

KEY FINDINGS

Efficiency and Performance of Packaging EPR Systems in the EU

A Comparative Analysis of Different Countries and Market Structures

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Background and Objective

The EU's Circular Economy Action Plan promotes emissions reduction, waste minimisation, and resource efficiency, including through Extended Producer Responsibility (EPR). EPR has been mandatory in Member States since 2018 under regulations such as the Packaging and Packaging Waste Regulation (2025). However, EPR implementation varies significantly across the EU, with different market structures including competitive, quasi-monopolistic, and monopolistic systems. This diversity, further amplified by differing operational models, governance frameworks and cost structures, leads to varied performance outcomes. The objective of this study was to compare EPR systems in **Germany, France, Italy, Belgium, Spain, the Netherlands, Austria, and Czechia**, and to answer the following question:

Which EPR market structure delivers optimal **cost-effectiveness** and **environmental performance**?

Impact of EPR Market Structure

Germany's competitive system leads in plastic recycling rates (76.1%), followed by Belgium's monopolistic structure (60.8%). Regarding cost and economic efficiency, Germany demonstrates the highest efficiency for plastics while Italy (monopolistic) achieves strong performance particularly for glass and the Netherlands for paper/cardboard recycling. Germany demonstrates full operational responsibility and robust oversight, similarly to Belgium. France (quasi-monopolistic) is very advanced in eco-modulation, however the system only applies partial cost-coverage (80% paid by PROs), as is also the case in Italy.

Methodology

To estimate and compare licensing costs for 10 typical packaging types, the software database RECYDA was used. Furthermore, a four-dimensional assessment using standardised performance indicators was developed. The performance categories, including key indicators within each category were:



Environmental Performance

Recycling and collection rates



Innovation Capacity

The system's ability to adopt new technologies, eco-modulation, promotion of eco-design and stakeholder engagement



Cost and Economic Efficiency

E.g., tons recycled per euro spent



System Design and Governance

Who is responsible for collection, sorting, and recycling, the degree of operational control, and the transparency of governance

Weighted EPR System Performance Scores by Country (1-10)

Higher scores reflect stronger performance. Totals are weighted across all four dimensions: environmental, economic, governance, and innovation.

	Competitive			Monopolistic			Quasi Monopolistic	
	Germany	Austria	Italy	Belgium	Czech Rep.	Netherlands	Spain	France
Environmental performance	8.6	4.6	6.0	7.2	6.0	6.0	4.4	4.6
Cost and Economic Efficiency	7.4	4.0	6.4	4.3	4.6	6.6	4.4	3.6
System Design and governance	3.6	3.2	3.2	3.2	2.0	2.8	2.0	3.2
Innovation	3.6	2.6	3.8	2.8	1.8	3.6	2.6	3.6
TOTAL	23.3	14.4	20.0	18.1	12.5	19.0	13.3	15.1

Overall, the comparison matrix above, highlights that strong results do not depend exclusively on competitive versus monopolistic EPR market structures, but are linked to a variety of different factors. Policy solutions as developed from this insight, are outlined below.

Conclusions and Recommendations for Action

Our study revealed that both systems present benefits and challenges. As shown in the comparative matrix, competitive systems such as in Germany, have a heightened potential for lower costs, and higher environmental performance. The comparatively high results in Germany demonstrate that competitive systems can be beneficial, as market pressure generates incentives for cost efficiency, improvements in service quality, and compels PROs

to develop competitive solutions for market share. However, in countries such as Italy, monopolistic systems can also deliver relatively high results, including in innovation and cost-efficiency for traditional waste streams.

As discovered from our research, for more effective EPR systems across the EU, rather than focusing on a particular market structure, it is essential that policymakers:



Ensure **full cost coverage** by producers, to align incentives and strengthen accountability



Promote effective EPR system design elements rather than a “one-size-fits-all” approach based on either a competitive or monopolistic structure. Instead, our study shows that system designs where PROs have **direct operational and material control** should be prioritised



At the **EU level, data collection and definitions should be harmonised**, to enable more transparent data reporting, higher compliance and continuous improvement



Provide **strong independent oversight** to foster effective EPR system design and governance