

The Transition Toward Adoption of Deposit-Return Systems in EU Countries for Plastic Packaging Bottles*

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Abstract

Plastic packaging is one of the most resource-intensive sectors globally, making it both a priority and a significant challenge in the transition toward a circular economy. To improve the selective collection of packaging waste and ensure high-quality recycling, the deposit and return system (DRS) has been introduced as a key policy instrument under EU legislation. However, EU Member States are progressing at different rates in the development and implementation of these systems. While some have embedded DRS into long-term strategic frameworks, others continue to face notable operational and infrastructural barriers.

In accordance with Directive (EU) 2019/904, Member States are required to meet mandatory targets for the separate collection of single-use plastic beverage bottles—specifically, a 77% collection rate by 2025 and 90% by 2029. As of now, 15 EU countries have introduced functioning DRS schemes. Among them, five have already achieved the 90% collection target, and several others are approaching this goal. Nevertheless, a number of countries still encounter significant challenges, including logistical constraints, limited infrastructure, and insufficient public engagement.

This article seeks to compare the diverse national approaches to DRS implementation and assess how differences in system design influence the effectiveness of plastic bottle collection across the EU.

Keywords: deposit and return system, single use plastic bottles, waste management, circular economy