

Guidance on the calculation methodology of reuse rate for transport and beverage packaging targeted in Article 29 of the Regulation 2025/40 (EU) on packaging and packaging waste

Notice:

This document contains non-binding guidance to Regulation 2025/40 (EU) on packaging and packaging waste, also known as the Packaging and Packaging Waste Regulation or PPWR. This guidance document is intended to help national authorities and economic operators interpret the calculation of reuse rate targeted by Article 29 of this Regulation. The content, including examples, reflects the views of Directorate-General Environment of the European Commission and as such is not legally binding. The binding interpretation of EU legislation is the exclusive competence of the Court of Justice of the European Union (CJEU). The views expressed in this guidance document cannot prejudice the position that the Commission might take before the CJEU.

It is the Member States' task to enforce EU environmental law and enforcement practice may differ between Member States, depending on circumstances, administrative structures, regional or local conditions or some other reason. In practical cases similar to the examples presented, other facts may justify a different decision by the competent authority. Therefore, the examples should in no way be construed as laying down decisions that Member State legislators or enforcement bodies are obliged to take. In practical implementation and enforcement, specific circumstances and the context of the waste management situation, as well as the requirements of the legislation, will always need to be taken into account.

In the document, the European legislation in force at the time of writing is taken as the basis. Annex 1 contains a reference to the date of adoption of all legal acts cited, the publishing reference in the Official Journal of the European Union (OJ) and a link to the corresponding entry on the EurLex website. It should be noted that the legal acts may since have been amended or repealed. Information on any such changes can be found in the EurLex entries to the acts under the section 'Relationship between documents'; consolidated versions of the acts can be found at http://eur-lex.europa.eu/RECH_consolidated.do.

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I. Key notions on the regulation and calculation methodology

Who is concerned?

The regulation establishes **three reuse rates** to be calculated: 29(1), 29(5) and 29(6). **Reuse targets will be calculated individually by and for each economic operator.** The reuse objectives established by the PPWR do not concern global results but individual activities of every economic operator. Hence, each economic operator must calculate its own packaging reuse rates by combining all the packaging formats in one calculation for each reuse rate target. In fact, concerning transport packaging and grouped packaging addressed in this calculation methodology, each economic operator must calculate both reuse rates combining. Besides, regarding beverage packaging, each distributor must calculate its reuse rate combining all his beverage packaging.

Exact descriptions of economic operators concerned by each reuse rate are given below.

Transport packaging:

As clearly established in Article 29(1), all “**economic operators that use transport packaging, or sales packaging used for transporting products**, including for products distributed via e-commerce, within the territory of the Union, in the form of pallets, foldable-plastic boxes, boxes, trays, plastic crates, intermediate bulk containers, pails, drums and canisters of any size or material, including flexible formats or pallet wrappings or straps for stabilisation and protection of products put on pallets during transport” are concerned by the transport packaging reuse regulation.

Grouped packaging:

In Article 29(5), it is explained that “**economic operators that use grouped packaging in the form of boxes**, excluding cardboard, outside of sales packaging to group a certain number of products to create a stock-keeping or distribution unit” are concerned by the grouped packaging reuse regulation.

Beverage packaging:

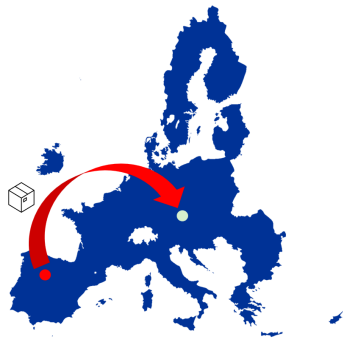
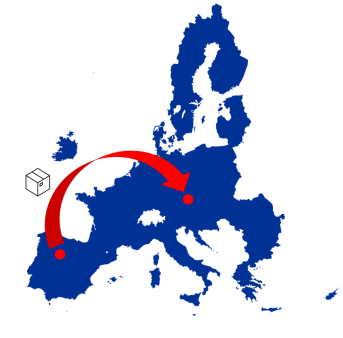
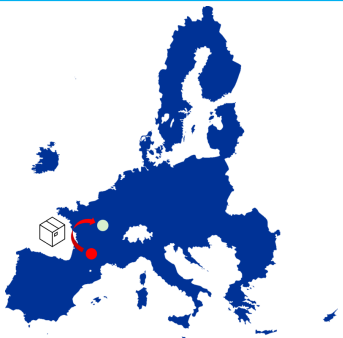
In Article 29(6), it is explained that “**final distributors that make alcoholic and non-alcoholic beverages in sales packaging available** on the territory of a Member State to consumers” are concerned by the beverage packaging reuse regulation.



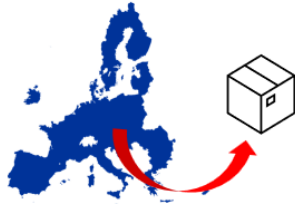
Attention should be paid to the distinction between transport and storage packaging. While certain types of packaging may serve both storage and transport functions, only those actually used for transport purposes fall within the scope of the declaration requirements.

Which trade exchange are concerned?

Different situations are addressed by the regulation, with specific objectives fixed for each of them. First, only packaging that are used or made available within the territory of the European Union are concerned by the regulation.

Transport packaging:

Type of trade exchange	Description	Illustrative scheme	Reuse rate objectives
<p>Trade exchange between economic operators within the EU</p>	<p>Trade exchanges between economic operators that include the use of transport packaging within the territory of the European Union and wherein the latter transport packaging do not end outside of the said territory</p>		<p>40% from 2030</p> <p>70% from 2040</p>
<p>Trade exchange between affiliated operators within the EU</p>	<p>The trade exchanges between different sites on which the operator performs its activity, or between any of the sites on which the operator performs its activity and the sites of any other linked enterprise or partner enterprise within the European Union territory</p>		<p>100% from 2030</p>
<p>Trades exchanges within the same Member State</p>	<p>Trade exchanges between economic operator within the territory of the same Member State</p>		<p>100% from 2030</p>

<p>Import from outside the EU</p>	<p>Transport packaging imported from outside the territory of the European Union that do not leave the territory</p>		<p>40% from 2030 70% from 2040</p>
<p>Transit through the EU</p>	<p>Transport packaging imported from outside the territory of the European Union that leave the territory</p>		<p>Not concerned</p>
<p>Export to outside of the EU</p>	<p>Packaging exported outside of the European Union territory</p>		<p>Not concerned</p>

- Represents a first economic operator and its affiliated economic operators
- Represents a second economic operator

Grouped packaging:

All **grouped packaging used by an economic operator within the territory of the European Union** are concerned by the following reuse rate objectives: **10% reuse rate from 2030 and 25% reuse rate from 2040.**

Beverage packaging:

All **beverage packaging made available by a distributor to consumers within the territory of the European Union** are concerned by the following reuse rate objectives: **10% reuse rate from 2030 and 40% reuse rate from 2040.**

How to distinguish packaging considered as reusable within a reuse system versus single use?

A packaging is considered reusable within a reuse system if it fulfils the requirements of Article 11 and Annex 6 of the regulation.

To make the information available for the economic operators, packaging suppliers need to assess the compliance of their packaging towards Article 11 and Annex 6 of the regulation.

‘Reusable within a reuse system’

Within the PPWR calculation methodology, no difference is made between “reusable” and “reusable within a reuse system”. In practice, according to Annex IV of the PPWR, if the packaging has been designed to be reusable, in alignment with Article 11, it is considered

automatically “reusable within a reuse system”. No proof of performance is required, which means that packaging that is not actually reused is still considered “reusable within a reuse system”, or simply “reusable”, for the calculation.

Clarification on IBCs

As part of the ongoing methodological work, specific attention is being given to the inclusion and accounting of IBCs, particularly regarding the treatment of inner plastic liners in reuse target calculations.

Based on industry guidelines (notably ELIPSO), IBCs are understood as composite packaging systems comprising multiple elements, including structural components and, where relevant, inner liners. Certain formats (such as metal cage and plastic box IBCs) are designed for reuse, with rigid outer structures intended for multiple rotations, even if some components are replaced between uses.

Two complementary approaches are currently being explored to assess the reusability of such systems: one based on the “designed for reuse” criterion and the existence of reuse systems, and another based on the share of single-use components within the total packaging weight. Both approaches lead to consistent preliminary conclusions, notably distinguishing between reusable and non-reusable IBC formats.

These elements are still under discussion, and further stakeholder feedback is being collected to support the final methodological choices.

What are the metrics used?

Since the objective is to produce a calculation methodology applicable by all concerned economic operators, the choice of the unit is key.

Transport packaging:

For transport packaging, the selected metric for *number of equivalent units of any of the packaging formats listed in Article 29(1) or (5)*, mentioned in Article 30(1) is understood as the number of packaging units. A packaging unit directly refers to the packaging formats described in Article 29.1 of PPWR (for further information, cf. 2.2.1.3).

Here, the counting of the number of packaging units is completely independent of the number of sales unit (e.g. a pallet may transport 10 or 100 sales units of products without any impact on the counting of packaging).

Examples given:

- For the transport of a product on a pallet, wrapped with a standard wrapping and attached with 3 straps for stabilisation, we will have $1+1+3 = 5$ units.
- Lids or caps are considered part of the packaging they close.
- For IBCs, the parts are considered separately if they are not strictly bonded. For example, for a plastic inner bottle in an outer cage on a pallet, if the inner bottle can be removed and changed from the cage, but the pallet is bonded to the cage, then we will have 2 units.

Beverage packaging:

For beverage packaging, for the counting of *the total number of sales units or total volume of beverages [...] made available on the territory of a Member State* mentioned in Article 30 (2), two different metrics can be used:

- Sales unit: based on the counting of number of individual beverage packaging unit
- Volume: based on the counting of the volume of beverages. Here, the counting of the total volume is independent of the number of sales unit (e.g. a stakeholder may sell 3

bottles of 1L or 2 bottles of 1.5L without impact on the counting of the volume: 3L in any case)

Focus on take-away sector

Article 33 establishes reuse obligations for the take-away sector, including the provision of reusable packaging options and a target for reusable packaging uptake. Although the take-away sector does not fall directly within the scope of Article 29(6), the calculation methodology developed for beverages should be applicable to this sector. Furthermore, Article 30(2) explicitly refers to Article 33 regarding reporting obligations for the take-away sector, supporting the relevance of developing a coherent reporting framework at this stage to ensure effective implementation and enable a meaningful assessment of progress towards the 10% target. The objective is to ensure consistency by applying the same framework across both contexts. However, in line with the scope of Article 29, the **focus remains on hot and cold beverages**, excluding ready-prepared food, which is also included under Article 33.

Here, food packaging is understood as defined in Part A (2) of the Annex to the Single-Use Plastics Directive (2019/904): “Food containers, i.e. receptacles such as boxes, with or without a cover, used to contain food which: (a) is intended for immediate consumption, either on-the-spot or take-away, (b) is typically consumed from the receptacle, and (c) is ready to be consumed without any further preparation, such as cooking, boiling or heating, including food containers used for fast food or other meal ready for immediate consumption, except beverage containers, plates and packets and wrappers containing food.”

II. Calculation of the number of packaging used or made available

Three reuse rates must be calculated, concerning respectively transport packaging, grouped packaging for transport and beverage packaging.

For transport packaging, the economic operator needs to assess the amount of packaging units received (i.e. that enters the economic operator’s site) during the year (E_{trans}), packaging units produced within the site (P_{trans}), packaging units whereas in stock at the beginning of the year (Sb_{trans}) and finally packaging units still in stock at the end of the year (Sf_{trans}). For each of these, the share of reusable packaging is also required (respectively RE_{trans} , RP_{trans} , RSb_{trans} and RSf_{trans}). With these figures, the economic operator can calculate the number of transport packaging used during the year, and the corresponding reuse rate. In fact, used transport packaging correspond to the transport packaging that leave the site of activity.

For grouped packaging, the calculation methodology is identical to the transport packaging methodology, using $E_{grouped}$, $P_{grouped}$, $Sb_{grouped}$, $Sf_{grouped}$, $RE_{grouped}$, $RP_{grouped}$, $RSb_{grouped}$ and $RSf_{grouped}$.

For beverage packaging, the same categorization is used, but they can be assessed in number of units or in volume: E_{bev} , P_{bev} , Sb_{bev} and Sf_{bev} , with a share of reusable packaging (respectively RE_{bev} , RP_{bev} , RSb_{bev} and RSf_{bev}). With these figures, the economic operator can calculate the number of beverage packaging made available during the year, and the corresponding reuse rate.

III. Calculation of the reuse rates

Once the different values obtained, the calculation is as follows:

Transport Packaging

The **total** of transport packaging units **used** (i.e. that leaves the activity site) by an economic operator is equal to:

$$E_{\text{trans}} + P_{\text{trans}} + S_{\text{btrans}} - S_{\text{ftrans}}$$

The **number of reusable** transport packaging units **used** (i.e. that leaves the activity site) by an economic operator is equal to:

$$RE_{\text{trans}} \times E_{\text{trans}} + RP_{\text{trans}} \times P_{\text{trans}} + RS_{\text{btrans}} \times S_{\text{btrans}} - RS_{\text{ftrans}} \times S_{\text{ftrans}}$$

Grouped Packaging

The **total** of grouped packaging units **used** (i.e. that leaves the activity site) by an economic operator is equal to:

$$E_{\text{grouped}} + P_{\text{grouped}} + S_{\text{bgrouped}} - S_{\text{fgrouped}}$$

The **number of reusable** grouped packaging units **used** (i.e. that leaves the activity site) by an economic operator is equal to:

$$RE_{\text{grouped}} \times E_{\text{grouped}} + RP_{\text{grouped}} \times P_{\text{grouped}} + RS_{\text{bgrouped}} \times S_{\text{bgrouped}} - RS_{\text{fgrouped}} \times S_{\text{fgrouped}}$$

Beverage Packaging

The **total** of beverage packaging **made available** by a distributor is equal to:

$$E_{\text{bev}} + P_{\text{bev}} + S_{\text{bbev}} - S_{\text{fbev}}$$

The **number of reusable** beverage packaging units **made available** by a distributor is equal to:

$$RE_{\text{bev}} \times E_{\text{bev}} + RP_{\text{bev}} \times P_{\text{bev}} + RS_{\text{bbev}} \times S_{\text{bbev}} - RS_{\text{fbev}} \times S_{\text{fbev}}$$

Thus, the personal reuse rates are equal to:

$$R_{\text{transport}} = \frac{(RE_{\text{trans}} \times E_{\text{trans}}) + (RP_{\text{trans}} \times P_{\text{trans}}) + (RS_{\text{btrans}} \times S_{\text{btrans}}) - (RS_{\text{ftrans}} \times S_{\text{ftrans}})}{E_{\text{trans}} + P_{\text{trans}} + S_{\text{btrans}} - S_{\text{ftrans}}}$$

$$R_{\text{grouped}} = \frac{(RE_{\text{grouped}} \times E_{\text{grouped}}) + (RP_{\text{grouped}} \times P_{\text{grouped}}) + (RS_{\text{bgrouped}} \times S_{\text{bgrouped}}) - (RS_{\text{fgrouped}} \times S_{\text{fgrouped}})}{E_{\text{grouped}} + P_{\text{grouped}} + S_{\text{bgrouped}} - S_{\text{fgrouped}}}$$

$$R_{\text{beverage}} = \frac{(RE_{\text{bev}} \times E_{\text{bev}}) + (RP_{\text{bev}} \times P_{\text{bev}}) + (RS_{\text{bbev}} \times S_{\text{bbev}}) - (RS_{\text{fbev}} \times S_{\text{fbev}})}{E_{\text{bev}} + P_{\text{bev}} + S_{\text{bbev}} - S_{\text{fbev}}}$$

IV. Examples of calculation

The aim of the following examples is to construct the calculation of the reuse rate for several cases that could be encountered by the economic operators, which are either considered common or are likely to raise questions.

In the following examples, colours are used to separate packaging categories. In fact, packaging are split into 3 categories: packaging that are not within the scope, in yellow – thus not considered in the calculation –; single use packaging, in blue, and reusable packaging, in green.

Example n°1: Transport Packaging, pallets

Here, we consider an economic operator that uses pallets to deliver items. To assure the smooth running of this operation, different types of packaging associated with pallets are used.

The packaging addressed here are transport packaging and not storage packaging.

In order to complete his declaration, the economic operator identifies the transport packaging used on his site throughout the year.

A representation of the items the economic operator used is provided below:

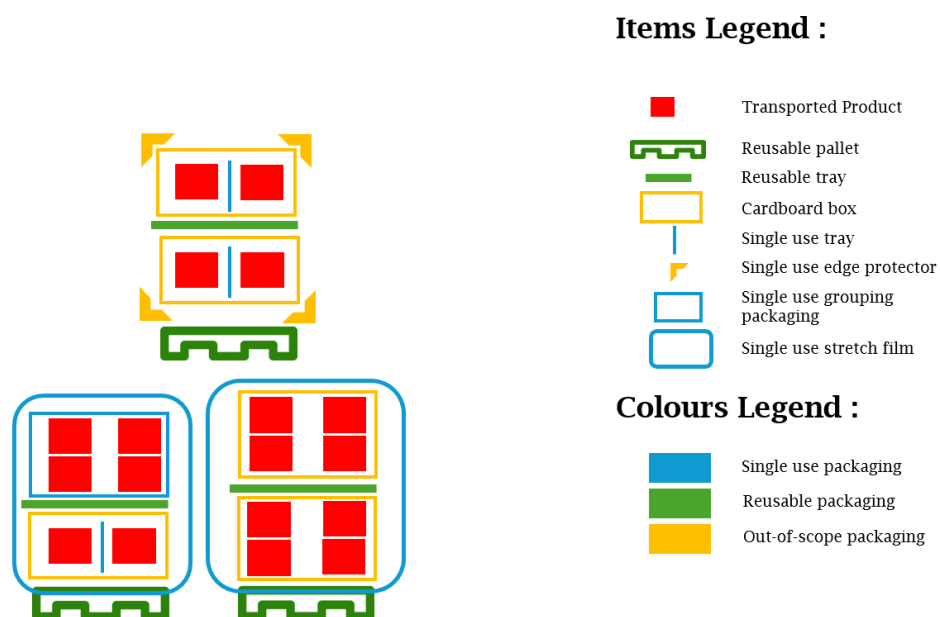


Figure 1 – Description of the packaging used by the economic operator in example 1

To complete his calculation, the economic operator needs to consider the packaging concerned by the regulation.

To complete his calculation, the economic operator needs to count the number of single use packaging on the one hand and the number of reusable packaging on the other hand, as described below:

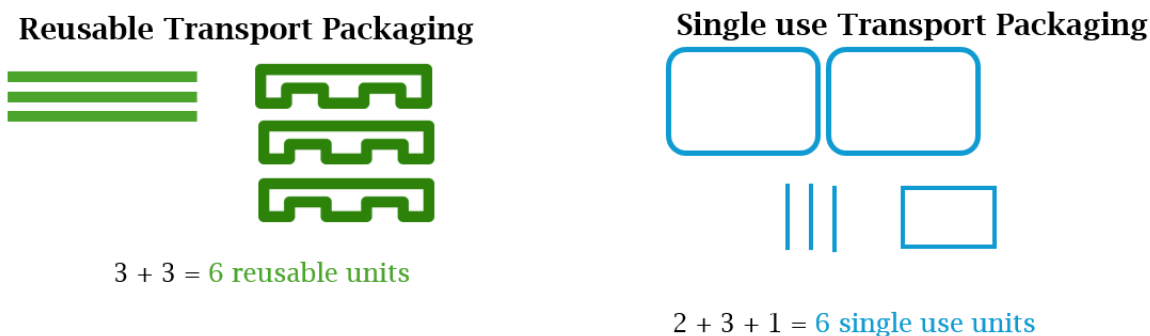


Figure 2 – Calculation of the number of reusables and single use packaging units in example 1

So, in this case, the reuse rate of transport packaging is equal to:

$$R_{\text{transport}} = \frac{6}{6+6} = 50\%$$

This economic operator is thus in compliance with the PPWR objectives of 40% reuse rate of transport packaging in 2030.

Example n°2: Beverage Packaging, water bottles

In this example, we consider a distributor that makes available water bottles. 3 types of bottles are represented here: 1.5 L single use plastic bottles, 0.33 L single use plastic bottles and 1.5 L reusable glass bottles.

In order to complete his declaration, the distributor identifies the beverage packaging made available on his site throughout the year.

A representation of the items made available is provided below:

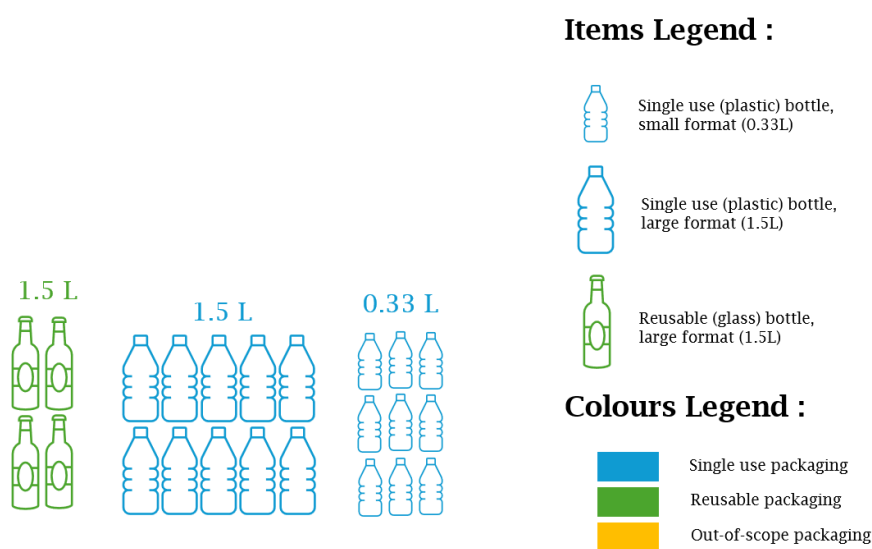


Figure 3 – Description of the beverage packaging made available by the distributor in example 2

To complete his calculation, the distributor may use two different metrics, each based on a specific unit. These two approaches are explained in the following paragraphs.

Sales Unit Approach

The first approach is the sales unit approach, wherein the metric is directly the number of packaging sales units made available. This approach's calculation is represented in the figure below:

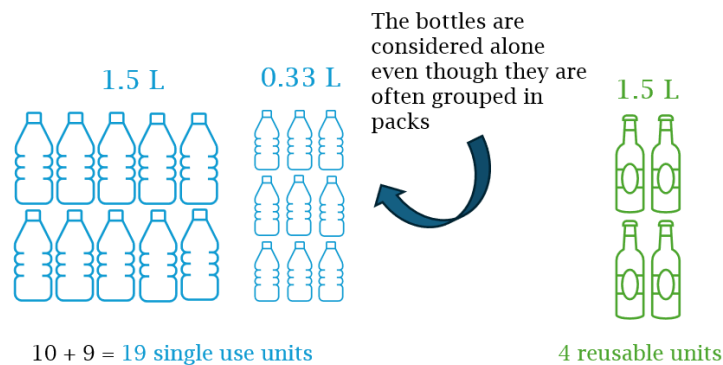


Figure 4 – Calculation of the number of reusables and single use packaging units in example 2 according to the sales unit approach

So, in this case, the reuse rate of beverage packaging is equal to:

$$R_{\text{beverage}} = \frac{4}{4+19} = 17\%$$

This economic operator is thus in compliance with the PPWR objectives of 10% reuse rate of beverage packaging in 2030.

Volume of Beverage Approach

The second approach is the volume of beverage approach, wherein the metric is the volume of beverage contained in packaging units made available. This approach's calculation is represented in the figure below:

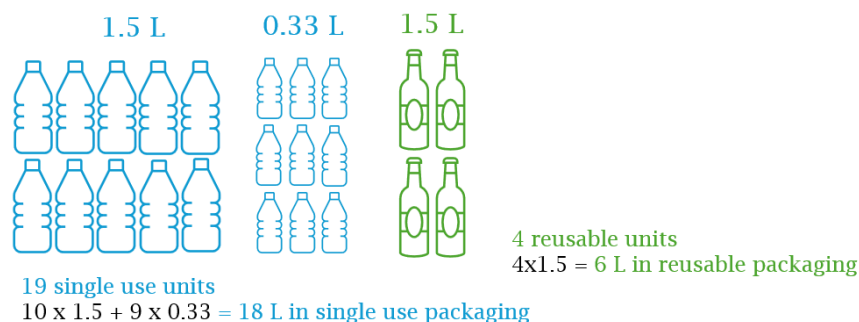


Figure 5 – Calculation of the number of reusables and single use packaging units in example 2 according to volume of beverage approach

So, in this case, the reuse rate of beverage packaging is equal to:

$$R_{\text{beverage}} = \frac{6}{6+18} = 25\%$$

This economic operator is thus in compliance with the PPWR objectives of 10% reuse rate of beverage packaging in 2030.

As highlighted by the two approaches, the exact same case can result into different reuse rate depending on the metric used. In fact, the sales unit approach is sensible to the packaging formats used, giving significant weight to small format containing less liquids. On the other hand, the volume of beverage approach does not differentiate the formats used at equivalent volumes. The following figure summarizes the differences between the two approaches.

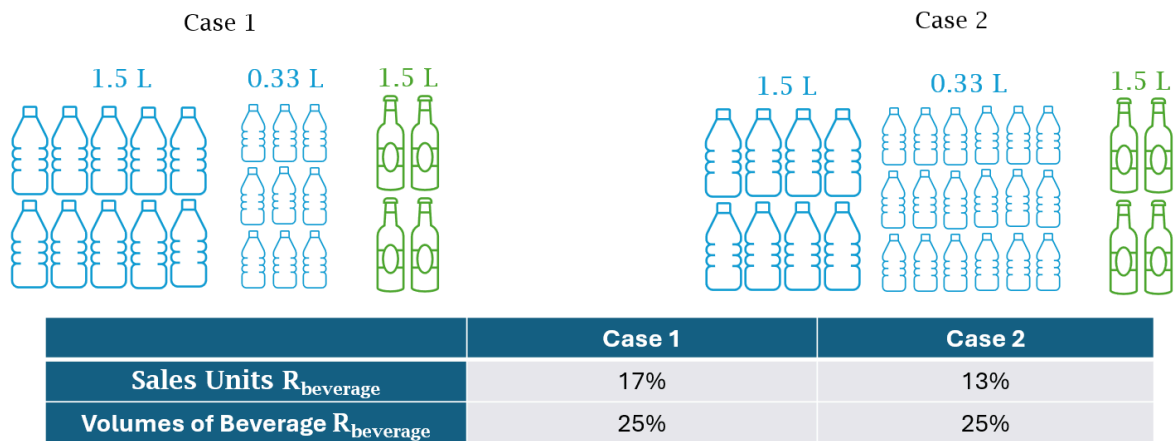


Figure 6 – Differences between sales unit approach and volume of beverage approach applied to two cases (both cases contain the same volumes)