

Packaging Recyclability Performance Grades

Technical paper on design for recycling criteria translation into RPG

Brussels, August 2026

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This technical paper aims to contribute to the assessment of design for recycling criteria and recyclability performance grades (RPG) from the European Joint Research Centre (JRC) for the European delegated acts in support of the EU Packaging and Packaging Waste Regulation (PPWR)¹.

It groups ECOS comments sent to the European Technical Committee for Packaging CEN/TC 261 Sub-Committee for the Environment SC 4 working group on RPG Calculation, within the JRC consultation process, in June 2026.

Apply an inductive approach, not a deductive one

The inductive approach can rely on the actual data and information sharing requirements from the PPWR to shape the RPG calculation. Its main step is the identification of all components that contribute to recycled material. It is transparent, auditable and compatible with the existing design for recycling (DfR) structure of the European standards.

According to the PPWR all packaging placed on the EU market shall have a declaration of conformity, which shall contain all relevant information, including exhaustive data on components and constituents of all packaging components of a packaging unit².

The declaration of conformity must be transmitted throughout the entire supply chain to all relevant actors to demonstrate compliance with PPWR obligations, including the absence of substances of concern and recyclability requirements. It allows data transfer on components and constituents of a packaging unit throughout the supply chain.

Owning detailed mass data regarding all components and constituents of a packaging unit is thus not a risk or a concern regarding intellectual property and commercially sensitive information. This actually represents one of the main obligations enforced by the PPWR.

By contrast, the deductive approach does not consider all packaging components. In particular, one of its main steps is the exclusion from the calculation of components classified as “removed and not recycled”. As such, the approach is not based on actual data inputs and in fact not auditable.

Ensure compatibility, not subtraction of removed components

The method starting point should ensure any component classified in red in design for recycling criteria is considered not compatible with state-of-the-art sorting and/or recycling processes. As such, separate or removed components including parameters classified in red should score 0% in the RPG.

As for components or constituents that are intentionally removed during sorting, preparatory recycling or reprocessing and are not recycled, they should be factored in the RPG score. Excluding them would breach the provisions and objectives of the PPWR as it risks undermining the effective implementation of its recyclability provisions:

- “All packaging placed on the market shall be recyclable”³.
- Starting with 2030 on the basis of the RPG, packaging units that “have a recyclability performance grade below 70 % [will be] considered to be non-compliant with the recyclability performance grades and therefore the packaging will be considered technically non-recyclable and its placing on the market shall be restricted”⁴.
- Both DfR and RPG should consider:
 - “the ability of packaging waste to be separated into different material streams for recycling, sorted and recycled [...]”⁵;
 - “established collection and sorting processes proven in an operational environment and cover **all packaging components**”⁶;
 - “available recycling technologies, [...] including the quality of the output [...]”⁷.

- The DfR criteria that shall then be used in order to perform the RPG scoring shall mandatorily include also parameters / constituents such as “inks, adhesives, labels, small closures, colours, sleeves”⁸.

Subtracting the mass share of integrated components or constituents classified as “removed-and-not-recycled” from the assessed SIPP or separate component’s score would thus constitute a derogation from the obligation to place on the EU market only packaging that is recyclable. This could be the case for inks, adhesives, labels, small closures, colours and sleeves. In practice, these elements have a significant impact on the ability of the packaging unit to be effectively sorted and properly recycled. In fact, these components and constituents are not individually removed at sorting facilities; rather, their presence generally results in the rejection of the whole packaging unit, and there is rarely any step that leads to their intentional removal during the recycling process.

In addition, efficiency of sorting and recycling processes is one of the fundamental criteria of DfR and correspondingly of RPG. If one component or constituent of the packaging unit would need to be removed as it cannot be recycled during the sorting or pre-recycling process, this step is certainly impacting the efficiency of the sorting / recycling process.

Moreover, such subtraction would lead to inaccurate RPG scoring as the non-recyclable materials would be excluded from the RPG scoring. Instead, the removed-and-not-recycled material should be penalised. The RPG score should reflect the reality of the packaging units placed on the EU market and their compatibility with established separate sorting and recycling processes. If a packaging unit has a poor RPG score, it reflects its limited compatibility with the sorting and recycling processes and the PPWR’s obligations.

Besides, introducing the concept of “removed-and-not-recycled” risks rendering the concept of “packaging waste recycled at scale”⁹ largely meaningless, as a substantial proportion of packaging waste quantities would be excluded from the calculation of the recycling targets. The RPG method should be planned for and take into account these upcoming recycled at scale requirements so that coherence is ensured between DfR, RPG and recycled at scale.

Consider all DfR criteria to calculate the RPG score

DfR criteria such as colour, shape, size and inks are generally technically relevant for recyclability and can affect all stages of recycling processes, not only in certain cases, as shown in the different DfR tables of EN 18120X:2026 series¹⁰. They are also listed in the PPWR parameters for DfR criteria¹¹. Such key characteristics influencing compatibility with recycling processes should thus be included in the RPG calculation method.

These factors are already considered in the eco-modulation of packaging EPR fees in certain EU countries (e.g. in the Netherlands), as well in the UK.

Considering that the purpose of DfR and RPG is to harmonise at EU level the recyclability assessment and scoring of packaging in the EU¹², while ensuring that the main objectives of the PPWR are met – i.e. that all packaging placed on the EU market is recyclable – we consider that excluding these elements from the RPG assessment would render both DfR and RPG ineffective.

Their exclusion combined with the concept of “removed-and-not-recycled materials” would thus ultimately lead to outcomes that are not aligned with the objectives of the PPWR, effectively allowing non-recyclable packaging to be placed on the EU market.

Consider both the intentional and non-intentional use of substances of concern

While we acknowledge that the report due to be prepared by the European Commission on substances of concern¹³ is not available yet, there are already substances of concern banned from packaging items – such as PFAS in food contact packaging¹⁴ – which should be already included in the DfR and RPG. For instance, PFAS is listed in the red category in the draft TS DfR table for paper and cardboard packaging.

According to the PPWR¹⁵, "packaging placed on the market shall be so manufactured that the presence and concentration of substances of concern as constituents of the packaging material or of any of the packaging components is minimised, including with regard to their presence in emissions and any outcomes of waste management, such as secondary raw materials, ashes or other material for final disposal, and to the adverse impact on the environment due to microplastics."

In light of this, it is clear that the PPWR focuses on the minimisation of substances of concern throughout the entire manufacturing process. It obliges manufacturers to verify and ensure that, at all stages of manufacturing, and once the packaging becomes waste, and further recycled, substances of concern are identified and minimised.

The PPWR does not distinguish between intentionally and non-intentionally present substances of concern. It relies on the ESPR¹⁶ definition of a substance of concern, according to which it is "a substance that: [...] negatively affects the reuse and recycling of materials in the product in which it is present"¹⁷. According to the general legal principle that "where the law does not distinguish, neither shall we" (*Ubi lex non distinguit, nec nos distinguere debemus*).

The PPWR's obligations concerning substances of concern apply broadly to all such substances, irrespective of the stage at which they are present or the manner in which they enter the packaging, packaging waste, or recyclates.

Apply a simple and accurate calculation method

The calculation method should be easy to understand and to apply by the producers. It should necessarily be sensitive and consider technical severity and the nature of the recycling impact. Multiple yellows should lead to red scoring because this would be an accurate reflection of the state of art of the existing recycling processes.

Moreover, we do not support a maximum score cap for the DfR yellow category as it leads to RPG scoring not reflecting the DfR compatibility (e.g. scoring RPG grade A even though the packaging unit includes a component classified in yellow for their limited compatibility with state-of-the-art recycling processes). Applying such a cap would not distinguish between one minor yellow entry, such as impacting the yield of sorting and recycling processes, and a technically significant yellow entry, which can impede the recycling process.

Set testing pass as yellow, not green

Testing protocols should not be used to override the DfR classification and tables. They should not be used to obtain a green classification as tests may not be representative or reproducible, let alone independent, especially in-house tests. This is even more true for the red classification that categorises "packaging constituents which are not compatible with recycling" "reflecting collection, sorting and recycling state of the art in Europe".

The DfR tables should remain the guidelines as they are "representative of the state of the art in Europe and cover all steps from design for recycling, packaging waste collection, sorting, recycling into

recycled plastic and to use in a new application". They are thus based on several tests to be recognised as good practice in Europe. If needed, the DfR tables can then be updated at a later stage to reflect technological innovation becoming state-of-the-art in Europe.

Conclusion

In view of these important methodological and legal considerations, ECOS did not support the conclusions of CEN/TC 261/SC 4/WG 3 and WG 10 technical position paper on RPG calculation as the proposed methodology would neither ensure the proper implementation of the PPWR recyclability requirements nor give the right incentive to redesign packaging for enhanced material sorting and recycling. We are finally concerned some of the proposed RPG methodological steps risk undermining or narrowing the obligations established by the PPWR on recyclability and substances of concern.

References

¹ Regulation (EU) 2025/40 of the European Parliament and of the Council of 19 December 2024 on packaging and packaging waste, amending Regulation (EU) 2019/1020 and Directive (EU) 2019/904, and repealing Directive 94/62/EC. Article 6(4). https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:L_202500040

² As provided by the PPWR article 15, article 39, Annex IV.

³ PPWR article 6(1).

⁴ In line with PPWR Annex II, Table 3 on RPG.

⁵ PPWR article 6(4)(a).

⁶ PPWR article 6(4)(a)(ii) and Annex II, Table 3.

⁷ PPWR article 6(4)(a)(iii).

⁸ PPWR Annex II, Table 4.

⁹ PPWR article 6(2) and (5)(a).

¹⁰ EN 18120X:2026 on Packaging - Design for recycling of plastic packaging. <https://standards.cencenelec.eu/ords/f?p=205:105:.....&cs=117B8E8682150D42818988EEE05C945D6>

¹¹ PPWR Annex II, Table 4.

¹² PPWR recital 28.

¹³ In accordance with PPWR article 5(2).

¹⁴ in accordance with PPWR article 5(5).

¹⁵ PPWR article 5(1).

¹⁶ Regulation (EU) 2024/1781 of the European Parliament and of the Council of 13 June 2024 establishing a framework for the setting of ecodesign requirements for sustainable products, amending Directive (EU) 2020/1828 and Regulation (EU) 2023/1542 and repealing Directive 2009/125/EC. Consolidated version. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02024R1781-20240628>

¹⁷ ESPR article 2(27).