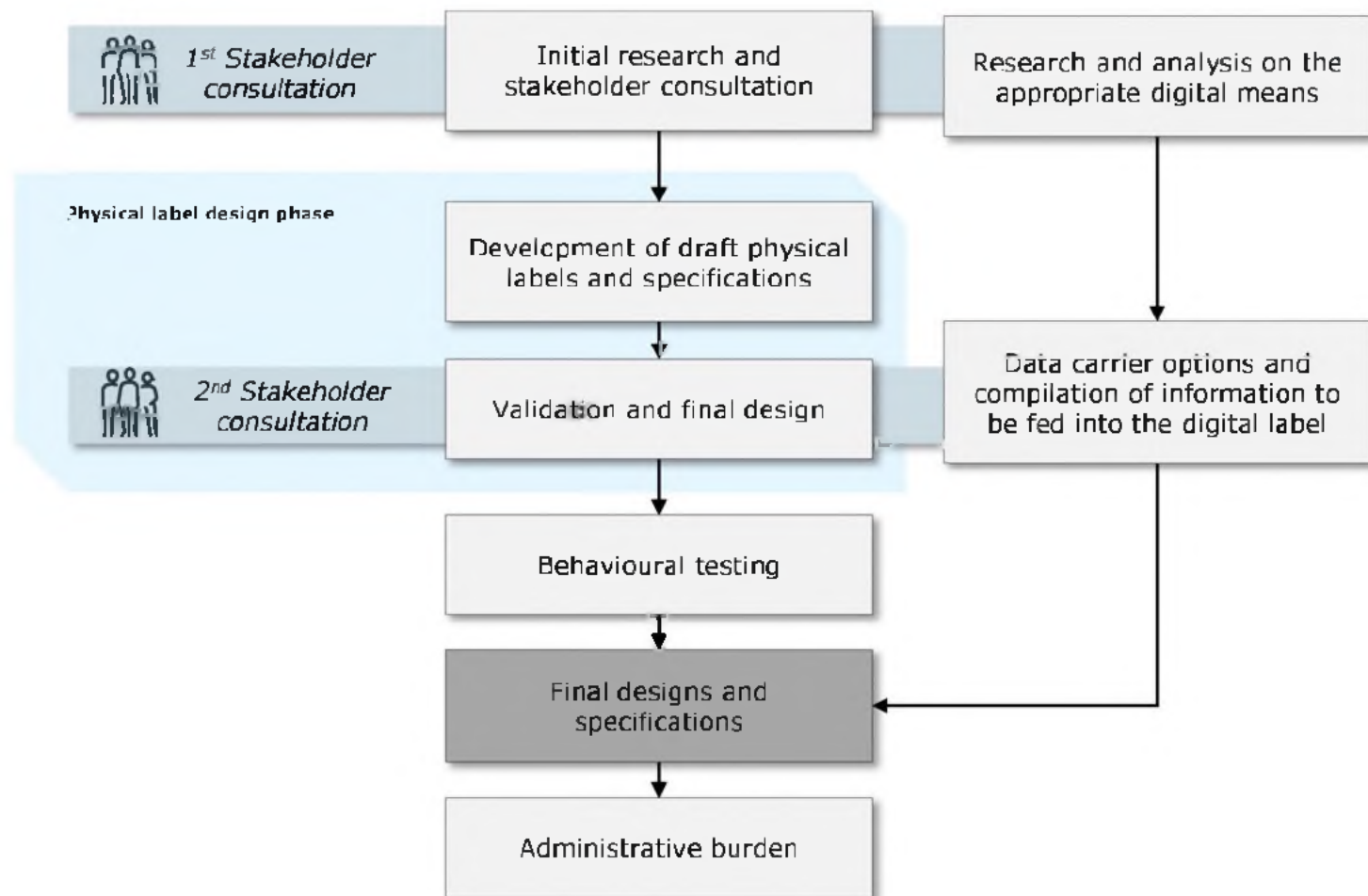
Four **physical label designs and specifications:**

- **Reusable** packaging label (Art. 12 (2))
- Packaging subject to **DRS** label (Art. 12 (1))
- **Recycled** plastic content label (Art. 12 (4))
- **Bio-based** plastic content label (Art. 12 (4))

Four **digital label specifications:**

- Digital label for **reusable** packaging (Art. 12 (2))
- Digital label to indicate the **bio-based** and **recycled** plastic content (Art. 12 (4))
- Digital label informing consumers and recycling operators about **SOC** (Art. 12 (7))
- Digital label informing consumers about **waste sorting** (based on physical labels being developed by JRC project) (Art. 12 (1))

Structure of the study and stakeholder consultation



Stakeholder consultation

- **1° stakeholder consultation:** targeted consultation, September-October 2025
- **2° stakeholder consultation:** Stakeholder workshop, 28 November 2025 + follow up until mid December
- *Behavioural testing: April 2026*
- Ad hoc interviews and e-mail exchange with stakeholders: throughout the study duration

Stakeholder categories: packaging manufacturers, industry associations, standardisation bodies, PROs, NGOs



Physical labels



Reusable packaging label

Final designs

Scope Reusable packaging **except open loop systems which do not have a system operator** in accordance with Annex VI (Article 12(3))

Article 12(2): "Reusable packaging placed on the market from 12 February 2029 or 30 months from the date of entry into force of the implementing act adopted pursuant to paragraph 6, whichever is the latest, shall bear a label **informing users that the packaging is reusable.**"

- Mandatory in closed loop systems
- Voluntary in open loop systems
- Additional to mandatory waste sorting label*
- Mandatory information to be provided also through digital labelling

Main design principles:

- Specific colour, not confusable with other labels
- Barcode icon nudging correct return behaviour
- Arrow design developed from stakeholder input
- 10 variants of label developed for economic operators, to address costs and technical challenges and different packaging formats. Labels must be salient, durable, legible and recognisable.

	Text	No text
black pictogram on coloured background		
white pictogram on opaque black background		
black pictogram on opaque white background		
white pictogram on transparent background		
black pictogram on transparent background		

Packaging subject to DRS label

Final designs

Scope	Packaging that is subject to deposit and return systems under Art 50(1): a) single-use plastic beverage bottles with a capacity of up to three litres; and b) single-use metal beverage containers with a capacity of up to three litres.
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Article 12(1): "Packaging that is subject to deposit and return systems as referred to in Article 50(1) shall be marked with a clear and unambiguous label. **In addition to the national label**, packaging **may** be marked with a **harmonised colour label** established in the relevant implementing act adopted pursuant to paragraph 6 of this Article.

Member States **may** require that packaging that is subject to deposit and return systems be marked with that harmonised colour label, provided that that does not lead to distortions on the internal market or trade barriers for products from other Member States."

- Voluntary label, decision for Member States
- Only single-use metal / plastic beverage containers up to 3 L
- No use of waste sorting label on packaging subject to DRS (art. 12(1))

	Text	No text
white pictogram on coloured background		

Main design principles:

- Specific colour, not confusable with other labels
- Blue colour directly connects to EU colours
- Simple and clear icons
- Economic operators can choose between the 2 variants

The packaging subject to DRS label is described in art. 12 as "harmonised **COLOUR** label". Therefore, only the colour version shall be used, regardless of the packaging background colour (black, white, coloured, translucent)

Recycled plastic content label

Final designs

Scope	Packaging to which Article 7 applies and is marked with a label containing information on the share of recycled content, that label and the standardised, open, digital data carrier shall comply with the specifications laid down in the relevant implementing act adopted pursuant to paragraph 6 of this Article and shall be based on the methodology established pursuant to Article 7(8).
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Article 12(4): "Where packaging to which Article 7 applies (...) is marked with a **label containing information on the share of recycled content**, that label and, where applicable, the QR code or other type of standardised, open, digital data carrier shall comply with the specifications laid down in the relevant implementing act adopted pursuant to paragraph 6 of this Article and shall be based on the **methodology** established pursuant to Article 7(8)."

- Voluntary label, a decision is made to use the recycled plastic content label then the harmonised label must be used and mandatory information provided via digital labelling
- The label shall enable consumers to clearly identify recycled content in plastic *and the share of recycled content*. "x %" is a placeholder for exact % of recycled plastic content
- Additional to mandatory labels: waste sorting label* + reusable label (for reusable packaging)

Main design principles:

- Yellow colour, different shade of WSL. Connects to plastic, but not confusable with WSL because they co-exist
- Simple and clear icon
- Text necessary to convey complex message
- 5 variants of label developed for economic operators, to address costs and technical challenges and different packaging formats. Labels must be salient, durable, legible and recognisable.

	Text
Black/white pictogram on coloured background	
white pictogram on opaque black background	
black pictogram on opaque white background	
white pictogram on transparent background	
black pictogram on transparent background	

Biobased plastic content label

Final designs

Scope	Where packaging is marked with a label containing information on the share of biobased plastic content, that label shall comply with the specifications laid down in the relevant implementing act adopted pursuant to paragraph 6 of this Article.
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Article 12(4): "Where packaging is marked with a **label containing information on the share of biobased plastic content**, that label shall comply with the specifications laid down in the relevant implementing act adopted pursuant to paragraph 6 of this Article."

- Voluntary label, but where a decision is made to use the biobased plastic content label then a harmonised label must be used and mandatory information provided via digital labelling
- The label does not provide the share of biobased plastic since no harmonised standards for the calculation are in place (art. 8(1) "By 12 February 2028, the Commission shall review the state of technological development and environmental performance of biobased plastic packaging (...)")
- Additional to mandatory labels: waste sorting label* + reusable label (for reusable packaging)

Main design principles:

- Yellow colour, different shade of WSL. Connects to plastic, but not confusable with WSL because they co-exist
- Simple and clear icon
- Text necessary to convey complex message
- 5 variants of label developed for economic operators, to address costs and technical challenges and different packaging formats. Labels must be salient, durable, legible and recognisable.

	Text
Black/white pictogram on coloured background	
white pictogram on opaque black background	
black pictogram on opaque white background	
white pictogram on transparent background	
black pictogram on transparent background	

Exemplary overview of technical specifications

(a) **Size of the marking**

The minimum size of the marking shall be 1 cm by 1 cm (1 cm²). In exceptional cases, such as extremely small packages, the label shall be affixed on the grouped packaging. Where even that is not possible, QR codes or other type of data carrier may be warranted as substitutes. In case QR codes or other data carriers are used, the specifications for digital labels apply.

(b) **Position of the marking**

The marking shall be positioned in a way that it is readable horizontally when the packaging is set down normally. Other labels required under the PPWR should have equal prominence in terms of size and positioning. If placed next to each other, a space of more than 25% width of the marking should be ensured between the different labels.

(c) **Design of the marking**

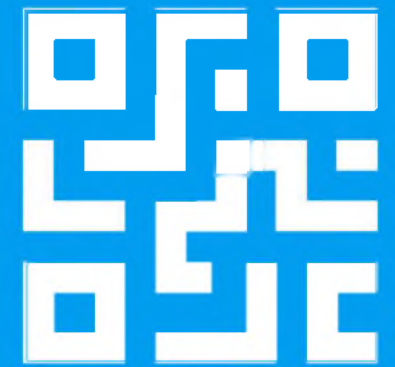
The design of the marking shall be reproduced without adding any effects, adjusting the colours, retouching or extending the background. The marking shall be reproduced at a minimum resolution of 300 dots per inch when printed in actual size.

Where text is used, for example "REUSABLE", the text or its translation shall be in upper case regular Noto Sans font. The font size shall be a minimum of 5 pt and a maximum of 14 pt.

The colours having the following colour codes shall be used (*depends on the label, not reported here in detail*):

- White: C = X / M = 0 / Y = 0 / K = 0
- Black: C = X / M = 0 / Y = 0 / K = 0
- Turquoise: C = 0 / M = 0 / Y = 0 / K = 0
- Blue: C = 0 / M = 0 / Y = 0 / K = 0.

Digital labels



Technical specifications of digital labels

Digital label	User group	Data carrier requirements	Information requirement
Reusable packaging	End-consumers (B2C)	 Durability for single rotation  Readability for end-consumers	Availability of a local, national or Union-wide re-use system and information on collection points. Further information on reusability.
	Economic actors (B2B)	 Durability until end-of-life  Readability for economic actors e.g., via special equipment to read data carriers  Process time to read crucial for B2B use cases and should not slow down processes	
Recycled and bio-based plastic content	End-consumers (B2C)	 Readability for end-consumers	Not specified .
Substances of concern	Waste operators	 Durability until end-of-life  Readability for waste operators e.g., via special equipment to read data carriers  (additional) Readability for end-consumer	At least name and concentration of the substance of concern present in each material in a packaging unit.
Waste sorting	End-consumers (B2C)	 Durability until end-of-life  Readability for end-consumers	Material composition (art. 12 (1)) and information on the destination of each separate component of the packaging in order to facilitate consumer sorting.

Data carrier options

Optical data carriers

Electronic data carriers

	Read range	Power Source	Printable	Suitable for B2C information	Suitable for tracking of rotations	Example picture
QR (GS1 Digital Link)	Typically, approx. 50cm, line of sight required	None	Yes	yes	no	
Data Matrix code	Below 1m, line of sight required	None	Yes	yes	no	
Linear barcode	~ 20cm, line of sight required	None	Yes	no	no	
Digital Watermark (invisible codes)	Below 3m, line of sight requires	None	Yes	no	Usable only with important limitations	Invisible
RFID -Passive	Up to 10m, no line of sight required	Inductive (powered by reader)	No	no	yes	
RFID – Active	Up to 100m, no line of sight required	Internal battery	No	no	Yes, but with limitations	
NFC	~ 4cm	Inductive (powered by reader)	No	Yes, but with limitations	Yes, but with limitations	
GPS / GPRS	Unlimited, no line of sight required	Internal battery	No	no	Yes, but with limitations	

Results of data carrier requirements and analysis

- No single data carrier is able to **efficiently** cover both the requirements of providing information on digital labels to consumers and tracking the rotations of reusable packaging
- Data carrier options suitable for providing information to consumers are **difficult to use** for tracking rotations in a B2B context (e.g. short read range, manual scanning)



- Other Union laws such as ESPR providing for a Digital Product Passport may require the provision of information on the packaged product via data carriers and these data carriers could be used to provide information on both the product and the packaging: this would **minimise use of data carriers** on packaging.
- However, reusable labelling may require an additional data carrier to facilitate tracking of rotations

Reusable packaging digital label

Data element	Mandatory / non-mandatory	Specifications for the Implementing Act	Reason / legal basis
Identification of packaging as reusable	Mandatory	Identification of packaging as reusable	Required by art. 12 (2)
Re-use systems	Mandatory	- Availability of a re-use system <u>Region, country or countries in which the re-use system operates</u>	Required by art. 12 (2)
Collection points	Mandatory	- Location of collection points either in the form of: - List of individual locations - Map of individual locations - If the previous options are not possible, a general description, e.g., a description of the retailers accepting the reusable packaging	Required by art. 12 (2)
Number of rotations achieved	Mandatory	At least the following information shall be made available via the data carrier for a reference year: - Units of reusable packaging rotating within the re-use system - Collection rates, e.g., the share of reusable packaging returned by end-consumers or economic actors within a re-use system of the total reusable packaging units in rotation - Information on ejection rates, e.g., the share of reconditioned packaging within a re-use system of the total reusable packaging units in rotation	Required by art. 12 (2)
Minimum number of rotations	Non-mandatory	Minimum number of rotations the packaging has to achieve (where available for the specific packaging format)	Provide a reference value for the numbers of <u>rotations achieved</u> .
Return conditions	Non-mandatory	- Return conditions - Information on available incentives for return, e.g. deposit - Requirements for participation in the re-use system e.g. contractual agreement with the <u>system operator</u>	Provide consumers and economic operators with additional information on <u>return conditions</u>
Update/version timestamp	Mandatory	Date of last update of digital label information	Ensures traceability

Recycled plastic content digital label

Data element	Mandatory / non-mandatory	Specifications for the Implementing Act	Reason / legal basis
Share of recycled plastic content	Mandatory	Share of recycled plastic in packaging, by weight, total and per component (where applicable in line with Art 7(5)(b))	Provides transparent and detailed information on the share of recycled plastic in the packaging <u>per plastic component</u> .
Manufacturing plant	Mandatory	Identification of the manufacturing plant where the packaging has been produced	Provides transparency in terms of calculation methodology
Certification / verification scheme	Mandatory	Reference to third-party verification	Provides more detailed information to the consumers
Link to supporting documentation	Non-mandatory	Link to additional information provided by the manufacturer regarding the recycled plastic content in the packaging	Provides more detailed information to the consumers
Update/version timestamp	Mandatory	Date of last update of digital label information	Ensures traceability

Biobased plastic content digital label

Data element	Mandatory / non-mandatory	Specifications for the Implementing Act	Reason / legal basis
Share of bio-based plastic content	Mandatory	Share of bio-based plastic in packaging, by weight, total and per component	Provides transparent and detailed information on the share of biobased plastic in the packaging <u>per plastic component</u> .
Certification / verification scheme	Mandatory	Reference to third-party verification	Provides more detailed information to the consumers
Link to supporting documentation	Non-mandatory	Link to additional information provided by the manufacturer regarding the biobased plastic content in the packaging	Provides more detailed information to the consumers
Update/version timestamp	Mandatory	Date of last update of digital label information	Ensures traceability

Digital label to inform about the presence of SOC

Data element	Mandatory / non-mandatory	Specifications for the Implementing Act	Reason / legal basis
Presence of substances of concern	Mandatory	Indication that packaging contains substances of concern	Required by art. 12 (7)
Substance identification	Mandatory	Name of substance(s) of concern	Required by art. 12 (7)
CAS number / identifier	Mandatory	Standard chemical identifier	Ensures harmonisation across EU databases
Concentration range	Mandatory	Concentration or range (e.g. ppm)	Consistent with chemical disclosure practices
Packaging component breakdown	Mandatory	Which part contains the substance (film, ink, coating, cap, etc.)	Allows for correct handling
Function in packaging	Non-mandatory	Purpose (e.g. barrier coating, ink additive, plasticiser)	Helps risk understanding (for additional B2C information)
Hazard classification	Non-mandatory	CLP classification (e.g. toxic, persistent, bioaccumulative)	Aligns with EU chemicals legislation
Update/version timestamp	Mandatory	Date of last update of digital label information	Ensures traceability

Digital waste sorting label

Data element	Mandatory / non-mandatory	Specifications for the Implementing Act	Reason / legal basis
Packaging composition	Mandatory	List of packaging components (e.g. bottle, cap, label, etc.)	(indirectly) required by art. 12 (1)
Material composition	Mandatory	Information about the material composition of the packaging, per packaging component (e.g. plastic, paper etc.)	Required by art. 12 (1)
Information on destination of packaging components	Mandatory	Indication of where each component should be disposed	Required by art. 12 (1)
Disassembly and sorting guidance	Non-mandatory	Instructions to support correct sorting, e.g. "remove cap", "remove label", "fold and press", etc.	Improves recycling
Link to local collection scheme	Non-mandatory	Link to the website of the local waste management operator	Availability of additional specific information
Update/version timestamp	Mandatory	Date of last update of digital label information	Ensures traceability

Exemplary overview of technical specifications

1) Further information on the *(depends on the label)*, shall be made available through a QR code or other type of standardised, open, digital data carrier.

(a) **Information to be provided for consumers**

The digital data carrier shall provide end-users with access to the information without the need for purchasing a certain electronic appliance or downloading a specific application to their smartphones.

(b) **Size of the QR code**

Where a QR code is used, the recommended size is 20 mm x 20 mm, with a recommended minimum size of 10 mm x 10 mm.

(c) **Position of the QR code**

Where a QR code is used, this should be positioned towards the right of the packaging marking, leaving a space of 25% of the width of the marking.

(Further specifications for reusable packaging):

- 2) For the purpose of tracking and tracing of the packaging and for the calculation of trips and rotations, the QR code or any other type of standardised, open, digital data carrier shall be applied to the packaging.
- 3) By way of derogation from point 1), where the affixing of a digital data carrier is not feasible due to the nature of the packaging, or where the durability of such a digital data carrier cannot be guaranteed based on the expected use and reconditioning process, the information accessible via the digital data carrier shall be made available to the end-user via other means, such as via official websites.
- 4) By way of derogation from point 2), where the affixing of a digital data carrier for the tracking and tracing of packaging is not feasible due to the nature of the packaging, or where the durability of such a digital data carrier cannot be guaranteed based on the expected use and reconditioning process, an average estimation may be employed to calculate rotation rates.

Your contribution

Please send your comments and submissions on this proposal prior to **17 July 2026**

to [REDACTED] ([\[REDACTED\]@ramboll.com](mailto:[REDACTED]@ramboll.com))



Thank you!



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