



Romanian Deposit Return System Performance – 2024 One Year After Implementation

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1. Introduction

Implementing Deposit Return Systems (DRS) is often viewed optimistically in feasibility studies, but the reality, as seen in the six-year journey of establishing a DRS for one-way beverage packaging in Romania (2018–2023), is far more complex. This endeavour, from legislative proposal to system launch, was a unique and complex process.

Beyond this extended timeline, the implementation of Romania's DRS necessitated extensive negotiations among a diverse range of stakeholders. These discussions tackled complicated legal, operational, and financial dimensions critical to the system's effectiveness, requiring the active engagement of all parties involved, alongside a substantial number of experts and consultants.

Despite the valuable insights provided by experts and consultants during analyses and feasibility studies conducted in 2019, the data underwent significant transformations throughout the preparation and implementation stages (2020 – Nov. 2023). Many fundamental assumptions from the initially developed scenarios became unsustainable as the project progressed.

The negotiations among involved parties and the evolving legal framework substantially altered several assumptions and scenarios, thereby influencing the outcomes documented in earlier studies. Furthermore, various post-implementation factors—such as market behaviours, including packaging substitutions and shifts in consumer behaviours—resulted in diminished accuracy for some economic projections, affecting estimates related to system costs, logistical investments, and packaging structures.

From Romania's experience, it is clear that future feasibility studies concerning DRS must conduct a thorough and objective evaluation of the actual impacts of DRS implementation on all stakeholders. Despite the challenges this may entail, such evaluations are crucial to uncover a range of hidden costs, legal hurdles, and significant operational issues that carry profound financial and environmental consequences.

Moreover, the tendency among consultants to adopt a generalized and universal 'copy-paste' approach to DRS implementation is problematic. This methodology fails to account for the fundamental differences inherent in each country's specific context, including population distribution, existing infrastructure, regulatory frameworks, consumption patterns, and consumer behaviour. What is needed is a shift towards tailored strategies that respect and adapt to these unique contexts.

For a successful DRS implementation, a realistic, well-coordinated approach tailored to national specifics is crucial. This approach should prioritize and comparatively analyse existing collection schemes and alternatives at the national level, ensuring a comprehensive understanding of the context.

In this context, this study, which objectively analyses the underperformance of the Romanian Deposit Return System (DRS) during its inaugural year, offers precious insights that could serve as a critical point of reflection for all countries contemplating implementing a deposit system for single-use packaged beverages.

The premature launch of the system, executed without sufficient collection infrastructure and logistical systems, and a robust operational IT platform, has adversely affected the economic and environmental efficacy of the Romanian DRS. This scenario has led to discouraging outcomes, including alarmingly low collection and recycling rates, notable economic inefficiencies, and substantial legal interventions.

Utility of the Study: The relevance of this study is underscored by the fact that the Romanian DRS currently stands as the largest centralized DRS in the European Union. When we assert that the Romanian DRS is the most extensive, we refer to the beneficiary population, the range of products included, and the various packaging types encompassed within this system. Estimates suggest that the Romanian DRS will manage approximately 7 billion¹ units of packaging (plastic, glass, and metal). It is also important to note that Germany's DRS operates on a decentralized model, and economic data regarding its scale is not readily available.

In comparison to other centralized DRS models in Europe that have exhibited exceptional performance—such as Sweden, with a population of 10.4 million and an urban population rate of 87%; Denmark, with 5.7 million inhabitants and 88% urban; and Finland, with 4.8 million and 87% urban—Romania's DRS faces unique national challenges with significant implications for its overall effectiveness.

The Romanian DRS serves a population exceeding 19 million², of which only 52% reside in urban areas, resulting in a density of 84 inhabitants per square kilometer. In contrast, countries with implemented DRS systems typically feature an urban population averaging 75.6% and a density of 112 inhabitants per square kilometer.

This distinction is made in light of a widely recognized principle among DRS experts globally: the economic efficiency and environmental performance of a DRS are heavily influenced by the national-level collection and logistics infrastructure, territorial area, urban population density and distribution, as well as the volume of packaging produced, the nature and structure of the retail sector, and the state of road networks.

Value of the Study: The significance of this study stems from the accuracy and intricacy of the information presented, made possible by the remarkable transparency of the Romanian DRS regarding various data. The monthly reports provided at national and regional levels showcase collection and recycling performance across all material types—plastic, glass, and metal—as well as costs and applicable tariffs. This level of transparency³ equips the Romanian

¹ <https://hotnews.ro/sistemul-de-garantie-returnare-si-miza-celor-7-miliarde-de-ambalaje-reciclate-anual-ce-trebuie-sa-stie-toti-comerciantii-de-bauturi-din-romnia-33572>

² <https://insse.ro/cms/ro/tags/romania-cifre>

³ <https://returosgr.ro/raportare>

DRS with relevant and highly valuable insights for any specific analyses concerning deposit return systems.

Indeed, **the Romanian DRS stands out as the most transparent system from every angle when assessing all European systems.**

Additionally, the publicly accessible data⁴ on the performance of Extended Producer Responsibility schemes (PROs) in Romania has facilitated comparative analyses between these two systems (PRO vs. DRS), allowing for a detailed evaluation of their implications along the value chain.

The information presented in this study can serve as an effective tool for assessing the assumptions and scenarios developed by DRS consultants and those outlined in public theoretical analyses. In many instances, as demonstrated in the Romanian context, the operational complexities of the system, coupled with the myriad variables at play, render the assumptions and estimates found in feasibility studies significantly detached from the realities of implementation.

2. Definitions

DRS = Deposit Return System

EPR = Extended Producer Responsibility

PRO = Packaging Recovery Organization

EFA = Romanian Environmental Fund Administration

RetuRO = Romanian DRS Administrator

RVM = Reverse Vending Machine (automated packaging collection in shops)

RHF = Retail Handling Fee (paid by the DRS administrator to shops for handling the packaging returned by consumers)

Unredeemed deposit = the deposit not recovered by the consumer for not returning the empty packaging to shops

Producers fee = fee paid by producers to the DRS administrator for fulfilling their legal obligations

⁴ <https://www.mmediu.ro/categorie/comisia-de-supraveghere/196>

3. Study summary

This study addresses several key elements concerning the implementation of the Deposit Return System (DRS) in Romania:

1. **Process of Implementing the DRS in Romania:** This study meticulously outlines all the factors that influenced the decision to implement the Romanian DRS. It provides a comprehensive and concise overview of the implementation timeline, beginning with the adoption of the legal framework in 2018, followed by the development of feasibility studies in 2019, and culminating in the system's official launch on November 30, 2023.
2. **National Characteristics Regarding Packaging and Waste Management in 2023:** Within this context, the study analyses the structure of packaging in Romania, the methods employed to meet packaging recycling obligations, associated costs, and the performance of existing packaging recycling alternatives.
3. **Unique characteristics of the Romanian DRS:** The analysis includes an examination of the categories of products and types of materials involved, the volumes of packaging covered by the DRS, deposit values, the quantitative dimensions of the system and the infrastructure required. It also outlines several assumptions regarding the system's scope, highlighting the unique and interesting aspects of the Romanian DRS.
4. **Context of the DRS Launch in Romania:** The study investigates into the challenging circumstances surrounding the system's launch in Romania, emphasizing how these conditions may impact the economic and environmental performance of the DRS.
5. **Governance of the Romanian DRS:** The governance structure of the Romanian DRS is distinct from that of other European systems. This section analyses the composition of stakeholders, ownership structure, the Directorate, the Supervisory Board, legal obligations, and applicable penalties.
6. **Environmental and Economic Performance of the Romanian DRS:** A crucial component of the study is the examination of the system's revenue sources and cost structures, along with the correlations between these elements.
7. **Conclusions and Recommendations:** The study identifies the primary causes of the system's underperformance in its first year and emphasizes the urgent need for significant improvements in the Romanian DRS. This is particularly crucial in light of the substantial increase in DRS recycling targets legally established for 2025-2026.

While the Romanian DRS has the potential to be a viable solution for various packaging types, it is not a one-size-fits-all answer and must be viewed within the broader framework of national waste management systems and objectives. Furthermore, any implementation must be executed with meticulous preparation.

4. The implementation process of DRS in Romania

The journey from the legislative proposal for a Deposit Return System (DRS) in Romania to its actual implementation crossed nearly six years (2018 – November 2023). Establishing a DRS is a complex and extended endeavour that hinges on comprehensive feasibility studies and the crucial alignment of the entire industry. This underscores the necessity of collaboration and unity in such a significant undertaking.

This chapter aims to elucidate the drivers that facilitated the implementation of the DRS in Romania, a significant step in packaging waste management. It will outline the timeline of the implementation process, and explore the national context in which the Romanian DRS was launched in November 2023.

4.1 Drivers of Implementation.

The decision to implement a deposit return system in Romania was motivated by several key factors identified from 2017 to 2018:

- **Persistent Underachievement in National Packaging Recycling Targets:** Romania consistently failed to meet the national packaging recycling targets established in alignment with European Union regulations.
- **Risks of Non-Compliance with Packaging Recycling Objectives:** There were significant concerns regarding the potential inability to meet national packaging recycling objectives for certain materials from 2023 to 2025.
- **Challenges Related to Recycled Content Obligations:** Major risks existed concerning the failure to fulfil obligations regarding recycled content, particularly for PET, along with other objectives outlined in the Single-Use Plastics Directive.
- **Credibility Issues in Packaging Collection and Recycling Activities:** Instances of reported fraud by some collectors and recyclers resulted in a lack of credibility surrounding packaging recycling initiatives for specific material types.
- **Inadequate Infrastructure for Packaging Waste Collection:** The national infrastructure for the separate collection of packaging waste from households was notably deficient.
- **Legislative Ambiguities:** Significant gaps in legislation regarding property rights over packaging waste facilitated the growth of the informal collection sector, a network of unregulated waste collectors, undermining municipal collection efforts.

Without these challenges, the approach to implementing the system in Romania would likely have been tailored to the recycling performance of only a few material types (plastic and aluminium). However, from the outset, the implementation strategy was more inclusive, opting to introduce all eligible materials and products for the system.

4.2 Chronology of Implementation

The timeline for the implementation of the deposit system in Romania was as follows:

- **2018:** Emergency Ordinance No. 74⁵ establishes a deadline for the implementation of the DRS, based on feasibility studies, set for March 2021.
- **2019:** Two simultaneous feasibility studies are conducted: one coordinated by representatives of the beer industry and the other coordinated by representatives of the water and soft drink industries. The results of the two studies are compared and integrated, aligning the assumptions and scenarios.
- **2020 - 2022:** Negotiations between stakeholders (producers, retailers, and state authorities) regarding the legal framework, institutional approach, and essential financial and operational aspects of the system.
- **2022:** In August 2022, following a Government Decision, the Romanian state mandates **RetuRO** as the administrator of the Romanian DRS.
- **November 30, 2023:** Official launch of Romanian DRS.

4.3 Characteristics of the Romanian Market – 2023

It is crucial to analyse the national context at the time of implementation to assess the impact of DRS implementation objectively. This analysis should consider the structure of packaging introduced to the market, the current or alternative methods for meeting recycling obligations, and the recycling performance by material type, all while correlating these factors with economic efficiency.

4.3.1 Packaging Structure In 2023, over 19,000 economic operators reported the placement of 2.46 million tons of packaging into the market. Data collected from the Romanian Environmental Fund Administration (EFA) reveals the following structure of packaging by material type, ranked in descending order based on quantity:

- **Paper-Cardboard:** 688,897 tons
- **Wood:** 593,281 tons
- **Plastic:** 495,768 tons
- **Glass:** 441,671 tons
- **PET:** 148,400 tons
- **Metal:** 65,015 tons
- **Aluminium:** 31,059 tons

4.3.2 Methods of Fulfilling Packaging Recycling Obligations The recycling obligations for 1.94 million tons of packaging placed on the market were successfully met through the efforts of 16 PROs.

For the remaining quantities, totalling over 500,000 tons, companies opted for individual recycling solutions. Meanwhile, tiny companies reported their packaging quantities to state authorities and paid penalties for non-recycling, which are set at €0.40 per kilogram for unrecycled packaging.

⁵ <https://legislatie.just.ro/Public/DetaliuDocumentAfis/203014>

4.3.3 Recycling Performance The global recycling target for Producer Responsibility Organizations (PROs) in 2023 was 65.2%, and the recycling targets by material type were met as follows:

- **Cardboard Paper** = 72.22%
- **Glass** = 67.54%
- **Metal** = 65.69%
- **PET** = 61.14%
- **Wood** = 51.03%
- **Plastic** = 41.44%
- **Aluminium** – 31.47%

Following audits conducted by EFA, it was observed that the PROs in Romania successfully met all their legal recycling obligations in 2023.

This achievement was notable in terms of the overall target and the specific recycling objectives for each material type.

A key national characteristic is that, since 2012, Romania has set separate targets in its legislation for PET packaging, which are considerably higher than the plastic recycling objectives established at the European Union level.

4.3.4 Packaging Recycling Costs Given the economic implications associated with the implementation of the DR), it is essential to evaluate the environmental and financial performance of current recycling solutions.

In Romania, unlike many other EU member states, Producer Responsibility Organizations rely solely on one source of revenue: the fees charged to producers and importers of packaged products. Notably, PROs in Romania do not possess ownership rights over the collected packaging waste, which means they do not benefit financially from selling the collected packaging waste to final recyclers.

A review of the public data regarding PROs revenues⁶, reveals that for the 1.94 million tons of packaging for which they are responsible and have successfully met all recycling targets, PROs generated a total of €165 million revenue from producers and importers (PROs producers fees).

On a surface level, one might deduce that the average recycling fee in Romania for 2023, as paid by producers and importers to PROs, amounts to €85 per ton. However, this perspective oversimplifies the situation, as it fails to consider the variety of packaging types introduced to the market and the differing costs incurred by producers based on the flows of packaging waste generated (municipal versus industrial-commercial).

A positive aspect in Romania, as is the case throughout the European Union⁷, is that PRO fee structures are well-documented and publicly accessible by material type, enhancing transparency and allowing for a thorough and comprehensive analysis.

⁶ <https://termene.ro/>

⁷ <https://expra.eu/countries/>

Consequently, in 2023, Romania reported the average fees charged by PROs categorized by material type and distinguished by industrial-commercial collection flows, alongside the recycling targets achieved.

Type of material	PROs - avg. municipal fee (euro/ton)*	Type of material	PROs - avg. Industrial - commercial fee (eur/ton)*
Glass	115	Glass	102.8
Plastic	97.9	Plastic	77
PET	167	PET	134.5
Cardboard-paper	84.9	Cardboard-paper	79
Metal	99	Metal	78
Aluminium	160	Aluminum	140
Wood	85.3	Wood	72.9

**The presented fees represent the average fees of Romanian PROs for the year 2023 and are expressed in euros/ton of packaging placed on the market.*

5. Romanian Deposit Return System characteristics

When considering fundamental national elements such as population size, urban versus rural distribution, population density, roads and retail networks, and market and consumer behaviours, several standard factors emerge that influence the size, complexity, and efficiency of a deposit system for single-use beverage packaging:

- Categories of products
- Types of materials
- Packaging Volumes
- Quantitative size of the system
- Deposit value
- Required infrastructure

5.1 Categories of Products

The diversity of products included in the deposit system is crucial in shaping its structure and operational requirements. Across Europe, functioning DRSs universally cover water, soft drinks, and beer, while certain categories, such as edible oil and dairy products, are typically excluded. Furthermore, wine and spirits are specifically excluded in six operational DRSs throughout Europe. In Romania, the decision has been made to incorporate all eligible product categories into the system, except for edible oil and dairy product.

5.2 Types of Materials

The materials incorporated into DRSs significantly influence not only the recycling processes but also consumer behaviour and participation in the deposit system.

Decisions regarding the inclusion of packaging materials in the deposit system should take into account national specificities, the effectiveness of existing recycling solutions (including the performance of current PROs), recommendations from feasibility studies, and the overall economic, social, and environmental impacts of the system's implementation on society.

From this standpoint, DRSs across Europe display a variety of unique characteristics⁸. For instance, Sweden, Slovakia, and Ireland have opted not to include glass in their DRSs, while the Netherlands has excluded both glass and metal packaging.

In Romania, following extensive discussions between state authorities and industry stakeholders, it was determined that all beverage packaging materials—specifically glass, plastic, and metal—will be included in the deposit system.

5.3 Packaging Volumes Accepted

The DRS packaging volumes are critical for evaluating the overall impact and efficiency of the deposit system. In alignment with established practices at the European level and taking into account the technical and operational conditions of Reverse Vending Machines (RVMs) as well as the types and structures of retail networks, the Romanian Deposit Return Scheme (DRS) allows for accepted volumes of one-way beverages ranging from 0.1 to 3 liters.

5.4 Quantitative Size of the System

The scale of the system and the extent of market coverage are critical factors influencing its implementation and effectiveness. From the outset, it is essential to note that the entire deposit system is built around a digital platform, with all cost and revenue elements reported per packaging unit. In contrast, the PRO model relies on a quantitative metric based on tons. Within the DRS, the sole relevant quantitative measure pertains to the weight of the collected and sold packaging to recyclers.

According to data shared by representatives of the DRS administrator in 2023, the Romanian DRS is expected to handle over 7 billion pieces of packaging, with an estimated composition of 45% plastic, 40% glass, and 15% aluminium. Analysing national data from 2023 and considering the categories of products and materials included in the system, it is estimated that the Romanian DRS will manage a maximum of 550 tons of packaging annually, which accounts for approximately 21% of the total packaging introduced into the Romanian market. During the first year of operation, transitioning from non-DRS labelling to DRS-marked labelling will likely result in significantly lower quantities.

Any substantial reduction in the number of DRS-marked packaging—regardless of the affected material type—will lead to an immediate and considerable negative financial impact on the system's economy. This reduction will generally stem from consumer behaviour (such as purchasing products in larger

⁸ <https://www.reloopplatform.org/resources/global-deposit-book-2024/>

volumes, for example, 2 liters instead of 0.5 liters, which reduces the allocated deposit value) or producer behaviour, where they may opt for alternative packaging solutions.

Two specific situations can be identified:

- **Producers avoiding high DRS producers' fees:** Some producers may prevent the producer fees associated with certain materials by switching from 3-liter preforms to slightly larger options, such as 3.1, 3.2, or 5 liters, thereby transferring those quantities to PRO models where the producers' fees are significantly lower.
- **Adjusting packaging proportions:** In another scenario, producers may change the proportions of materials in their packaging portfolio, such as switching from plastic (PET) to aluminium, provided their production capacity allows for it. This strategy aims to benefit from the lower producer fees associated with aluminium, as the costs for plastic are considerably higher.

5.5 Deposit value

The financial incentive offered through the deposit amount is crucial for encouraging consumer participation and ensuring the return of used packaging. While the deposit values across Europe range from a minimum of €0.10 per unit to a maximum of €0.40 per unit, Romania has set a deposit value of €0.10 per unit, considering its citizens' purchasing power.

5.6 Required DRS Infrastructure

Adequate infrastructure, encompassing collection points, logistics, and recycling facilities, is crucial for the deposit system's successful operation and ensuring the efficiency of the process.

The performance of the deposit system is influenced by the infrastructure of retail networks at the national level, the method of collection used in stores (automated vs. manual), and the number and distribution of logistics centers nationwide.

The efficiency of the deposit system is closely tied to the extent of automated collection, which relies on stores' ability to invest in Reverse Vending Machines (RVMs) and the types of retail outlets available nationally—whether modern supermarkets or traditional small shops—as well as the demographic distribution between urban and rural areas.

According to Romanian legislation governing the implementation and operation of the deposit system, all stores in Romania, regardless of size, are legally required to:

- Organize collection points.
- Optionally invest in automated collection infrastructure (RVMs), depending on their financial capability.
- Collect returned packaging from consumers and refund the associated deposit value.

Stores that choose to invest in Reverse Vending Machines (RVMs) can anticipate recovering their investment within a maximum timeframe of five years through the Retail Handling Fees received from the DRS administrator. These fees are applied to the volume of packaging items collected by each store on a monthly basis.

At the launch of the DRS in November 2023, 80,000 stores were obliged to participate in the DRS, of which only 6,579 were modern retail outlets, according to Piața Review⁹. The remaining 73,000+ stores were small, traditional shops.

An essential factor for the system's effectiveness is the distribution of logistics centers, where manually collected packaging is counted, sorted, and baled before recycling.

Official communications from RetuRO in November 2023 indicate that the Romanian DRS requires a minimum of 17 logistics centers¹⁰ to operate optimally.

6. Context of the DRS launch in Romania – November 30, 2023

According to recommendations from experts and consultants specializing in DRS for single-use beverage packaging, the launch of such a system cannot occur 24 months after the appointment of the system's administrator.

Following a legal process, RetuRO was officially appointed as the administrator of the deposit system in Romania in August 2022. This means that the earliest possible launch date for the system would have been August 2024.

The actual reasons behind the premature launch of the system in November 2023 remain unclear. There are speculations that political motivations may be involved or that state authorities did not fully grasp the system's complexity and its macroeconomic and legal implications. Furthermore, demanding negotiations among the stakeholders may have contributed to the perception that the industry was deliberately blocking the DRS launch.

Notably, the executive management of RetuRO formally requested a postponement during the General Shareholders' Meeting in September 2023, proposing April 2024 as the new launch date. However, the state authorities did not grant this request.

Considering the complexity of the model and the essential nature of specific implementation steps that cannot be shortened without compromising the integrity of the entire system, the DRS management articulated compelling justifications for postponing the launch:

- **Lack of a functional IT platform:** There was no national IT system in place¹¹ to integrate all data collected within the DRS, including quantities collected, recycled materials, deposit guarantees, transportation, and product registrations. Even if such a platform had been completed by November 2023, it would have required rigorous testing for at least 2-3 months.
- **Inadequate logistics system:** The implementation and testing of a logistics framework for retrieving empty packaging returned by consumers to retailers had not been completed. The bidding process to select Geodis, the logistics company responsible for managing the entire system, took place after the system's launch.
- **Insufficient automated collection infrastructure:** At the time of the launch, there was a notable deficiency in automated collection systems, even among major retail chains; by
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⁹ <https://www.revista-piata.ro/retail/harta-retailului-modern>

¹⁰ https://returogr.ro/sites/default/files/2023-11/Comunicat_de_presa_RetuRO_Deschiderea_centrului_de_la_Cluj_RO_0.pdf

¹¹ <https://www.businessmagazin.ro/analize/comert/sgr-un-sistem-complex-sustinut-de-o-platforma-it-unica-22201714>

November 2023, fewer than 10% of registered modern retail stores had implemented Reverse Vending Machines RVMs).

- **Deficient logistical infrastructure for counting centers:** Of the 17 necessary and planned counting centers at the national level, only one was operational at the time of the launch, having opened just days before the DRS started¹².
- **Absence of a national DRS billing system:** There was no billing system to integrate the 80,000 stores required to register, ensure proper collection and return of packaging, and manage deposit guarantees.
- **Lack of a reporting and packaging registration system:** There was no interface established for RetuRO to operate effectively with producers and retailers. At the time of the system's launch, fewer than 25% of the over 73,000 traditional stores had signed contracts with RetuRO, the system administrator¹³.
- **Confusion regarding product labelling transition:** Significant confusion existed concerning the transition from the packaging without DRS labelling to those with DRS labelling, a situation likely to create numerous inventory, billing, and product identification challenges for RVMs in 2024.

These factors collectively indicated that the premature launch of the system would substantially hinder the environmental and economic performance of the Romanian DRS, particularly in its first year of operation. This prediction was later substantiated by the detailed performance analysis of the DRS in 2024.

7. Romanian DRS governance

It is essential for the governance of a DRS to comprehensively consider all stakeholders involved and their contributions to its operation, ensuring equitable representation in the system's governance.

7.1 Stakeholders Involved in the System

A DRS should be a collaborative effort that involves a range of stakeholders. Each group, including producers, retailers, HORECA, local authorities, recyclers, and the DRS administrator, has a unique role to play in ensuring the system's effectiveness.

The Romanian DRS key stakeholders are:

- **Producers and Importers:** Over 1,300 national and international companies¹⁴ in Romania must label their packaging with the Romanian DRS symbol, apply the deposit value of €0.10, report data, pay administrative fees, and fulfil specific DRS obligations.
- **Retail Sector:** All stores, regardless of size, must establish collection points, acquire the necessary collection infrastructure (whether automated or manual), and ensure the collection

¹² <https://revistaprogresiv.ro/stiri/green/primul-centru-regional-de-colectare-ambalajelor-de-bauturi-din-romania-inaugurat-la-bontida/>

¹³ <https://www.euronews.ro/articole/nu-toate-magazinele-respecta-sgr-doar-25-dintre-retailerii-s-au-inscris-in-sistemu>

¹⁴ <https://returogr.ro/sites/default/files/2025-01/Lista%20produc%C4%83tori%20-%20contracte%20semnate%209.01.2025.pdf>

and return of the deposit value. This sector encompasses approximately 80,000 stores, of which modern retail accounts for 6,579, according to data from July based on Piața Review.

- **HORECA Sector:** This sector, which encompasses establishments within the Hotel, Restaurant, and Catering (HORECA) industry, is required to collect and return DRS packaging that is consumed on their premises.
- **Local Authorities:** According to Government Decision 1074/2021¹⁵, local authorities can organize common collection points in collaboration with small stores (under 200 m²). These points must be located no more than 150 meters from the point of generation in urban areas and 500 meters in rural areas.
- **Recyclers:** Responsible for recycling the packaging waste collected through the system.
- **DRS Administrator - RetuRO:** As the central entity managing the entire system, RetuRO serves as the administrator of the deposit system. Its responsibilities include overseeing the collection and return of the deposit value, ensuring the recycling of the packaging waste, and investing in the development of logistics centers at the national level.

7.2 Shareholding Structure of the Romanian DRS

In a significant move in August 2022, the Romanian state, through a government decision, entrusted RetuRO with the crucial role of managing the Romanian DRS. The shareholding structure of RetuRO¹⁶ is as follows:

- **80% of the shares** are held by industry associations, distributed as follows:
 - **75%** by the Association of Water and Soft Drink Producers and the Association of Beer Producers
 - **25%** by the Association of Modern Trade
- **20%** is held by the Ministry of Environment, Waters, and Forests.

However, the exclusion of key industry sectors, such as traditional trade (accounting for over 70,000 stores) and the wine, spirits, and HORECA sectors, from RetuRO's shareholding structure has had a significant impact. This exclusion has led to a range of grievances, challenges, and difficulties during the first year of operation of the Romanian DRS.

7.3 Supervisory Board and Directorate

As per the national legislation, the Romanian Deposit Return System (DRS) is governed by two key entities-the Supervisory Board and the Directorate. These bodies play crucial roles in overseeing and managing the operations of the DRS.

7.3.1 DRS Supervisory Board The Supervisory Board of RetuRO consists of 11 members, appointed as follows:

- **7 members** are nominated by producers' associations (representing water, soft drinks, and beer).
- **2 members** are nominated by modern trade associations.
- **2 members** are appointed by the Romanian State, specifically the Ministry of Environment, Waters, and Forests.

¹⁵ <https://legislatie.just.ro/Public/DetaliuDocument/247209>

¹⁶ <https://revistaprogresiv.ro/stiri/fmcg/returo-sistem-garantie-returnare-devine-administratorul-sgr-romania/>

7.3.1 DRS Directorate Under the government decision, the RetuRO Directorate can consist of a minimum of 3 members and a maximum of 7 members. Members of the Directorate are exclusively proposed by the following shareholders of RetuRO: the Producers' Associations (representing water, soft drinks, and beer) and the Retailers Association.

RetuRO's operations are underpinned by a clear and transparent governance structure. The representation of RetuRO in legal documents is executed through the signatures of two individuals: the President of the Directorate and another Directorate member. The regulatory framework governing the operations of the DRS administrator leaves no room for ambiguity, clearly delineating the powers of the Supervisory Board and the responsibilities of the RetuRO Directorate.

RetuRO operates under a dual system, meaning that members of the administrative body are civilly liable to the company for damages resulting from their failure to fulfill or improper fulfillment of obligations as outlined by law, the articles of association, and decisions of the general meeting. They are responsible for the quality of administrative actions. Additionally, administrators and members of the Supervisory Board are liable under the Commercial Companies Law for damages arising from the failure to meet their obligations as stipulated by law and the mandate contract.

7.4 Romanian DRS legal obligations

In national legislation, the DRS is required to meet collection objectives, while producers have to meet recycling objectives. Failure to achieve these objectives results in substantial penalties payable to the Environmental Fund Administration.

7.4.1 Collection and Recycling Objectives In Romania, during the year 2024, there were two types of legal objectives concerning the collection and recycling of DRS packaging:

- **The collection objectives**, which was placed upon the DRS administrator
- **The recycling objectives**, which remained (until December 30, 2024) the responsibility of producers, a situation similar to that of companies fulfilling their recycling objectives through PROs.

According to current legislation, RetuRO has a legal obligation to meet the following **DRS packaging collection objectives** during the period 2024 – 2026:

- **2024:** 65% glass, 65% plastic, 65% metal;
- **2025:** 75% glass, 80% plastic, 80% metal;
- **2026:** 85% glass, 90% plastic, 90% metal.

7.4.2 Applicable penalties for Non-fulfilment of collection and recycling objectives It is essential to note that in Romania, failing to meet legal objectives for packaging collection and recycling incurs specific penalties with significant financial consequences. The application of these penalties is as follows:

a) Penalties applied directly to the DRS administrator—RetuRO—for not meeting packaging collection objectives:

- **€0.20** for each unit of glass and PET packaging not collected according to the legally established collection target.
- **€0.10** for each unit of metal packaging not collected according to the legally established collection target.

In the event of non-compliance with these legal objectives, RetuRO is obligated to declare and pay these penalties to the Romanian State, which it will subsequently recover from producers through the management fee in the following year.

b) Penalties applied directly to producers for failing to meet packaging recycling objectives:

- **€0.40** for each kilogram of packaging that is not recycled according to the legally established recycling targets.

Throughout 2024, there was uncertainty regarding how producers could recover penalties for failing to meet recycling objectives from RetuRO, primarily if the DRS administrator itself did not fulfil its legal obligations. This concern arises because producers have paid RetuRO to ensure compliance with their legal obligations for collection, which implicitly includes recycling duties.

These specificities regarding the Romanian DRS are crucial, as legislative changes effective December 30, 2024, will significantly change the applicability of penalties associated with DRS underperformance. The next chapter will detail this legislative change and its impact on producers, importers, and the DRS administrator.

8. Environmental and economic performance of the Romanian DRS in 2024

In contrast to other DRSs across Europe that often vaguely communicate their performance, the Romanian DRS has been exemplary in its transparency. RetuRO provides monthly reports detailing the quantities of packaging introduced to the market and the amounts collected and recycled, presented in terms of the number of pieces and kilograms. Additionally, RetuRO has made public critical information, including the volume of investments, the value of bank loans, retail handling fees (RHF), producers' fees, and various other vital data. This commitment to transparency has facilitated a proper assessment of the performance of the Romanian DRS in 2024.

8.1 Romanian DRS environmental performance- 2024

The assessment of the environmental performance of the Romanian DRS in 2024 takes into account the following five analyses:

- **Analysis of DRS infrastructure development**
- **Analysis of the DRS packaging structure**
- **Analysis of collection rates**

- **Analysis of recycling rates**
- **DRS Communication with Stakeholders and Consumers**

8.1.1 Analysis of DRS infrastructure development The infrastructure of the Romanian DRS and its functionality relate to the following elements:

- **Number of DRS packaging units introduced to the market:** Initial estimates by RetuRO indicate a total of 7 billion units annually (with an estimated structure of 45% plastic, 40% glass, and 15% aluminium).
- **National Specificities:** Romania has an area of 238,397 km² (ranked 13th in Europe), with a population of 19.05 million residents (ranked 10th in Europe), having a distribution of 52% in urban areas and 48% in rural areas, with a density of 54 inhabitants per km².
- **Collection Infrastructure in stores** (automated or manual): Over 80,000 stores are legally obligated to be part of the DRS. Among these, only 6,576 stores are part of modern trade (hypermarkets and supermarkets), while over 73,000 are small traditional shops. Correlated with space, the ability to pay, and the number of units collected, this is essential for ensuring the recovery of investments.
- **Logistics Centers:** The DRS logistics centers are essential for counting and sorting manually collected packaging. Given the national characteristics, Romania requires a minimum of 17 logistics centers for the system's proper functioning.
- **IT Platforms:** The platform or platforms that coordinate the functioning of the DRS (transport, billing, registration of packaging in the system, management of monthly data, etc.).
- **Roads Network:** Romania has approximately 1,000 km of highways¹⁷, which is notably very low relative to its size and population, negatively impacting logistical and transportation costs.

Collection infrastructure in stores. Consumers return empty post-consumption packaging to stores (return-to-retail) to recover their deposit value. The packaging collected through Reverse Vending Machines (RVMs) is automatically numbered and subsequently transported for recycling. Conversely, manually collected packaging is sent to logistics centers, where it is numbered and baled before being dispatched to recycling facilities.

The economic efficiency of the DRS pivots on the proportion of automated collection at retail collection points. Establishing an automated collection infrastructure (RVMs) requires significant investments from retailers.

Analyzing public data from Norway, Denmark, Sweden, and Finland, a high-performance DRS should achieve a collection rate of 80-90%, with an average of one RVM for every 1,600 inhabitants and an automated collection share exceeding 50-60%. In Romania, estimates suggest that at least 12,000 RVMs would be necessary for the DRS to operate efficiently.

While modern retail is financially and technically equipped to develop an automated collection infrastructure using RVMs, traditional trade faces technical and economic limitations. Small traditional shops have extremely limited space for collection and storage. Even if they wished to invest in RVMs, the investment cost (€18,000 - €40,000 per RVM) would only be amortized if a store collects at least

¹⁷ <https://hotnews.ro/video-romnia-trece-de-borna-de-1-000-de-kilometri-de-autostrazi-joi-de-la-13-00-se-deschide-traficul-pe-nca-un-ciot-din-autostrada-transilvania-43008>

1,000 packaging units daily. Thus, the share of modern trade compared to traditional trade must be carefully analysed in the implementation of a deposit system.

At the time of the DRS launch on November 30, 2023, less than 2% of eligible SGR stores in Romania had implemented an automated collection system. By August 2024, media reports indicated that only 4,000 RVMs were operational¹⁸ within the Romanian DRS, with 80% located in modern trade stores and 20% in medium-sized independent stores.

Price variations for different types of machines are significant and often overlooked in studies, impacting the overall investment conditions.

Small shops without automated infrastructure, using manual collection solutions (containers and bags), must purchase specific infrastructure from the DRS administrator. In Romania, the cost of this manual infrastructure, based on comparative market data, is prohibitively high, causing dissatisfaction among traditional retailers.

Logistics Centers: The efficient operation of a DRS depends not only on the collection infrastructure in stores but also on substantial investments in logistics centers (counting centers) nationwide. Population, store locations, and recycling capabilities across the country dictate this infrastructure's number and geographic distribution.

According to official information from RetuRO, the Romanian DRS requires a minimum of 17 logistics centers for optimal functionality. The investment needed for this infrastructure totaled €85.2 million, funded through loans from ING Bank¹⁹ and various producers.

Unfortunately, at the time of the launch, the Romanian DRS had only one functional logistics center. By July 2024²⁰, five centers were operational, and in October 2024²¹, RetuRO announced the launch of the seventh counting center, out of the total of 17 required for proper functioning.

In 2024, collection/transport contracts were awarded directly, without bidding or opening procedures, a fact publicly acknowledged by the CEO of RetuRO. This has raised significant suspicions in the collector market, particularly regarding RetuRO's dominant position and anti-competitive practices (adversities, non-payment of invoices to collectors, communication blockages, etc.).

Recently, the media reported that **an audit conducted by the international firm KPMG highlighted serious issues in the management of Romanian DRS²²**. The report points out operational and financial deficiencies and suspicions of favouritism towards the company GEODIS, which provides logistics for the entire system.

IT Platform. The delayed launch of an IT platform that facilitates communication between producers, stores, and transport companies (functional three months after the DRS launch) has caused significant delays in collection and, consequently, high hidden costs. Romanian media frequently reported on the difficulties generated by the absence of this platform.

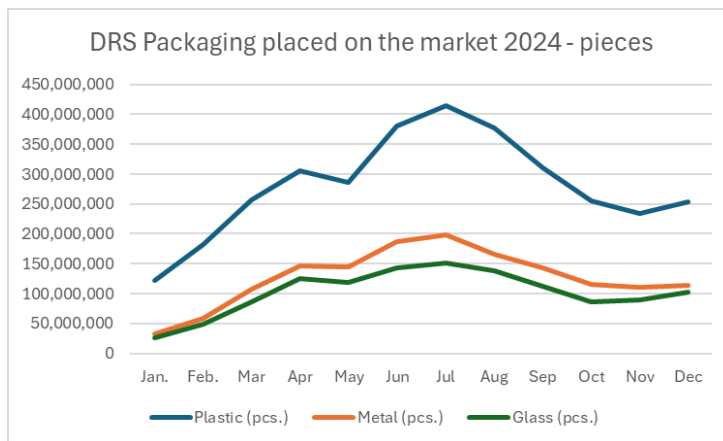
¹⁸ <https://www.zf.ro/economia-verde/pagina-verde-cum-au-evoluat-rezultatele-furnizorilor-de-aparate-care-22442056>

¹⁹ <https://hotnews.ro/webpr-deloitte-romnia-a-asistat-returo-n-obtinerea-de-la-ing-bank-a-celui-mai-mare-credit-verde-privat-din-romnia-n-valoare-de-426-de-milioane-de-lei-pentru-implementare-53087>

²⁰ <https://www.revistabiz.ro/returo-a-deschis-in-judetul-bacau-al-5-lea-centru-pentru-colectarea-si-procesarea-ambalajelor-sgr/>

²¹ <https://www.zf.ro/zf-24/returo-inaugurat-comuna-aricestii-rahtivani-judetul-prahova-cel-22501508>

²² <https://www.capital.ro/nereguli-semnificative-la-returo-si-posibila-favorizare-a-unei-firme-de-transport.html>



8.1.2 Analysis of the DRS packaging structure in 2024 Before we proceed, it's important to clarify that the legislation allowed the transition from non-DRS labelling to DRS labelling until July 1, 2024.

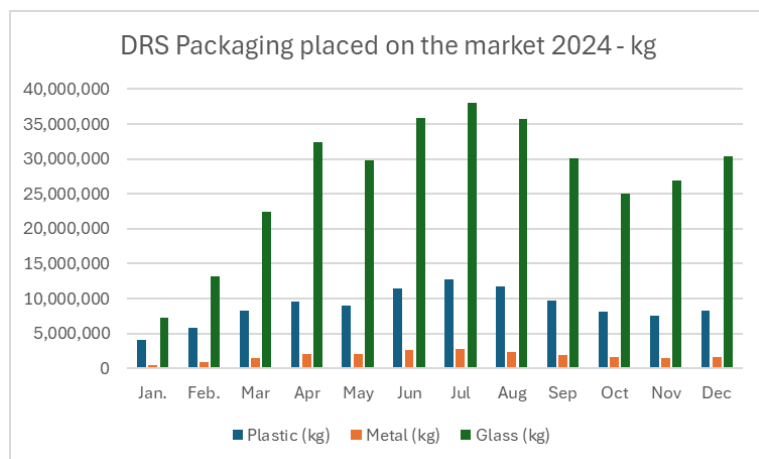
This transition, which included DRS obligations, was applicable to all packaging types except for wines and spirits. The extension of the transition deadlines for these products was a

necessary and objective decision.

In 2024, a substantial volume of over 6.1 billion pieces of packaging was introduced to the Romanian DRS market. This included 3.3 billion plastic pieces (55.12%), 1.5 billion metal pieces (24.86%), and 1.2 billion glass pieces (20.02%).

In terms of the quantity of DRS's packaging, the structure is as follows: the system managed over 455,000 tons of packaging, comprising 106.4 thousand tons of plastic (23.4%), 21.2 thousand tons of metal (4.67%), and 327.2 thousand tons of glass (71.9%).

This distribution is not advantageous for generating revenue from the sale of materials, as glass has a very low market value in Romania and presents challenges in the recycling process.



However, it is essential to note that 99.9% of the plastic reported in the Romanian DRS is PET, and over 96% of the metal reported is aluminium. These materials possess a high market value, which alleviates the economic impact of the low-value glass packaging.

8.1.3 Analysis of Collection Rates Based on the official data presented by RetuRO on January 25, 2025²³, the Romanian DRS recorded the following overall performance in 2024:

DRS packaging placed on the Romanian market - 2024

Plastic		Metal		Glass		TOTAL	
Pcs.	Kg.	Pcs.	Kg.	Pcs.	Kg.	Pcs.	Kg.
3,375,947,734	106,484,694	1,522,979,473	21,270,124	1,226,278,615	327,259,779	6,125,205,822	455,014,597

DRS packaging collected by Romanian DRS - 2024

Plastic		Metal		Sticla		TOTAL	
Pcs.	Kg.	Pcs.	Kg.	Pcs.	Kg.	Pcs.	Kg.
1,871,319,166	63,962,574	841,926,301	11,899,348	650,634,577	160,897,072	3,363,880,044	236,758,994

Romanian DRS collection rate - 2024

Plastic (pcs)	Metal (pcs)	Glass (pcs)	TOTAL
55.43%	55.28%	53.06%	54.92%

Legal collection rate established for the Romanian DRS in 2024 (according to Government Decision 1.074/2021)

65%	65%	65%	65%
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Romanian DRS collection performance vs. legal objectives - 2024

-9.57%	-9.72%	-11.94%	-10.08%
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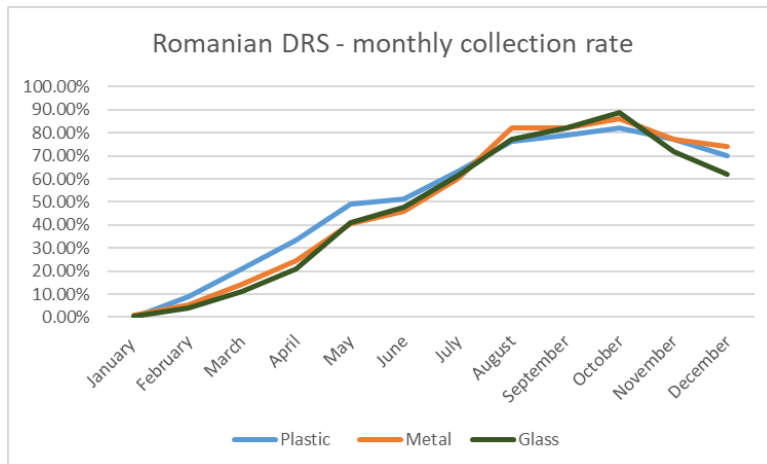
The collection rate is crucial not only because it is calculated numerically for each unit but also due to its economic implications, as each packaging unit incurs costs and deposits.

From this perspective, it can be stated that the **Romanian DRS managed in 2024 a total of 6.12 billion packaging units**, with the following composition: 55.12% plastic packaging (99.99% of which is PET), 24.86% metal packaging (over 90% of which is aluminium), and only 20% glass packaging.

By 2024, the Romanian DRS failed to meet the legally established collection objectives despite the deposit of €0.10. Moreover, the collection rates achieved for PET and glass were lower than those accomplished by the Romanian PROs in 2023. In PRO model the collection is voluntary and not dependent in the application of a deposit system.

To better illustrate the system's evolution, it is helpful to present the monthly collection rates (packaging collected versus packaging placed on the market):

²³ <https://returosgr.ro/sites/default/files/2025-02/Raportare%2025%20Ianuarie%2025%20-%20Dec%2024%20Actualizat.pdf>



An ascendent trend in collection rates can be observed during August, September, and October, followed by a decline in November and December. Notably, starting in July, most packaging not labeled with the DRS logo disappeared from the market.

This trend can be explained through a straightforward analysis of per capita collection rates at the county level (across 41 counties plus Bucharest, the capital). This

analysis also highlights the contributions of each county towards meeting the collection objectives.

Considering Romania's population of 19.05 million inhabitants, an average of 321 packaging units per capita was generated in 2024, equivalent to 24 kg, with the following structure by material type.

DRS packaging placed on the Romanian market - 2024							
Plastic		Metal		Glass		TOTAL	
Pcs.	Kg.	Pcs.	Kg.	Pcs.	Kg.	Pcs.	Kg.
3,375,947,734	106,484,694	1,522,979,473	21,270,124	1,226,278,615	327,259,779	6,125,205,822	455,014,597
177	6	80	1	64	17	321	24

DRS packaging per capita - 2024

Analysing this data and comparing the quantities of packaging collected at the county level²⁴, it is noted that only four counties in the country have exceeded the collection target of 65% set for 2024.

County	County population	Urban population	Share of Romanian total population	Packaging collected	Avg. pcs. collected per capita	Avg. pcs. generated per capita	Avg. collection rate per capita
		%	%	Pcs.	Pcs.	Pcs.	%
București	1,716,961	100.00%	9.01%	526,182,880	306	321	95.47%
Ilfov	542,704	45.19%	2.85%	151,779,730	280	321	87.13%
Constanța	655,997	65.99%	3.44%	165,088,874	252	321	78.40%
Timiș	650,533	53.10%	3.41%	156,664,917	241	321	75.02%
Brașov	546,615	68.69%	2.87%	117,092,253	214	321	66.73%
TOTAL	4,112,810		21.59%	1,116,808,654			

By analysing the population of the counties and their effective contribution to the collection objective, we can conclude that over 21% of the population of Romania resides in these four counties, which collected over 33% of the packaging gathered by the DRS in 2024. These counties have a predominantly urban population and a highly developed structure of modern trade. Ilfov County is attached to the Capital of Romania and boasts a well-developed modern retail infrastructure.

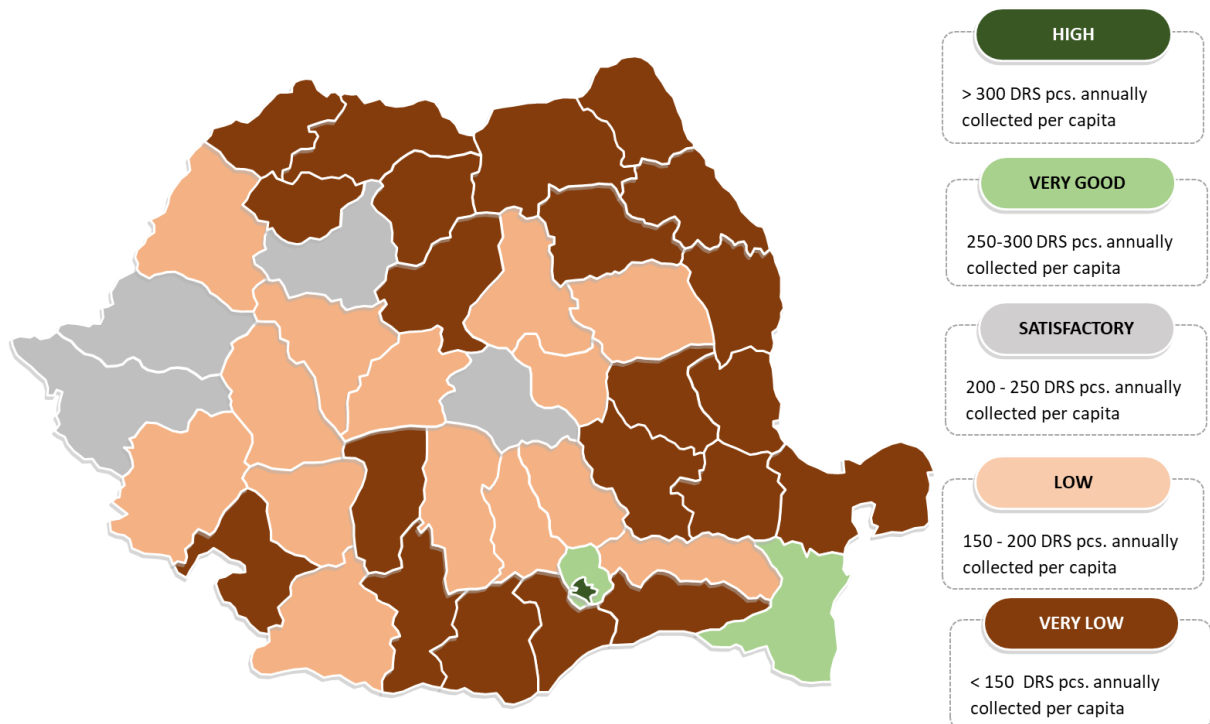
²⁴ <https://returosgr.ro/sites/default/files/2025-01/Raportare%20Judete%20Decembrie%202024.pdf>

Conversely, following the same reasoning, we identify nine counties that, on average, failed to surpass a collection rate of 40% in 2024.

County	County population	Urban populatio	Share of Romanian total population	Packaging collected	Avg. pcs. collected per capita	Avg. pcs. generated per capita	Avg. collection rate per capita
		%	%	Pcs.	Pcs.	Pcs.	%
Călărași	283,458	35.51%	1.49%	35,986,676	127	321	39.55%
Giurgiu	262,066	28.66%	1.38%	32,181,536	123	321	38.26%
Bistrița-Năsăud	295,988	37.60%	1.55%	35,891,224	121	321	37.78%
Vaslui	341,861	44.86%	1.79%	41,338,829	121	321	37.67%
Bacău	601,387	41.81%	3.16%	69,796,873	116	321	36.16%
Vrancea	335,312	32.65%	1.76%	38,751,284	116	321	36.00%
Neamț	454,203	35.36%	2.38%	50,480,305	111	321	34.62%
Suceava	642,551	39.29%	3.37%	71,271,118	111	321	34.55%
Botoșani	392,821	38.46%	2.06%	39,675,721	101	321	31.46%
TOTAL	3,609,647		18.94%	415,373,566			

The nine counties, which account for 19% of Romania's population, contributed only 12% to the quantities collected by the Romanian DRS in its first year of operation. These counties have a predominantly rural demographic, and the results highlight the performance disparities of the DRS model between urban and rural areas.

Considering that 48% of Romania's population resides in rural areas, the results from 2024 indicate that RetuRO must swiftly establish an adequate collection infrastructure at the rural level. Below is the map illustrating the average number of packaging units collected per capita at the county level.



8.1.4 Analysis of recycling objectives National legislation has established the following recycling targets for specific types of DRS packaging: 65% for plastic, 65% for metal, and 65% for glass. A crucial aspect outlined in national legislation is that only the quantities effectively recycled **by December 31, 2024**, will be considered when calculating the annual recycling target.

The quantities reported monthly by the Romanian DRS²⁵ encompass various types of data, including the amounts delivered and the corresponding recycled quantities. These recycling objectives are calculated based on the tonnage of packaging recycled vs. the total packaging placed on the market.

According to the final data from January 25, 2025²⁶, the Romanian DRS recorded the following recycling performance:

DRS packaging placed on the Romanian market - 2024

Plastic		Metal		Glass		TOTAL	
Pcs.	Kg.	Pcs.	Kg	Pcs.	Kg	Pcs.	Kg
3,375,947,734	106,484,694	1,522,979,473	21,270,124	1,226,278,615	327,259,779	6,125,205,822	455,014,597

DRS packaging recycled by Romanian DRS - 2024

Plastic		Metal		Sticla		TOTAL	
Pcs.	Kg	Pcs.	Kg	Pcs.	Kg	Pcs.	Kg
1,848,627,269	63,742,136	759,862,236	10,534,378	589,039,115	155,916,316	3,197,528,620	230,192,830

Romanian DRS collection rate - 2024

	Kg		Kg		Kg		Kg
	59.86%		49.53%		47.64%		50.59%

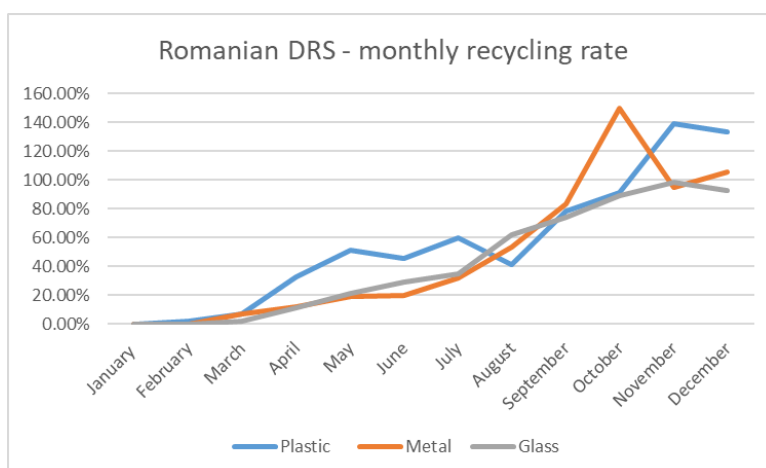
Legal recycling rate established for the Romanian DRS in 2024 (according to Government Decision 1.074/2021)

65%	65%	65%	65%
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Romanian DRS recycling performance vs. legal objectives - 2024

-5.14%	-15.47%	-17.36%	-14.41%
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Analysing the monthly recycling rates highlights the challenges encountered in collecting and counting packaging, primarily due to insufficient logistical infrastructure—only 5 of the 17 necessary logistics centers were operational as of July. Additionally, difficulties in relationships with final recyclers, particularly concerning glass packaging, have further exacerbated these challenges.



²⁵ <https://returosgr.ro/raportare>

²⁶ <https://returosgr.ro/sites/default/files/2025-02/Raportare%2025%20Ianuarie%2025%20-%20Dec%2024%20Actualizat.pdf>

8.1.5 DRS Communication with Stakeholders and Consumers. Communication with stakeholders has emerged as one of the most significant challenges within the Romanian DRS model. Given the substantial shareholding of the Romanian state in the DRS, the importance of effective communication with both the industry and consumers cannot be overstated. Relying solely on forceful state intervention or consumers' concern over losing the €0.10 deposit is not a sustainable strategy.

Advertising the DRS to consumers, utilizing animated representations rather than realistic depictions of the process has contributed to decreased adoption rates. It is crucial to recognize that consumers will embrace the DRS if it is perceived as easy, normal, and rewarding. They need to feel, "I have the skills and knowledge to engage with this, and there are no organizational obstacles in my way—I won't face repercussions, and no one will hinder my efforts."

Several factors have negatively impacted the Romanian consumer experience with the DRS, including inadequate information, frequent malfunctions of RVMs, shifting responsibility from stores to RetuRO when consumers seek assistance, and limited engagement by traditional trade. Collectively, these issues have led to a cycle of awareness, hope, initial engagement, and subsequent disengagement. Currently, the national media widely highlights these adverse circumstances.

An analysis would be beneficial to determine the proportion of current DRS packaging returns sourced directly from consumers versus that collected by informal collectors from separate collection containers.

Communication among industry stakeholders (producers, importers, retailers) was challenging in the initial four months of the system's operation. Problems such as unresponsive communications, inadequate replies, and unprepared staff in the RetuRO call center generated public complaints from companies and even resulted in legal actions. This issue will be revisited in a subsequent chapter.

Recently, however, communication regarding data reporting to companies has also encountered serious errors with significant implications for producers, including penalties and sanctions from state authorities and unnecessary consumption of time and resources. For instance, RetuRO notably omitted caps and labels from its report, creating an apparent discrepancy between what producers reported as being placed on the market and what RetuRO confirmed to state authorities.

To handle these issues, it is essential to facilitate immediate improvements in data management in relation to producers and retailers.

In conclusion, in 2024, communication with stakeholders within the DRS has faced substantial challenges, ultimately resulting in a poor reputation for the system, which has been frequently discussed and negatively portrayed in the national media.

8.2 Romanian DRS economic performance – 2024

To accurately understand the economic dimension of the Romanian DRS, it is essential to detail the structure of costs and revenues, which differ significantly from that of PROs. Based on public data, we have identified the following structure of costs and revenues within the Romanian DRS:

COST STRUCTURE

- Retail Handling Fee (RHF)
- Investments in Logistics

- Monthly Logistics and Transport Costs
- Administrative Costs
- Marketing and Communication Costs
- Penalties for Non-fulfilment of Legal Objectives
- VAT applied on the difference between the deposit paid and the deposit returned

REVENUE SOURCES

- Value of Unreturned Deposits
- Producers Fee Paid by Producers
- Sale of Collected Materials

At the end of 2024, based on estimates and the public data communicated by RetuRO, the centralized structure of costs and revenues for the Romanian DRS is presented in the table below:

Costs structure and revenue streams of Romanian DRS - 2024

COSTS STRUCTURE	euro
1 Retail Handling Fee - based on the average RHF per type of material and the number and type of pieces collected	est. 137,372,725
2 Logistics costs (collection and transport)	N/A
3 Investment to build the logistic centers (Total bank loan - 85.2 million euros)	60,000,000
4 Administration costs (including IT platform costs)	N/A
5 Marketing & communication - 1.5 to 2% of the total value of unredeemed deposits and the sale of materials	est. 5,956,284
6 Penalties for failing to meet collection and recycling targets (legal requirement)	
Collection penalties - applicable for DRS's administrator - RetuRO	24,507,082
Recycling penalties - applicable to producers and importers for not reaching legal recycling objectives	72,265,229
7 VAT - applicable for difference between the annual total value of deposit and the value of the returned deposit	starting 2025
REVENUE STREAMS	euro
1 Value of UNREDEEMED DEPOSIT (unitary deposit value - 0,1 EURO per piece)	276,132,578
2 Value of producers' fees (estimated based on average rates per type of packaging material)	est. 109,838,721
3 Value of material collected and sold to recyclers (estimated based on average market prices)	est. 21,681,654

N/A = unavailable data

ROMANIAN DRS COST STRUCTURE

In comparison to all active DRSs in Europe, the Romanian DRS exhibits the following fundamental characteristics regarding its cost structure:

- **Application of Penalties:** Financial penalties are imposed on the administrator, RetuRO, and producers in cases of non-fulfillment of collection and recycling objectives.
- **Application of VAT:** Starting in 2025, VAT will be applied to the difference between the total value of guarantees in the system and the guarantees returned.

These regulations, which significantly impact the system's finances, were not accounted for by producers in the feasibility studies conducted in 2019, which utilized a traditional approach common across Europe. Instead, these regulations were imposed by Romanian state authorities both before and after the system's launch.

8.2.1 The Retail Handling Fees (RHF) The RHF paid by RetuRO to retailers serve as monthly compensation from the DRS administrator to help cover the retail costs associated with investments in automated or manual collection infrastructure, as well as ongoing operational expenses.

Within the Romanian DRS, there are three distinct types of RHF, each with its structure, as outlined below:

RHF for Automated Collection includes:

- The cost of purchasing, installing, and configuring RVMs
- The cost of maintaining and operating RVMs
- The cost of compacting SGR packaging
- Labor costs
- Costs associated with the placement area of the RVM
- Costs for storage area

RHF for Manual Collection includes:

- The cost of purchasing collection bags from the DRS administrator
- The cost for the area designated for placing bags for returning packaging
- The cost for the storage area for return packaging bags
- Labor costs

RHF for HORECA Collection includes:

- The cost for the storage area for bags for returning packaging
- Labor costs

The values of the RHF in 2024²⁷ were as follows, depending on the types of materials collected and the collection infrastructure used:

Romanian Retail Handling Fee (RHF) - 2024

Type of packaging	RVM - Automat collection (euro/pc.)	Manual collection (euro/pc.)	HoReCa (euro/pc.)
Small glass (<500 ml)	0.0364	0.0201	0.0109
Large glass (>500 ml)	0.0378	0.0329	0.0218
Small plastic (< 1000 ml)	0.0394	0.0119	0.0027
Large plastic (>1000 ml)	0.0497	0.0198	0.0086
Metal	0.0355	0.0096	0.0019

There are significant differences across Europe regarding the structure and values RHF. The following public data illustrates these variations:

- **Croatia:** RHF for automated collection is €0.023 per unit, while RHF for manual collection is €0.006 per unit.
- **Denmark:** RHF for automated collection ranges from €0.036 per unit for metal to €1.06 per unit for glass, while RHF for manual collection, the fees range from €0.62 per unit for metal to €2.05 per unit.
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²⁷ <https://circulador.ro/tarife-de-gestionare-sgr/>

- **Estonia:** RHF for automated collection varies from €0.031 per unit for metal to €0.037 per unit for plastic, while RHF for manual collection fees ranges from €0.0137 per unit for plastic to €0.0154 per unit for glass.
- **Finland:** RHF for automated collection ranges from €0.020 per unit for glass to €0.025 for plastic and metal, while RHF for manual collection, the fees range from €0.02 per unit for plastic to €0.09 per unit for glass and metal.

Comprehensive data on EU DRS retail handling fees can be found in the report "*Handling fees in deposit return systems*" by Reloop²⁸.

8.2.2 Investments in Automated Collection Infrastructure (RVMS) According to media reports from November 2024, there are currently 4,000 operational Reverse Vending Machines (RVMS) within the Romanian DRS. The type of RVM acquired is influenced by various factors, including the

type of store, customer traffic, geographical location, store size, and financial capacity for purchasing an RVM.

Estimates suggest that over 60% of operational RVMS (approximately 2,400 units) are large RVMS installed in hypermarkets, supermarkets, and discount stores, while 40% (about 1,600 units) are small RVMS found in smaller format stores.

The average prices for RVMS in the Romanian market, as set by manufacturers, are as follows:

- **€40,000 for large RVMS**
- **€18,000 for small RVMS**

Based on these figures, we can estimate that by the end of 2024, the total investment by the retail sector in RVMS was approximately €124.8 million.

8.2.3 Investments in Logistics Centers RetuRO's strategic planning was evident in its decision to borrow €85.2 million from ING Bank in 2023 for the development of logistics centers. The package, which includes an investment loan of €69 million for a five-year period and a working capital loan of €16.7 million for two years, was a well-thought-out move to ensure the company's growth and stability.

Although RetuRO's business plan anticipated the development of 17 logistics centers for the proper functioning of the system, only one center was operational at the launch of the DRS in November, and by the end of 2024, only 7 centers were operational.

Contrary to the claims of most DRS consultants, who assert that the infrastructure necessary for the functioning of the DRS can be funded from unredeemed deposits in the first year of operation, this is a misconception. The case of the Romanian DRS, which faced significant operational and financial challenges due to underfunding, serves as a cautionary tale in this regard.

According to official communications from November, RetuRO spent €60 million on the construction of the 7 logistics centers, indicating that, on average, the development of a logistics center in Romania cost approximately €8.5 million. **To ensure the complete infrastructure of the system, the DRS administrator, in collaboration with the company, will need to invest a total of approximately €145 million.** This investment will be crucial for the successful and sustainable operation of the DRS.

²⁸ https://www.reloopplatform.org/wp-content/uploads/2023/05/RELOOP_Factsheet_HandlingFees_Jan-2023_Web.pdf

8.2.4 Logistics Costs The value of logistics costs—encompassing collection, sorting, and transport—is influenced by several factors, including the level of system development, the structure of retail networks, the proportion of collection infrastructure (automated vs. manual), the quality of road networks, geographical positioning, and the scale of recycling capacities. Additionally, the managerial performance of the logistics operator is crucial.

In Romania, specific logistics costs are not publicly disclosed, and most transport contracts have been awarded through direct assignments, leading to dissatisfaction among all stakeholders.

From this perspective, operational and economic inefficiencies and concerns related to transparency and business ethics have resulted in significant financial and reputational challenges for the Romanian DRS.

An audit conducted by the international firm KPMG revealed serious issues in managing the deposit return system administered by RetuRO. The report identifies operational and financial deficiencies and

raises suspicions of favouritism towards the logistics operator GEODIS, which oversees logistics for the entire system.

These issues underscore the need for a more comprehensive analysis of costs moving forward.

8.2.5 Administrative Costs The administrative costs of a DRS are relatively stable. A significant portion of these costs is dedicated to the development and operation of the IT platform, which is crucial for the system's effective functioning, including financial management, data management, and the optimization of operations.

The administrative costs associated with this model are not publicly disclosed; however, it is anticipated that they will be made public by mid-2025.

8.2.6 Marketing and Communication Costs RetuRO's expenses for education and communication are governed by specific regulations. RetuRO is required by law to allocate an annual sum equivalent to 1.5-2% of its revenues for campaigns aimed at educating the public and raising awareness about the system. This allocation is derived from the cumulative value of unredeemed deposit and the revenue generated from the sale of collected materials to recyclers.

Generally, the communication budget of a DRS tends to increase when collection rates decline. Conversely, for economic reasons, these communication budgets decrease when collection rates significantly exceed established objectives.

Considering that this is the system's first year of operation and that intensive communication is essential, we estimate that in 2024, using the maximum allocation permitted by law (2%) and the data reported by RetuRO, the communication expenses of the Romanian DRS amounted to approximately €5.95 million.

8.2.7 Penalties for Non-fulfilment of Collection and Recycling To our knowledge, Romania is the only country in Europe that has established two types of penalties applicable in cases of non-performance within the deposit system—specifically for failing to meet collection and recycling objectives.

Under the legislation in effect until December 30, 2024, RetuRO, as the administrator of the Romanian DRS, was responsible for paying penalties for failing to achieve collection objectives, while producers faced penalties for not fulfilling the legally established recycling goals.

In 2024, the total value of penalties incurred due to non-performance of the DRS amounted to €96.7 million, distributed as follows: €24.5 million in penalties applied to the DRS administrator and €72.2 million in penalties imposed on producers for failing to meet recycling objectives.

Typically, these penalties were to be paid by January 25, 2025, to the Environmental Fund Administration by both the DRS administrator and the producers.

However, following advocacy efforts from the industry—justified by reasons such as the system's premature launch, insufficient infrastructure, its first year of operation, and the transition period—the total penalties were converted into a multi-annual priority investment program for the period 2025-2029 under Emergency Ordinance No. 154/2024, enacted on December 30, 2024. This program includes an annual budget of at least €14 million until reaching a total investment of €70 million, aimed at enhancing the efficiency of the deposit system.

RetuRO will develop the multi-annual priority investment program, which the Environmental Fund Administration must approve within 30 days of submission. It will then receive government approval through a resolution.

It is clear that these penalties, transformed into costs allocated for a five-year investment plan, will be borne by the DRS administrator, who will incorporate them into management fees for the period 2025-2030.

As a consequence of this emergency ordinance, while only stores were acquiring RVMs, the investment plan indicates that the DRS administrator is also likely to acquire RVM infrastructure starting in 2025, alongside other specific purchases for logistics centers.

It should be noted that this exemption from penalties applies only for the year 2024. If, by 2025, the DRS fails to meet its collection and recycling objectives (75% for glass, 80% for plastic, and 80% for metal), the DRS administrator will be required to pay the corresponding penalties directly to the Environmental Fund Administration.

ROMANIAN DRS REVENUE SOURCES

First and foremost, it is essential to recognize that the collection rate establishes a direct correlation between the cost structure and revenue sources of a DRS for single-use beverage packaging. In comparison to the cost and revenue structure of PROs, the structure of a DRS exhibits different—and often counterintuitive—dynamics for those who may not be familiar with the details.

With an increase in the collection rate of the DRS, several significant changes occur within the system's dynamics - these changes, which we will explore below in detail, have a profound impact on the financial structure and operational aspects of the system:

- **Increased Total Value of RHF and Operational Costs:** The total value of the Retail Handling Fees and operational costs (logistics and transport) rises significantly, as a larger number of packaging units are returned to stores and subsequently transported to counting and recycling centers.
- **Decreased Nominal Value of Unredeemed Deposits:** The nominal value of unredeemed deposits drops dramatically. Among all values applied per unit of packaging in any DRS, the highest is the deposit value (e.g., €0.10 per unit), compared to an average RHF of €0.02 and an average producer's fee of €0.01.
- **Increased Revenue from Collected Materials Sales:** Revenue from the sale of collected materials grows proportionally as larger quantities are collected and sold to recyclers. However, in Romania, these increases are not particularly dramatic, as glass—representing a significant portion of the system—has a very low sale price.

When the return rates in a DRS are below 80%, the primary revenue source is the unredeemed deposits from consumers. However, as the collection rates rise, the revenue from unredeemed deposits decreases dramatically, while the revenue from the “producer fee” increases, significantly changing the system's financial dynamics.

Understanding the revenue sources for the Romanian DRS is a key aspect of our discussion. We will present below, in descending order of value, the sources that financed the system in 2024. This information will provide a comprehensive view of the financial dynamics of the system.

8.2.8 Unredeemed Deposits The term 'unredeemed deposit' refers to the value collect by the DRS administrator for packaging that consumers fail to return. This is a key concept in understanding the financial implications of the Romanian DRS. The total value of deposits within the Romanian DRS was €612.5 million. Given the overall collection rate of 54.92% (the portion of the deposit returned to consumers), the value of unredeemed deposits amounted to €276.1 million.

In 2024, the unreturned deposit was not just a statistic, but the primary source of revenue for financing the Romanian DRS. The failure of Romanian citizens to return packaging and reclaim their deposits resulted in a significant financial implication, contributing €276.1 million to the system's financing.

VAT Applied to Unredeemed Deposits in the Romanian DRS

One unique aspect of the Romanian DRS, setting it apart from all other models in Europe, is the application of Value Added Tax (VAT) at a rate of 19%, starting in 2025, on the difference between the total value of DRS deposits and the value of unredeemed deposits. This decision, made by the Romanian state in 2024, is objectively justified by the Ministry of Finance, as the unredeemed deposit represents a significant revenue source in the business plan of the Romanian DRS.

Had the VAT regulation been in place in 2024, the DRS would have been burdened with an additional €52.4 million in taxes to be paid by the DRS administrator to state. This significant financial strain underscores the urgency of the situation and the need for proactive measures to manage the rising costs and the increase in DRS producers' fees in the coming years.

8.2.9 Producers Fee The producers' fee represents the monthly costs that producers pay to the DRS administrator to fulfil their legal obligations regarding collection and recycling. This fee is calculated

per unit of packaging and varies based on the types of packaging materials introduced into the national market.

When the DRS achieves collection rates between 50-60%, the primary source of revenue derives from the "unredeemed deposits - consumers money." However, as collection rates surpass 80%, the producers fee imposed on producers increases significantly. This is due to the decrease in unredeemed deposits and the accelerated growth of operational costs (including monthly RHF and transportation and logistics expenses).

Many consultants across Europe tend to overstate their claims in feasibility studies. They often present the producers fee as either negative or very low during the first 1-2 years after the system's launch, suggesting that producers' costs will be offset by unredeemed deposits. However, the situation within the Romanian DRS contradicts this assumption, as the producers fee is a significant and necessary for the system.

Since the launch of the Romanian DRS, the state authorities have established the DRS producers fee for the year 2024 through a government resolution, as outlined below²⁹:

Romanian DRS producers fee - 2024

Type of packaging	euro/pc.
Small glass (<=500 ml)	0.0294
Glass large (>500 ml)	0.0461
Transparent plastic	0.0118
Blue plastic	0.0155
Green plastic	0.0155
Mixt colored plastic	0.0206
Plastic barrier	0.0247
Metal can	0.0015

The total value of the producer's fee in 2024, calculated based on the types of packaging introduced to the market and the average producers fee per material type, is estimated at €109.9 million.

There are significant differences in the DRS producers' fees practiced based on material type and corresponding volumes. These differences are primarily due to the varying costs of collection, sorting, and processing associated with different materials.

For example, comparing the producers fee for packaging a 500 ml beverage in a plastic preform (ranging from €0.0118 to €0.026 per unit) versus a metal can (€0.0015 per unit), it becomes evident that producers fee for plastic is 17 times more expensive than producers fee for metal.

Furthermore, in the case of glass, the producers fee for bottles under 500 ml is 56% higher than that applied to bottles over 500 ml.

Given the exponential rise in recycling costs for certain materials, several companies in Romania have proactively made substitutions regarding the types of packaging used. This strategic shift, based on

²⁹ <https://circulador.ro/tarife-de-administrare-sgr/>

their packaging portfolio and production capabilities, is aimed at optimizing recycling costs and demonstrates the industry's adaptability and resilience.

This trend is also reflected in the changes in the structure of packaging introduced to the market in 2024 as compared to 2019, when data was collected for the feasibility studies.

Romanian Producers Fee - perspectives 2025 In December 2024, the DRS administrator communicated the interim producers' fees for the year 2025. These fees did not account for the financial impact of the legally established investment plan for 2025 (€14 million) or the application of VAT. The interim producers' fees, therefore, provide a baseline for companies to estimate their potential costs for the year, but the final fees may differ based on these additional factors.

Moreover, a revision (increase) of the producers' fees paid to stores is necessary, as stipulated by national legislation. The entire process will be completed in March when RetuRO will announce the final producers' fees for 2025. Below, we present the interim produces fees and the recorded increases:

Romanian DRS producers fee	2024	2025 intermediate fee	fee increase %	2025 final fee
Type of packaging	euro/pc.	euro/pc.		euro/pc.
Small glass (<=500 ml)	0.0294	0.0436	48.10%	n.a
Glass large (>500 ml)	0.0461	0.0775	68.23%	n.a
Transparent plastic	0.0118	0.0137	15.93%	n.a
Blue plastic	0.0155	0.0175	13.45%	n.a
Blue plastic	0.0155	0.0174	12.42%	n.a
Mixt colored plastic	0.0206	0.0228	10.98%	n.a
Plastic barrier	0.0247	0.0305	23.60%	n.a
Metal can	0.0015	0.0024	54.55%	n.a

As a new feature, the interim producers fees for 2025 show differences between blue PET and green PET, compared to 2024 when the fees were identical.

8.2.10 Sale of Collected Materials to Recyclers The DRS model was established on a centralized basis, meaning that ownership of the collected materials belongs to the DRS administrator, RetuRO. RetuRO sells these materials to recycling facilities. As of now, it is not publicly disclosed to whom, in what quantities, and at what prices these materials are sold, as there have been no public tenders for this purpose. Similar to transportation, the sale of materials has occurred in a direct and non-transparent manner.

Due to the lack of transparency regarding sales information, the value of revenue generated from the sale of collected materials has been estimated based on average market prices for these materials (glass: €0.01/kg, PET: €0.20/kg, and aluminum: €0.70/kg). This lack of transparency has been a concern for some stakeholders, as it makes it difficult to verify the fairness and efficiency of the DRS model's operations.

Consequently, the estimated revenue from the sale of materials for the DRS in 2024 is projected to be €21.6 million, with the estimate falling within a maximum margin of error of 10%.

8.2.11 PROs vs. DRS – Environmental and Economic Performance To effectively assess the differences in costs incurred by producers in 2024 between the two operational systems in Romania—DRS and the PROs—it is essential to compare the costs per ton and the recycling performance of both models.

DRS vs. PRO performance 2024*		DRS performance 2024		PRO performance 2024	
Type of packaging		Producers fee euro/ton	Recycling performance (%)	Producers fee euro/ton	Recycling performance (%)
PET		439 - 1,233	59.86%	133	60.00%
Glass		59 - 92	47.64%	98	65.00%
Aluminum		90	49.53%	85	40.00%

**The data in the table above has been calculated based on average weights of the packaging, as follows: 20 g for PET preforms, 500 g for glass, and 17 g for metal cans.*

Analyzing the above data, we can draw the following conclusions regarding the economic and environmental performance in the first year of Romanian DRS:

- **PET:** Despite the increase in recycling fees applied to producers, which are up to 9 times higher than those of PROs, the DRS barely managed to match the recycling performance of PROs.
- **Glass:** In spite of the increase in recycling fees for producers, which are up to 20% higher than those of PROs, the DRS failed to meet its legal objectives and lags significantly behind the performance recorded by PROs. This calls for further investigation, which will be detailed in the conclusions of the study.
- **Aluminium:** The DRS records costs nearly identical to those of PROs but with superior environmental performance.

From the perspective of the Romanian DRS's size, we believe it would be highly beneficial to analyse the difference between the fees of the Romanian DRS in its first year of operation and the minimum and maximum producers' fees of functioning DRSs in Europe. According to available data, the fees applicable to producers by material types in DRS systems within the EU vary significantly:

- **Glass:** Ranging from a minimum of €0.005 per unit in Finland to a maximum of €0.54 per unit in Denmark.
- **Metal:** Ranging from €0.00 per unit for aluminium (in many EU DRSs) to a maximum of €0.05 per unit for metal in Lithuania.
- **Plastic:** Ranging from a minimum of €0.009 per unit in Estonia to a maximum of €0.85 per unit in Denmark.

Comprehensive data on EU DRS retail handling fees can be found in the report "*Handling fees in deposit return systems*" by Reloop³⁰.

³⁰ <https://www.reloopplatform.org/wp-content/uploads/2024/12/Reloop-Global-Deposit-Book-2024.pdf>

9. DRS financial and operational impact on PRO and local authorities

9.2 Financial and operational impact on local authorities.

The most significant cost associated with the PRO model is related to the packaging collected by local authorities, averaging €160 per ton paid to these authorities. With the exit of DRS packaging from the PRO model in the first six months of 2024, local authorities were directly affected in two key ways:

- **Revenue Losses:** Local authorities experienced over €72.8 million in revenue losses due to eliminating the €160 per ton payment previously received from PROs as subsidies for PET, aluminum, and glass collected.
- **Financial Losses:** There were substantial financial losses associated with the management (collection, sorting, and storage) of unreturned DRS packaging that ended up in the municipal waste stream. Unfortunately, the precise impact of this cannot be determined.

While unreturned DRS packaging results in operational costs for local authorities, it generates additional revenue for the DRS model due to the deposit value of €0.10 per piece.

In light of this situation, it is strongly recommended that all feasibility studies for DRS implementation thoroughly calculate and present the real impacts on stakeholders, particularly concerning local authorities and sanitation companies. These studies should thoroughly calculate and present the real negative impacts on stakeholders, particularly concerning local authorities and sanitation companies. **This approach will provide a clear understanding of the potential challenges and allow for informed decision-making.**

9.3 Financial and operational impact on existing PRO schemes

Considering the quantities of DRS-type packaging that have "migrated" from PROs to the DRS model, along with the average producer fee charged by PROs in 2024, **the Romanian PROs experienced a cumulative €49 million reduction in total turnover for the entire year.**

A prominent and immediate consequence of this shift, particularly in light of the increase in national recycling objectives set for 2025, is that the PRO model will likely increase the producer's fees applied to manufacturers and importers of packed products.

10. Main leading causes of the poor performance of Romanian DRS in 2024

Failure to Revised Assumptions and Results from Feasibility Studies. The results of the feasibility studies (2019) regarding the implementation of the DRS in Romania were far from the country's actual reality. Even though the data at the time of the study's preparation were extremely valuable (2018

data), essential elements of the feasibility plans later underwent significant changes with economic impacts (increased costs, the emergence of hidden costs, etc.), operational impacts (restructuring of the entire infrastructure), and legal implications (the entry of state authorities into the DRS's shareholding, introduction of penalties for not meeting objectives, and application of VAT on unreturned consumer deposits – a unique situation at EU level).

The premature launch of Romania's DRS, combined with inadequate infrastructure and poor stakeholder communication, has led to unforeseen challenges. These issues, not accounted for in the feasibility studies, highlight the importance of thorough preparation and stakeholder engagement before system implementation.

The lack of transparency in the DRS implementation, particularly the non-involvement of all affected parties, has led to a lack of understanding and acceptance. This issue, coupled with poor stakeholder communication, underscores the need for open communication and stakeholder involvement in system implementation.

Insufficient DRS Infrastructure The insufficiency must be viewed from both perspectives: automatic collection infrastructure (RVMs) and logistics centers. The DRS suffers from inadequate collection infrastructure nationwide, except in modern trade within urban areas, which severely limits DRS effectiveness.

This situation cannot be resolved promptly; the vast majority of traditional stores cannot purchase RVMs due to high acquisition costs and the inability to amortize them. Regarding the development of logistics centers, these require funding, which RetuRO currently lacks. It remains uncertain where the funds will be sourced to construct the remaining 10 logistics centers, especially since the bank loan has been exhausted and an additional €80 million will be needed for those centers.

A significant increase in the producer's fee is expected in 2025, much higher than what was communicated in the interim fee.

Marketing and communication There has been a lack of adequate pre- and post-launch communication with consumers within the traditional trade and HORECA sectors, which is characterized by insufficient media campaigns and an undersized call center.

The governance of the DRS has been marked by a significant lack of transparency, a dominant market position (as the sole player), and non-transparent business practices (as evidenced in the KPMG audit). This has contributed to economic inefficiency, poor environmental results, and a declining reputation, underscoring the need for more open and transparent governance.

11. Conclusions and recommendations

Several conclusions can be drawn from Romania's experience one year after the launch of its DRS. To avoid micromanaging the analysis, we will highlight a few key findings that have contributed to the DRS's underperformance during its initial years:

Significant Differences between feasibility studies and implementation realities: There are significant differences between theory, feasibility studies, and the specific realities. Given the multiple and complex variables of the DRS and the lengthy timeline from design to actual implementation, substantial discrepancies arise between the estimates, scenarios, and forecasts and the financial and operational realities of the system. These discrepancies have a substantial impact on both the economic and environmental performance of the system, as well as on all affected stakeholders, including producers, retailers, local authorities, and consumers. The severity of these impacts underscores the need for a more accurate and realistic approach to DRS implementation.

Lack of Transparency during the entire process: The absence of transparency during the preparation and implementation of the DRS, combined with a lack of communication and negotiation strategies with all involved stakeholders, has exacerbated the discrepancies between estimates and realities, resulting in market disruptions. The lack of a common implementation strategy discussed with all parties involved has led not only to frustration but also to inadequate infrastructure and major dysfunctions within the system, causing significant economic implications. This highlights the crucial need for a collaborative and communicative approach to DRS implementation.

Inadequate and Undervalued Logistical Infrastructure: Deficiencies in logistical infrastructure, along with other operational shortcomings, have arisen from empirical approaches taken during both the design and implementation phases. The "copy-paste" methodologies heavily promoted by certain consultants, which do not account for the specific needs and characteristics of the country, undervalue the minimal infrastructure required for the DRS. This oversight has led to precarious operational conditions with long-term economic implications.

As mentioned in the study's introduction, the Romanian DRS can serve as a valuable case study for all countries looking to implement a similar system. A series of recommendations derived from the Romanian experience are outlined below in chronological order of the design and implementation process of the DRS:

- **Engaging stakeholders early is a crucial step.** Align stakeholders with the project, securing their commitment and ensuring the effective implementation of the system.
- **Involve Producers and Retailers in DRS Design.** Foster commitment and reduce conflicts by engaging all categories of producers and retailers early in the decision-making process. This inclusive approach not only ensures a smoother implementation but also makes each stakeholder feel valued and integral to the system's success.
- **Implementing a phased approach is key.** Allow for the identification of issues and supports the smoother development of the system.
- **Developing a sustainable financial model is crucial.** Support Extended Producer Responsibility (EPR) principles and ensures the system does not rely on unredeemed deposits.
- **Clarify the Legal Framework:** Establish a well-defined penalty system that considers stakeholder readiness to prevent financial strain.
- **Establish Transparent Governance:** Develop a clear governance structure with defined roles in order to prevent conflicts of interest and accountability issues.
- **Implement Robust IT Systems:** Develop a functional IT platform for tracking returns, invoicing, and reporting, ensuring accountability and efficient operations.
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- **Prioritize Infrastructure and Logistics:** Develop and test logistics systems and collection methods. Accurate feasibility studies should estimate retail needs, RVM requirements, logistics centers, and associated costs.
- **Prepare the Retail Network:** Equip traditional retailers with the necessary infrastructure and training to manage packaging sold and returned effectively.
- **Ensure Clear Communication:** Develop a transparent and consistent communication before and after the launch for securing stakeholder engagement and satisfaction.
- **Set Realistic Targets:** Avoid unrealistic collection and recycling goals. By setting realistic projections, we can prevent underperformance, financial penalties, and hidden costs, instilling confidence in the system's success and reassuring stakeholders of its feasibility.
- **Collaborate with Local Authorities:** Work closely with local authorities to mitigate revenue losses and manage operational costs.
- **Avoid Premature DRS Launch:** Thoroughly assess the existing PRO model and future developments before launching the system, ensuring that critical infrastructure (logistics centers, IT platforms, retailer contracts) is fully operational.
- **Prepare for Macroeconomic Impacts:** Assess the real macroeconomic impacts on all stakeholders in order to avoid disruptions in the supply chain.
- **Focus on Consumer Education:** Well-executed public awareness campaigns encourage participation and ensure system success.
- **Maintain Transparency:** Launch public tenders and clear guidelines for fostering trust and sustaining competition.
- **Monitor and Adjust Regularly:** Continuous monitoring and evaluation are not just best practices, they're essential for the system's adaptability and success. By emphasizing this, we can instill a sense of security and confidence in stakeholders, assuring them that the system is always evolving to meet their needs.

Final Remarks

It is evident that in 2024, the Romanian DRS failed to meet its environmental and economic objectives. This non-performance is likely to have long-term economic repercussions, particularly as the Romanian DRS must achieve a legal collection objective of at least 80% in 2025.

Given that the implementation of the Romanian DRS took six years and still resulted in poor performance, it is evident that significant attention must be paid to this DRS business case. However, the Romanian case also presents a unique opportunity for learning and improvement, as there are particular lessons to be learned from its shortcomings.

However, it is important to recognize that the transparency of the Romanian DRS deserves praise. It has become the most transparent DRS in the EU regarding data, providing relevant and valuable information for countries evaluating options for implementing their own DRS systems.