

Diagnostic Analysis for Circular Economy Interventions in Romania





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Acronyms and Abbreviations

AFM	Administration of the Environmental Fund
ANPM	National Agency for Environmental Protection
CDW	Construction and Demolition Waste
CE	Circular Economy
CEAP	Circular Economy Action Plan
CERC	Coalition for the Circular Economy
CMCI	Municipal waste collection center Iasi
DRS	Deposit-return system
EC	European Commission
EGD	European Green Deal
EO	Emergency Ordinance
EPR	Extended Producer Responsibility
EU	European Union
GD	Government Decision
GDP	Gross Domestic Product
GEO	Government Emergency Ordinance
GHG	Greenhouse Gas
GNM	National Environmental Guard
GO	Government Ordinance
GPP	Green Public Procurement
GR	Government Resolution
HORECA	Hotel, Restaurant and Catering Sector
IDA	Intercommunity Development Associations
IFI	International Financial Institution
ITC	Information and Communication Technology
LD	Landfill Directive (EU)
MO	Ministerial Order
NGO	Non-Governmental Organization
NRRP	National Recovery and Resilience Plan
NWPMP	National Waste Prevention and Management Plan
PAYT	Pay-as-you-throw
PCB	Polychlorinated Biphenyls
PPWD	Packaging and Packaging Waste Directive (EU)
RDF	Refuse-Derived Fuel
SDG	Sustainable Development Goals
SME	Small and Medium-Sized Enterprise
SMID	Integrated Waste Management System
SRF	Solid-Recovered Fuel
SUP	Single-Use Plastics
WEEE	Waste from Electrical and Electronic Equipment
WFD	Waste Framework Directive (EU)

Executive Summary

Over the past decade, material efficiency and resource productivity have surfaced on the global policy agenda. The rise of the Circular Economy (CE) agenda reflects the objective of moving away from the current systems of production and consumption based on the ‘take-make-use-waste’ linear economic model toward economies centered on minimizing the use of virgin materials without adversely affecting welfare. The focus is on a life-cycle approach to resource management, which starts with reducing raw material demand by looping resources back into consumption and production systems, through innovations in material design, production, and reutilization processes. In addition to easing the environmental pressures, the CE can be a driver of private sector growth and jobs, and can increase the strategic autonomy of countries by reducing dependence on raw material imports.

The objective of this rapid analysis is to identify CE related priority areas/sectors in Romania and potential follow-up interventions. The study also aims to highlight concrete barriers that prevent the national and local governments from undertaking such actions as well as the enabling factors that may potentially unlock them.

Methodology and Approach

This rapid study is based on a review of legislation, literature, and best practices, as well as on a survey and interviews with CE stakeholders from the public and private sector. Consultations were also held with the Ministry of Environment, Water and Forests (Romania’s key actor on CE), the Ministry of Investments and European Projects, and the Ministry of Economy. This report is not intended to be an in-depth analysis but rather to provide an overview of the status of CE implementation in Romania and to provide some recommendations on how to accelerate progress toward a CE in Romania.

The analysis of selected indicators shows that Romania is the least circular member state in the European Union (EU), with only 1.4 percent of materials recovered and fed back into the economy in 2021 (compared to 11.7 percent EU-wide). Romania scores below the EU average on all indicators and significantly underperforms in terms of the recycling of municipal waste and biowaste. Along with Bulgaria, Romania also has the lowest resource productivity across the EU, about two thirds below the EU average. Romania’s indicator scores are largely a result of three factors: low purchasing power which influences consumption patterns; lack of a full waste management system in some parts of the country; and poor data quality and a faulty reporting system.

Romania has an extended body of regulations in place, mostly focused on waste management. In 2017, the country adopted a National Waste Prevention and Management Plan (NWPMP) and introduced 16 laws, 23 government emergency ordinances (GEOs), and over 40 government decisions (GDs) and ministerial orders (MOs). However, the effectiveness of legislation is undermined by a lack of enforcement and monitoring due to improper allocation of resources, absence of a long-term vision, shared responsibilities across government institutions, as well as the low administrative and technical capacity of central and local governments. The focus on waste management also distracts from a wider government vision of circular transition, related legislation and fiscal policy, which would also support the development of circular businesses. At the local level, municipalities are not focused on building industrial symbiosis and sustainable partnerships with private actors, and they are also not applying green public procurement (GPP) as it is not mandatory. Another issue is the availability and quality of data; data collection needs to be improved in coming years to provide for better monitoring of the transition.

EU directives on the circular economy are not fully transposed. In November 2021, the European Commission (EC) announced that it is taking legal steps against Romania for failing to comply with EU laws on waste, namely the Waste Framework Directive and the Landfill Directive. While there are significant amounts of funding available for the transition to CE—including from Cohesion Policy, Recovery and Resilience Facility, and the Just Transition Fund—the low capacity to absorb EU funds (in December 2022, only about 70 percent of funds allocated to Romania for the period 2014-2020 had been absorbed) needs to be addressed in the context of implementing the new Partnership Agreement between Romania and the EU for 2021–2027.

On a positive note, there are currently multiple efforts ongoing within the government to accelerate the transition to a circular economy. In September 2022, the new CE Strategy for Romania was approved. It provides a long-term vision and strategic direction, with the goal for Romania to become a leader in the Southeast European region in CE. An Action Plan associated with the CE Strategy is expected to be adopted in 2023. In the context of the National Recovery and Resilience Plan (NRRP), the government has committed to phase out coal from the national energy system within the next decade. In September 2022, the Romanian Government issued an EO to enhance the capacity of the Environment Administration Fund to implement the NRRP. In addition, the Ministry of Economy is working on fiscal measures to support the greening of businesses, including small grant schemes in support of repair—an essential element of the CE. The Ministry of Investments and European Projects is working with the Presidential Administration to develop communication campaigns on the ‘Just Transition Mechanism’. Local authorities are to take responsibility for the transition and work with chambers of commerce to identify opportunities for future programming.

The Way Forward: Initiatives for a More Circular Romania

Based on desk research and interviews with key stakeholders, several potential follow-up interventions are suggested (Table 1). Most of these initiatives were already discussed with key stakeholders in June 2021 and their proposal was driven by government demand based on the NRRP, prior to its approval. In the meantime, implementation of some of the previously proposed activities has already started, which are therefore not included anymore in the updated table below. In the context of updating this report in September 2022, additional consultations with the lead expert on the CE Strategy and Action Plan took place, which concluded that technical and financial support are needed for both the development and implementation of the Action Plan in the short and medium term. The specific directions identified for the development and implementation of the Action Plan are food and beverage, water, construction, and agriculture.

TABLE 1. PROPOSED FOLLOW-UP INTERVENTIONS BASED ON THE RAPID ASSESSMENT OF CE POTENTIAL IN ROMANIA

Business model development	
Develop a business model for a reuse and repair center	Reuse and repair are key activities in a CE. The objective is to develop a reuse and repair center as a business model to be replicated at the local level. Initial focus would be on key economic sectors, including, but not limited to, electric and electronic equipment, furniture, textiles, and so on. The business model will ensure support for awareness-raising activities and will include a social impact measurement.
Dashboards/tools	
Set up the first national dashboard on closing the loop	Develop a national dashboard under the Ministry of Environment, Water and Forests that will provide data and best practices on closing the loop for public and private economic agents, thus addressing key barriers for the application of circular business models, techniques, and technologies. A core element will be a scoreboard (adapted from Circulytics/EMF) for circular products and for local authorities based on their circularity (for example, energy-efficient buildings, GPP). ¹
Data collection system on CE	Develop a national system for improved data collection and reporting on CE and within the Environment Fund Administration. This tool will provide a clear view of the current state of Romania in terms of CE indicators and will provide the necessary data for future decision-making on CE strategies and government policies.
Support in developing secondary legislation for CE (including waste management)	
Single-Use Plastics (SUP) Directive	Following EC guidelines for SUP implementation, develop a roadmap and technical norms for the implementation of the legislation for public sector central and local institutions (including public events), as well as private companies in a variety of fields, including those in the hotel and restaurant sector (HORECA).
Development of guidelines to support implementation of the NWPMP	Develop guidelines for the local administration for pay-as-you-throw (PAYT) systems that can be adapted for quantity, volume, and frequency, and can serve for the development of performance indicators for Romania's Integrated Waste Management System (SMID).
Development of technical standards and guidelines for composting for both industry and individual use	Develop technical standards for composting and certification, as well as guidelines detailing options and techniques for individual composting systems at the household level. As part of this intervention, analysis will be conducted on the effectiveness of existing actions in this area, and complementary actions related to the prevention of biowaste generation will be developed.

¹ Information on Circulytics/EMF is available at ellenmacarthurfoundation.org.

1. Introduction and Methodology

Over the past decade, material efficiency and resource productivity have surfaced on the global policy agenda. The rise of the Circular Economy (CE) agenda reflects the objective of moving away from the current systems of production and consumption based on the ‘take-make-use-waste’ linear economic model toward economies centered on minimizing the use of virgin materials without adversely affecting welfare. The focus is on a life-cycle approach to resource management, which starts with reducing raw material demand by looping resources back into consumption and production systems, through innovations in material design, production, and reutilization processes. In addition to easing the environmental pressures, the CE can be a driver of private sector growth and jobs, and can increase the strategic autonomy of countries by reducing dependence on raw material imports. CE has been on top of the European Union (EU) policy agenda since 2015 and is now a firm component of its growth strategy, the European Green Deal.

This study aims to identify CE related priority areas/sectors and follow-up interventions, including measures, initiatives, and programs. This study was undertaken in June 2021 and updated in September 2022. It is not intended to be an in-depth analysis but rather to provide an overview of the status of CE implementation in Romania and to provide some recommendations for policy makers on how to accelerate progress toward a CE in Romania.

The report aims to identify solutions which lie at the intersections of (a) European Union (EU) obligations and evolving context, (b) national priorities and the strategic policy context of Romania, and (c) sufficiently mature needs and demands of key stakeholders in Romania and their capacities, including international financial institutions. The analysis also identifies concrete barriers that may prevent the national and local governments from undertaking the priority interventions, as well as the steps to overcome these barriers. These include public administrative and institutional capacity factors, among others.

The report was based on desk research of national and regional policies, legislation, and best practices, followed by interviews with key stakeholders in June 2021. An update was performed in September 2022. Interviewees included the State Secretary for the Ministry of Environment, Water and Forests; State Secretary for the Ministry of Economy; Head of Industrial Policy at the Ministry of Economy; Expert on transposition of the Circular Economy (CE) package from the Ministry of Environment, Water and Forests; Head of the Just Mechanism Program from the Ministry of Investments and European Projects; the Romanian Coalition of Circular Economy; and major companies from the waste management sector. In September 2022, an additional interview was conducted with the consultancy firm tasked with the development of the CE Strategy and Action Plan.

A total of 110 national CE stakeholders were contacted, out of which 45 participated in interviews or written surveys. The targeted stakeholders included representatives from central and local public authorities, representatives from the waste management sector, professional associations, research institutes, environmental nongovernmental organizations (NGOs), educational institutions, consulting companies in the field of waste management and the circular economy, and independent consultants. In response, 45 organizations participated in the study, including 13 representatives of central and local public authorities, and 32 private organizations. Eight public organization representatives opted for an interview and five completed a written survey; 11 representatives of private organizations opted for an interview and 21 chose to complete the written survey. A total of 20 interviews were conducted (excluding the additional interview conducted in September 2022) and 26 written surveys were completed.

The report follows a “general-to-specific” approach. While the legislative and institutional analysis provides a cross-sectoral overview, the identification of focus sectors is based on stakeholder inputs and literature review.

The report starts with an overview of the status quo regarding circularity in Romania, then analyzes hindering and enabling factors for the transition to a circular economy before providing recommendations for potential priority actions. After an introduction to the CE in Chapter 2, the current institutional, strategic and regulatory CE landscape is laid out in chapter 3, and some key CE indicators for

Romania are presented in chapter 4. Chapter 5 presents the results of surveys and interviews, which also lay the basis for the identification of priority reform areas in chapter 6. Chapter 7 presents hindering and enabling factors for the CE transition followed by a SWOT analysis of the circular transition in Romania in chapter 8. Based on previous chapters, chapter 9 provides a list of proposed priority actions which may provide the basis for potential future follow-up technical and/or financial assistance.

2. The Circular Economy: Definitions, Strategies, and Benefits

2.1 Definition

The Circular Economy can be defined in numerous ways and there are more than 100 definitions in use. This report uses the definition used by the European Commission (EC):

A circular economy aims to maintain the value of products, materials, and resources for as long as possible by returning them into the product cycle at the end of their use, while minimizing the generation of waste. The fewer products we discard, and the fewer materials we extract, the better for our environment.

This process starts at the very beginning of a product's lifecycle: smart product design and production processes can help save resources, avoid inefficient waste management, and create new business opportunities.²

2.2 Circularity Strategies and Circular Business Models

Several circularity strategies and approaches exist as illustrated in Table 2, ranked by level of circularity and hence, environmental priority. The underlying logic of this circular hierarchy is that the higher a strategy is on the hierarchy, the more circular it is. While the debate around the CE often focusses on recycling, Table 2 also shows that the recycling of waste is rather low on the circular hierarchy, with other strategies more promising in preventing waste and pollution in the first place. While recycling is a necessary component, a circular economy should thus focus on preventing waste rather than recycling it. The below classification is used when exploring potential future interventions.

TABLE 2. CIRCULARITY STRATEGIES WITHIN THE PRODUCTION CHAIN ACTORS IN ORDER OF PRIORITY

Smarter product use and manufacture	R0 Refuse
	R1 Rethink
	R2 Reduce
Extend the lifespan of products and their parts	R3 Reuse
	R4 Repair
	R5 Refurbish
	R6 Remanufacture
	R7 Repurpose
Useful application of materials	R8 Recycle
	R9 Recover

Source: Based on Potting et al. 2017.

2.3 Benefits of a Circular Economy

Reducing material consumption leads to less pollution, waste, and related health impacts and is key to preserving vital ecosystem services and natural resources, including biodiversity. In the linear system, products eventually end up as waste, most of which is landfilled or incinerated. Globally, inadequate solid waste management contributes, among others, to climate change and (marine) plastic pollution. Locally, solid waste harms public health, putting millions at risk due to soil and water contamination and poor air quality. One of the principal aims of CE is to minimize waste and pollution by returning products, materials, and resources into the product cycle at the end of their use. Reducing waste and pollution and associated negative environmental

² Eurostat, <https://ec.europa.eu/eurostat/web/circular-economy>

impacts will thus have substantial benefits for public health, including through designing out toxic chemicals. In addition, it is estimated that the extraction and processing of natural resources is responsible for more than 90 percent of biodiversity loss. Decreasing the need for virgin materials can thus contribute to healthy ecosystems and biodiversity preservation.

Circular business models can help reduce greenhouse gas (GHG) emissions. The production of goods and services, including food, for the global economy accounts for nearly half of the global GHG emissions. Addressing GHG emissions from industry can be technologically challenging and costly, particularly in sectors such as iron, steel, aluminum, cement, and plastics, which are associated with hard-to-abate emissions related to high-temperature processes, production emissions, and end-of-life emissions. In the food system, food waste is a major source of GHG emissions. An increasing focus on material efficiency and circularity will help align the emissions trajectory of these sectors with the goals of the Paris Agreement.

Circularity can help address issues related to import dependencies and security of supply risks of critical raw materials. Ballooning resource consumption also has trade and security implications, raising concerns over resource shocks and supply failures worldwide. In a world of increased competition for access to materials, many advanced and emerging economies face dependency and supply risks. The EU imports 50 percent of the critical raw materials it needs. This increases to around 80 percent for certain materials required to achieve renewable energy targets, such as metals critical in the production of wind turbines, solar PV modules, and batteries. Returning products, materials, and resources back into the product cycle at the end of their use can thus help reduce import dependencies and supply risks.

In addition to easing environmental pressures, the circular transition can be a driver of private sector growth. Although there are still very few ex-post studies to verify growth and job creation potential of CE, technological innovation in resource efficiency can lead to productivity gains. What is certain is that the goal of decoupling natural resource extraction and use from economic output has already led to a range of concrete business applications aimed at closing resource utilization loops, slowing down material use, as evidenced by the growth of repair and remanufacture services, the birth of the sharing economy, or quite simply by an uptick in recycling and reuse rates. For example, an estimated 8 percent of the Dutch workforce is employed in CE jobs, with the biggest concentration in activities that preserve and extend the value of materials already in use, such as reuse and recycling.

2.4 Monitoring Progress Towards the Circular Economy

Monitoring progress towards a circular economy is a challenging task; the European Commission in 2018 brought forward the so-called Monitoring Framework for the Circular Economy consisting of several indicators. Perhaps the simplest indicator to measure circularity is the Circular Material Use Rate, calculated as the contribution of recycled materials to overall material use. However, since circularity goes beyond recycling, the European Commission included numerous other indicators in its monitoring framework, grouped in four categories: production and consumption, waste management, secondary raw materials, and competitiveness and innovation. The scores for Romania and the EU on each indicator are presented in chapter 4 on the current state of the circular economy in Romania.

3. The Circular Economy Institutional, Strategic and Policy Landscape in Romania

3.1 Institutional Landscape

Romanian stakeholders dealing with CE include line ministries and other national, regional, and local authorities, as well as academia, NGOs, and private sector representatives. At the national level, the most relevant stakeholders in CE are the line ministries led by the Ministry of Environment, Water and Forests, followed by regional agencies and local authorities. The line ministries are listed in Table 3. Other important actors are the Romanian Chamber of Commerce, Universities (including the Technical University of Civil Engineering Bucharest, University of Economic Studies Bucharest, Polytechnic University Bucharest, Technical University Cluj), NGOs (including Zero Waste Romania, Coalition for Circular Economy, Eco-Civica, Expert Forum, Institute for Circular Economy, and Ecoteca) and private companies (including Green Group, Green Ambalaje, Ecotic, Genesis Biotech, Business Development Group). Further details on relevant stakeholders are included in Annex B.

TABLE 3. LIST OF MINISTRIES IN ROMANIA (2021)

		Impact on CE	
		Current	Potential
1.	Ministry of Finance		X
2.	Ministry of Internal Affairs		X
3.	Ministry of Foreign Affairs		
4.	Ministry of Justice		
5.	Ministry of National Defense		
6.	Ministry of Economy	X	X
7.	Ministry of Energy		X
8.	Ministry of Transport and Infrastructure		X
9.	Ministry of Agriculture and Rural Development		X
10.	Ministry of Environment, Water and Forests	X	X
11.	Ministry of Development, Public Works and Administration		X
12.	Ministry of Investments and European Projects	X	X
13.	Ministry of Labor and Social Solidarity		X
14.	Ministry of Health		
15.	Ministry of Education		X
16.	Ministry of Research, Innovation and Digitalization		X
17.	Ministry of Culture		X
18.	Ministry of Sports		X

Source: [Romanian Government](#).

The Department for Sustainable Development was established in 2017 as part of the Prime Minister's office. It works to implement the 2030 Agenda for Sustainable Development and the EU strategy for Sustainable Development.³ The Department is focused on monitoring and reporting activities, data integration, and proposing potential goal adjustments at the national level. Romania's sustainable development strategy is the

³ <http://dezvoltaredurabila.gov.ro/web/about/>

outcome of this department and is one of the first documents to acknowledge the concepts of CE in Romania under the Sustainable Development Goals (SDG) agenda 2030.

The Ministry of Environment, Water and Forests is Romania's key actor in the area of CE, mainly due to its responsibilities related to waste management. Its areas of responsibility include the following:

- Industrial pollution control, air quality, and ambient noise
- Environmental infrastructure, waste management, management of hazardous chemicals and preparations
- Sustainable development, green economy, and climate change, including green public procurement (GPP).

According to Art. 4 of the Regulation for Functioning and Organization, the Ministry of Environment, Water and Forests is responsible, among other things, for national policy making related to the environment, green economy, climate change, circular economy and waste management, and construction safety.⁴ The Ministry of Environment, Water and Forests designs strategy and the legislation in these areas according to the national government strategy. It also ensures inter-ministerial coordination for sustainable development.

BOX 1. WASTE MANAGEMENT RESPONSIBILITIES AT THE NATIONAL LEVEL⁵

The competent decision and control authority in the field of waste management is the Ministry of Environment, Water and Forests. By law, the Ministry of Environment, Water and Forests carries out national policy in the field of waste management, fulfills the role of state authority, and engages in synthesis and coordination and control, directly or through specialized technical bodies, public authorities or institutions subordinated, coordinated, or under the authority of the ministry. The institutions under the coordination of the ministry, with responsibilities in the waste sector, are the following:

- The *National Agency for Environmental Protection (ANPM)* is responsible for implementation at national level of policies, strategies, and legislation in the field of environmental protection. ANPM subordinates 42 county agencies for environmental protection. The functions and responsibilities of ANPM are established by Government Decision (GD) 1000/2012 regarding the reorganization and functioning of the National Agency for Environmental Protection and of the public institutions subordinated to it.
- The *National Environmental Guard (GNM)* is responsible for ensuring implementation of governmental policy, applying the national legislation harmonized with the EU policies in the field of environmental protection. Specifically, GNM has the responsibility to implement governmental policy on preventing, detecting, and sanctioning violations of legal provisions on environmental protection, including non-compliance with regulations provided in specific laws in the field of industrial pollution control and risk management, hazardous substances and preparations, biodiversity and protected natural areas. The roles and responsibilities of GNM, including those related to control in the field of waste management, are established by GD 1005/2012 regarding the organization and functioning of the GNM with the subsequent modifications and completions.
- The *Administration for the Environmental Fund (AFM)* is the main institution providing financial support for the implementation of projects and programs for environmental protection. According to the Emergency Ordinance (EO) to modify its activity (EO 196/2005), AFM increased its capacity (from 256 to 350 employees, including a dedicated vice president) to implement the activities foreseen in the National Recovery and Resilience Plan (NRRP).

The National Commission for Strategy and Forecast, although not specifically focused on CE, is responsible for economic-social development forecasting for Romania, based on the country's economic public policies and national and global economic trends.⁶ The institution participates in the development of national, sectoral, or regional development strategies and programs, substantiates the strategic

⁴ <http://www.mmediu.ro/articol/regulamentul-de-organizare-si-functionare-al-ministerului-mediului-apelor-si-padirilor/3304>

⁵ Sources: National Agency for Environmental Protection (<http://www.anpm.ro/>); National Environmental Guard (<https://gnm.ro/0>); Administration for Environmental Fund (<https://www.afm.ro/index.php>).

⁶ <https://cnp.ro/>

orientations for achieving the development objectives and also participates in annual updates of the programmatic documents required by EU member states, such as the Convergence Program and the National Reform Program. This institution could be a good enabler for CE policies, as it has the national overview and data forecast for the entire economy.

The Ministry of Agriculture and Rural Development is the national authority responsible for the development and implementation of national policies for agriculture, fisheries, and aquaculture, the food industry, rural development, and in connected fields including research, conservation and sustainable soil management, and plant and animal genetic resources.⁷ It is the managing authority for the National Rural Development Program (NRDP) and a key national stakeholder in the field of waste prevention. For example, given its responsibility for the food industry, it potentially plays an important role in the prevention of food waste.

The Ministry of Economy is a potential key actor in Romania's transition toward CE. Although this ministry does not have a dedicated department responsible for any activity related to CE yet, it is the main the institution responsible for the business sector and for the following areas:

- Fulfilment of relevant obligations deriving from Romania's obligations as an EU member state, including transposition and/or creation of the legal framework for European legislation, and its implementation and monitoring
- Development, monitoring, and implementation of the country's strategies related to Romania's economy and competitiveness; also responsible for achieving the Green Deal economic indicator targets
- Participation in the development of the government strategy and program for economic and social reforms and ensuring relevant government policy
- Development of public policies on economic growth and the coordination of national policies regulating the internal market.

The Ministry of Investments and European Projects is another central institution with, currently, no responsibility for CE but a key role in external financial allocation. This ministry coordinates policy for structural and investment funds at the national level, is responsible for the elaboration and management of the NRRP, and will serve as the management authority for the future Just Transition Mechanism in Romania. The Ministry of Investments and European Projects received the six draft territorial plans for Just Transition from County Councils in May 2021; these serve as the basis for negotiations with the EU for the next five-year resource allocation.⁸

At the regional level, counties are responsible for development of waste management plans (including waste prevention) which ensure that all relevant legislation is followed, and that necessary support is provided. Moreover, city halls for each county seat municipality are responsible for the development and implementation of local sustainable development and/or CE plans.

As a multisectoral undertaking, CE would benefit from a more integrated approach and a long-term vision. Therefore, improved ministerial collaboration, especially between the Ministries of Economy, EU Funds, Environment, and Agriculture is foreseen in the national CE Strategy. Moving the CE transition forward requires a recognition of CE as a crucial theme for the country's future, a long-term strategic vision and a clear governance structure. Interviews and surveys conducted as part of this research indicate that line ministries are open to collaboration and creating a common agenda for developing the CE pathway.

⁷ <https://madr.ro/en/>

⁸ <https://mfe.gov.ro/mecanismul-pentru-o-tranzitie-justa/#ptj>

3.2 National Strategies and Roadmaps

The next three sections provide an overview about the key strategic and legislative documents on the national and regional level. The existence of strategies, laws and regulations does not necessarily always entail change on the ground. This is due to a gap between *de jure* and *de facto* implementation of policies, which may exist due to issues related to monitoring, reporting and enforcement. The following subchapters do not assess this gap between *de jure* and *de facto* implementation of policies, but give an overview of the regulatory framework put in place by Romanian authorities in order to open up a discussion on measures that may need to be set in place to implement the regulatory framework with a focus on priority areas of intervention.

The National Government Plan 2021–2024⁹ is the main strategic document of the government and addresses CE. According to the plan, Romania aims to transpose and implement the European Green Deal (EGD) and related legislation by developing and implementing a Green Deal for Romania, which tailors the European objectives to national realities and possibilities. One section of the plan is dedicated recycling and circular economy and sets the following objectives:

- Reducing the amount of waste going to compliant landfills by at least 75 percent of all waste generated by 2025;
- Using natural resources in a sustainable way, including by accelerating the use of secondary raw materials, with priority given to reusing existing resources;
- Developing a CE strategy and implementing it based on the polluter-pays principle and by focusing on innovation, new technologies, collaboration, communication, and transparency;
- Introducing a deposit-return system (DRS) for packaging;
- Establishing of landfills for construction waste;
- Recovering some materials from polluting landfills (slag, tailings, and so on) in collaboration with universities and research institutes, through joint projects with funding from different sources;
- Identifying sources of funding to support the development of the recyclable waste processing industry, for which there is currently no infrastructure in Romania;
- Increasing the demand for compliance with environmental legislation.

The National Plan for Investments and Economic Recovery 2020–2025 sets the goal of ensuring convergence with EU economies, so that the gross domestic product (GDP) per capita (PPP) will reach 87 percent of the EU27 average by 2025.¹⁰ The national investment plan provides information for each of the key infrastructure domains: energy, economy and business environment, health, education, local development, agriculture and irrigation, environment, and sports. Specific investments to strengthen CE are only mentioned in relation to the Just Transition Mechanism under the mining sector.

The NRRP is a recovery instrument aimed at supporting the green and digital transitions during post-COVID-19 recovery. Published by the Ministry of Investments and European Projects in June 2021,¹¹ it was approved by the EC in September 2021 and provides a clear pathway for Romania's development in the coming years. It addresses circular economy and waste management as areas of intervention, as outlined in Box 2.

⁹ <https://gov.ro/ro/objective/programul-de-guvernare-2021-2024>

¹⁰ https://gov.ro/fisiere/programe_fisiere/Planul_Na%C8%9Bional_de_Investi%C8%9Bii_%C8%99i_Relansare_Economic%C4%83.pdf

¹¹ <https://mfe.gov.ro/pnrr/>

Area of intervention: Circular Economy

Development and approval of the CE Strategy by Q3 of 2022 (this has already been approved by the Romanian Government in September 2022).

Entry into force by Q3 2023 of the regulatory act approving the Action Plan for the implementation of the National CE Strategy. Currently (September 2022), the Action Plan is under development and, according to the NRRP will cover:

Key milestones for the implementation of the Strategy, responsible authorities, and a binding timetable for actions identified on the basis of expert recommendations, measures covering the entire life cycle of products. Moreover, it will be organized by section and in correlation with the measures foreseen in the different relevant components of NRRP (education, research, innovation, taxation, consumer protection, packaging and plastics, construction and demolition, textiles, GPP, municipal waste management).

Measures targeted at the private sector, in particular the small and medium-size enterprise sector, in line with the measures identified in the EU Environmental Implementation Review 2019.

Appropriate monitoring system and tools to ensure the implementation of key actions.

1. Complete implementation of all actions by end Q1 2026.

Area of intervention: Waste Management

Objective: To accelerate the process of expanding and modernizing waste management systems with a focus on separate collection, prevention, reduction, reuse, and recovery measures to comply with applicable directives and the transition to CE.

Reform: Improving governance in waste management to accelerate the transition to CE

Investments

1. Development, modernization, and completion of integrated municipal waste management systems at county level or at city/commune level.
2. Development of infrastructure for the management of manure and other compostable agricultural waste.
3. Development of technical capacity and skills in the field of CE and climate at the level of central and local public institutions (including support for the development of technical skills for sustainability €19 million).

Total Budget: €1.2 billion.

Source: NRRP, <https://mfe.gov.ro/pnrr/>.

One of the activities proposed in the NRRP is the development of a national CE Strategy, which has been adopted in September 2022. The new national CE Strategy was adopted with GD no. 1172/21.09.2022. The purpose of the document is to provide a long-term vision and strategic direction for overcoming the challenges in the journey toward CE in Romania. The key objective is the decoupling of economic development from environmental degradation in line with the global SDGs and climate targets as well as new EU CEAP targets and the principles and actions promoted within the EGD. The Strategy has no concrete set targets but offers an overview of 14 economic sectors in Romania in terms of their circularity potential. Based on a preliminary analysis, the Strategy concludes that enhancing the CE has the highest potential in agriculture and forestry, automotive sector, construction and consumer goods such as food and beverages, packaging, textiles, and electrical and electronic equipment. In view of its successful implementation, the Strategy also proposes options for a coherent governance structure that clearly defines the roles and responsibilities of key institutions involved. An Action Plan will elaborate on specific actions for the sectors selected in the CE Strategy. According to the NRRP, the CE Action Plan should be adopted in 2023 and implemented by the end of 2026.

Romania has adopted a number of national and regional strategies with potential relevance for CE, but no monitoring reports on implementation of these strategies have yet been published; this is also the

case for the National Waste Prevention and Management Plan (NWPMP). Romania missed the deadline (July 5, 2020) for updating the National Plan to the revised Waste Framework Directive (WFD). The NWPMP, valid until 2025, was an ex-ante conditionality required by the EC for the accession of EU funds for large infrastructure projects and was adopted by the Government of Romania in December 2017. The Ministry of Environment, Water and Forests has not published a monitoring report and most of the targets set by the Plan were not met, most notably those regarding waste prevention.

Lack of reliable data is a major issue of concern related to the implementation of the NWPMP. For example, one of the waste prevention targets was a ten percent reduction in household waste per capita by 2025 as compared to 2017 (that is, reduce municipal waste from the 228 kg per capita recorded in 2017 to 204 kg per capita in 2025). However, according to Eurostat, Romania in 2017 generated 272 kg per capita of waste, up from 247 kg per capita in 2015.¹² The data presented in the NWPMP is thus not aligned with Eurostat's data. The NWPMP was not updated according to new EU regulations and targets, meaning that Romania is lagging, and continues to be unable to meet the ex-ante conditionality for Cohesion Funds.

Romania's Sustainable Development Strategy 2030¹³ and the related Action Plan of 2022¹⁴ contain a dedication to the CE in the context of SDG12. The following sustainable development targets are mentioned in the strategy which align with the CE transition:

- Gradual transition to a new development model based on the rational and responsible use of resources by introducing elements of CE and drawing up a roadmap.
- Halve per capita food waste at the level of retail and consumption and reduce food waste throughout the production and supply chain, including post-harvest losses.
- Recycle 55 percent of municipal waste by 2025 and 60 percent by 2030.
- Recycle 65 percent of packaging waste by 2025 (plastic materials 50 percent, wood 25 percent, ferrous metals 70 percent, aluminum 50 percent, glass 70 percent, paper and cardboard 75 percent) and 70 percent by 2030 (plastic materials 55 percent, wood 30 percent, ferrous metals 80 percent, aluminum 60 percent, glass 75 percent, paper and cardboard 85 percent).

The Romanian Energy Strategy 2019–2030 was developed based on an environmental report for 2020 – 2050 and on an adequate evaluation study with a 2050 time horizon and aims overall at clean energy and energy efficiency.¹⁵ With regard to CE, the strategy proposes to close the loop on municipal waste management without taking into account incineration. The document notes that Romania produces over 8 million tons of municipal waste each year, of which over 90 percent is landfilled. The strategy proposes that Romania make use of its municipal waste. According to the EU Directive 2008/98/EC and the principle of CE, 55 percent of this waste (including the recyclable fraction [25 percent] and the wet-organic fraction [30 percent]) must be recovered (not incinerated). The strategy proposes some theoretical answers for the waste problem, but without taking any step forward to an actual implementation agenda. For example, the strategy notes that from the wet-organic fraction it is possible to obtain both gas, which can be injected into the existing natural gas network, and compressed natural gas (CNG), which can be used in some vehicles. The remaining 45 percent, composed of the dry fraction (20 percent) and the dry-organic fraction (25 percent), can be processed into an alternative fuel that can reach up to twice the calorific value of lignite. The document also provides an idea for the use of secondary solid fuels (that is fuels obtained from the dry component of non-hazardous waste) according to EU rules with instant economic benefits, reducing the bill paid by economic agents for CO₂ certificates.

¹² https://ec.europa.eu/eurostat/databrowser/view/ENV_WASMUN__custom_1021929/default/table?lang=en

¹³ <https://sdgtoolkit.org/tool/romania-sustainable-development-strategy-2030/>

¹⁴ <https://dezvoltaredurabila.gov.ro/planul-national-de-actiune-final>

¹⁵ <http://energie.gov.ro/transparenta-decizionala/strategia-energetica-a-romaniei-2019-2030-cu-perspectiva-anului-2050/>

In addition to these strategies, the Government of Romania has developed other documents, which have not yet been adapted in line with CEAP and which lack implementation reports or published quantifiable results. These include the following:

- National Waste Strategy, 2014–2020¹⁶
- National Strategy on Climate Change¹⁷
- Action Plan for Climate Change 2016–2020¹⁸
- Romanian National Strategy for the Digital Agenda 2020¹⁹
- Romanian Strategy for the Agri-food sector in the medium and long term, 2020–2030²⁰ (last updated in 2015)
- Masterplan for tourism development 2007–2026.²¹

To facilitate the transition to CE in Romania, several country policies need to be updated. This includes Romania's industrial policy through 2030 (GD no. 1171/2005); the National Energy Policy, that needs to adapt to the green transition thus creating the framework for the Just Mechanism implementation; Law no. 69/2016 regarding green public acquisitions which requires an action plan for implementation; and the NWPMP that needs to be adapted to include all EU provisions, and the national data system needs improvement.

3.3 Romanian Circular Economy Legislation

In 2016, the Senate Decision No. 3 on the EC's 2015 CE Package, including the first CEAP, acknowledged the importance of CE for economic development and job creation in Romania.²²

Moreover, the adopted opinion underlines that waste prevention is a key element and Romania remains committed to promoting projects that ensure integrated waste management and hierarchy. However, as underlined previously, results in waste prevention are difficult to measure as most of the necessary data is missing, while improvement in waste management efficiency requires an extended joint effort, and targets to be met at the local level.

Most of the Romanian legislation on CE is related to waste management. It comprises an extended number of laws (16), government emergency ordinances (GEOs - 23), and over 40 government decisions (GDs) and ministerial orders (MOs) (Annex C). The main provisions on CE are regulated through two laws:

- EO no. 92/2021 regarding the waste regime (replacing Law no 211/2011, General Regime of Waste Management ['Waste Law'])²³
- Law no. 249/2015, Legal framework of managing packaging and packaging waste.²⁴

Significant changes to the Romanian waste legislation were brought about in June 2021, when Romania adopted EO no. 74/2018 concerning the amendment and completion of Law no. 211/2011 regarding the waste regime, Law no. 249/2015 on the management of packaging and packaging waste, and GEO no. 196/2005 on the Environmental Fund.²⁵ The adoption of these legislative acts by the Romanian Government comes as a response to the EC letter received by Romania in April 2018 on the procedure for suspending interim payments from the Cohesion Fund under Axis 3—development of environmental infrastructure, in

¹⁶ http://www.mmediu.ro/beta/wp-content/uploads/2014/01/2014-01-28_SNGD_HG_870_2013.pdf

¹⁷ <http://mmediu.ro/app/webroot/uploads/files/Strategia-Nationala-pe-Schimbari-Climatice-2013-2020.pdf>

¹⁸ http://www.mmediu.ro/app/webroot/uploads/files/2015-12-04_Planul_national_de_actiune_2016-2020%282%29.pdf

¹⁹ https://www.ancom.ro/uploads/links_files/Strategia_nationala_privind_Agenda_Digitala_pentru_Romania_2020.pdf

²⁰ <https://www.madr.ro/strategia-pentru-dezvoltarea-sectorului-agroalimentar-pe-termen-mediu-si-lung-orizont-2020-2030.html>

²¹ http://turism.gov.ro/web/wp-content/uploads/2017/05/masterplan_partea1.pdf

²² <https://lege5.ro/gratuit/hezdmzgwu/hotararea-nr-3-2016-cu-privire-la-pachetul-privind-economia-circulara-com-2015-614-final-comunicare-a-comisiei-catre-parlamentul-european-consiliu-comitetul-economic-si-social-european-si-comitetul-re>

²³ <http://legislatie.just.ro/Public/DetaliiDocument/133184>

²⁴ <http://legislatie.just.ro/Public/DetaliiDocument/172506>

²⁵ <https://eur-lex.europa.eu/legal-content/EN/NIM/?uri=celex%3A32018L0851>

conditions of efficient management of resources, noting that the ex-ante conditionality on waste had not been met. EO 74 aims to promote the CE package by introducing in the national legislation several economic instruments: pay-as-you-throw (PAYT), Extended Producer Responsibility (EPR), and introduction of a landfill tax, which has been postponed many times and is now commonly referred to as a 'CE tax'. In September 2021, GEO 74/2018 was amended by EO no. 92/2021 on the waste regime (replacing Law no. 211/2011), but its objectives remained the same. Moreover, GEO no. 196/2005 on the Environmental Fund was amended in September 2022.

On EPR, EO 92/2021 states that to prevent, reuse, recycle, and recover waste, the central public authority for environmental protection shall promote or, where appropriate, propose legislative or non-legislative measures by which the producer of the product, authorized natural person, or legal entity designs, produces, processes, treats, sells, or imports products is subject to an EPR regime.

The new provisions state that the local authorities/local development associations need to:

- Ensure separate collection of paper, metal, plastics, and glass waste from municipal waste.
- By December 31, 2020, reuse and recycle at least 50 percent of paper, metal, plastics, and glass municipal waste.
- Beginning January 1, 2019, implement PAYT and apply a CE tax.

Unfortunately, excluding the introduction of the tax for CE, none of these objectives were reached in 2022.

Box 3. Circular economy tax overview

Since 2013, the EU has sent numerous recommendations to Romania to improve waste management and accelerate the transition to CE. Romania has tried countless times to introduce a landfill tax in various forms, but this has been postponed several times.

On April 25, 2018, the EC sent to Bucharest a letter announcing that state authorities would open the procedure for suspending interim payments from the Cohesion Fund 2014–2020 to the Large Infrastructure Operational Program.²⁶ In addition to suspending these payments, the EC once again demanded Romania implement a PAYT system, EPR and, most importantly, introduce a waste disposal tax starting July 1, 2018.

As per the response letter from the Ministry of Investments and European Projects to the EC, the Ministry assured officials from Brussels that the executive from Bucharest is preparing an EO to implement all the recommended economic instruments. As proposed by the Ministry of Environment, Water and Forests, the landfill fee would be called a 'circular economy tax'—a term considered inappropriate by many actors in the field of waste management— and all funds collected from the tax would be used exclusively to finance projects to increase projects under local authorities for separate waste collection and recycling.

The ordinance referred to by the Minister of European Funds was EO no. 74/2018. This document placed a value on contribution to CE, with tax for municipal waste destined for landfilling, as follows: RON 30 per ton in 2019 (~€6 per ton); RON 80 + VAT per ton from 2020 (~€17 per ton).

While local authorities and sanitation/collection companies commonly cite the cost burden on the individual when challenging this tax, European experience has shown that the transition to a more circular economy cannot be accelerated without the introduction and application of a tax to discourage landfilling.

Unfortunately, in the case of Romania, the amounts collected by the Administration of the Environmental Fund (AFM) from the tax for CE and from the tax for deviation from storage— approximately RON 1.2 billion (about €244 million)— are very hard to reinvest in CE stimulus projects because no programs exist at the national level to fairly direct these funds.²⁷

²⁶ <https://ecologic.rec.ro/consiliul-concurrentei-solicita-schimbarea-legislatiei-in-domeniul-deseurilor-municipale/>

²⁷ Ibid.

The central authorities also had a deadline of January 1, 2021, imposed by EO 74, to deliver the methodological norms for a Deposit-Return System (DRS) for reusable packaging. In the transition to a CE, the implementation of DRS is a steppingstone which could demonstrate that Romania is committed to reaching EU waste targets. The deadline was later extended until October 1, 2022 by GD 1074/2021 on the establishment of the DRS for non-reusable primary packaging. Although GD 1074/2021 called for only recyclable primary packaging (glass, plastics, or metal, with volumes between 0.1 liter and 3 liters) and did not require reusable packaging, the process of drafting the legislation was widely debated and producers still lobbied against the measures. According to GD 1074/2021, producers, through the DRS administrator, are obliged to achieve the following minimum annual objectives for the return of DRS packaging:

65 percent glass, 65 percent plastics, 65 percent metal for the period between October 1, 2022 and December 31, 2022;

65 percent glass, 65 percent plastics, 65 percent metal for the year 2023;

75 percent glass, 80 percent plastics, 80 percent metal for the year 2024;

85 percent glass, 90 percent plastics, 90 percent metal, starting in 2025.

Romania is the first EU country aiming to implement DRS without applying the polluter-pays principle.

Although Romania has adopted legislation on EPR, Romania is trying to use EU funding to cover DRS implementation. In fact, DRS is included in the government plan for 2020–2024,²⁸ with the intention that it will be financed with EU funds. The government plan also calls for negotiating with producers the gradual introduction of recycling obligations with increasing percentages of waste to be recycled each year, rather than a fixed percentage target. Additionally, the plan allows for the possibility to further extend the types of packaging collected to all primary plastic and glass packaging (for example, shampoo jars and bottles, as well as other categories of atypical packaging) depending on the evolution of the system. Similarly, the first version of the National Resilience and Recovery Plan also called for financing of the DRS system through EU funds.

Until September 2022, most of the objectives of GD 1074/2021 on the establishment of the DRS for non-reusable primary packaging were not reached. Steps have been taken to include the Romanian state as a shareholder of the DRS administrator - a unique measure compared to other EU member states. In general, most EU member states that have adopted a DRS have opted to include associations of producers and retailers as shareholders of the DRS administrator. However, according to GD 1074/2021, the designated administrator *RetuRO Sistem Garanție Returnare SA*, a company established by the representative associations of beverage producers and traders, is obliged to include the Romanian state as a shareholder (represented by the central public authority for environmental protection with a 20 percent share). Given that most of the deadlines for the preparation and system implementation have passed, the representatives of manufacturers and retailers estimate that the DRS will be established by the end of 2023, which may still be ambitious given the tight deadlines for preparation and system implementation.

Three other major laws are relevant for CE in Romania, however, they are not enforced due to a lack of applicable methodological norms.

- **Law on Food Waste Prevention:** Law no. 217/2016²⁹ regarding food waste prevention (updated by Law 131/2020) was not enforced until 2019 due to lack of methodological norms. The law encourages retailers to sell at a lower price or to donate products which are close to their expiration date in exchange for some financial benefit.³⁰ The provisions in the updated law are now optional. According to the National Institute of Public Health report from 2019,³¹ in Romania, 4.5 million people have difficulties purchasing daily food, while every year 2.55 million tons of food is thrown away (each Romanian throws away 129 kg of food per year), out of which in the urban areas over 95 percent ends up in landfills.

²⁸ <https://gov.ro/ro/obiective/programul-de-guvernare-2020-2024>

²⁹ <https://legislatie.just.ro/Public/DetaliuDocument/183792>

³⁰ <http://legislatie.just.ro/Public/DetaliuDocument/183792>

³¹ https://insp.gov.ro/download/cnepss/stare-de-sanatate/determinantii_starii_de_sanatate/nutritia/Analiza-de-situatie-ALIMENT-2019.pdf

Romania does not have a strategy for food waste prevention and the targets regarding food waste from the National Prevention and Waste Management Plan were not reached.

- **Law on Composting:** According to estimates reported to Eurostat, Romanians generate more than 5 million tons of waste annually, of which approximately 3 million tons are biodegradable waste, 90 percent of which is landfilled.³² On August 19, 2020, the Romanian Parliament adopted Law no.181/2020³³ on the management of compostable non-hazardous waste. This law is in line with the new targets imposed by the EU under the 2018 CE package which calls for 55 percent of municipal waste to be recycled by 2025.³⁴ According to this law, all biodegradable waste must be collected separately from other waste and handed over to authorized collectors or transformed into natural fertilizer in households, using special individual containers designed for composting. The main barriers that prevent the implementation of the compost law at present are the lack of technical application norms, lack of treatment facilities, and the low involvement and technical capacity of local public authorities (city halls, administrative-territorial units) which lack policy instruments and the necessary drivers to develop and make use of compost facilities.³⁵
- **Law on Green Public Procurement:** Law 69/2016 on GPP aims to promote the following: (a) environmental protection and sustainable development; (b) sustainable consumption and production, as well as the efficient use of resources; and (c) development and application of clean and environmentally friendly technologies.³⁶ Enforcement of the law is still pending, influenced by the approval of two additional regulations: the Guide for GPP and the National Green Public Procurement Strategy. The guide was approved through MO no. 1068/1652³⁷ from October 2018. The guide sets provisions regarding the use of optional green labelling by public institutions. It also sets minimum requirements for public acquisition concerning select priority products and service groups including copy paper (minimum 10 percent recycled paper); new indoor and outdoor furniture, renovation/refurbishment services for furniture, and services for the collection and reuse of the stock of end of life cycle for furniture; food and catering services (minimum 10 percent obtained from organic farming and reusable packaging); vehicles (standard for pollution); cleaning products and services (labelling and packaging requirements); and office IT equipment (requirements for energy performance, life of the product, and end-of-life/ recycling).
- **The National GPP Strategy is to include a National Plan for GPP, with multiannual targets for public institutions.** Currently, the Ministry of Environment, Water and Forests is a partner until 2022 in an Interreg Europe Project called Green Public Procurement and Sustainability Tools for Resource Efficiency Mainstreaming that aims at elaborating the National Plan and plans to modify the GPP law from 2016.³⁸ No other public data on the GPP Strategy are available and no data exist at the national level on the present state of green public acquisition in Romania. The current agenda is to approve the GPP guidelines without lower level (local) targets for public institutions, a hindering factor in the transition toward CE.

The proper enforcement of the anti-food waste law, compost law, and the GPP law is a prerequisite for Romania to accelerate the transition of its economy toward more circularity.

³² <https://ecologic.rec.ro/deseurile-biodegradabile-intre-micile-dorinte-ale-investitorilor-si-marea-nepasare-a-autoritatilor/>

³³ <https://legislatie.just.ro/Public/DetaliuDocument/229273>

³⁴ https://ec.europa.eu/commission/presscorner/detail/ro/IP_18_3846

³⁵ <http://legislatie.just.ro/Public/DetaliuDocument/229273>

³⁶ <http://legislatie.just.ro/Public/DetaliuDocumentAfis/177918>

³⁷ <https://legislatie.just.ro/Public/DetaliuDocument/206680>

³⁸ <https://www.interregeurope.eu/gpp-stream/?fbclid=IwAR3o5enHhp2ms0dwiApE-eYIbRyhi1UwGp4Lmg5rhJ-zBR2lyd5IuONDwfU>

3.4 Local-Level Strategies

At the local level, a number of county or local strategies hold the potential to impact the CE transition if implemented properly. These are listed in Table 4.

Table 4. Examples of local strategies with CE potential

City	Strategy
Bucharest	Integrated Air Quality Plan 2018–2020 ³⁹ Waste Management Plan 2020–2025 ⁴⁰
Brasov	Strategy for Sustainable Development 2030 ⁴¹ Strategy for Urban Development ⁴² County Waste Management Plan 2019-2025 ⁴³
Oradea	Draft Strategy for Local Development 2021–2027 ⁴⁴ County Plan for Waste Management ⁴⁵ Master Plan Waste Management 2018 ⁴⁶
Buzau	County Plan for Waste Management ⁴⁷ revision 2021 Strategy toward Circular Economy 2020–2030 ⁴⁸ <ul style="list-style-type: none"> • Buzau is home to the Green Group, the biggest private group of companies focused of recycling in Romania.⁴⁹ It represents the largest integrated recycling park in Europe specialized in management of recyclable waste, collection of waste for recycling, and recovery of various types of waste. Green Group transforms recyclable waste into a valuable economic resource, closing the loop and saving resources and energy. Green Group has a strong partnership with the local authorities, especially with Buzau City Hall, which has published a revised version of the County Plan for Waste Management.⁵⁰ • Buzau is the first Romanian city to develop a strategy toward CE with seven key directions for circularity for 2030. <ul style="list-style-type: none"> ○ Materials: Buzau municipality has zero waste and a flow of circular materials of almost 60 percent ○ Energy: Supply of Buzau with renewable energy using mainly local production ○ Biodiversity: Buzau's ecosystems and its base of natural capital are regenerated through strategic actions ○ Health: Infrastructure in Buzau is designed for flexibility and maximum use, and local mobility is achieved with emissions tending to zero ○ Society and culture: A healthy, safe, and attractive environment with spaces recreation for all residents

³⁹https://doc.pmb.ro/institutii/primaria/directii/directia_meniu/planuri_de_calitate_aer/docs/plan_integrat_calitate_aer_buc/plan_integrat_calitate_aer_buc_2018_2022.pdf

⁴⁰https://doc.pmb.ro/institutii/primaria/directii/directia_servicii_publice/docs/planul_de_gestionare_a_deseurilor_din_mun_buc_2020_2025_20210827.pdf

⁴¹ <https://www.brasovcity.ro/file-zone/strategii/Strategia%20de%20Dezvoltare%20Durabila%20Brasov%202030/Strategia-dezvoltare/Strategia%20de%20dezvoltare%20a%20Municipiului%20Brasov.pdf>

⁴² <https://www.brasovcity.ro/file-zone/strategii/Strategia%20Integrata%20de%20Dezvoltare%20Urbana/Analiza%20situatiei%20existente.pdf>

⁴³https://site.judbrasov.ro/page_Planul%20Jude%20de%20Gestionare%20a%20De%20C5%9Feurilor%20C3%AEn%20Jude%20de%20Bra%20C5%9Fov%202019-2025%20E2%80%93%20septembrie%202020_749.html

⁴⁴ <https://www.cjbihor.ro/strategia-pentru-dezvoltarea-judetului-bihor-pentru-urmatorii-ani-in-lucru/>

⁴⁵ <https://www.cjbihor.ro/wp-content/uploads/2021/02/varianta-2021-aprilie-20.04.2021-ultima.pdf>

⁴⁶ <https://www.cjbihor.ro/wp-content/uploads/2021/02/Master-Plan-Deseuri-Revizuit.pdf>

⁴⁷ <http://cjbuzau.ro/wp-content/uploads/2021/02/Raport-de-Mediu-PJGD-BZ-21.01.2021-1.pdf>

⁴⁸ https://primariabuzau.ro/wp-content/uploads/2020/05/Anex%C4%83-3-1-60_compressed.pdf

⁴⁹ For more information, see: <https://www.green-group-europe.com/en/about-green>.

⁵⁰ <http://cjbuzau.ro/wp-content/uploads/2021/02/Raport-de-Mediu-PJGD-BZ-21.01.2021-1.pdf>




City	Strategy
	<ul style="list-style-type: none"> ○ Generation of value: Strong local economy that stimulates entrepreneurs and encourages the development of circular business ○ Resilience: The city is a leader in the field for measures taken on CE. <p>The strategy does not present an action plan to reach the objectives, but provides some information on the current situation of the economy and the potential development for circularity. Buzau county already has one of the most advanced systems for waste management in the country. Although Buzau municipality has an industry for waste recycling as well as a business environment open to this approach, to accelerate the transition to CE requires involvement in strategic support actions of these actors. In 2018, 221 million kg of CO₂ and over 44,055 tons of waste were generated in the city – over 55 percent of which entered the sorting station.</p>

4. State of the Circular Economy in Romania and Alignment with EU Legislation

4.1. Romania's Performance in the EU Circular Economy Monitoring Framework

The CE Monitoring Framework aims to assess progress toward a more circular economy at both the EU and national levels through a limited set of key indicators that capture the main elements of CE. Table 5 shows the most recent data for CE indicators in the EU and Romania, and compares them with EU targets.⁵¹

TABLE 5: PERFORMANCE AGAINST CE INDICATORS: ROMANIA AND EU

INDICATOR	EU 	Romania 	EU targets 
Production and consumption			
EU self-sufficiency for raw materials (%)	9.8 (2018)	n.a.	
Green public procurement	n.a.	n.a.	
Generation of municipal waste per capita (kg per capita)	530 (2021)	302 (2021)	
Generation of waste excluding major mineral waste per GDP unit (kg / €, thousands), chain linked volumes (2010)	65 (2020)	107 (2020)	
Generation of waste excluding major mineral wastes per domestic material consumption (%)	12.8 (2020)	3.3 (2020)	
Food waste (million tons)	69 (2018)	n.a.	
Waste management			
Recycling rate of municipal waste (%)	49.6 (2021)	11.3 (2021)	50 (2020) 65 (2035)
Recycling rate of all waste excluding major mineral waste (%)	58 (2020)	37 (2020)	
Recycling rate of overall packaging (%)	64.3 (2020)	44.6 (2019)	65 (2025) 70 (2030)
Recycling rate of plastic packaging (%)	37.7 (2020)	31.1 (2019)	50 (2025) 55 (2030)
Recycling rate of wooden packaging (%)	32.4 (2020)	24.8 (2019)	25 (2025) 30 (2030)
Recycling rate of e-waste (%)	38.9 (2018)	25 (2016)	
Recycling of biowaste (kg per capita)	100 (2021)	14 (2021)	
Recovery rate of construction and demolition waste (%)	89 (2020)	88 (2020)	70 (2020)
Secondary raw materials			
End-of-life recycling input rates (EOL-RIR) (%)	12.3 (2019)	n.a.	

⁵¹ <https://ec.europa.eu/eurostat/web/circular-economy/indicators/monitoring-framework>

Circular material use rate (%)	11.7 (2021)	1.4 (2021)
Imports from non-EU countries	41,447,289 (2021)	706,778 (2021)
Exports to non-EU countries	38,352,417 (2021)	2,020,026 (2021)
Intra-EU trade	92,042,658 (2021)	872,805 (2021)
Competitiveness and innovation		
Gross investment in tangible goods (percentage of GDP at current prices)	0.12 (2019)	0.17 (2019)
Persons employed (percentage of total employment)	1.76 (2019)	1.55 (2019)
Value added at factor cost (percentage of gross domestic product (GDP) at current prices)	0.99 (2019)	0.76 (2019)
Number of patents related to recycling and secondary raw materials	295.32 (2019)	5.5 (2019)

Source: Eurostat, updated January 2023.

As Table 5 shows, Romania scores well below the EU average on all indicators. Romania's indicator scores are largely a result of three factors: low purchasing power which influences consumption patterns; lack of a full waste management system in some parts of the country; and poor data quality and a faulty reporting system. The only positive aspect is related to waste generation per capita, where Romania is one of the EU countries with the lowest amounts generated. This is partly due to the differences between consumption patterns and economic wealth and partly due to the way municipal waste is currently collected and managed.

4.1. National Circular Economy Performance in More Detail

Romania faces major challenges in the implementation of EU CE legislation and achievement of EU CE- and waste-related targets. In 2021, Romania's economy was two thirds less resource-efficient compared to the EU average, with very low reuse and recycling levels and the highest landfilling rate in the bloc. Romania has missed most EU targets related to waste management and faces infringement procedures on its non-compliant landfills. Other challenges for Romania include improving compliance with EU waste and urban wastewater legislation to meet EU targets and to improve coordination and administrative capacity of the authorities and agencies involved in the implementation of EU waste legislation.

In November 2021, the EC announced that it is taking legal steps against Romania for failing to comply with EU laws on waste – the Waste Framework Directive and the Landfill Directive. The EC urged Romania and four other EU member states to ensure appropriate treatment of waste before landfilling. In the case of Romania, an additional case was referred back to the Court of Justice of the EU for failure to comply with the Landfill Directive. In 2018, the Court had found that Romania had failed to fulfill its obligations to close and rehabilitate 68 landfills, 49 of which were still not closed by November 2021.

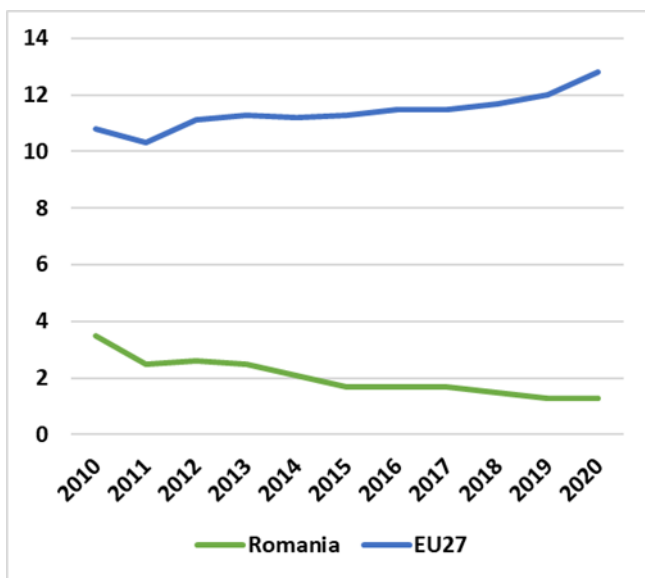
The EU Environmental Implementation Review 2022 - Country Report for Romania⁵² - highlights the country's lack of progress in areas related to the CE. According to the report, the circular (secondary) use of material in Romania declined from 1.5 percent in 2015 to 1.3 percent in 2019, and is very low compared to the EU average of 12.8 percent, as shown in Figure 1. In contrast to most other member states, Romania's performance as regards the secondary use of material has deteriorated in the last few years. In addition, Romania's resource productivity in 2020 remained low at €0.33 per kg of material consumed, which is far below the EU average of €2.09 per kg (Figure 2). Romania ranked 24th on the 2021 Eco-innovation scoreboard,

⁵² https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=comnat%3ASWD_2022_0271_FIN

indicating that Romania needs to step up its eco-innovation activities. Priority actions in the area of CE proposed by the 2022 Country Report include the following:

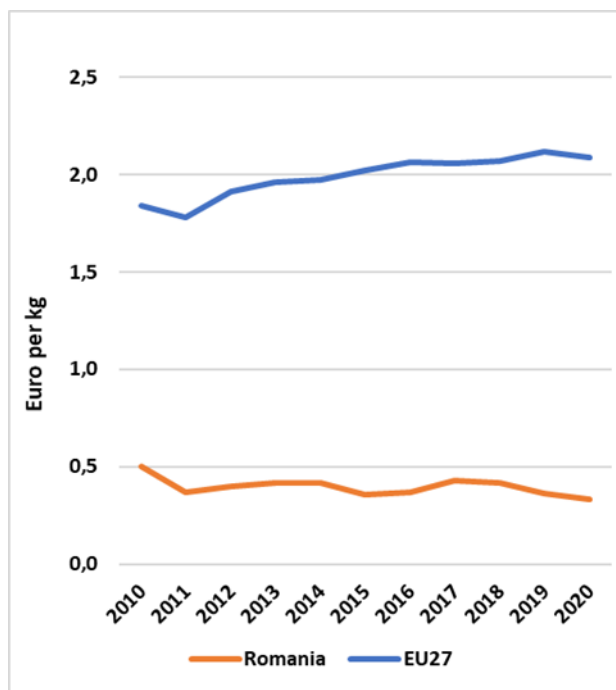
- Strengthen the policy framework to speed up the transition toward the circular economy by all economic sectors, in particular by implementing the CE Strategy and CEAP as soon as they are adopted.
- Continue developing policy along strategic long-term lines, an integrated approach to mainstreaming sustainable development, circular economy thinking, and eco-innovation across policies, at the same time not losing sight of the need to increase resource-efficiency measures among small and medium-sized enterprises (SMEs), in particular by investing further in education and training.
- Adopt measures to increase the circular material use rate.

FIGURE 1. CIRCULAR MATERIAL USE RATE (%), 2010–2020



Source: EC 2022.

FIGURE 2. RESOURCE PRODUCTIVITY, 2010–2020



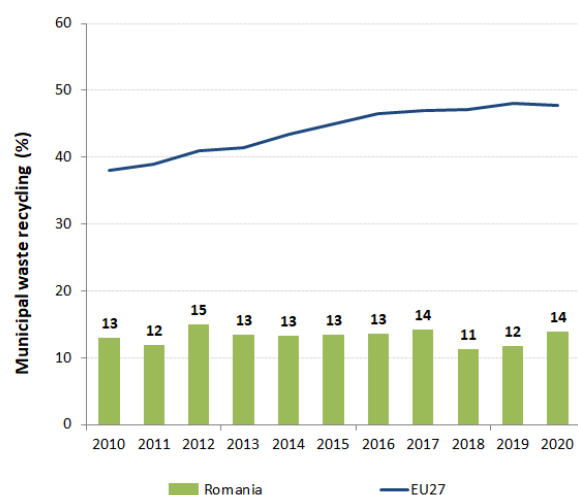
Source: EC 2022.

Regarding waste management, the EU Environmental Implementation Review 2022 for Romania concludes that Romania is underperforming, with no real progress achieved over the past years in terms of recycling and landfilling. Managing waste efficiently remains a major issue for Romania. Only 14 percent of municipal waste was recycled in 2020, well below the EU average of 48 percent (Figure 3). The vast majority of waste continues to be landfilled, as shown in Figure 4. Romania fails to meet its obligations under the Landfill Directive (Directive 1999/31/EC). Many irregular and substandard landfills operate in Romania, presenting serious risks for human health and the environment; most of the waste is landfilled without any treatment and often the proper infrastructure is lacking. In November 2021, the EC has therefore initiated an infringement procedure against Romania for failing to comply with the Landfill Directive and the Waste Framework Directive (see above). According to the EC, Romania is at risk of missing the EU 2020 targets for the reuse/recycling of waste and needs to step up investment in recycling to reach the EU 2020 and 2025 recycling targets. Priority actions in the area of waste management proposed by the 2022 Country Report include the following:

- Ensure the closure and rehabilitation of substandard landfills, and take action against illegal landfills and fly tipping.

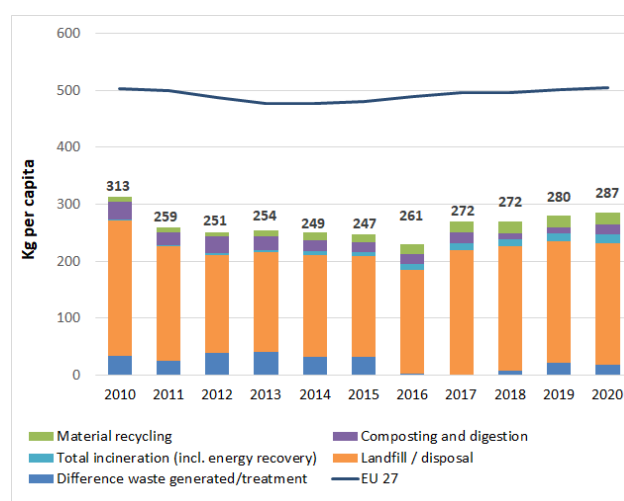
- Ensure that a national waste management plan and a waste prevention program in line with the revised WFD are in place and that they are consistent with the 41 county plans and the Bucharest municipality plan.
- Improve and extend the separate collection of waste, including for biowaste. Establish minimum service standards for separate collection (for example, frequency of collections, types of containers) in municipalities to ensure high capture rates of recyclable waste. Use the economic instruments, for example, PAYT, and set mandatory recycling targets for municipalities, with penalties for non-compliance (for example, fines).
- Develop and run implementation programs for municipalities to give them support in organizing separate collection and improving their recycling performance.
- Improve the functioning of EPR systems, in line with the general minimum EPR requirements.

FIGURE 3. RECYCLING RATE OF MUNICIPAL WASTE, 2010–2020



Source: EC 2022.

FIGURE 4. MUNICIPAL WASTE BY TREATMENT IN ROMANIA, 2010–2020



Source: EC 2022.

The reasons for high landfilling rates and low recycling rates are manifold. On the one hand, separate collection infrastructure is still largely missing, a decade after it was introduced as mandatory in the legislation. On the other hand, the introduction of Integrated Systems for Waste Management at the county level was not as successful as expected, although built with EU funding, and only a few such systems are functional. While local areas have autonomy in waste management, there are profound discrepancies between regions, based on the abilities and will of the local politicians in dealing with waste management policy.

Romania needs to step up transposition of EU legislation into the national law and to simplify national legislation. Romania still needs to fully transpose into national law three of the four directives of the EU CE Package (WFD - Directive [EU] 2018/851), PPWD - Directive [EU] 2018/852, and LD - Directive [EU] 2018/850), which were due for adoption in July 2020. Adoption of provisions to complete the transposition of the three directives, as well as the transposition of Directive 2019/904 on certain plastic products is yet to happen. Moreover, there is a clear necessity to simplify the legislation beyond the EU transposition of laws. There is a need to simplify and standardize the legislation on waste management as it is lengthy, complex, and difficult to follow, to harmonize the regulations of the public sanitation service with environmental objectives, in particular as regards the application of economic instruments and, consequently, to reduce waste (revision of GEO 92/2021 on waste management, Law 249/2015 on packaging and packaging waste, GD 349/2005 on waste storage, as well as the need to develop technical rules for the application of the Compost Law no. 181/2020).

As noted above, the 2017 NWPMP was not properly implemented; and the respective ex-ante condition imposed by the EC for accessing EU funds, was not met with proper reforms and investments, leading to unsatisfactory implementation results. A new and adapted version of the National Plan to the EU's CE Package is foreseen by the Ministry of Environment, Water and Forests for 2022. Its approval needs to be followed by a proper implementation and close monitoring, with clear targets fully aligned with EU CE legislation.

Romania has not implemented an effective plan for waste prevention and the market for reuse or repairs is not sustainable. To prevent waste generation, data must be available on consumption, production, and food waste. This will allow for development of a food waste prevention strategy, full application of anti-waste laws, and the development of composting infrastructure. To build a national action plan for reuse and repair, a deep understanding of consumer and producer behavior is needed, as the shift from a linear economy toward a circular economy needs to include changes in society and its consumption patterns. The shift from 'throw away' to 'reuse and repair' requires government measures, consumer demand for the shift, and sustainable production. If repair and reuse centers are not financially sustainable, developing social impact assessments is crucial—particularly where products are donated or sold without profit.

The country's 42 county waste management plans (including the one for Bucharest Municipality), are important tools for local and national governance of waste management. At the regional/local level, the path toward CE is widely uneven and, overall, underdeveloped. Although Law 211/2011 has required separate collection of paper, plastics, metal, and glass since 2011,⁵³ even after more than a decade, Bucharest—one of the biggest waste generators in the country— does not have a fully functional system for separate waste collection. Each of the city's six separate district mayor's offices has interpreted this law in different ways. Thus, in some sectors a dual system was implemented with separate collection of dry waste and wet waste from both households and small enterprises. In other areas, no separate collection system exists, and only mixed disposal services exist, provided by sanitation companies. After a decade in which it lacked enforcement by the majority of local public authorities, Law 211/2011, the framework law on the waste management, was repealed and replaced by GEO 92/2021 (from August 19, 2021), even though most of the articles of the old law remain in place.

4.2. Local Best Practice

Romania has several best practice examples of separate waste collection at the local level. Several Romanian cities have high potential to lead the CE transition process because of their rapid economic development, high purchasing power, strong infrastructure, development pools, and sustainable development:

- Cluj - Smart city, national information and communication technology (ICT) development pool, high EU funds absorption rate
- Oradea - Developed infrastructure, digitalization, high EU funds absorption rate, high quality of life
- Buzau - Good system for waste management due to partnerships, first city with a local strategy for CE.

This section features best practices from Iasi, Bihor County, and Cluj.

Box 4. MUNICIPAL COLLECTION CENTER, IASI

The main goal of the Municipal Collection Center in Iasi is the improvement of collection rates for recyclable waste and the reduction of negative impact on the environment, especially from waste comprised of electric and electronic equipment (WEEE).⁵⁴ With funding from a Norway Grant,⁵⁵ the Iasi project aimed to both demonstrate the business opportunities of greening of the European economy and serve as a local solution for Iasi and an example of best practices at the national level. Launched in March 2016, the municipal waste collection center Iasi (CMCI) is the first municipal waste collection center in Romania, built and operated according to European standards. The launch took place under the title, 'My Clean Iasi', meant to stimulate the people of Iasi to recycle their waste, including

⁵³ http://www.ecoteca.ro/wp-content/uploads/2019/01/2019_L211_2015_AmendataPrinL31-2019-1.pdf

⁵⁴ For more information, see <https://www.urbanwins.eu/municipal-waste-collection-center-iasi/>

⁵⁵ <https://en.parp.gov.pl/component/site/site/norway-grants>

biodegradables, textiles, packaging, and WEEE. Norway Grants provided both funding and knowledge transfer from similar Norwegian projects.

Box 5. FUNCTIONAL INTEGRATED SYSTEM FOR WASTE MANAGEMENT: BIHOR COUNTY

The composting station in Bihor County is an example of good practice for collecting and treating biodegradable waste. The station was built by EcoBihor, a company specialized in integrated waste management.⁵⁶ The enabling factor behind the project's success was a strong partnership with the local administration of Oradea city that started in 2004, with a long-term vision and significant funding and international expertise. Through this partnership, all waste generated at the county level from both the population and public institutions is transported to EcoBihor where it is treated, recycled, or stored in an environmentally controlled manner.

In 2010, Bihor County added a composting plant which meets the most rigorous requirements of both Romania and the EU. The composting station treats biodegradable organic waste collected selectively from the Oradea metropolitan area and Bihor County.

EcoBihor is one of the pioneers of biodegradable waste treatment in Romania, which began implementing a collection system and biodegradable waste treatment and obtaining a new product in a perfectly circular system 10 years before the compost law was even adopted in Romania. To ensure integrated municipal waste management, EcoBihor also built an ecological waste landfill, a sorting hall, a mechanical biological treatment plant, a concrete crushing station, a biogas capture system, and a water treatment plant.

Box 6. CLUJ NAPOCA'S POTENTIAL FOR CE

Cluj-Napoca (Cluj) is one of the top Romanian cities with CE potential. Cluj's local economy and labor structure changed after the 2008–2010 crisis.⁵⁷ The city has become a Central and Eastern European hub that has benefited from new forms of globalization by outsourcing operations. In particular, Cluj excels in four transnational fields: information and communication technology (ICT); business support services, engineering and research and development; and financial services. As a result, in 2018, Cluj was ranked in the top 50 developed cities in the EU among cities with per capita GDP of 19,000–27,000 purchasing power parity (PPP) which have demonstrated a credible commitment to promoting knowledge, culture and creativity at the European level. Cluj ranks 16 among these cities in terms of the size of the economy based on knowledge and creativity. In the past 10 years, the economy has doubled in size, with a significant upward trend for all performance indicators.

In 2021, Cluj was named a 'smart city' on the Emerging Europe's Business-Friendly Perception Index, for fostering sustainable growth and the implementation of environmental, social and governance practices (ESG) in the region.⁵⁸ In 2020, the first smart street was inaugurated in the city.⁵⁹ The administration has a budget of €433 million (2021), provides over 250 online services for its citizens, and has the highest rate for the absorption of structural funds.⁶⁰ The city has an adopted the [Integrated Urban Development Strategy](#) (SIDU) for the period 2021–2030 that includes implementation of €184.8 million in EU projects.⁶¹ The city is a center for innovation and start-ups, and a main hub for the IT sector in the country.

⁵⁶ For more information, see <https://ecobihor.ro/prezentare/>

⁵⁷ <https://primariaclujnapoca.ro/informatii-publice/comunicate/studiu-ubb-economia-clujului-s-a-dublat-intr-un-singur-deceniu/>

⁵⁸ <https://emerging-europe.com/business-friendly-city-report/>

⁵⁹ <https://www.monitorulcj.ro/actualitate/81928-prima-strada-smart-din-romania-a-fost-finalizata-la-cluj-napoca-cum-arata-si-ce-facilitati-ofera-#sthash.apYvrUaj.dpbs>

⁶⁰ <https://primariaclujnapoca.ro/informatii-publice/comunicate/proiectul-de-buget-al-municipiului-cluj-napoca-pe-anul-2021/>

⁶¹ <https://primariaclujnapoca.ro/proiecte-europene/pidu-cluj-napoca/>

5. Main Findings from Surveys and Interviews

Survey and interviews were performed in June 2021, followed by an update in September 2022, with a total of 46 organizations providing input to the findings. In June 2021, the study team invited a total of 103 CE stakeholders to participate in the study, including representatives from the public sector, from various industries, representatives from the waste management industry and the circular economy, professional associations, research institutes, environmental NGOs, educational institutions, consulting companies in the field of waste management and the circular economy, and independent consultants. A total of 45 organizations participated in the study, including 13 representatives of the central and local public authorities and 32 private organizations. A total of 19 interviews were conducted and 26 questionnaires were completed. For the updated report, in September 2022, another interview was conducted with a member of the consortium responsible for drafting the Romanian CE Strategy and Action Plan. In addition, the conclusions from a round table covering education and the technical skills needed in the context of the CE were taken into account.

While a decade ago, the concept of CE was not very well known in Romania, in recent years, it has been increasingly promoted in public events organized by various industries, through corporate social responsibility campaigns, by the media, and especially by environmental NGOs. Although CE is still often confused with the concept of waste management, the level of understanding of the concept is improving, especially among private companies.

The CE Strategy and Action Plan, together with the investments and reforms from the NRRP are necessary tools in the transition process. The NRRP and the funds allocated for investments and reforms in Romania, together with the other EU funding opportunities (the Just Transition Fund, the Third Partnership Agreement, and so on) offer the necessary tools needed to transform the linear economy, although hindering factors are still present. The CEAP has a short timeframe for implementation under the NRRP, but it is foreseen to be developed with private sector collaboration. Over the past year, CE has been promoted mainly by the development of the CE Strategy, especially at the central level, the principles of sustainability are starting to be promoted at large scale and the society as a whole shows increased interest in related issues (air quality, energy efficiency, sustainable transport, green energy, and so on).

The research highlighted that after environmental NGOs, those most interested in ensuring a good transition to CE are the organizations in the waste management industry and in manufacturing. While CE processes are not yet fully developed in Romania, organizations in the field of waste management demonstrate more interest than companies in other sectors in making the transition to CE. Their motivation is either to optimize processes, to reduce production costs and virgin raw materials, or to reduce waste disposal and ensure a 100 percent waste recovery target (by recycling and energy recovery of waste that usually reached landfills). All the organizations participating in the survey/interviews confirmed that they followed the activity of foreign companies and built/or intend to build more circular business plans.

Although both the waste management industry and other industries are still mainly focused on better waste management measures, optimizing waste management represents an important first step in the CE transition. If an organization properly manages its waste and reduces the amount stored, then a natural step is to find solutions to optimize recycling processes and production (for example, changing the design of products so they are easier to recycle, consume few resources, and can be used for a long time). For this reason, major investments have been made in the private sector to ensure a high degree of waste recycling.

In the past years, waste management capacities have evolved. While a decade ago, sanitation companies depended on several sorting stations or recycling factories, in recent years, many sanitation companies have chosen to develop their capacity, to build their own sorting plants, and thus now manage to recover a larger quantity of waste that reaches either recycling or energy recovery and greatly reduces the amount of waste stored. This measure also determined the recovery of some categories of waste that were not of interest a few years ago. Thus, although they are not properly supported by law and their recovery is not encouraged, textile waste, construction waste, bulky waste (such as furniture), waste from the automotive industry (plastic and

textile components that generally reached landfills) began to be increasingly recovered either by recycling or by energy recovery.

In Romania, five important factories support the recycling process at the national level:⁶²

- Green Tech is the largest PET plastic recycler in Europe and an important producer of flakes, polyethylene terephthalate (PET) strap and recycled polyethylene terephthalate (r-PET) granules.
- Green Fiber is the only manufacturer of polyester synthetic fiber in Romania and the largest European producer of polyester synthetic fiber made of 100 percent recycled PET flakes.
- Green WEEE is one of the leading Southeastern and Central European players, focused on collection, treatment and recycling of WEEE, cables, batteries, and automotive components.
- Green Lamp uses the latest technologies for lighting equipment, an in-house distillation process to separate fluorescent powder from lamps and recover the mercury residuals from it.
- Green Glass is one of the most modern and efficient glass waste recycling facilities in Romania and Southeastern Europe.

Romania has the necessary technologies to ensure a higher degree of recycling at the national level. Unfortunately, the low degree of municipal waste collection prevents the recovery of more quantities of raw materials. The study highlights that recycling processes have become more efficient due to new technologies used, meaning that more resources are recovered and less raw material is used to make new products.

To accelerate the transition to CE, in 2017 the Coalition for the Circular Economy (CERC)⁶³ **was founded.**

As mentioned above, companies in the waste management industry were among the first organizations interested in ensuring a transition to CE. Established as an independent organization by a group of environmentally and socially responsible professionals and companies, the main aim of the CERC is to promote at the national level the key objectives of the EC circular economy package: to stimulate the development of new markets and business models, thus contributing to economic growth and job creation. Initially, the Coalition brought together members of the entire waste management sector (producers, waste collection companies, sorting stations and recyclers), as well as various environmental experts. As a consolidated body, the commitment is to expand the variety of members throughout the Romanian economy, toward a circular approach to business.

Currently, CERC is actively working to strengthen communication with local and central authorities, as well as with parliamentary committees, by participating in public debates and working groups, to inform them about the benefits that CE can bring to the Romanian economy. CERC has become a key actor for the local business community, also developing master's programs with universities on CE and specifically on innovative technologies for secondary raw materials.

Six main legislative shortcomings were highlighted by the organizations participating in the study:

- The lack of specific measurable requirements regarding the ecological design of products
- 'End-of-waste' status is not included in Romanian legislation; legislation limits the possibility for the waste status to end when an object is reconditioned; legislative clarifications are needed
- Development of facilities to produce sustainable goods from recycling stream materials is not sufficiently encouraged

⁶² <https://www.green-group-europe.com/en>

⁶³ <https://www.economicirculara.eu/>

- Regarding organic waste, no rules exist for implementation of the compost law, and energy recovery is not sufficiently promoted (through incentives and rules for using biogas and cogeneration)
- Insufficient landfill tax for municipal waste and CDW destined to be eliminated by storage; increasing these taxes would make recycling and recovery feasible, creating an incentive to avoid waste landfilling. The experience of other European countries with developed waste management proves that the percentage of recycling and disposal deviation is directly proportional to the size of the contribution to the landfill taxation
- Lack of methodological norms for the implementation of the law on GPP, the law on food waste management, construction waste, textile waste, and other flows.

Participants recommended a host of specific policy measures at the national and regional levels to support sustainability:

- Development of a CE strategy and CE Action Plan at the national level, to be supported by an adequate budget, either from European funds, or from national funds, or both. This national strategy should also be reflected in regional, county, and local development strategies, also supported with appropriate allocation of resources
- Regulating 'end-of-waste' status when a product is reconditioned, reused, or recycled
- Better implementation of the EPR and its extension to new product categories (such as textiles and construction materials)
- Introduction of a DRS, which was planned for 2018
- Adoption of measures to ban disposable plastics
- Introduction of taxes on non-recycled plastics
- Introduction of waste taxation at source (the PAYT model)
- Development of a methodology to implement the compost law and GPP law
- Increased enforcement of environmental laws
- Development of new product standards to increase reliability and possibilities for reuse and repair
- Introduction of mandatory quotas for the use of recycled materials in certain products
- Creation of a market for recycled materials
- Development of better regulation of waste imports and exports
- Increase in the storage fee according to similar tariffs from other European countries.

Improving the waste management system is one of the essential factors that can facilitate the transition to CE. Respondents expressed their view that they cannot ensure the transition to CE if the essential aspects of waste management are not resolved. This may explain why so much of the CE focus to date has been on waste management.

6. Prioritizing Circular Economy Reform Areas

There are different ways to identify priority reform sectors for the circular transition. The new national CE Strategy, for example, offers an overview of 14 economic sectors in Romania in terms of their circularity potential. Based on a preliminary analysis, the Strategy concludes that enhancing CE has the highest potential in agriculture and forestry, automotive sector, construction and consumer goods, such as food and beverages, packaging, textiles, and electrical and electronic equipment.

This chapter focuses on four sectors identified in the context of the stakeholder consultation. These sectors have been identified according to the specificities of their products or value chains, their environmental footprint, or the dependency on material from outside Europe. In particular, they include sectors with large levels of waste generation and resulting high impacts on the environment, given the many issues facing waste management in Romania. They include heavy industry, agri-food, agriculture and forestry, textiles, and construction and demolition waste (CDW).

6.1 Priority Sectors for the Circular Economy Transition

Heavy industry

Romanian heavy industry is one of the main polluters and needs to address its resource use within the context of a just transition. In Romania, this sector is characterized by several factors which affect CE transition. First, energy products, predominantly oil and natural gas extraction, over the years have not only produced products for domestic consumption but also for export. Second, the mining and quarrying industry also includes extraction of coal, a product that has largely been used as fuel used in power plants. The Just Transition Mechanism aims to change the former industrial models for the six Romanian counties that are key in the CE process. Identification of sustainable business models and greening the Romanian oil and gas industry are core elements that need clear legislative tools and energy policies to guide them in the process.

Agri-food and agriculture

The agri-food industry is another challenge for Romanian transition toward CE. According to EU Agriculture, Forestry and Fishery statistics (2020 edition), the value of Romania's agricultural industry output rose by 2.2 percent in 2019 to €19 billion, out of which more than two-thirds (70 percent) came from crop products.⁶⁴

Romanian agriculture was shaken in 2020 by two major events: the coronavirus (COVID-19) pandemic and the worst drought in the last 50 years, with a direct and significant impact on Romania's GDP. According to a KeysFin analysis, the drought and lack of infrastructure investments will bring decreases of over 15 percent in the turnover of over 25,000 companies in local agriculture, from almost RON 46 billion in 2019, to about RON 39 billion in 2020.⁶⁵ At the same time, the new Common Agricultural Policy contains ecological objectives and the protection and conservation of the environment, forcing farmers to be more responsible for the natural environment in which they operate. The objectives of the new Common Agricultural Policy are to fight climate change and provide young people with easier access to agricultural land and funding. Organic farming could increase, both in terms of the number of operators and the areas certified. Romania scores low among EU countries by share of certified land in total agricultural areas. Romania has huge potential for development, and subsidies for organic farming can play a significant role. Romania does not yet have a farm-to-fork sustainable policy.

Forests

The forest area in Romania in 2019 was 6,427,340 hectares in 2019, an increase of 9,127 hectares over the previous year.⁶⁶ This increase is mainly due to redevelopment of forested pastures and the introduction of degraded land and deforested land in the forest fund, by law. Illegal logging is a continuous problem in Romania

⁶⁴ <https://ec.europa.eu/eurostat/web/products-statistical-books/-/ks-fk-20-001>

⁶⁵ https://www.economica.net/retrospectiva-2020-agricultura-romaniei-zdruncinata-de-pandemie-si-seceta_194731.html

⁶⁶ <https://insse.ro/cms/ro/content/statistica-activit%C4%83%C5%A3ilor-din-silvicultur%C4%83-%C3%AEn-anul-2019>

and the transition toward CE will need to address this issue. As part of the EGD, Romania will need to adapt its actions to the new EU Forestry Strategy published in July 2021, which sets a vision and concrete actions to improve the quantity and quality of EU forests and strengthen their protection, restoration and resilience. The strategy supports the socioeconomic functions of forests for thriving rural areas and aims to boost forest-based bioeconomy within sustainability boundaries. It will also protect, restore, and enlarge the EU's forests to combat climate change, reverse biodiversity loss, and ensure resilient and multifunctional forest ecosystems.

The textile industry

Romania's market is mainly based on fast fashion, and the import of secondhand textiles is a real threat given the low recycling options; lack of data availability regarding the textile industry is another big issue. Textiles are the fourth highest-pressure category for the use of primary raw materials and water (after food, housing, and transport), and fifth for GHG emissions.⁶⁷ It is estimated that less than 1 percent of all textiles worldwide are recycled into new textiles. The EU strategy for sustainable textiles will help the EU shift to a climate-neutral, circular economy where products are designed to be more durable, reusable, repairable, recyclable, and energy-efficient. The strategy aims to ensure that the textile industry recovers from the COVID-19 crisis in a sustainable way by making it more competitive, applying circular economy principles to production, products, consumption, waste management, and secondary raw materials, and directing investment in research and innovation. A new sustainable framework will aim at developing eco-design measures to ensure that textile products are fit for circularity, ensuring the uptake of secondary raw materials, tackling the presence of hazardous chemicals and empowering business and private consumers to choose sustainable textiles and get easy access to reuse and repair services. Already in 2018, the revised EU Waste Directive (2018/851) introduced the obligation for member states to introduce separate collection of textiles in households starting January 1, 2025.⁶⁸

Romania does not have clear regulations on textile waste management, and the authorities have not yet taken measures to prepare separate collection of textile waste in households, for reuse, repair, recycling, and recovery. However, legal provision for separate collection of textile waste have been introduced in the legislation in 2021 (EO no. 92/2021). For now, most textile waste ends up in the municipal stream where it complicates the sorting of municipal waste and largely ends up being sent for energy recovery in cement plants or stored at authorized landfills. As textile waste is not regulated, there are no organizations to ensure implementation of obligations regarding the extended responsibility of the producer.

Construction and demolition waste

According to Eurostat, 88 percent of CDW was recovered in Romania in 2020.⁶⁹ This data provided by industry have not yet been checked by the authorities. At the same time, it is important to remember that at the national level there are very few CDW crushing stations and they fail to serve the entire territory. As a result, and in order to evade the payment of a fee of about €11 per ton for the storage of construction waste, many companies illegally dump construction waste, a common and worrying phenomenon across the country. Moreover, no program for the extended responsibility of construction material producers has yet been implemented; such a program would significantly increase the degree of collection and recovery of CDW.⁷⁰ A positive development has been the adoption of EO 92/2021,⁷¹ according to which builders have the obligation to manage CDW, so as to reach a level of preparation for reuse, recycling, and other material recovery operations, including backfilling operations that use waste to replace other materials, of at least 70 percent of the mass of non-hazardous waste from construction and demolition activities. Unfortunately, these measures are rarely respected.

⁶⁷ https://ec.europa.eu/growth/industry/sustainability/textiles_en

⁶⁸ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L:2018:150:FULL&from=EN>

⁶⁹ https://ec.europa.eu/eurostat/databrowser/view/cei_wm040/default/table?lang=en

⁷⁰ <https://ecologic.rec.ro/recomandari-pentru-statele-membre-privind-transpunerea-prevederilor-referitoare-la-raspunderea-extinsa-a-producatorilor/>

⁷¹ <https://legislatie.just.ro/Public/DetaliuDocumentAfis/245846>

7. Hindering and Enabling Factors for the Circular Transition in Romania

7.1 Hindering Factors

Through strong government commitment, many barriers to CE transition in Romania can be overcome in the next few years. The challenges include legislation, low institutional capacity, low capacity to absorb EU funds, insufficient cooperation between line ministries and stakeholders, and the focus on current issues (waste issues - landfilling, low separate collection infrastructure, and so on) rather than on long-term vision (behavioral change toward sustainability). These challenges are further aggravated by missing or poor data (for example, on food waste) and complicated laws or poor enforcement of laws.

EU directives on CE were not fully transposed, and in November 2021, the EC announced that it is taking legal steps against Romania for failing to comply with EU laws on waste – the Waste Framework Directive and the Landfill Directive. Already in June 2021, the EC sent a reasoned opinion to Romania for breaking the EU Environmental Law. This reasoned opinion was to serve as a final warning before a referral to the European Court of Justice for not updating the transpositions of the revised Landfill Directive, which imposes restrictions on landfilled waste that could be recycled or incinerated, and limits the share of municipal waste that can be landfilled to 10 percent of the total by 2030. The document also noted that Romania has not set new targets on municipal waste recycling as required under the revised Waste Framework Directive and has not transposed in full the Packaging and Packaging Waste Directive.

Romanian strategies and legislation suffer from a low level of enforcement and proper monitoring. They are not supported by appropriate resource allocation and action plans are not usually based on a long-term vision or shared responsibilities across the government institutions. An extended number of national strategies were developed as ex ante conditionalities imposed by the EC for accessing EU funding, such as the National Prevention and Management Plan adopted by the Ministry of Environment, Water and Forests in 2017 and without resource allocation.

A key hindering factor in the transition is the absence of standards in CE developed for Romania. Without standards, it is impossible to measure the transition on CE as a process and to score individual entities. The lack of a national dashboard to give an overview on circularity is another stepping stone that is missing and there are no resources allocated at this time. For the private sector, there are no fiscal incentives to embark in the transition process. In addition, EPR is not properly applied in Romania, for textiles, CDW, and so on. The government should address these aspects with high priority and to support especially SMEs in implementing the standards with close coordination and monitoring.

The low institutional capacity of the central and local government affects the proper implementation of the legislation. For example, while separate collection has been required in the country for over 10 years, it still takes place only in pilot areas. Human resources for CE, sustainable development, and climate change are marginal in Romania's public administration. Government actions are mostly reactive and not proactive in dealing with the waste sector, the legislation is not cascaded at the local level. Waste prevention is not a government priority; anti-food waste, composting, and GPP laws are not implemented due lack of supporting norms for application and enforcement.

Lack of technical capacities and poor institutional efficiency remain as issues. The new 2021-2027 Partnership Agreement between Romania and the EU will most probably be delivered with the same administrative and technical capacity. The Just Transition Fund is focused on the economic transition of six former industrial counties with low GDP; the capacity to build and deliver new projects at the local level remains limited. Although the former government announced a ministerial evaluation in 2020, as of the writing and update of this report in September 2022, no news was available on a potential institutional restructuring or objective evaluation of results based on medium- and long-term government objectives.

Low capacity to absorb EU funds is another hindering factor. By December 2022, the absorption rate of structural funds allocated to Romania for the period 2014-2020 was slightly above 70 percent.⁷² This is partly due to delays in implementation, but also due to a lack of trained staff to develop and implement the proposals, and the weak budgetary and administrative capacity of public institutions, especially at the local level, significant bureaucratic obstacles such as difficult-to-understand rules, regulations on co-financing that sometimes lack of transparency, low capacity for co-financing, limited opportunity for exchange of experience between projects, and underdeveloped possibilities for interregional coordination. Several counties do have very high absorption of EU funds (Bihor, Bucharest, Constanta, Cluj) and others with have notably low absorption rates (Giurgiu, Ialomita, Teleorman), which contributes to increasing economic disparities between regions.

Poor or missing data is an essential link that affects the entire chain of circularity. Reporting data on waste management are considered faulty and the EU has several times raised the issue of the system requiring improvement and transparency. The lack of data on food waste and consumption means that it cannot be measured. Without an overall picture of the current situation, it is difficult to develop a food waste strategy.

Lack of government vision in the past years, current legislation, and fiscal policy on CE are limiting the development of circular businesses. At the local level, most municipalities are not focused on building industrial symbiosis and sustainable partnerships with the private actors, and they are not applying GPP, as it is not mandatory.

The demand for products with low impact on the environment is still low, especially as these products are usually more expensive than conventional products. The transition toward CE will also need to be demand driven, but Romanian consumer behavior is not currently oriented toward circular products or activities. In a first step, the attitude toward a 'throw away economy' needs to be changed through national and local policies, communication campaigns, extended media coverage, and strong political messages.

7.2 Enabling Factors

Despite the many challenges, Romania's potential for circularity is high. The current political context and future EU financial support are necessary tools in the transition process.

The government has a commitment to the European authorities, through the NRRP, that in no more than a year it will elaborate, debate, adopt, pass through the Parliament, and publish in the Official Gazette a law on the gradual elimination of coal from the national energy system within 10 years. Although the implementation decision has been postponed by two years due to the recent international events, it is still a historic decision, a necessary step in the process; similar decisions are needed to support other economic actors.

Moreover, the NRRP offers the necessary funding to support the extended number of investments needed for the green transition. Since mid-September 2022, the Environment Fund Administration has the legal basis to enlarge its human resource capacity to deliver the NRRP objectives related to the environment.

The Ministry of Economy, Ministry of Environment, Water and Forests, and the Department of Sustainable Development are fostering CE development in cooperation with stakeholders, including through the first National CE Strategy and the forthcoming Action Plan. In extended interviews for this report, the Ministry of Environment, Water and Forests demonstrated understanding of and commitment to CE transition, although currently, problems in the waste sector continue to hinder the CE transition process. The NRRP is the tool and the resource that the ministry needs to start the transition toward CE and to deliver clear solutions for waste management. In 2022, the dialogue between stakeholders on CE was extended; the Ministry of Economy is open to dialogue and has facilitated feedback on the content of the CE Strategy, while the CEAP is foreseen to be developed in partnership with both public bodies and industry representatives.

⁷² <https://mfe.gov.ro/stadiul-absorbției-fondurilor-ue/>

In August 2022, the Ministry of Economy initiated the first financial support scheme providing grants to companies spearheading the transition to a circular economy. With grants of €15,000, the new mechanism supports companies that carry out technology transfer activities for strengthening CE; development of research-innovation activities, eco-design of products and services that promote the principles of CE; establishment and/or equipping and operation of repair and reconditioning centers of goods; development of waste recycling activities, and so on.

In 2021, representatives of the line ministries have identified potential actions for technical and/or financial support. The Ministry of Environment, Water and Forests has identified a number of potential actions that could benefit from technical support over the coming years, including support in implementing the NRRP activities related to CE, in building pilot national dashboards on circularity (including CE indicators), as well as technical support in drafting secondary legislation that will support the transition to CE. The Ministry of Economy is open to collaboration with other line ministries or international organizations to deliver circular solutions for entrepreneurship, including sustainable tourism. Cross-border cooperation with Bulgaria along the Black Sea on tourism and marine litter is considered a good opportunity to tackle a common problem that should identify and implement joint solutions.

The interview with the Ministry Investments and European Projects, focused on the future Just Transition Mechanism, on the process for the approval, and capacity to absorb the future allocation. With the ministry's support, the six counties significantly affected by the transition to a carbon-neutral economy—Hunedoara, Gorj, Galați, Mureș, Prahova, and Dolj—shaped a territorial plan for a just transition as part of the “Fair Transition” Operational program that will outline future development based on the current social, economic, and environment needs. The capacity of these six counties to deliver the long-term vision will need further support and extended stakeholder engagement. These areas must develop local technical skills and increased administrative capacity to foster new models of business, and they require clear and easy to follow lines of financing. The ministry is working with the Presidential Administration to develop communication campaigns on the Just Mechanism, with the local authorities to take responsibility for the transition, and with the territorial chambers of commerce to identify opportunities for future programming.

Financing opportunities for CE will increase in the coming years. The Sustainable Development Operational Program will finance phased projects (to include the CE part of the projects, without storage and incineration) and new projects, with an emphasis on the treatment of separately collected waste. Through the operational program Just Transition, support will be provided to SMEs which, through their work, will contribute to actions to prevent the generation of waste and reduce its quantity, as well as actions to increase their efficient reuse and recycling. The LIFE 2021–2027 program, Environment, the Circular Economy and Quality of Life sub-program aims to demonstrate good practice, integrated solutions and approaches to the transition to CE through efficient waste management. It will contribute to ensuring the protection of natural resources and human health. In terms of quality of life, the LIFE sub-program, in direct connection with research and innovation actions carried out by Horizon Europe, will ensure the transfer of knowledge and information actions to control environmental pollution from agricultural sources and reduce GHGs and strengthen the links between agriculture, food production, and forestry toward better management of the environment and climate change.

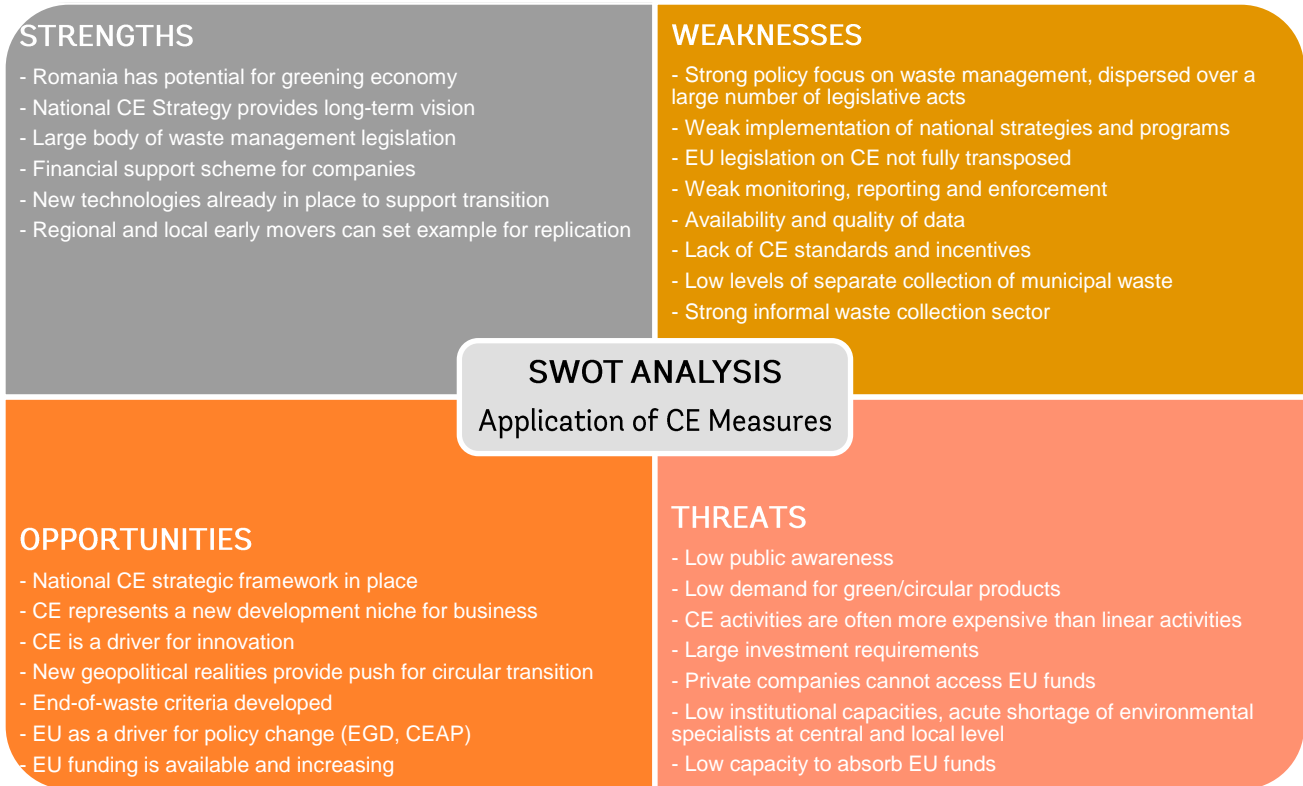
Several Romanian cities have high potential to lead the CE transition process because of their rapid economic development, high purchasing power, strong infrastructure, development pools, sustainable development, and related factors. Examples of such cities are Cluj—the first Romanian smart city, which represents the first national ITC development pool, with a high EU funds absorption rate; Oradea—which has a developed infrastructure, is focused on digitalization, with a high EU funds absorption rate, and high quality of life; and Buzau, with a good system for waste management due to partnerships with the biggest Romanian actor on CE and the first city to have a local strategy for CE.

This research shows that the business sector is open to the transition process, but the government needs to set the legal framework and predictive legislation in accordance with the EU CEAP.

8. SWOT Analysis

Based on the information received during interviews with companies, the following strengths, weaknesses, opportunities, and threats (SWOT) emerged regarding the application of CE measures in Romania, shown in Figure 5.

FIGURE 5. SWOT ANALYSIS - SELECTED STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS RELATED TO THE CE TRANSITION IN ROMANIA



Source: Developed by the authors based on interviews and survey responses.

Strengths

- Romania has potential for greening the economy, both in terms of resources and economic sectors (especially green energy potential).
- The national CE Strategy has been adopted and provides a long-term vision for the circular transition. Concrete actions are to be specified in the forthcoming Action Plan.
- The Ministry of Economy initiated the first financial support scheme providing grants to companies spearheading the transition to a circular economy.
- New technologies are already in place in Romania to support the transition process (for example, Green Group, AS Metal).
- Several early movers at the regional and municipal levels, including the city of Buzau with the first local CE strategy, can serve as best practice examples for upscaling at the local, regional, and national levels.

Weaknesses

- Weak law enforcement due to weak institutional capacities at local and central levels and underdeveloped coordination/collaboration between stakeholders.

- Weak national strategies and program implementation due to shortcomings in design (without SMART objectives and no resource allocation), lack of ownership, underdeveloped cooperation among stakeholders, weak institutional capacities at central and local levels.
- Poor implementation capacity for the Romanian public authorities due to underdeveloped institutional capacities, lack of training for civil servants on sustainable development, project management, EU policies, and so on.
- Separate collection of municipal waste, although growing, is low compared to both the targets set by law and the performance of other EU member states. Although 10 years have passed since the passage of the law requiring extension of the separate collection system at the national level, the separate collection system is not sufficiently developed even in large cities (for example Bucharest). Additionally, in many areas where separate collection is implemented either in dual system (wet fraction, dry fraction), or in three fractions (wet fraction, dry fraction, glass), or in four fractions (paper, plastics, metal, glass) or many fractions (including residual and biodegradable waste), it is not 100 percent functional.
- At the same time, many rural areas do not even have access to sanitation services for the collection of mixed municipal waste. In this context, when basic waste management services are not provided, it is very difficult to ensure the transition to CE.
- Unfortunately, the informal waste collection sector is still quite strong (especially in terms of packaging and waste electrical and electronic equipment), due to lack of infrastructure and enforcement. Especially in the case of WEEE, important resources that could return in one form or another to the circuit are lost either by incineration for the recovery of precious metals, or by illegal storage.
- Although Romania has a cumbersome legislation on waste management (over 80 legislative acts), European legislation on CE has not yet been fully transposed. Therefore, CE measures are not well known and are not supported by the current legislation.
- At the same time, the law does not apply uniformly in all regions. Sometimes offices of the same environmental institutions (for example the Environmental Protection Agency) from two different counties offer different solutions and interpret laws differently, so that a company with branches in several counties does not know which measures to apply.
- Collaboration with local authorities is difficult either due to lack of qualified people for this field, or due to misinterpretation of legislation, or due to low budgets of local public authorities (which causes a lack of interest in other investments).
- There are no standards for CE and no incentives for organizations wishing to ensure a transition to CE, even though incentives are necessary for continued investment and ensuring market competitiveness.

Opportunities

- Approval of the CE Strategy and development of the Action Plan as milestones in the NRRP, resource allocation based on EU funding gives enhanced legitimacy to the transition process.
- EU Circular Economy Directives and Action Plan have a direct impact on Romania's development toward sustainability, while the EU funding available is increasing.
- The new geopolitical realities in 2022 represent a 'push' for Romania to accelerate the process toward green energy.
- 'End of waste' criteria developed (compost already approved, plastics and textiles under development) by the Joint Research Centre is a key technical support for the transition process.
- CE represents a new development niche for the Romanian business sector.

- A more circular economy, focused on reuse, more efficient use of resources, and on recycling, would help stimulate investment and generate benefits in both the short and long term for the environment, employment, and the economy (for example, in the long run ensuring the reduction of production costs and increase of incomes).
- Encouraging research and development projects will allow innovation to provide technical solutions for different types of waste to optimize resource consumption (extraction of precious materials from electrical appliances, mobile phones, tablets, and so on, mobile WEEE dismantling laboratories).
- Identification of legislative and fiscal initiatives for supporting industrial symbiosis projects (such as those that exist for industrial parks, Law 186/2013 on the establishment and operation of industrial parks) would stimulate innovative businesses with the involvement of multiple stakeholders.

Threats

- The transition toward CE will also need to be demand driven, but Romanian consumer behavior is not yet sufficiently oriented toward circular products or activities.
- Unfortunately, the demand for products with low impact on the environment is still low, especially as these products are usually more expensive than products made using conventional methods. The law on green procurement that would stimulate this sector is not properly implemented in institutions. Usually, easier measures are adopted, such as the purchase of recycled paper for the offices of public institutions (but not even such a simple and handy rule applies in all public institutions).
- CE procedures are often more expensive than linear economy procedures, and it is difficult to be competitive in the market without state subsidies to support this industry.
- To ensure the transition to CE, huge changes in technologies and production systems are sometimes necessary and the investment is generally very difficult to recoup.
- Industrial clusters are not very active in this field although they could offer innovative solutions and put pressure on the authorities to take swift action to ensure a faster transition to CE.
- Private companies (except for some small and medium enterprises) cannot access European funds although the investments made by these companies would have a significant impact and greater coverage than the investments made by SMEs.
- Sanctions are not applied to the end user (low law enforcement – for example, local police).
- Both at the level of central public authorities and at the local level there is an acute shortage of environmental specialists, which is reflected in the poor management of some local projects and investments and in the lack of clear directions from the central authorities in the implementation of CE projects.
- Low capacity to absorb EU funds is another hindering factor and needs to be addressed to ensure sufficient financial flows to accelerate the CE transition.

9. The Way Forward: Recommendations for Priority Areas and Actions to Boost the Circularity Transition

Romania has developed in the past 10 years an extended number of strategies, national plans, and policies aimed at accelerating the green transition, however, the speed of the transition depends largely on their implementation and enforcement. The implementation of environmental legislation remains a challenge in Romania. Monitoring, reporting, and enforcement are still pending issues due to insufficient resource allocation and underdeveloped cooperation between line ministries, local authorities, and the private sector. In most cases, there is no reporting on the implementation of action plans, milestones, or specific targets reached. Romania's strategies are usually not based on SMART (specific, measurable, attainable, relevant, time-based) objectives, and lack follow-up activities to reach stated goals. For example, Romania launched a waste management strategy in 2014, but over the past eight years, the country has not reached the waste-related targets set by the EU. This will need to change, for example, in the context of the new Romanian CE Strategy and the forthcoming Action Plan, if the transition to a more circular economy in Romania is to be successful.

Despite the Romanian Government's commitment to CE transition, Romania has a long journey ahead to make the shift from a linear economy to a circular one. Many actions will be needed. As underlined before, an improvement in the reporting and data management is essential for the transition, as is support for SMEs and research for innovation. The transition will require strong stakeholder engagement, especially in view of implementing the recently approved CE Strategy and associated Action Plan. The latter needs to be developed with SMART objectives to be implemented in a public/private partnership, with strong cooperation between the line ministries and the regional/local authorities, and supported by education centers. Interviews with the Ministry of Environment, Water and Forests and the University of Economic Studies reveal good progress in this direction, moving forward with graduate and postgraduate studies in accordance with CE goals.

At the central level, strengthening the institutional capacities is a core element needed to support policy development, monitoring, and implementation and to coordinate with regional/local authorities in the transition. Training of civil servants in all aspects related to circularity (including GPP and institutional 'greening') is needed. Local authorities have limited understanding of CE principles and limited interest in the transition process. In addition, the lack of national policies and limited transposition of EU laws hampers the transition. It is important to make use of the European best practices in CE and to foster knowledge transfer from countries who lead in circularity (including the Netherlands, France, Belgium). To strengthen waste legislation enforcement and move toward achievement of EU waste targets, the capacity of the National Environmental Guard, a key actor in this field, needs to be strengthened. A rapid analysis of the organization indicates the need to extend its human resource capacity, to ensure responsibilities are aligned with desired results, and to align incentives with performance.

Transposition of the SUP Directive is likely to have limited effects in the coming years, as the Ministry of Environment, Water and Forests needs to guide its implementation and support the process. DRS implementation is a good exercise for the government to perform better on packaging waste and extend the implementation of reusable packaging as soon as possible to produce effects and changes in consumer behavior, as well as in applying effective EPR schemes.

While Romanian legislation currently tends to focus on waste management, circularity is often determined upstream. In Romania, waste management is the key element of CE, given the multiple problems related to waste in the country. In fact, the surveys and interviews conducted for this study show that CE is often confused with the concept of waste management. A circular economy is not possible without circular waste management systems, but CE policies need to go beyond. The focus on waste management may distract from a wider government vision of a circular transition, including related legislation and fiscal policy, which would also support the development of circular products and businesses. For example, at the local level, municipalities may need to place additional focus on building industrial symbiosis and sustainable partnerships with private actors, and on GPP, which is not yet mandatory.

To move forward with the CE transition, Romania should engage in a set of comprehensive activities to build CE legislation, develop the country's technical and institutional capacities, and change behaviors.

Specific activities under each of these areas are outlined below.

Build CE legislation:

- Improve and simplify legislation in accordance with EU directives, orient legislation toward long-term targets, and enforce the legislation. As mentioned above, Romania has an extended number of legislative acts on waste, and it is important to adjust and eliminate any inconsistencies between them and to simplify them to ensure they are easy to follow and understand.
- Focus on waste prevention in line with the CE Package (including a strategy on food waste prevention), as well as adoption and enforcement of legislation on SUPs.
- Develop a compost policy to be applied at the local level, but with a strong oversight and monitoring system from the central level.
- Establish a GPP Action Plan with targets and obligations for all public institutions, including a monitoring and reporting system that can be used to rate the level of circularity.
- Implement a DRS at the national level for both reuse and recycling of packaging, with a target of at least 85 percent in the second year of implementation and penalties for non-compliance.
- Develop a national CE Action Plan, including clear implementation and monitoring responsibilities, and unified guidelines for the development of local CE strategies while ensuring their development based on local potential for circularity.
- Establish financial incentives for circular businesses, promote resource allocation for local authorities based on factors including the level of circularity and industrial symbiosis.

Develop technical and institutional capacities:

- Develop the institutional capacity of the Ministry of Environment, Water and Forests and subordinate institutions to implement CE at the central and the regional/local levels. An in-depth evaluation of the resources and training needs is necessary to facilitate structural change, reorganization, and implementation of a long-term development strategy. The assessment should carefully look at the lag in transposition of EU laws, overall insufficient legislation, and lack of enforcement. Results of the assessment will inform the transition.
- Deliver training on CE, sustainable development, and climate change for civil servants (advanced training for key personnel in the Parliament, Prime Minister's office, and ministries) and improve the cooperation between the relevant institutions.
- Improve data management on waste by implementing an open source, reliable centralized waste reporting system with checks in place by the authorities, research institutions, and producers/generators.
- Develop partnerships with universities and promote research on innovative solutions, product design, and closing the loop; establish advanced studies on CE (to develop experts in the field) and clusters for innovation.
- Develop a national database on sustainable economic practices, making use of existing best practices in the EU, such as the Bioregio Project or C-VoUCHER that combine design and technology to support SMEs on their way toward a circular economy; EU Project GoDanuBio—'Participatory ecosystems to stimulate the revitalization of rural-urban cooperation by governing the circular bioeconomy in the

Danube region' co-financed by EU (European Regional Development Fund and Instrument for Pre-Accession Assistance).⁷³

- Establish national CE standards for both public institutions and businesses, including tools for the reduction of resource use, that could be used as indicators for financial incentives.

Change behaviors:

- Empower consumers and provide them with cost-saving opportunities as a key building block of the sustainable product policy framework.
- Promote education for sustainable development, awareness raising/improve sensitivity for population, empowering civil society, mid- and long-term planning in terms of obsolescence management.
- Increase support of and promotion of resource efficiency measures by SMEs as mentioned in the EU reviews, in particular, by investing further in education and training. Improving resource efficiency can improve the export capacity of SMEs.
- Develop and empower regional research pools within universities and research centers, promote participation on the EU Stakeholders Platform for CE and make use of the best practices presented there.
- Improve skills and ensure proper investment in designing products and processes for future reuse and obsolescence management.
- Promote sustainable business models.
- Enforce EPR schemes, as underlined in the 2022 EU environment review.

During the interviews and follow-up discussions with key stakeholders, a number of activities for potential technical and/or financial support were identified. Data was primarily gathered in June 2021 following discussions with key stakeholders from line ministries (Ministry of Environment, Water and Forests, Ministry of Economy, Ministry of Investments and European Projects), academia (University of Economic Studies), and CERC - The Romanian Coalition for Circular Economy. The interventions were developed based on key national strategy documents - NWPMP and the support needed to deliver key milestones; the National Resilience and Recovery Plan - which was under development in 2021, and under implementation in September 2022; the EU CEAP. These are outlined in Tables 6 and 7, and further details about selected interventions are included in Annex A.

The national CE Strategy and the forthcoming Action Plan are key policy documents relevant for the transition of Romania toward circularity. Following in-depth discussions with the Romanian lead expert for the development of the CE Strategy and Action Plan in September 2022, four areas of potential technical support were identified with particular relevance for the development and implementation of CEAP. As the Action Plan is a milestone in the NRRP, its implementation is foreseen until the third quarter of 2026. These four priority areas include food and beverage, water, construction, and agriculture. Moreover, the importance of education as a transversal approach was underlined, but requires further discussions due to time constraints related to the development of this report.

In more detail, the four priority areas for potential technical and/or financial support include the following:

- Food and beverages: Support the development of composting and/or methanation installations, promoting the use of biowaste as biofertilizer and energy source;

⁷³ For more information, see: <https://www.interregeurope.eu/bioregio/news/>; <https://c-voucher.com/>; and <http://www.economie.gov.ro/proiectul-godanubio-ecosisteme-participative-pentru-stimularea-revitalizarii-cooperarii-rural-urban-prin-guvernarea-bioeconomiei-circulare-in-regiunea-dunarii-cod-dtp3-471-4>.

- Water and wastewater:
 - Develop tailored technical solutions for remote areas without access to sanitation (through sanitation facilities with semi-decentralized or decentralized wastewater treatment)
 - Promote investments into water and wastewater infrastructure to increase connectivity/access to clean water and wastewater treatment
 - Restore natural water bodies to improve their natural treatment capacity (so that ground water can be safely used as drinking water) to reduce water stress and increase their buffer capacity in case of flooding.
- Construction: develop regional material platforms where secondary construction materials and reusable or recyclable CDW can be traded.
- Agriculture: promote organic farming and social farms as well as alternative farming systems such as horticulture and permaculture; create new agricultural production areas through the use of innovative technological methods.

More detailed recommendations are presented in Tables 6 and 7. These detailed recommendations were developed in 2021, based on the results of the survey and interviews with key stakeholders. The list has been modified in September 2022 to reflect progress in NRRP implementation, which also includes implementation of some previously recommended CE-related activities.

TABLE 6. POTENTIAL CE ACTIONS FOR FOLLOW-UP TECHNICAL AND/OR FINANCIAL ASSISTANCE

Business model development	
Develop a business model for a reuse and repair center	Reuse and repair are key activities in a CE. The objective is to develop a reuse and repair center as a business model to be replicated at the local level. Initial focus would be on key economic sectors, including, but not limited to, electric and electronic equipment, furniture, textiles, and so on. The business model will ensure support for awareness-raising activities and will include a social impact measurement.
Dashboards/tools	
Set up the first national dashboard on closing the loop	Develop a national dashboard under the Ministry of Environment, Water and Forests that will provide data and best practices on closing the loop for public and private economic agents, thus addressing key barriers for the application of circular business models, techniques and technologies. A core element will be a scoreboard (adapted from Circulytics/EMF) for circular products and for local authorities based on their circularity (for example, energy-efficient buildings, GPP). ⁷⁴
Data collection system on CE	Develop a national system for improved data collection and reporting on CE within the Environment Fund Administration. This tool will provide a clear view of the current state of Romania in terms of CE indicators and will provide the necessary data for future decision-making on CE strategies and government policies.

⁷⁴ Information on Circulytics/EMF is available at <https://ellenmacarthurfoundation.org/>.

Support in developing secondary legislation for CE (including waste management)	
Single-Use Plastics (SUP) Directive	Following EC guidelines for SUP implementation, develop a roadmap and technical norms for the implementation of the legislation for public sector central and local institutions (including public events), as well as private companies in a variety of fields, including those in the hotel and restaurant sector (HORECA).
Development of guidelines in support of the NWPMP	Develop guidelines for the local administration for pay-as-you-throw (PAYT) systems that can be adapted for quantity, volume, and frequency, and can serve for the development of performance indicators for Romania's Integrated Waste Management System (SMID).
Development of technical standards and guidelines for composting for both industry and individual use	<p>Develop technical standards for composting and certification, as well as guidelines detailing options and techniques for individual composting systems at the household level. As part of this intervention, analysis will be conducted on the effectiveness of existing actions in this area, and complementary actions related to the prevention of biowaste generation will be developed.</p> <p>Conduct three subsequent studies, as follows:</p> <p>Study on the current degree of household composting, the effect of the method used, and the impact of individual composting on household waste generated by the population: the results of this study will provide essential information for assessing the effectiveness of individual composting and implicitly assessing prevention targets</p> <p>Feasibility study on collective composting in the case of facilities equipped with cafeterias (including nurseries, kindergartens, hospitals, and other public institutions), with a view to promoting the future application of this practice</p> <p>Study on the most efficient options for preventing the generation of biowaste in the national context, and specifically for urban and rural areas, to determine how to best extend existing measures and identify tools to prevent the generation of biowaste.</p>

TABLE 7. ADDITIONAL IDEAS PROPOSED BY KEY STAKEHOLDERS

Research center on CE	With support from the private sector and academia, develop a center of excellence supporting public authorities in reaching EU targets for waste prevention and management.
Feasibility study for an eco-design center	Assess the feasibility of an eco-design center aimed at accelerating the eco-design of products, including related to lifetime extension, reparability, recycling component of materials, and use of secondary raw materials in new products. The eco-design center is foreseen as a collaboration between academia (faculties of design, engineering, architecture), companies, municipalities, and so on. Initial focus could be on the development of a test center for recoverable packaging through composting and biodegradation.
Raw material exchange platform	Develop new industrial sectors and revalue currently disregarded resources which are categorized as waste. Engage in research and development to obtain a competitive advantage in the global economy; promote digitalization for raw material exchange; create new activities and processes that carry value, or streamline the existing ones.

10. References

- Bihor County Masterplan on Waste. 2021. <https://www.cjbihor.ro/wp-content/uploads/2021/02/Master-Plan-Deseuri-Revizuit.pdf> (accessed on June 12, 2021)
- Bihor County strategy. 2021. <https://www.cjbihor.ro/wp-content/uploads/2021/02/varianta-2021-aprilie-20.04.2021-ultima.pdf> (accessed on June 15, 2021)
- Bihor County. 2021. <https://www.cjbihor.ro/strategia-pentru-dezvoltarea-judetului-bihor-pentru-urmatorii-ani-in-lucru/> (accessed on June 15, 2021)
- Biodeck. 2021. <https://www.biodeck.ro/povestea-noastra> (accessed on June 29, 2021)
- Brasov City Hall strategies. 2021. <https://www.brasovcity.ro/file-zone/strategii/Strategia%20Integrata%20de%20Dezvoltare%20Urbana/Analiza%20situatiei%20existente.pdf> (accessed on June 17, 2021)
- Brasov City Hall Sustainable D <https://www.brasovcity.ro/file-zone/strategii/Strategia%20de%20Dezvoltare%20Durabila%20Brasov%202030/Strategia-dezvoltare/Strategia%20de%20dezvoltare%20a%20Municipiului%20Brasov.pdf> (accessed on June 15, 2021)
- Bucharest City Hall, Air Quality Plan. 2018. https://doc.pmb.ro/institutii/primaria/directii/directia_meniu/planuri_de_calitate_aer/docs/plan_integrat_calitate_aer_buc/plan_integrat_calitate_aer_buc_2018_2022.pdf (accessed on June 12, 2021)
- Bucharest City Hall, Waste Management Plan. 2019. https://doc.pmb.ro/institutii/primaria/directii/directia_servicii_publice/docs/planul_de_gestionare_a_deseurilor_din_mun_buc_2019_2025.pdf (accessed on June 15, 2021)
- Bunge Romania. 2021. <https://bunge-romania.ro/ro/activitatea-noastra/biodiesel/>(accessed on June 29, 2021)
- Buzau City Hall Strategy. 2021. https://primariabuzau.ro/wp-content/uploads/2020/05/Anex%C4%83-3-1-60_compressed.pdf (accessed on June 20, 2021)
- Buzau City Hall. Environment report. 2021. <http://cjbuzau.ro/wp-content/uploads/2021/02/Raport-de-Mediu-PJGD-BZ-21.01.2021-1.pdf> (accessed on June 21, 2021)
- Buzau County. 2021. <http://cjbuzau.ro/wp-content/uploads/2021/02/Raport-de-Mediu-PJGD-BZ-21.01.2021-1.pdf> (accessed on June 20, 2021)
- Circular Economy Conference report <https://green-report.ro/circular-4r-economy-cat-de-pregatit-este-domeniul-de-afaceri-din-romania-pentru-economia-circulara/> (accessed on June 29, 2021)
- CREM. 2021. https://web.archive.org/web/20110716170735/http://www.ccre.org/roumanie_en.htm (accessed on June 21, 2021)
- Data GOV. 2015. <https://data.gov.ro/dataset/asociatii-de-dezvoltare-intercomunitara/resource/97ea986f-5a35-49a0-881e-bc84c1e69a34> (accessed on June 21, 2021)
- Department of sustainable development. 2021. <http://dezvoltaredurabila.gov.ro/web/despre/> (accessed on June 19, 2021)
- EC Textile. 2020. https://ec.europa.eu/growth/industry/sustainability/textiles_en (accessed on June 29, 2021)
- Circular Economy Draft Strategy. 2022. <https://dezvoltaredurabila.gov.ro/strategia-nationala-privind-economia-circulara-13409762> (accessed on September 18, 2022)

- Ecologic magazine article in waste targets. 2021. <https://ecologic.rec.ro/de-ce-ratam-obiectivele-asumate-in-gestionarea-deseurilor-municipale/> (accessed on June 21, 2021)
- Ecologic magazine article. 2020. <https://ecologic.rec.ro/consiliul-concurentei-solicita-schimbarea-legislatiei-in-domeniul-deseurilor-municipale/> (accessed on June 29, 2021)
- Ecologic magazine article. 2020. <https://ecologic.rec.ro/deseurile-biodegradabile-intre-micile-dorinte-ale-investitorilor-si-marea-nepasare-a-autoritatilor/> (accessed on June 29, 2021)
- Ecologic magazine article. 2020. <https://ecologic.rec.ro/depozitele-de-deseuri-din-romania-intre-neputinta-si-abuzurile-autoritatilor/> (accessed on June 21, 2021)
- Ecologic magazine article. 2020. <https://ecologic.rec.ro/octavian-berceanu-in-domeniul-mediului-avem-o-coruptie-sistemica-atat-in-zona-de-avizare-cat-si-in-cea-de-verificare/> (accessed on June 29, 2021)
- Ecologic magazine article. 2020. <https://ecologic.rec.ro/recomandari-pentru-statele-membre-privind-transpunerea-prevederilor-referitoare-la-raspunderea-extinsa-a-producatorilor/> (accessed on June 29, 2021)
- Ecologic magazine article. 2021. <https://ecologic.rec.ro/fcc-environment-romania-are-in-plan-noi-investitii-in-valoare-de-12-milioane-euro/> (accessed on June 29, 2021)
- Ecologic magazine interview on textile industry in Romania. 2021. <https://ecologic.rec.ro/cezar-bulacu-in-romania-nu-exista-nici-macar-o-reglementare-cu-privire-la-deseurile-textile/> (accessed on June 29, 2021)
- Ecologic magazine interview. 2020. <https://ecologic.rec.ro/deseurile-biodegradabile-intre-micile-dorinte-ale-investitorilor-si-marea-nepasare-a-autoritatilor/> (accessed on June 23, 2021)
- Economica article. 2020. https://www.economica.net/retrospectiva-2020-agricultura-romaniei-zdruncinata-de-pandemie-si-seceta_194731.html (accessed on June 29, 2021)
- Ecoteca article compost. 2015. <http://www.ecoteca.ro/rom-waste-solutions-cum-se-recupereaza-materie-prima-din-gunoi-bun-de-groapa.html> (accessed on June 23, 2021)
- Ecoteca article. 2017. <http://www.ecoteca.ro/taxa-la-groapa-se-modifica.html> (accessed on June 22, 2021)
- Ecoteca article. 2019. http://www.ecoteca.ro/wp-content/uploads/2019/01/2019_L211_2015_AmendataPrinL31-2019-1.pdf (accessed on June 19, 2021)
- EEB Ecoteca. No Time to Waste. 2020. <https://eeb.org/library/circular-economy-memer-states-delaying-the-inevitables-targets/> (accessed on June 21, 2021)
- EEB webinar. 2021. <https://ebcd.org/wp-content/uploads/2021/03/Webinar-Report-EU-Waste-Laws-Implementation-15.04.2021.pdf> (accessed on June 20, 2021)
- Environment Fund Administration. 2019. https://www.afm.ro/main/programe/psipan/2019/evolutie_rabla_2018-noiembrie_2019.pdf (accessed on June 29, 2021)
- Environment Fund Administration. 2021. <https://fotovoltaice.afm.ro/> (accessed on June 29, 2021)
- The Environmental Implementation Review. 2019. https://ec.europa.eu/environment/eir/pdf/country-reports-archive/report_pt_en.pdf (accessed on June 21, 2021)
- The EU Environmental Implementation Review Country Report Romania. 2017. https://ec.europa.eu/environment/eir/pdf/country-reports-archive/report_ro_en.pdf (accessed on June 18, 2021)

EU CE Action Plan. 2020. https://ec.europa.eu/environment/strategy/circular-economy-action-plan_en (accessed on June 20, 2021)

EU Landfill Directive. 2018. <https://eur-lex.europa.eu/eli/dir/2018/850/oj> (accessed on June 12, 2021)

EU Press Corner. Article on CE. 2018. The Circular Economy: with the New Rules, the EU will Become a World Leader in Waste Management and Recycling. https://ec.europa.eu/commission/presscorner/detail/ro/IP_18_3846 (accessed on June 29, 2021) (In Romanian.)

EU Press Corner. June 2021 Infringements Package. 2021. https://ec.europa.eu/commission/presscorner/detail/en/inf_21_2743 (accessed on June 18, 2021)

EU Press release. 2018. https://ec.europa.eu/romania/news/20181108_ajutor_de_stat_incompatibil_60_milioane_euro_ce_hu_nedoara_ro (accessed on June 12, 2021)

EURLEX Europa. 2018. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L:2018:150:FULL&from=EN> (accessed on June 29, 2021)

European Commission press release. 2018. https://ec.europa.eu/info/news/new-waste-rules-will-make-eu-global-front-runner-waste-management-and-recycling-2018-apr-18_en (accessed on June 29, 2021)

Eurostat. 2020 <https://ec.europa.eu/eurostat/web/products-statistical-books/-/ks-fk-20-001> (accessed on June 29, 2021)

Eurostat. 2020. <https://ec.europa.eu/eurostat/web/circular-economy/indicators/monitoring-framework> (accessed on June 29, 2021)

FADI. 2021. <https://www.federatiaadi.ro/index.php> (accessed on June 29, 2021)

Green Report. The Single Use Plastics Directive, the Industry's First Real Challenge in the Transition to the Circular Economy. <https://green-report.ro/single-use-plastic-tranzitie-economie-circulara/> (accessed on June 20, 2021)

Green Report. Conference Video. 2020. <https://www.green-report.ro/video-secretar-de-stat-in-min-agriculturii-nu-avem-niciun-sistem-coerent-de-colectare-a-datelor-despre-risipa-alimentara/> (accessed on June 21, 2021)

Government of Romania. 2016. Agri-food Strategy. <https://www.madr.ro/strategia-pentru-dezvoltarea-sectorului-agroalimentar-pe-termen-mediu-si-lung-orizont-2020-2030.html> (accessed on June 19, 2021)

Intercommunity Development Association. 2007. <http://old.dialogsocial.gov.ro/wp-content/uploads/2016/04/ADI.pdf> (accessed on June 21, 2021)

Law no 181/2020 on Compost Regulation. 2020. <http://legislatie.just.ro/Public/DetaliiDocument/229273> (accessed on June 29, 2021)

Master Plan Tourism. 2007. http://turism.gov.ro/web/wp-content/uploads/2017/05/masterplan_partea1.pdf (accessed on June 19, 2021)

Ministry of Administration and Regional Development. 2021. http://www.dpfbf.mdrap.ro/nr_uat-uri.html (accessed on June 21, 2021)

Ministry of Environment DRS implementation. 2020. <http://www.mmediu.ro/articol/mmap-supune-dezbaterii-publice-proiectul-de-hg-pentru-stabilirea-sistemului-de-garantie-returnare-pentru-ambalaje-primare-nereutilizabile/3799> (accessed on June 23, 2021)

Ministry of Environment. 2020. http://www.mmediu.ro/beta/wp-content/uploads/2014/01/2014-01-28_SNGD_HG_870_2013.pdf (accessed on June 19, 2021)

Ministry of EU funds absorption rate. 2021. <https://mfe.gov.ro/stadiul-absorbției-fondurilor-ue/> (accessed on June 29, 2021)

Ministry of EU Funds Inception Report on Just Mechanism.2021. <https://mfe.gov.ro/wp-content/uploads/2021/02/709f19e4b27c43623792fef255280ab2.pdf> (accessed on June 20, 2021)

Ministry of EU Funds Report on Just Mechanism for Stakeholder engagement. 2021. <https://mfe.gov.ro/wp-content/uploads/2021/04/b1bb465b26d93ea35cdf52fa0295331b.pdf> (accessed on June 20, 2021)

Ministry of EU Funds. 2021. <https://mfe.gov.ro/mecanismul-pentru-o-tranziție-justă/#ptj> (accessed on June 21, 2021)

National Action Plan on Climate Change. 2016. <http://mmediu.ro/categorie/planul-national-de-actiune-privind-schimbarile-climatice-2016-2020/122> (accessed on June 19, 2021)

National Environment Protection Agency Environment Report 2019. 2020. [http://www-old.anpm.ro/upload/183996_Raport%20indicatori%202019_EN.pdf](http://www.old.anpm.ro/upload/183996_Raport%20indicatori%202019_EN.pdf) (accessed on June 29, 2021)

National Institute for Statistics. 2020. <https://insse.ro/cms/ro/content/statistica-activității-silvicole-din-silvicultură-2019> (accessed on June 29, 2021)

National Strategy on Climate Change. 2016. <http://mmediu.ro/categorie/strategia-nationala-privind-schimbarile-climatice-rezumat/171> (accessed on June 19, 2021)

National Strategy on Digital Agenda. 2020. https://www.ancom.ro/uploads/links_files/Strategia_nationala_privind_Agenda_Digitala_pentru_Romania_2020.pdf (accessed on June 19, 2021)

National Transposition Measures Communicated by the Member State. 2021. <https://eur-lex.europa.eu/legal-content/EN/NIM/?uri=celex%3A32018L0851> (accessed on June 21, 2021)

Potting, J., et al. 2017. “Circular Economy: Measuring Innovation in the Product Chain.” <http://www.pbl.nl/sites/default/files/cms/publicaties/pbl-2016-circular-economy-measuring-innovation-in-product-chains-2544.pdf>

Rainbow Plast. 2021. <http://www.rainbowplast.ro/despre-noi/> (accessed on June 29, 2021)

Romanian Energy Strategy. 2019. <http://energie.gov.ro/transparența-decizională/strategia-energetică-a-romaniei-2019-2030-cu-perspectivă-anului-2050/> (accessed on June 19, 2021)

Romanian Government Plan. 2020. <https://gov.ro/ro/obiective/programul-de-guvernare-2020-2024> (accessed on June 29, 2021)

Saint Gobain. 2021. <https://www.saint-gobain.ro/blog/stop-deseurilor-economiei-circulare-pentru-clădiri-sustenabile> (accessed on June 10, 2021)

Annex A: Selected Potential Follow-up Interventions

PROPOSED INTERVENTION: Development of 15 national reuse and repair centers

DEVELOPMENT OBJECTIVE

To establish 15 fully functional reuse and repair centers at the national level

ACTIVITY TYPE

Advisory

EXPECTED RESULTS AND OUTCOMES

Development of 15 national reuse and repair centers. Coordination and monitoring, using best management practices for 15 reuse and repair centers at the national level, including ensuring support for infrastructure development, performing awareness campaigns, and developing a social impact measurement.

ACTIVITY SUMMARY

Romania has not implemented an effective plan to prevent waste generation and the market for reuse or repairs is still unsustainable. The infrastructure for separate collection is insufficient, far from being able to support the PAYT system and the landfill disposal rate is one of the highest in Europe. Having 15 centers in big cities would help lower the disparities between Romania and other member states and will start the shift in behavior by implementing communication campaigns on reuse and repair. The expected results are to support Romania in implementing the waste hierarchy by focusing on repair and reuse rather than recycling and landfilling.

The action is included in the NRRP and in line with EGD and the EU's targets on waste prevention.

ACTIVITY DESCRIPTION

The 15 centers for reuse and repair will aim to support the connected activities in 15 Romanian cities by providing the necessary tools for waste to be reused and repaired rather than recycled or landfilled. The centers will include special waste streams: textiles, batteries, CDW, and will have to be built in strong partnerships with local stakeholders to close the loop on all waste streams. The location will be provided by the local authorities and will have to be easily accessed by the population; the public acquisitions will be carried out with support from the Ministry of Environment, Water and Forests. The proper functioning of the centers will be ensured and covered by local human resources.

Romanians do not have a culture of reuse and repair. The Romanian economy is linear and based on the 'throw away' principle. Therefore, a communication campaign will be a key aspect in helping the reuse centers become fully functional. The timeframe is limited by the NRRP, which gives a deadline for the implementation as the third quarter of 2026.

The Ministry of Environment, Water and Forests is looking for support in carrying out this intervention and has shown interest in a partnership with an IFI. As mentioned above, the centers will be based in cities across the country and local partnerships will be necessary in order to build the centers and close the loop on different waste streams.

RISKS AND SUCCESS FACTORS

The main risks are related to the lengthy procedures for public procurement that will need to be carried out for each center and in accordance with the approved budget. The timeline might also be affected because of the time taken to identify stakeholders to close the loop. It may also take time to change the attitude of the public about using the centers and about purchasing reused or recycled items.

The communication campaign will have to target Romanian consumers, adapted to their behavior toward waste in general, and to reuse and repair, in particular.

BUDGET

Allocated funding from the NRRP for 15 reuse and repair centers: €8,430,000 per center.

PROPOSED INTERVENTION: Creating the First National CE Dashboard

DEVELOPMENT OBJECTIVE

To set up the first national dashboard on circularity, thus fostering CE solutions in Romania. Currently, the country does not have an overview of CE activities or a map of stakeholders. The dashboard will help the transition by identifying needs and gaps and addressing proper solutions on closing the loop.

ACTIVITY TYPE

Analytical

EXPECTED RESULTS AND OUTCOMES

This intervention aims to develop a national dashboard under the coordination of the Ministry of Environment, Water and Forests to provide information on CE. The main outcome will be an online tool that will provide economic agents with data on closing the loop to help eliminate barriers for circular business models across the entire product life cycle. The system also aims to train pioneers in CE-related activities that will be able to provide the best available CE options based on financial analysis covering the entire life cycle of products. The online tool will also provide transparent information on businesses and give the ministry a clear overview of the CE situation in the country.

Developing a dashboard on circularity for both public and private institutions will provide the necessary data for reporting at the national level and to promote best practices. The dashboard will be adapted from the Circulytics/EMF model and will include scores for products, public institutions, and local authorities.

ACTIVITY SUMMARY

Problem Statement

Romania does not have specific circularity indicators for either public institutions or for businesses, which is considered a hindering factor for the transition to a more circular economy. The dashboard for closing the loop and for applying and assessing circularity is a starting point in the CE transition and will also provide an overview of the state of play.

Strategic Relevance

A functional tool focused on closing the loop and a scoreboard on circularity are steppingstones in the transition process that would support the implementation of the new CE Strategy, in line with the EGD.

Activity Description

The development of an online tool to provide economic agents with data on closing the loop will address barriers for the CE transition across the entire product lifecycle. The system's other role is to train pioneers in CE-related activities, who can then address barriers with the best available CE options based on life cycle financial analysis. Extensive research on available resources will be needed, including mapping of available options for various waste streams. Importantly, the activity will identify pioneers at the national level and will promote resource matching at the national and local levels.

Building a national scoreboard (adapted from Circulytics/EMF) for circularity will contribute to the CE transition. It aims to allow end users to measure productivity processes in businesses and public institutions, including local authorities. Scoring will be based on the circular actions in place, such as filters reducing the need for bottled water, energy-efficient buildings, GPP, and so on.

The tool is aimed to be functional within one year as a pilot instrument in three regions and within two years nationally. It will be continuously improved and developed further.

Potential counterparts/clients

The Ministry of Environment, Water and Forests is considered the key potential counterpart and the initiator of the intervention. The Ministry of Economy is another potential counterpart.

RISKS AND SUCCESS FACTORS

The main risks stem from a lack of available solutions for closing the loop in Romania. Specific recommendations will need to be presented to the line ministries to facilitate finding or creating viable options. Finding potential pioneers in CE will need extended research and their training has resource implications. Moreover, the closing the loop dashboard will need to be financially sustainable and building a feasible and applicable management plan is a core aspect to be taken into account.

BUDGET

TBD

PROPOSED INTERVENTION: Support in Developing Secondary Legislation for CE (including waste management)

DEVELOPMENT OBJECTIVE

Romanian legislation on waste prevention and management is not always applicable due to a lack of norms for its enforcement. SUP guidelines together with secondary legislation mentioned in the NWPMP in 2017 are still not developed due to the lack of technical capacity at the Ministry of Environment, Water and Forests. This issue needs to be addressed for Romania to be able to better perform on waste management and to reduce gaps between Romania and other EU member states.

ACTIVITY TYPE

Advisory/Analytical

EXPECTED RESULTS AND OUTCOMES

Development of the following secondary legislation:

- SUP Directive guidelines for the enforcement of the transposed directive

- Support in developing guidelines for PAYT systems at the local level

- Developing the technical norms for compost for both industry and individual use.

ACTIVITY SUMMARY

The NWPMP adopted in 2017 has not been implemented and the waste hierarchy is not yet applicable in Romania, as most of the municipal waste is landfilled. In practical terms, no clear directions and applicable measures exist in Romania for waste prevention primarily because the relevant legislation is not being implemented and application norms are not in place for the legislation. This is the case, for example, for composting. Most local authorities have no separate collection system in place. PAYT has not been implemented. Putting secondary legislation in place will make it possible to apply the existing legislation and reduce waste management gaps.

Strategic Relevance

The secondary legislation will support the implementation of the EU waste targets and will address the application of the EU waste hierarchy in support of the targets set by the NWPMP.

Activity Description

The activity will consist of technical support over the next two years for the following:

SUP Directive: Following EC guidelines for SUP implementation, develop a roadmap and technical norms for the implementation of the legislation for public sector central and local institutions (including public events), private companies in a variety of fields, including HORECA.

Development of guidelines for implementation of the NWPMP: Develop guidelines for the local administration for PAYT that will be adapted for quantity, volume, and frequency, and can serve as a performance indicator for SMID.

Development of the technical norms for compost for both industry and individual use: Develop methodological guidelines on composting for certification and guidelines for individual systems. The guidelines intended for individual households will present succinctly and illustratively the options and techniques regarding composting in individual systems. Conduct an analysis of the effectiveness of existing actions. Develop complementary actions related to the prevention of biowaste generation.

Conduct three subsequent studies, as follows:

Study on the current degree of household composting, the effect of the method used, and the impact of individual composting on household waste generated by the population. The results of this study will provide essential information for assessing the effectiveness of individual composting and implicitly assessing prevention target

Feasibility study on collective composting in the case of facilities equipped with cafeterias (including nurseries, kindergartens, hospitals, and other public institutions), with a view to promoting future application of this practice

Study on the most efficient options for preventing the generation of biowaste in the national context, and specifically for urban and rural areas, to determine how best to extend existing measures and identify tools to prevent the generation of biowaste.

Potential counterparts/clients

Ministry of Environment, Water and Forests has identified this intervention as a legislative gap that needs to be addressed and a partnership with an IFI is welcomed.

RISKS AND SUCCESS FACTORS

The key risks are related to the country specificity, to be applicable, the guides need to be both in line with the EU directives and with the local needs. The enforcement of the legislation is conditioned by the approval of the secondary legislation and the Ministry of Environment, Water and Forests will take responsibility for this activity.

BUDGET

TBD

Annex B: List of Stakeholders Participating in the Study

Interview respondents: public authorities (national and local level)

Organization	Field	National/ regional/local coverage	Relevant information about the organization
Ministry of Environment, Water and Forests - Romania	Central public administration	National	The Ministry of Environment, Water and Forests the most important environmental protection institution in Romania.
Ministry of Investments and European Projects	Central public administration	National	The Ministry of Investments and European Projects is the specialized body of the central public administration, subordinated to the Romanian Government, through which the European affairs and the absorption of the European funds coming from EU are managed. The Romanian Government Agent for the Court of Justice and the EU Tribunal operate within the ministry.
Ministry of Economy	Central public administration	National	The Ministry of Economy functions as a specialized body of the central public administration, subordinated to the Romanian Government, which applies the strategy and the Government Program in the field of economy and public finances.
Bucharest City Hall	Local public administration	Local	<p>Bucharest City Hall constitutes the functional structure that fulfills the decisions of the General Council and the dispositions of the General Mayor, solving the current problems of the local community in Bucharest. At the head of the institution is the general mayor of the municipality.</p> <p>The city proper is administratively known as the 'Municipality of Bucharest' (Municipiul București), and has the same administrative level as that of a national county, being further subdivided into six sectors, each governed by a local mayor.</p>
Federation of Intercommunity Development Associations	Non-profit organization in the national public administration sector	National	<p>The Federation of Intercommunity Development Associations (IDAs) has as objective of activity, integrated waste management and was established for the purpose of cooperation and institutional development in the field of waste in Romania (also includes all IDAs established at national level). IDAs are forms of association that localities and counties have been forced to build, this being, in the absence of regionalization, an essential condition in accessing environmental funds from EU.</p> <p>In 2015, there were 391 IDAs at the national level.</p>
Servsal Argeș Intercommunity Development Association	Non-profit organization in the regional public administration sector	National	The Servsal Argeș IDA was established for the operational implementation of the project of common public interest 'Integrated Solid Waste Management in Argeș County'. It was established according to Art. 6 of GO no. 26/2000, operates based on GD 855/2008, and currently has 103 members, respectively all local public administrations, including Argeș County Council.

Interview respondents: private organizations

Organization	Field	National/ regional/local coverage	Relevant information about the organization
Green Group	Recycling industry	National	Green Group comprises five factories (Green Fiber - manufacturer of synthetic fiber from recycled PET flakes, Green Tech - PET plastics recycler, Green Glass, Green WEEE, Green Lamp) and is the largest recycler in Southeastern Europe, specialized in recyclable waste management (collection), recycling, and recovery of various types of waste. They transform recyclable waste into a valuable economic resource, closing the loop and saving resources and energy.
Circular Economy Coalition (CERC)	Professional association - recycling industry and circular economy	National	CERC is a non-profit organization that includes the most important stakeholders in the waste management industry and the circular economy. The purpose of the CERC Association is to promote the principles of the EC Circular Economy Package, which is to stimulate the development of new markets and business models, to develop the economy and create new jobs.
Romcarbon SA	Packaging production Plastics recycling	Local	Romcarbon brings 65 years of experience in the processing of polyethylene, polypropylene, PVC, polystyrene, and is one of the largest employers in the county of Buzau, with about 900 employees. Over the last decade, Romcarbon has been part of the green industry through the investments as shareholder in some of the largest treatment and recycling units in Central and Southeastern Europe. In mid-2012, Romcarbon put into operation the most modern plastics wastage recycling plant in Romania. Thus, Romcarbon is now able to close the recycling circle.
Minet SA	Textile manufacturer and recycler	Local	Founded in 1983, the company MINET SA is the most important producer of nonwovens in Romania. The dynamics of investment in recent years led to radical technological changes, synchronizing the quality and the production capacity with the highest European requirements. It is also, one of the few companies that recycles textile waste in Romania.
Urban SA	Recycling	Local	Urban SA is an important waste collection company that recovers within the sorting station in Bucharest (District 6) significant quantities from municipal waste: packaging stream, textiles, bulky waste, construction waste, wood waste. It currently operates in sector 6 and the city of Otopeni, near Bucharest. In the past he also operated in Brasov and Ramnicu Valcea. Sorting is done on 17 separate streams, a success compared to the types of waste recovered by other competitors in Bucharest and beyond.
Cora Romania	Retail	Regional	Cora Romania, part of the Louis Delhaize group, is one of the most dynamic retail brands. It owns 11 hypermarkets in 7 cities in Romania (4 of the stores are in Bucharest and in its vicinity).
*Does not want the name of the	Waste collection	Regional	One of the largest sanitation operators in Romania with 8 existing branches in 8 counties in Romania (Braşov, Brăila, Timiş, Hunedoara, Vâlcea, Bucharest, Ilfov, and Giurgiu)

Organization	Field	National/ regional/local coverage	Relevant information about the organization
organization exposed			
Romanian Compost Association - ARC	Waste recovery	Local	<p>The Romanian Compost Association was founded in 2017, a member of the European Compost Network and operates as a professional structure.</p> <p>The objective of the association is for it to become a representative professional organization at the national and European levels in the field of integrated management of bioresources and residual bioresources. Currently, the organization has 30 members—main actors in the field that support the capitalization of biowaste by transforming them into compost/fertilizer and they want to develop composting systems as the technical norms in this field will be developed.</p>
Bucharest University of Economic Studies (ASE)	Educational institution	Local	<p>The Bucharest University of Economic Studies (abbreviated ASE) is a public university in Bucharest. Founded in 1913 as the Academy of Higher-level Commercial and Industrial Studies it has become one of the largest higher education institutes for economics in both Romania and Southeastern Europe. The Bucharest Academy of Economic Studies is classified as an advanced research and education university by the Ministry of Education. It is one of the five members of the Universitaria Consortium (the group of elite Romanian universities)</p>
Bucharest University of Economic Studies (ASE)	Educational institution	Local	<p>The foundation of the ASE aims to</p> <p>Promote relations with the business environment to contribute to the sustainable development of society;</p> <p>Support the educational process of students, master students, and doctoral students to develop the skills necessary for the real requirements of the economic environment.</p>
Romanian Brewers Association	Professional organization	National	<p>Romanian Beer Producers Association</p> <p>Its members are the most important beer producers in Romania: Bergenbier SA, Heineken Romania, United Romanian Breweries Bereprod, Ursus Breweries, Martens, Soufflet Malt, Association of Hoppy Producers from Romania, together with the CLIN microbrewery.</p>
EGGER Romania	Wood manufacturer	National	<p>EGGER is a global family company founded in 1961 in Tyrol, Austria, where it is currently based. The company produces wood-based panel products. EGGER is represented by 19 production sites in Europe. In 2006, the company invested €210 million in the construction of a new production site located in Rădăuți, Romania with a capacity of 600,000 cubic meters of melamine faced chipboard. At the Romanian site, the company operates a combined heat and electricity cogeneration power station with a capacity of 40.5 MW. Egger is one of the wood producers that recovers wood waste from the flow of bulky waste from the population and recycles it in its factory in Rădăuți.</p>

Organization	Field	National/ regional/local coverage	Relevant information about the organization
STRATOS Romania	Consultancy services	National	Local lead partner in the development of the Romanian CE Strategy.

Respondents to the online survey: public authorities

Organization	Field	National/ regional/local coverage	Relevant information about the organization
Bucharest City Hall	Local public administration	Local	Bucharest City Hall constitutes the functional structure that fulfills the decisions of the General Council and the dispositions of the General Mayor, solving the current problems of the local community in Bucharest. At the head of the institution is the general mayor of the municipality.
Buzau City Hall	Local public administration	Local	Buzau is home for Green Group, the biggest private group of companies focused of recycling in Romania. Green Group has a strong partnership with the local authorities, especially with Buzau city hall that has published a revised version of the County Plan for Waste Management. ⁷⁵ Buzau is the first Romanian city to develop a Strategy toward CE with seven key directions for circularity for 2030: materials (Buzau is a city with zero waste and a flow of circular materials of almost 60 percent), energy, biodiversity, health, society and culture, and generation of value and resilience. The city is a center of excellence for CE measures.
Baia Sprie City Hall	Local public authority	Local	City hall in Maramures County is dedicated to streamlining waste management in the region.
Directorate of Public Utilities, Sanitation and Environmental Protection District 1 City Hall (Bucharest)	Local public authority	Local	<p>The Municipality of Bucharest is divided into six administrative units - districts each of which has their own mayor and council, and has responsibility over local affairs, such as secondary streets, parks, schools, and the cleaning services.</p> <p>Each of the six districts (sectors) contains a number of informal districts (neighborhoods) which have no administrative function.</p> <p>Sector 1 is an administrative unit of Bucharest located in the northern part of the city. It also contains the northwestern neighborhoods of Băneasa and Pipera. Sector 1 is thought to be the wealthiest sector in Bucharest. Like each of Bucharest sectors, there is a Local Court (District 1 Court), which it submits to the Bucharest Tribunal.</p>
Sălacea Commune Hall	Local public authority	Local	<p>Sălacea is a small commune in Bihor County, Crișana (north-west of the country) with a population of 3,036.</p> <p>It is composed of two villages, Otomani and Sălacea. Going from 0 to 40 percent recycling rate within three months, the small commune of Sălacea tells a remarkable Zero Waste success</p>

⁷⁵ <http://cjbuzau.ro/wp-content/uploads/2021/02/Raport-de-Mediu-PJGD-BZ-21.01.2021-1.pdf>

Organization	Field	National/ regional/local coverage	Relevant information about the organization
			story, establishing itself as a best practice that can be replicated in rural communities across Romania.

Respondents to the online survey: private organizations

Organization	Field	National/ regional/local coverage	Relevant information about the organization
Eco Bihor SRL	Waste management industry	Local	<p>Eco Bihor SRL is one of the pioneers of biodegradable waste treatment in Romania, managing to implement a collection system, proper treatment of biodegradable waste, and obtaining a new product in a perfectly circular system 10 years before the compost law was adopted in Romania.</p> <p>To ensure an integrated municipal waste management, Eco Bihor SRL also built an ecological waste landfill, a sorting hall, a mechanical biological treatment plant, a concrete crushing station, a biogas capture system, and a water treatment plant.</p>
Green Point Management	Waste management consultancy	National	<p>Green Point Management is an organization that implements the obligations regarding EPR in the field of packaging and packaging waste management authorized by the Ministry of Environment, Water and Forests to carry out its activity at the national level. It holds in its portfolio approximately 200 of the largest companies in Romania that produce or introduce packaged goods on the market.</p>
Ecotic	Waste management consultancy	National	<p>Ecotic is the first organization of electrical and electronic equipment (EEE) producers and importers in Romania. Ecotic manages WEEE on behalf of approximately 700 related manufacturers and importers.</p> <p>Ecotic ensures and supervises the entire process of taking over, transport, dismantling, and recycling so that, in the end, WEEE is no longer a danger.</p>
Holcim Romania, Geocycle Romania	Construction industry	National	<p>One of the world's leading suppliers of cement and aggregates (crushed stone, gravel and sand)</p> <p>Holcim (Romania) SA has been active for over 20 years in the construction materials sector. The company owns 2 cement plants in Cămpulung and Aleșd, a grinding station, 18 ecological concrete stations, 3 aggregate stations, 2 special binder stations, and 3 cement terminals in Bucharest, Turda, and Roman. Holcim has approximately 800 employees in Romania.</p> <p>Holcim Romania is a member of the LafargeHolcim group, which was born after the merger of equals between Lafarge and Holcim in 2015.</p> <p>The Holcim Romania group of companies includes Somaco Grup Prefabricate (which owns 5 prefabricated factories and 1 BCA factory), Geocycle Romania (with 3 work points for waste pre-treatment) and Start Casa (interior design).</p>

Recolamp Association	Professional association	National	Non-profit association founded 14 years ago that ensures the transfer of responsibility of lighting equipment manufacturers regarding waste management. Recolamp is part of Eucolight, since its establishment in 2015. The association is the voice of organizations in Europe that deal with waste management of lighting equipment, on behalf of the producers it represents, being also concerned with the implementation of economic principles in CE.
Recycle InterNational SRL	Waste collection company	Regional	SC Recycle International SRL, with almost 10 years of experience, has the main field of activity collecting non-hazardous waste from individuals and legal entities. Besides the headquarters in Bragadiru (Ilfov County), they have offices in the country in Iasi, Cluj, and Suceava through which they cover the north, east, and west of Romania. For the other areas, they have reliable collaborators, thus managing to cover large regions of the country
Biodeck	Organic plastic industry	National	With 100 percent Romanian shareholders, Biodeck is the organic products division of Prodplast, a plastics manufacturer, founded in 1957. Biodeck is the first Romanian brand to offer the public sustainable packaging, produced entirely from plants and which are 100 percent biodegradable and compostable. Biodeck products are made entirely of plants, corn starch or sugar cane, using advanced technology and a production process with carbon emissions 80 percent lower than plastics products. They are the only products that biodegrade along with food waste, are certified at European level and comply with EU directives on compostability (EN 13432).
Salubris SA Iasi	Waste collection	Local	Salubris SA is a company specialized in waste collection from Iasi City which administers Municipal Waste Collection Center in Iasi (and is one of the founders of the center together with the Ecotic and other local partners). The main goal of the center is the improvement of collection rates for recyclable waste and the reduction of the negative impact on the environment, especially for WEEE. The collection center (CMCI) is the first municipal waste collection center in Romania, built and operated by European standards, and was launched in March 2016. Over 10 types of municipal waste can be stored to CMCI to be transformed in secondary raw materials (new resources): furniture, objects for decoration, electronic equipment, batteries and accumulators, clothes, footwear, paper, cardboard packaging, plastics, glass packaging, metal packaging, including contaminated packaging, books, stationery, CDW, vegetal waste. ⁷⁶
Grup Transilvae SRL	Graphic industry		Grup Transilvae SRL is a company in the IT (digital printing) area that provides complete equipment and solutions especially for the graphic industry in Romania (printing houses, publishing houses, newspapers, pre-press, design, advertising agencies, and so on).

⁷⁶ <https://www.urbanwins.eu/municipal-waste-collection-center-iasi/>

			In recent years, Grup Transilvae has become the partner of Hewlett-Packard Industrial Printing Solutions Europe and MGI France, becoming the only importers of equipment and consumables for MGI digital printing machines and especially for the entire HP-wide and super format printing portfolio.
Energex Expert SRL	Waste management consultancy	Local	Energex Expert SRL is a Romanian engineering company, operating in energy efficiency project development in energy production and energy consumption; waste to energy, waste treatment; offers business support for foreign entities in Romania and Bulgaria.
Intervision Trading-RO SRL	Retail	Regional	Intervision Trading-RO SRL is a company located in Argeş county whose activity is the sale of electronic equipment. It is one of the authorized distributors of the Japanese brand AKAI.

Respondents to the online survey, including professional associations, research institutes, NGOs, educational institutions, independent consultants

Organization	Field	National/ regional/local coverage	Relevant information about the organization
Circular Economy Coalition - CERC	Professional association - recycling industry and circular economy	National	NGO (includes the most important players in the recycling industry and the circular economy).
CIROM - Cement Makers' Association	Professional organization construction industry	National	Represents the most important producers in the cement and other mineral products for construction industry in Romania.
National Center for Sustainable Production and Consumption - CNPCD	Non-profit organization	National	CNPCD promotes sustainable production and consumption by adopting and implementing eco-innovative methods, in particular, streamlining the consumption of resources and clean production, in all economic sectors.

Organization	Field	National/ regional/local coverage	Relevant information about the organization
INMA Bucharest - National Institute for Research and Development of Machines and Installations designed for Agriculture and Food Industry	Environmental engineering and consultancy, waste management and research and development - innovation	National	<p>The National Institute of Research - Development for Machines and Installations Designed for Agriculture and Food Industry - INMA Bucharest has the oldest and the most prestigious researching activity in the domain of agricultural machinery and mechanization technologies in Romania. In 1927, it set up the first Research Center for Agricultural Machines within The Agronomical Research Institute of Romania (ICAR).</p> <p>Since May 2009, INMA is member of the prestigious European Hygienic Engineering and Design Group (EHEDG), bringing together in a consortium equipment manufacturers, food industries, research institutes, as well as public health authorities. It was founded in 1989 with the aim to promote hygiene during the processing and packing of food products. The principal goal of EHEDG is the promotion of safe food by improving hygienic engineering and design in all aspects of food manufacture.</p>
Terra Millennium III Foundation	NGO		Environmental protection organization that implements awareness programs on the causes and effects of climate change and promotes sustainable development solutions. It has 23 years of experience in programs development at the national and European levels.
Business Development Group	Management consulting	Local	Assisting foreign and local companies to develop projects in agriculture and food industry, energy and sustainability sectors, project management in constructions, zero energy buildings, water sector
Politehnica University of Bucharest, Faculty of Engineering and Management of Technological Systems	Academic; waste management consultancy	Local	Experienced Waste Management Specialist working in the environmental services industry. Experience in calculation of carbon footprint for solid waste recycling industrial processes. Experience in EPR systems.
Technical University of Cluj Napoca	Educational institution	Local	<p>The Technical University of Cluj-Napoca is a public university located in Cluj-Napoca, Romania. It was founded in 1948, based on the older Industrial College (1920). Technical University of Cluj-Napoca is classified by the Ministry of Education as an advanced research and education university The university is a member of the Romanian Alliance of Technical Universities (ARUT).</p> <p>Mrs. Tiuc is an experienced researcher with 35 papers currently published, including a review on CE, "Perspectives of Circular Economy in Romanian Space" published on August 22, 2020 together with two other colleagues from the university, Horatiu Vermes and Alexandrina Mangau.</p>

Organization	Field	National/ regional/local coverage	Relevant information about the organization
Viitor Plus Association	NGO	National	<p>Viitor Plus is a non-profit organization with 15 years of experience in developing social entrepreneurship programs, environmental education, environmental volunteering, afforestation, reuse and recycling, eco-tourism, construction of solar panels. One of their projects is the Recycling Map, the first national, interactive platform that allows the identification and location of separate collection points for recyclable waste in Romania, but also offers users the opportunity to contribute to the map database, by adding new separate collection points - if they do not already exist, or by reviewing existing ones, if their description does not correspond to reality.</p>
SNK Association	NGO	Local	<p>SNK Association is an environmental NGO based in Bucharest that founded the first 'green' publishing house in Romania. Seneca Publishing House uses only recycled paper and has a 'green layout' - they calculate the size of the books and the pagination so as to reduce material losses as much as possible. Surplus paper is turned into bookmarks, postcards, or notebooks.</p> <p>They chose an FSC-accredited printing house and IMPRIM VERT. They use only ink and water-based adhesives that are non-polluting for the production of books.</p>

Annex C: Surveys and Interview Results

For the study, 110 organizations were contacted in total: 31 public institutions and 79 private organizations.

Results of surveys and interviews: business sector

Out of the 79 requests to participate in the study, either by completing the questionnaire or by interview, 32 private organizations responded. These organizations are key stakeholders from waste management industry, other important industries, professional associations, research institutions, NGOs, and educational institutions.

1. What is your level of understanding of CE?

If 10 years ago, the concept of CE was not very well known in Romania, in recent years it is promoted more and more often in public events organized by various industries in Corporate Social Responsibility campaigns, by the media, and especially by environmental NGOs.

Although it is still quite often confused with the concept of waste management, there is an improvement in the level of understanding of this concept, especially in terms of private companies.

Of the 32 private organizations that participated in the study either by completing the questionnaire or through the interview, 26 stated that they have a high degree of understanding of CE. Only five of them answered that they have an average level of understanding of this concept and only one answered that he has a low level of understanding.

2. Have you made an assessment of a more 'circular' business model for your company? If so, please add more details.

During the study it was observed that besides the environmental NGOs, those most interested in ensuring a good transition to CE are the organizations from the waste management industry are also the organizations from the manufacturing industry.

All the organizations participating in the interview confirmed that they followed the activity of foreign companies. Only seven respondents have not yet developed a more circular business plan.

3. Have you implemented CE activities? If so, what are they?

Although both the waste management industry and other industries are still mainly focused on better waste management, it is considered that the measures to optimize waste management processes represent an important first step in ensuring the transition to CE.

If an organization manages its waste properly and reduces the amount stored, then a natural step is to find solutions to optimize recycling processes, production (changing the design of products to be easier to recycle, to consume few resources, to be used for a long time, and so on). That is why in recent years major investments have been made in the private sector to ensure a high degree of waste recycling.

If 10 years ago, sanitation companies depended on several sorting stations or recycling factories, in recent years, many sanitation companies have chosen to develop their capacity, to build their own sorting lines, thus managing to recover a larger quantity of waste that reaches either recycling or energy recovery and greatly reduce the amount of waste stored.

This measure also determined the recovery of some categories of waste that were not of interest a few years ago. Thus, although they are not properly regulated and their recovery is not encouraged, textile waste, construction waste, bulky waste (for example, furniture), waste from the automotive industry (plastic and textile components that generally reached landfills) began to be increasingly recovered either by recycling or by energy recovery.

At the same time, in Romania there are five main factories⁷⁷ that support the recycling process at the national level. Green Tech is the largest PET plastic recycler in Europe and an important producer of flakes, PET strap, and r-PET granules. Green Fiber is the only manufacturer of polyester synthetic fiber in Romania and the largest European producer of polyester synthetic fiber made of 100 percent recycled PET flakes. Green WEEE is one of the leading players in Southeastern and Central Europe, focused on collection, treatment, and recycling of WEEE, cables, batteries, and automotive components. Green Lamp uses the latest technologies for lighting equipment, an in-house distillation process to separate fluorescent powder from lamps and recover the mercury residuals from it. Green Glass is one of the most modern and efficient glass waste recycling facilities in Romania and Southeastern Europe.

From the point of view of recycling capacity, Romania has the necessary technologies to ensure a higher degree of recycling at national level. Unfortunately, the low degree of municipal waste collection prevents the recovery of more quantities of raw materials.

However, recycling processes have become much more efficient due to the new technologies used, thus managing to recover much more resources and use less raw materials to obtain new products.

4. Are you going to implement CE activities? If so, what are they?

Among the organizations participating in the study, only one company mentioned that it does not foresee, in the near future, the introduction of some CE activities. The rest of the organizations stated that they are considering the introduction of new activities in this direction and some have already taken steps in this direction (for example, investments in new technologies, investments in research, improvement of production processes).

As mentioned above, companies in the waste management industry were among the first organizations interested in ensuring a transition to CE.

In order to accelerate the transition to CE in 2017, the Coalition for the Circular Economy (CERC)⁷⁸ was founded. Established as an independent organization by a group of environmentally and socially responsible professionals and companies, the main aim of CERC is to promote at the national level the key objectives of the EC circular economy package, namely, to stimulate the development of new markets, business models, thus contributing to economic growth and job creation. Initially, the Coalition brought together members of the entire waste management sector (producers, waste collection companies, sorting stations, and recyclers), as well as various environmental experts. As a consolidated body, the commitment is to expand the membership throughout the Romanian economy, toward a circular approach to business.

Currently, CERC is actively working to strengthen communication with local and central authorities, as well as with parliamentary committees, by participating in public debates and working groups, to inform them about the benefits that CE can bring to the Romanian economy. The Coalition's objective is to become the main voice advocating for the principles of CE and for the best international practices in Romania, becoming, consequently, a key actor for the local business community, but also the voice that transmits internationally Romanian proposals and achievements in this sector.

5. What are the 3 most important reasons for introducing CE measures in your company?

The organizations participating in the study understood that CE represents the future for sustainable development, that it can no longer be ignored, that there is an obligation to align with European and international directives and become increasingly aware of its long-term social, environmental, and economic impact.

If in the short term the investments for ensuring the transition to CE represent a challenge, for the long-term, these investments can be recovered and can bring social, economic, and especially environmental benefits.

⁷⁷ <https://www.green-group-europe.com/en>

⁷⁸ <https://www.economiecirculara.eu/>

6. What are the 3 most important barriers to introducing CE measures in your company?

The main barriers in introducing CE measures presented by companies are legislative barriers (cumbersome legislation that is not adapted to European requirements, insufficient enforcement measures). There are currently 800 posts and 700 employees in the National Environmental Guard, responsible for increasing enforcement and there are no more than 450 environmental commissioners.⁷⁹ Basically, at least double the number of commissioners at national level are needed for the enforcement of legislation. Other barriers are the economic barriers (sustainable products are generally more expensive and investments to obtain these products are more difficult to recover because the demand for sustainable products is low) and social barriers (because the importance of this transition is not communicated in several environments, there are delays in the adherence of both employees and partners to this effort; most consumers are not very open to buy sustainable products or those made from recycled materials, because the waste is still perceived as garbage, something contaminated that is not safe for health and must be disposed of, not reused).

A concrete example is the significant decrease in sales of a producer of bottled water that promoted a national campaign regarding the introduction within the company only of plastic bottles obtained from 100 percent recycled plastics. Due to consumer reluctance, some companies choose to hide the fact that they use recycled raw materials in their products.

7. Do national/regional legislation and policies support CE activities? Please give details.

All organizations participating in the study agreed that national policies and legislation do not sufficiently support CE activities.

Unfortunately, CE is still in the concept phase and is not on the public agenda. There is no real concern for implementation, there are no financial or fiscal incentives to support it. At the regional and local levels, in most cases the concept of CE is not even known.

At the national level, resources are needed to control the application of legislation and the development of secondary legislation (GD, MO, specific norms, guides, and standards) to make implementation possible. Also, there is a need to create legislation to stimulate the demand for 'green' products and goods with recycled material/products by applying CE activities.

8. What are the main legislative/institutional gaps that should be addressed to ensure the transition to CE?

The main legislative shortcomings highlighted by the organizations participating in the study are

- Lack of specific measurable requirements regarding the ecological design of products (Law 211/2011);
- The status of 'end-of-waste' is unexplained in Romania; the legislation limits the possibility for the waste status to cease when an object is reconditioned and legislative clarifications are needed;
- The development of facilities for the production of sustainable goods from recycling stream materials is not encouraged much;
- Regarding organic waste, there are no application rules for the compost law, and energy recovery is not sufficiently sustained (through incentives and rules for using biogas and cogeneration);
- The reduced value of the storage tax for municipal waste and CDW, destined to be eliminated by storage - increasing these taxes would make recycling and recovery feasible, stimulating the avoidance of storage. The experience of other European countries with developed waste management proves that the percentage of recycling and disposal deviation is directly proportional to the size of the contribution to the landfill taxation;

⁷⁹ <https://ecologic.rec.ro/octavian-berceanu-in-domeniul-mediului-avem-o-coruptie-sistemica-atat-in-zona-de-avizare-cat-si-in-cea-de-verificare/>

- Lack of methodological norms for the application of the law on GPP, the law on food waste management, construction waste, textile waste, and other flows.

9. What concrete policy measures would you recommend at national/regional level to support sustainability in your business? (For example, tax facilities, other economic incentives, procurement, education.)

Elaboration of a Strategy and an Action Plan of the Circular Economy at the national level, to be supported by an adequate budget, either from European funds, or from national funds, or both. This national strategy should also be found in regional, county, and local development strategies with appropriate allocation of resources.

Regulating the status of 'end-of-waste' when a product is reconditioned or reused

Better implementation of EPR scheme and its extension for new product categories (for example, textiles, construction materials)

Introducing the DRS - which was to be introduced in 2018

Adopting the necessary measures for the ban on disposable plastics

Introducing taxation on non-recycled plastics

Introducing waste taxation at source (for example, PAYT model)

Elaborating the application methodology for the compost law, GPP law

Increasing environmental enforcement

Elaborating new product standards to increase the reliability and the possibilities of reuse, repair, and so on

Introducing mandatory quotas for the use of recycled materials in certain products

Creating a market for recycled materials

Developing better regulation of waste imports and exports

Increasing the storage fee according to similar tariffs from other European countries

Developing a specific legislation regarding the management of CDW that should contain, besides the responsibilities of their correct management and obligations for the development of the infrastructure for processing/production of recycled aggregates as well as obligations for their use, the following:

- Introduction of obligations to use CDW in state public works, within public procurement procedures for design and construction works
- Elaboration of a normative act that should include a 'Quality Protocol' with criteria that must be met both for the production and for the use of recycled aggregates from inert waste
- Granting financial incentives for operators who process CDW, so that the costs of recycled aggregates are below the cost of natural aggregates (to stimulate their use)
- Development of the Code of Practice for concrete and implementation at national level of the European standard EN 206 so as to allow the use of recycled aggregates in concrete

Recognizing the dual character of waste co-processing in cement plants as recycling of mineral content and energy recovery of waste - establishing a recycling index by co-processing of various types of waste (used tires, treated municipal waste, refuse-derived fuel (RDF), sewage sludge, and so on) and the correct accounting of their treatment methods in cement plants (depending on recycling rate and energy recovery rate of co-processed waste)

Elaborating completeness of the necessary legislative acts for compliance with Directive (EU) 2018/850 of the European Parliament and of the Council of May 30, 2018 amending Directive 1999/31 / EC on landfills, by

introducing mandatory progressive targets, starting from year 2021, to reduce the storage of potentially recoverable waste (by 10 percent annually for example), so that by 2030 Romania can totally ban their storage

Creating the legislative framework to stimulate the exploitation and greening of (historical) industrial/inert waste landfills

Mandatory drying of wastewater treatment sludge, as close as possible to the source/water treatment plant, so as to optimize the logistical costs of their management

Stimulating, along with recycling other recovery methods to achieve the objectives of reducing quantities of waste disposed of by storage (percentages) - the percentage must be increased by other forms of recovery. These do not endanger recycling, but on the contrary, complement the recycling, so that the waste that is not suitable for recycling is recovered by other methods and does not end up in storage. This would be achieved simultaneously by facilitating the transition to CE and reducing the negative effects of storage on the environment (uncontrolled storage, pollution of soils, water, uncontrollable wildfires, and so on), on population health, and reducing consumption of natural resources (coal, gas, and so on) and the reduction of GHG emissions (CO₂ and especially methane released during waste fermentation).

10. Do you consider that EU CE legislation supports your sector? Please add details.

In general, the respondents considered that the European directives support the industry and ensure the necessary premises for accelerating the transition to CE, but unfortunately these directives are not properly transposed and implemented in Romania.

Regarding the funds allocated by EU, several respondents considered that the funds granted do not support all relevant actors. They are generally granted to small and medium-size companies; large organizations that have a high potential for project development and expansion do not benefit from these funds. Support organizations (for example, consulting firms, NGOs) do not easily focus on such funds either.

At the same time, the research programs are very complex and do not have as direct objective of increasing the circularity in industrial companies.

11. Have you made any effort in developing elements of industrial symbiosis, or do you intend to do so in the near future?

Although industrial symbiosis is a little-known concept in Romanian industry that is not regulated or encouraged by specific measures, most companies have begun to develop relationships to exchange resources, obtain cheaper raw materials, reduce the amount of waste stored, and reduce production costs.

In this way, there are collaborations between several industries, within the same industry, and even between competitors.

The field of industrial symbiosis is in its infancy in Romania but the premises are encouraging: identification of collaborations between various waste management companies (use of common sorting stations by several waste collectors and achieving a fair exchange of waste/raw materials between producers and recyclers), collaborations between energy producers for waste recovery and recovery (fly ash, waste from gas desulfurization), collaborations in the petrochemical industry - for co-processing of petroleum waste, collaboration between tire manufacturers and importers, collaboration between industrial companies for recycling and/or capitalizing on various wastes resulting from their production processes, recycling the packaging of some partners and returning them to the shelves of partners as new products (in the case of packaging manufacturers who also have recycling lines).

For example, the cement industry already collaborates with waste management companies, with companies in the steel, metallurgical, chemical, energy, and so on - industries whose waste is used as alternative raw material or alternative fuel for the cement/concrete industry.

Out of 32 respondents, 15 stated that they have not yet developed industrial symbiosis activities but have either started research in this regard or intend to expand such collaborations in the future.

12. If you have other comments on the study, please add them here.

Most of the respondents requested, if possible, a copy of the results of the study and follow-up on future measures resulting from the study.

Even if the CE procedures are not very well developed in Romania, it is noticeable that organizations in the field of waste management are more interested in making the transition to CE either to optimize processes, to reduce production costs and virgin raw materials, or to reduce waste disposal and ensure a 100 percent waste recovery target (by recycling and energy recovery of waste that usually reached landfills).

There is another conclusion that many measures concern aspects related to the improvement of waste management because the people participating in the study consider that the transition to the circular economy cannot be ensured if there are still many unresolved waste management aspects. Improving the waste management system is one of the essential factors that can facilitate the transition to CE.

Results of surveys and interviews: regions

To analyze the measures taken by local and central public authorities to ensure the transition to CE, 31 representatives of local and central public authorities were contacted.

Following the requests, 13 representatives of the central and local public authorities participated in the study (8 public organizations opted for an interview and 5 for completing the study questionnaire). Among them were representatives from the Ministry of Environment, Water and Forests, Environment Fund, Ministry of Investments and European Projects, Ministry of Economy and representatives of the local authorities (Bucharest City Hall, Buzau City Hall, IDAs, Baia Sprie City Hall).

1. What kind of strategies/programs/similar activities that support circular economy models are implemented (or have been) implemented in your region?

Currently, the Waste Management Plan in Bucharest is being elaborated, which will establish investments for the implementation of CE.

The municipality of Buzau has approved, through the Local Council, the Strategy for CE 2020–2030 but has not implemented concrete actions.

A Strategy for CE was developed by a private institute in partnership with the Department of Sustainable Development (part of the Prime Minister's office) but it is in no shape to be adopted, as it is just a declaration of intent, and not an applicable action plan.

The national strategy for CE is to be adopted in the third quarter of 2022.

Regarding the IDAs organized at county level for the implementation of the 34 SMIDs, all the strategies developed for the implementation of these systems were based on the principles of recycling and waste recovery (projects were implemented during 2009–2015). No CE strategies were started within the SMIDs after the publication of the European Directive on the Circular Economy. But there are several county plans recently approved or in progress that have in view the integration of CE aspects regarding the waste managed in those counties.

2. What programs and municipal plans for CE are considered for the near future (1–2 years)?

Regarding the respondent mayors, they specified that they are considering the following measures for the next 1–2 years: integration of CE in local regulations, development of waste prevention programs for citizens and businesses for various waste streams (food, plastics, and so on), introduction of programs/measures for reuse/repair (municipal reuse centers, and so on), replacement of materials (for example, disposable plastics with bio-based plastics and biodegradable plastics), improving the recycling infrastructure for different waste streams.

Buzau City Hall is also considering the following activities according to the strategy for CE:⁸⁰

- Introduction of the principles and models of the 'circular school' in all educational institutions and in public institutions
- Improving the separate collection at source through diversified infrastructure (yellow bag for recyclable fraction, special bag and container for construction materials, special bag and containers for biodegradable waste, glass containers, buried platforms with card for users, use of surveillance camera)
- Development of a sorting station and a composting station
- Implementation of the PAYT principle based on a QR code assigned to each household and containers dimensioned on the volume of waste of each household
- Development of a wood pellets production line resulting from the maintenance of trees in the green spaces of the city
- Development of an energy production line from renewable resources (organic waste)
- Rainwater recovery in groundwater or its reuse for other purposes: sanitation, watering green spaces
- Implementation of permaculture principles with pilot projects in schools.

Although the measures proposed by Buzau City Hall aim more at improving waste management at the locality level than ensuring the transition to CE, they are important steps for the local authority.

Taking into account the low level of knowledge of CE at the level of local public authorities and the lack of concrete measures in this direction, the actions proposed by Buzau City Hall represent an important step in understanding and assimilating the concept of CE.

Regarding the central public authorities, the NRRP submitted to the EC on May 31, 2021, contains several concrete measures to ensure the transition to CE, including concrete measures to improve current waste management systems and the development of 16 centers for reuse and repair of products in large urban areas in Romania.⁸¹

The chapter on waste management and the transition to CE (Pillar I, Component 1.3, page 144) has an allocation of €1.2 billion and focuses on improving current waste collection systems in line with CE objectives, as well as on the implementation of the principles of waste reduction, preparation for reuse and recovery, in several sectors.

An important direction of the reform, with a budget of €840 million at the national level, is the establishment of small, medium, and large platforms for the voluntary collection of waste that is not normally collected at home as well as investments in repair centers and treatment/recycling facilities.

The reform also includes strengthening the capacity for monitoring, control, and reporting through the purchase of mobile scanners for containers and GPS modules for the Environmental Guard, which will thus have more tools to control the phenomenon of illegal waste shipments. The investment will be €30 million.

Another important component of the reform is the greening of public institutions in Romania, by implementing a set of measures consisting in equipping institutions with water filters, fractional collection bins, composters, economical light sources, bicycle racks, and strengthening administrative capacity to implement a long-term green policy through staff training. For this purpose, €49 million have been allocated.

⁸⁰ <https://primariabuzau.ro/strategia-pentru-economie-circulara-buzau-2020-2030/>

⁸¹ <https://mfe.gov.ro/pnrr/?fbclid=IwAR2NH4Cwg1qmy9no0UHItNmvAyO1JGQFrhBZTCyf6LJlw51v8vOiBOSqxEU>

Another substantial investment (€255 million) is to expand and increase the number of platforms for agricultural waste management. Reducing the impact of pollution from multiple sources on the environment by purchasing sensors and monitoring stations worth €15 million is also under consideration.

Regarding the IDAs, measures are considered to support the packaging production sector and the manufacturing industry to design products that can be recycled more easily, to find a solution for composite materials that cannot be recycled and end up in the waste stream and often contaminates it making their recycling difficult.

3. What would be the motivation of the regional/local authority to become 'more circular' and to implement CE measures and initiatives? Please explain.

The organizations participating in the study understood that CE represents the future for sustainable development, that it can no longer be ignored, that there is an obligation to align with European and international directives and become increasingly aware of its long-term social, environmental, and economic impact (reduction of operating costs, generation of new economic activities that bring more investors over time, generation of new jobs, more local income; protection of public health; reduction of emissions; counteracting climate change at local/regional levels).

4. Have you ever realized (or intend to realize) an assessment of the regional/local potential for a transition to CE? Please add details.

Within the municipality of Buzau, this evaluation was performed before the development of the CE Strategy.

The specifications for the Waste Management Strategy in Bucharest are currently being prepared, which contains a chapter on the transition to CE at the local level. This strategy will assess the local potential for the transition to CE.

Regarding the central authorities, this evaluation was performed before the development of the NRRP based on the internal reports made by all the institutions involved in the development process of the National Plan.

Regarding the IDAs, before starting the integrated waste management (SMID) projects, feasibility studies, environmental impact studies, waste management studies were carried out but were not taken into account in ensuring the transition to CE.

5. Which sectors, employ the most primary resources and have great circular potential, are being developed in your region and to what extent?

The representatives of the local and central public authorities appreciated that the electronic and IT industry, the plastics industry, and waste management have a high development potential and some important steps have been taken in this respect. They considered that the fields of water, textiles, construction, and the food industry have a moderate degree of development potential for the time being. In this case, they took into account the fact that these areas are not sufficiently regulated to know a faster development. The fields of production of packaging, batteries and vehicles, agriculture, industry/manufacturing industry have a low degree of development and investments are needed to stimulate these sectors.

6. To what extent have you worked with regional/local stakeholders involved in the transition to CE? Please add details.

The representatives of the local authorities specified that collaborations with other stakeholders involved in the transition to CE have not yet started.

Instead, in developing the local CE strategy, the representatives of Buzau worked with the Institute for Research in the Circular Economy 'Ernest Lupan' - IRCEM, German Ministry of Environment, Water and Forests, the group of recycling companies that perform part of their activity in Buzau - Green Group, the representatives of the organizations that implement the obligations regarding EPR - OIREP, other professional associations.

Regarding the central authorities, the Ministry of Investments and European Projects started, in January 2021, an extensive process of interministerial technical meetings/consultations and public consultations for updating the NRRP⁸² to bring it into line with the Regulation of the Recovery and Resilience Mechanism.

The process, coordinated by MIPE, started at the end of January, immediately after the approval by the Romanian Government of the Memorandum 'Mechanism for elaborating the Romanian Government's position on the National Recovery and Resilience Plan' (NRRP). At the same time, MIPE started in February 2021, 11 public debates, on topics, with business partners, NGOs and all those interested in updating the National Recovery and Resilience Program.

At the beginning of 2021, the City Hall of District 1 (Bucharest) concluded 13 contracts with Organizations for the Implementation of Extended Producer Responsibility (OIREP) to cover the net costs for collection and transport, temporary storage, sorting and entrustment for capitalization of packaging waste in Sector 1 Bucharest. This collaboration represents an additional source of funding for the public sector sanitation service 1, a first step in better waste management and has the role of opening the discussions regarding future measures for ensuring the transition to CE.

7. Which actors/stakeholders should be involved? (For example, industry representatives, waste management actors, academics, other local/central public authorities, NGOs, research institutes, employers' organizations.) Please add details.

Both the representatives of the local public authorities and the representatives of the central public authorities insisted that to start such a complex process as the transition to CE, it is necessary to involve all stakeholders: industry representatives, central and local authorities - ministries, county councils, mayors, IDAs, National Agency for Environmental Protection, County Agencies for Environmental Protection, research institutes, NGOs, consultants, representatives of the waste management industry, industrial clusters, employers' organizations, trade unions, and so on.

It is not only necessary to involve all stakeholders but also to develop communication and collaboration mechanisms. Currently, communication between the central and the local/regional institutions is poor. Communication is also poor between organizations of the same type in different counties (for example, County Environmental Protection Agencies, Intercommunity Development Associations).

8. Are the administrative and institutional capacities sufficient to implement CE measures? Please add details.

Both local and central public authorities have acknowledged that current administrative and institutional capacities are not sufficient to ensure the transition to such a complex process as the circular economy.

The deficit of technical and administrative capacities both at central and local levels is one of the main reasons that has prevented a better development of the waste management system at national level, therefore it will be a challenge in the implementation of CE measures.

There is no efficient collaboration between local and central public authorities; one of the reasons why SMIDs had operational problems was the lack of consultation with local authorities when developing the SMIDs Implementation Strategies.

An immediate effect of the lack of consultations between public and central authorities was the occurrence of some errors in the elaboration of the requirements from the SMID implementation guide; these mistakes led to the impossibility of accessing the funds from the Large Infrastructure Operational Program (POIM) financed in 2014–2020 by the Ministry of Investments and European Projects for the development and improvement of SMIDs.

⁸² <https://mfe.gov.ro/pnrr/>

It is very important that before the technical and administrative capacity for each region is dimensioned, clear CE standards are established.

9. What are the most important 2–3 opportunities to ensure the transition to CE in your region? Please add details.

The most important opportunities to ensure the transition to CE signaled by both local and central public authorities are as follows:

- The CE area represents for Romania a new development niche, for the business area (for example, offer solutions to underserved markets for specific products; use other circular business models for storing green energy [solar, hydro] to increase the efficiency of its use during peak consumption, use innovative, environmentally friendly methods for greening waste dumps).
- A more circular economy, focused on recycling, reuse, and more efficient use of resources, would help stimulate investment and generate benefits in both the short and long term for the environment, employment and the economy (for example, in the long run ensuring the reduction of production costs, the increase of incomes).
- Encouraging research and development projects will allow innovation to provide technical solutions for different types of waste to optimize resource consumption (extraction of precious materials from electrical appliances, mobile phones, tablets, and so on, mobile WEEE dismantling laboratories).
- Gabriel Moiceanu, President of the Federation of Intercommunity Development Associations (FADI) and executive director within SMID Arges considers that the introduction of the tax of €0.8 per kg of non-recycled plastic packaging waste starting from January 1, 2021 (as part of the package of economic recovery measures post COVID-19 estimated at €750 billion for the period 2021–2027 - Regulation [EU, Euratom⁸³] 2021/770) would put pressure on producers and increase investment in the design of packaging and products as sustainable as possible, which can be recycled, and are easier to repair and reuse.

This fee is intended to supplement the EU's own revenue and will be paid by the EU member states, based on the amount of non-recyclable plastic packaging waste in each country. Thus, member states are free to decide how to implement it and, while some states may decide to pay the EU contribution from their national budget, it is likely that many of them will impose a new form of taxation on plastic packaging, which will lead to different regimes across the EU.

To date, the Romanian authorities have not published any draft legislation or announced how they want to implement these measures regarding the €0.8 per kg plastic tax on non-recycled plastic packaging waste; this tax should be borne by the state budget or a new tax should be imposed on Romanian companies.

If the authorities choose to regulate a new environmental tax, there are several implementation options, such as for the tax to be borne either by the producers of plastic packaging or by companies whose products are packaged in plastic or by the latter company that sells consumer products.

Currently, there is already a tax of RON 2 per kg related to plastic packaging, due by the companies that place packaged goods on the market, for the difference between the annual recycling/recovery objectives (compared to the quantities of plastic packaging introduced on the market) and the quantities of packaging waste actually recycled/recovered.

Thus, there is a possibility for the authorities to amend this fee or to regulate an additional fee to collect and redirect to the EU budget the €0.8 per kg of non-recycled plastic packaging waste.

RDF/Solid-Recovered Fuel (SRF) treated waste is currently the latest solution in the waste management chain that contributes to closing the recycling 'loop' and approaching the 0 percent waste stored target. Given that there are many composite products and packaging that cannot be recycled and that currently there are no clear solutions implemented for the design/production of packaging and materials easily recyclable (and will take

⁸³ <https://home.kpmg/ro/ro/home/publicatii/2020/10/noi-masuri-de-taxare-a-ambalajelor-din-plastic-de-la-1-ianuarie-2021.html>

several years until these materials/products will be designed/ developed on a large scale at national level) it is important to find solutions for introducing RDF/SRF type waste in the centralized heating system, in large capacity thermal power plants, in gasification systems, pyrolysis, cracking to capitalize on energy or return the products to their origins (for example, in the production of oils or other fuels).

There are many existing technologies in the market in this field but there is a need to make the legislation more flexible to approve such installations and to finance the development of such procedures for the local authorities.

10. Identify 2–3 existing threats and barriers to implementing a CE Strategy in your region. Please add details.

The most important threats/barriers in implementing a CE Strategy considered by both local and central public authorities are as follows:

- Both at the level of central public authorities and at local level, there is an acute crisis of environmental specialists which is reflected in the poor management of some local projects and investments and the lack of clear directions from the central authorities in the implementation of CE projects.
- Although Romania has a cumbersome legislation on waste management (over 80 laws) European legislation regarding CE has not been transposed at present. Therefore, the measures of CE are not well known and are not supported by the current legislation. Also any measure of CE includes the interconnection of at least two regulated fields of activity and the biggest barrier becomes the legislative one, considering that an amendment in a law must be transposed in the related legislation.
- There are no standards for CE, there are no incentives for organizations wishing to ensure this transition, given that incentives are absolutely necessary for continued investment and ensuring market competitiveness.
- The lack of introduction of the deposit-return system, (DRS) also affects the investments of the local authorities regarding waste management; for example, when investments are proposed for the development of management systems, local authorities are not sure whether they should invest in the acquisition of collection infrastructure for plastic and glass or whether by the time the investment is completed the guarantee-deposit system will be functional.
- At present, at least at the local level, the costs of recycling and recovery of waste are not covered as is the case in western countries, which makes local and regional recycling systems difficult to operate. In the absence of 100 percent functional management systems, it is not possible to ensure the natural transition to the implementation of CE Strategies.
- There are difficulties and inconsistencies in the way of approval and obtaining authorizations from the Ministry of Environment, Water and Forests and other institutions subordinated to it (different authorization systems that cause confusion among local authorities).

11. Do national environmental policies support the regional development of CE? Are there gaps? And if so, what are they? Please provide details.

All representatives of the institutions participating in the study agreed that national policies and legislations do not sufficiently support CE activities.

Both local and central organizations confirmed the numerous legislative gaps highlighted by the private organizations that participated in the interview.

12. Indicate the most important support activities to facilitate the transition to CE (for example, taxes, other economic incentives, business models, procurement, education). Please add details.

The most important support activities to facilitate the transition to CE in the vision of local authorities:

- Elaboration of a Strategy and an Action Plan of CE at national level, to be supported by an adequate budget, either from European funds, or from national funds, or both.

- Elaboration of new product standards to increase the reliability and the possibilities of reuse, repair.
- Introduction of mandatory quotas for the use of recycled materials in certain products.
- Creating a market for recycled materials.

To facilitate the transition to CE, the central authorities are considering the implementation of two urgent measures: adoption of the National Strategy for the Circular Economy in the third quarter of 2022 and adoption of legislative measures for unitary practices in the field of waste management in the first quarter of 2023.

13. Has your region/municipality already implemented GPP or involved 'green' requirements in regular public procurement procedures? Please add details.

No, because currently the GPP law has no application norms and cannot be implemented. To avoid getting into legal trouble regarding public procurement procedures, some institutions choose to purchase recycled paper, or other green products/consumables.

So, public authorities are interested in investing in green goods (for example, green buses) but clear norms are needed to avoid problems in justifying these costs to the control authorities.

14. Are there ongoing/planned industrial symbiosis activities in your area? In what sectors? Please add details.

The concept of industrial symbiosis is not very well known among local public authorities, therefore at the moment such activities do not represent a significant interest for them.

Also, industrial symbiosis activities are not as developed in the public sector as they are in the private sector and this is somewhat understandable given that public institutions are subject to legislative restrictions that do not offer as much freedom of collaboration as private organizations.

A suitable example of industrial symbiosis is implemented within SMID – Argeş. ADI Argeş delivers the plastic packaging to a recycling factory and receives back bags for waste collection. Also, composite plastic waste that is harder to recycle is handed over to a recycler who uses it to produce individual composters. Subsequently, these composters are handed over to the town halls to be distributed to households from Argeş county. The program has already been functional and monitored for 6 months.

15. If you have other comments on the study, please add them here.

Most of the respondents requested, if possible, a copy of the results of the study and follow-up on future measures resulting from the study.

Annex D: National Legislation on Waste Prevention and Management

Reference	Title (translation)	Brief description
EO 92/2021 on waste regime	Framework Law on Waste Management ('Waste Law', waste regime)	It sets the measures for environment and health protection, by preventing and diminishing the adverse effects of resources use and increasing the resources use efficiency. Has repealed and replaced Law 211/2011, the first framework law on waste management. https://lege5.ro/App/Document/ha3tsnbtgi4a/ordonanta-de-urgenta-nr-92-2021-privind-regimul-deseurilor
EO no. 74/2018	EO no. 74/2018 for the amendment and completion of Law no. 211/2011, of Law no. 249/2015 and EO no. 196/2005	EO no. 74/2018 for the amendment and completion of Law no. 211/2011 on the waste regime, of Law no. 249/2015 on the management of packaging and packaging waste, and EO no. 196/2005 on the Environmental Fund. (Effective since July 19, 2018) https://lege5.ro/App/Document/gi4dsmbxgqyq/ordonanta-de-urgenta-nr-74-2018-pentru-modificarea-si-completarea-legii-nr-211-2011-privind-regimul-deseurilor-a-legii-nr-249-2015-privind-modalitatea-de-gestionare-a-ambalajelor-si-a-deseurilor-de-am
Law no. 31/2019	Law 31/2019 on the approval of the EO no. 74/2018 for the amendment and completion of Law no. 211/2011, of Law no. 249/2015 and the EO no. 196/2005 (Effective January 17, 2019)	Published for the approval of the EO no. 74/2018 for the amendment and completion of Law no. 211/2011 on the waste regime, of Law no. 249/2015 on the management of packaging and packaging waste, and EO no. 196/2005 on the Environmental Fund. https://lege5.ro/App/Document/gmytknrhazq/legea-nr-31-2019-privind-aprobarea-ordonantei-de-urgenta-a-guvernului-nr-74-2018-pentru-modificarea-si-completarea-legii-nr-211-2011-privind-regimul-deseurilor-a-legii-nr-249-2015-privind-modalitatea-
Law 101/2006, republished 2014 and modified by EO 58/2016	Municipal sanitation	It sets the legal framework for the activity of public service of municipal sanitation. https://lege5.ro/App/Document/gqydimzxgq/legea-serviciului-de-salubritate-a-localitatilor-nr-101-2006
Law 224/2008	Amends and supplements Law no 101/2006 regarding sanitation service of the localities	It sets the legal framework for the activity of public service of municipal sanitation and also sets the program 'integrated waste management system' - SMID. https://lege5.ro/App/Document/geytimzqgy/legea-nr-224-2008-privind-aprobarea-ordonantei-de-urgenta-a-guvernului-nr-92-2007-pentru-modificarea-si-completarea-legii-serviciului-de-salubritate-a-localitatilor-nr-101-2006

Reference	Title (translation)	Brief description
Law 249/2015, modified by EO 38/2016	Legal framework of managing packaging and packaging waste. Law no. 249/2015 of October 28, 2015 on how to manage packaging and packaging waste	It sets the provisions regarding all packaging, irrespective of the material from which they are produced to diminish the impact on environment. https://lege5.ro/App/Document/hazdenrqgi/legea-nr-249-2015-privind-modalitatea-de-gestionare-a-ambalajelor-si-a-deseurilor-de-ambalaje
MO no. 1271/2018	Order 1271/2018 on the procedure and criteria for registration of authorized economic operators - collectors who purchase packaging waste from the population at the place of generation	Effective January 11, 2019; it sets the procedure and criteria for registration of authorized economic operators - collectors who purchase packaging waste from the population at the place of generation. https://lege5.ro/App/Document/gmytknbtgiza/ordinul-nr-1271-2018-privind-procedura-si-criteriile-de-inregistrare-a-operatorilor-economici-colectorii-autorizati-care-preiau-prin-achizitie-deseuri-de-ambalaje-de-la-populatie-de-la-locul-de-generar
GO 27/2022	GO no. 27/2022 regarding the regulation of some financial measures by establishing the minimis aid scheme for the transition to CE.	The purpose of the ordinance is to support organizations in developing investments for the transition to CE. https://lege5.ro/App/Document/gezdkmbuhe3te/ordonanta-nr-27-2022-privind-reglementarea-unor-masuri-financiare-prin-instituirea-schemei-de-ajutor-de-minimis-in-vederea-tranzitiei-catre-economia-circulara
GR 1074/2021 modified by GR 165/2022	Decision no. 1.074/2021 regarding the establishment of the guarantee-return system for non-reusable packaging	Sets the frame for the implementation of the DRS, applicable for non-reusable primary packaging. https://lege5.ro/App/Document/he2dmojxgiyq/hotararea-nr-1074-2021-privind-stabilirea-sistemului-de-garantie-returnare-pentru-ambalaje-primare-nereutilizabile
GO 6/2021	Ordinance no. 6/2021 on reducing the impact of certain plastic products on the environment	The objectives of this ordinance are to prevent and reduce the impact of certain plastic products on the environment, especially on the aquatic environment, and on human health; it applies to SUPs, products made from oxo-degradable plastic materials, and fishing equipment containing plastics. https://lege5.ro/App/Document/ha3tsojrhe4a/ordonanta-nr-6-2021-privind-reducerea-impactului-anumitor-produse-din-plastic-asupra-mediului
MO 1736/2022	Order no. 1736/2022 regarding the approval of the Registration, reporting and declaration Procedure for economic operators who introduce waste into the country to be recovered	Approves the procedure for registration, reporting and declaration for economic operators who introduce waste into the country to be recovered. https://lege5.ro/App/Document/gezdambxha2dk/ordinul-nr-1736-2022-privind-aprobarea-procedurii-de-inregistrare-raportare-si-declarare-a-operatorilor-economici-care-introduc-deseuri-in-tara-pentru-a-fi-valorificate

Reference	Title (translation)	Brief description
MO no 1362/2018 amended by Order 1555/2020; Order 2190/2021	Effective January 15, 2019	On the approval of the authorization procedure, annual approval and withdrawal of the right to operate of the organizations implementing the obligations regarding extended producer responsibility. https://lege5.ro/App/Document/gmytknrsgq4q/ordinul-nr-1362-2018-privind-aprobarea-procedurii-de-autorizare-avizare-anuala-si-de-retragere-a-dreptului-de-operare-a-organizatiilor-care-implementeaza-obligatiile-privind-raspunderea-extinsa-a-prod
Law 212/2015	Management of vehicles and used vehicles	It sets the regulations regarding vehicles and used vehicles management, by reusing, recycling and other means to turn spare parts into goods. https://lege5.ro/App/Document/g4ztmrxg4/legea-nr-212-2015-privind-modalitatea-de-gestionare-a-vehiculelor-si-a-vehiculelor-scoase-din-uz
Law 278/2013	Legal framework of industrial emissions	It sets the rules for industrial emissions applied to integrated pollution prevention and control, as well as the rules to prevent and/or reduce emissions to air, water and soil, and waste generation. https://lege5.ro/App/Document/gm3tmobwgy/legea-nr-278-2013-privind-emisiile-industriale
Law 51/2006	Public utility services	It sets the rules regarding public utility services. https://lege5.ro/App/Document/gm2donrwha/legea-serviciilor-comunitare-de-utilitati-publice-nr-51-2006
Law 69/2016	GPP	It establishes the legal framework for GPP in Romania. https://lege5.ro/App/Document/geydmmyzgmzq/legea-nr-69-2016-privind-achizitiile-publice-verzi
Law 217/2016	Food waste prevention	Establishing the general legal framework for prevention of food waste and seven sets of measures for prevention. The methodological norms will be developed in the first half of 2017. https://lege5.ro/App/Document/gmytsmjrgq2a/legea-nr-217-2016-privind-diminuarea-risipei-alimentare
Government Resolution (GR) 856/2002, modified by GO 210/2007	Obligation to keep waste management records; list of waste categories, including hazardous waste	It sets the companies and institutions' obligation to keep and report to relevant authorities the accurate situation of generated waste. https://lege5.ro/App/Document/gm3tgnrw/hotararea-nr-856-2002-privind-evidenta-gestiunii-deseurilor-si-pentru-aprobarea-listei-cuprinzand-deseurile-inclusiv-deseurile-periculoase
GR 942/2017 regarding the approval of the National Waste Management Plan	National Waste Management Plan	It sets the framework for creating the backgrounds for developing and implementing a waste management integrated system, effective from both ecological and economical perspectives. https://lege5.ro/App/Document/gi3diojvge3a/hotararea-nr-942-2017-privind-aprobarea-planului-national-de-gestionare-a-deseurilor

Reference	Title (translation)	Brief description
GR 870/2013	National Waste Management Strategy (2014–2020)	It sets the national strategic guidelines for the waste prevention and management policy aiming to lead Romania to a 'recycling society'. https://lege5.ro/App/Document/gm4dmmjtga/hotararea-nr-870-2013-privind-aprobarea-strategiei-nationale-de-gestionare-a-deseurilor-2014-2020
GR 170/2004	Legal framework of used tires management	It sets the rules applicable to both legal entities and population regarding management of used tires to reduce the amount of waste, as well as improve the environmental performance along the life cycle of tires. https://lege5.ro/App/Document/gq4timjs/hotararea-nr-170-2004-privind-gestionarea-anvelopelor-uzate
GO 2/2021	Legal framework of landfill disposal	It sets the legal framework for landfill disposal of waste, as well as the technical characteristics and the requirements for the design, licensing, construction, operation, closure, and post-closure of landfills. https://lege5.ro/App/Document/ha3tqmbxgy2q/ordonanta-nr-2-2021-privind-depozitarea-deseurilor
GR 788/2007, modified by GR 1265/2021	Transboundary Movements of Waste	It aims to ensure the implementation of and compliance with Regulation (EC) No 1013/2006 regarding the transboundary movement of waste. https://lege5.ro/App/Document/geydmzxha/hotararea-nr-788-2007-privind-stabilirea-unor-masuri-pentru-aplicarea-regulamentului-parlamentului-european-si-al-consiliului-ce-nr-1013-2006-privind-transferul-de-deseuri
GR 856/2008	Mining waste management	It sets the legal framework for waste generated from prospecting, exploiting mineral resources, and mining. https://lege5.ro/App/Document/geytgobygi/hotararea-nr-856-2008-privind-gestionarea-deseurilor-din-industiile-extractive
GR 1061/2008 Modified by Law 203/2018	Transportation of hazardous and non-hazardous waste	It sets the rules applicable to a proper transportation of hazardous and non-hazardous waste, on roads, railways, and shipping. https://lege5.ro/App/Document/geytenzvgi/hotararea-nr-1061-2008-privind-transportul-deseurilor-periculoase-si-nepericuloase-pe-teritoriul-romaniei
GR 1132/2008, modified by GR 478/2020	Batteries and accumulators regime	It sets the specific rules regarding collection, treatment, recycling, and disposal of batteries, including rechargeables. https://lege5.ro/App/Document/geyteobtga/hotararea-nr-1132-2008-privind-regimul-bateriilor-si-acumulatorilor-si-al-deseurilor-de-baterii-si-acumulatori
GR 1862/2005	Incineration of hazardous waste and medical waste	It sets the strategic principles for the management of hazardous waste and waste generated from health-related activities. https://lege5.ro/App/Document/gezdenjzg4/hotararea-nr-1862-2005-pentru-aprobarea-proiectului-incinerarea-deseurilor-periculoase-si-sterilizarea-deseurilor-provenite-din-activitati-medicale

Reference	Title (translation)	Brief description
GR 2293/2004	Wood waste management	It sets the rules regarding the wood waste resulted from wood-processing activities. https://lege5.ro/App/Document/guydomrv/hotararea-nr-2293-2004-privind-gestionarea-deseurilor-rezultate-in-urma-procesului-de-obtinere-a-materialelor-lemnoase
GR 188/2002, modified by GR 352/2005 and GR 210/2007	Urban wastewater	It sets the regime of urban wastewater and sludge treatment. https://lege5.ro/App/Document/gm3tooju/hotararea-nr-188-2002-pentru-aprobarea-unor-norme-privind-conditiile-de-descarcare-in-mediul-acvatic-a-apelor-uzate
GR 173/2000, modified by GR 975/2007	Polychlorinated biphenyls (PCBs)	It sets the rules for the disposal of PCBs and the decontamination or disposal of equipment that contain PCBs toward their complete destruction. https://lege5.ro/App/Document/gi2tcnry/hotararea-nr-173-2000-pentru-reglementarea-regimului-special-privind-gestiunea-si-controlul-bifenililor-policlorurati-si-ale-altor-compusi-similari
GO 24/2016	Legal framework for animal origin waste management	It sets the rules regarding the neutralization of animal origin waste, namely, the collection, transportation, and disposal of such waste. https://lege5.ro/App/Document/gezdmnrxgqza/ordonanta-nr-24-2016-privind-organizarea-si-desfasurarea-activitatii-de-neutralizare-a-subproduselor-de-origine-animala-care-nu-sunt-destinate-consumului-uman
EO 195/2005	Environmental protection	The purpose of this ordinance is to regulate environmental protection, public interest objective, the principles and strategic elements that lead to sustainable development of society. https://lege5.ro/App/Document/hazdinrs/ordonanta-de-urgenta-nr-195-2005-privind-protectia-mediului
EO 196/2005	EO 196/2005 on the Environmental Fund (amended by EO 39/2016, L31_2019, EO 125/2022)	It sets the legal framework for the revenues collected from green taxation, as well as the activities regarding the declaration, control, collection, and litigations related to environment taxes. https://lege5.ro/Gratuit/gezdmnbqgm3ta/ordonanta-de-urgenta-nr-125-2022-pentru-modificarea-si-completarea-ordonantei-de-urgenta-a-guvernului-nr-196-2005-privind-fondul-pentru-mediu
EO 5/2015, modified by EO 933/2020	Legal framework of WEEE management (updated in 2019)	It sets environmental and health protection measures to prevent or reduce the harmful impacts of the production and management of WEEE, reduce global resource consumption impacts, improve resource efficiency, and contribute to sustainable development. https://lege5.ro/App/Document/gyztgojuga/ordonanta-de-urgenta-nr-5-2015-privind-deseurile-de-echipamente-electrice-si-electronice

Reference	Title (translation)	Brief description
EO 152/2005	Legal framework for prevention, reduction, and control of pollution	It sets the integrated measures necessary to prevent, reduce, and control pollution, as well as the rules to prevent and/or reduce emissions to air, water, and soil, and waste generation. Also, it sets the rules for issuing integrated environment authorization for industries having significant impact on environment. https://lege5.ro/App/Document/haytcmzt/ordonanta-de-urgenta-nr-152-2005-privind-prevenirea-si-controlul-integrat-al-poluarii
Order no. 149/2019	On amending and supplementing the Order of the Minister of Environment and Water Management no. 578/2006 for the approval of the methodology for calculating the contributions and fees due to the Environmental Fund	It sets environmental tax rules applied to energy, emissions, transport, water, waste, territory planning, forests and biodiversity; the tax regime for plastic bags, and so on. https://lege5.ro/App/Document/gmzdcnjzg43a/ordinul-nr-149-2019-privind-modificarea-si-completarea-anexei-la-ordinul-ministrului-mediului-si-gospodarii-apelor-nr-578-2006-pentru-aprobarea-metodologiei-de-calcu-al-contributiilor-si-taxelor-da
MO 95/2005, modified by MO 3838/2012	Waste acceptance criteria and preliminary procedures for accepting waste at the landfill	It sets the national waste categories and the acceptance criteria for depositing at the landfill, based on benchmark waste characteristics for each category and in line with Romanian and European regulations. https://lege5.ro/App/Document/g4ytqubr/ordinul-nr-95-2005-privind-stabilirea-criteriilor-de-acceptare-si-procedurilor-preliminare-de-acceptare-a-deseurilor-la-depozitare-si-lista-nationala-de-deseuri-acceptate-in-fiecare-clasa-de-depozit-d
MO 1281/2005	Waste containers' identification for waste separate collection applicable at the national level	It sets the identification methods for waste containers, for establishing the premises for a waste separate collection at the national level. https://lege5.ro/App/Document/hazdmobw/ordinul-nr-1281-2005-privind-stabilirea-modalitatilor-de-identificare-a-containerelor-pentru-diferite-tipuri-de-materiale-in-scopul-aplicarii-colectarii-selective
MO 1364/1499/2006, modified by MO 2854/2011	Regional Plans for Waste Management	For each of the 8 Romanian regions, these plans ensure the framework for reaching the targets set for waste management, ensuring the precondition of EU financing. https://lege5.ro/App/Document/geydcmrqhe/ordinul-nr-1364-2006-de-aprobare-a-planurilor-regionale-de-gestionare-a-deseurilor
MO 1362//2018, modified by MO 2190/2021	Authorization procedure for organizations that implement EPR	It sets the approval of the procedure for authorization, annual approval, and withdrawal of the right to operate for organizations that implement the obligations regarding EPR.
MO 344/2004	Environment soil protection in case of wastewater sludge	It sets the regime of utilization of wastewater sludge on agricultural land, to avoid harmful effects on humans, water, soil, vegetation, and animals. https://lege5.ro/App/Document/guztqobs/ordinul-nr-344-2004-pentru-aprobarea-normelor-tehnice-privind-protectia-mediului-si-in-special-a-solurilor-cand-se-utilizeaza-namolurile-de-epurare-in-agricultura

Reference	Title (translation)	Brief description
MO 794/2012	Procedure for reporting data on packaging and packaging waste	It regulates the procedure for reporting data on packaging and packaging waste. https://lege5.ro/App/Document/gmytenjvgi/ordinul-nr-794-2012-privind-procedura-de-raportare-a-datelor-referitoare-la-ambalaje-si-deseuri-de-ambalaje
Order 1298/2011	Amendment of the procedure of issuing environmental permits	Order of the Minister of Environment and Forests 1298/2011 on the amendment of the procedure of issuing environmental permits, approved through the Order of the Minister of Environment and Sustainable Development 1798/2007. https://lege5.ro/App/Document/gi2tkmjsge/ordinul-nr-1298-2011-pentru-modificarea-procedurii-de-emitere-a-autorizatiei-de-mediu-aprobata-prin-ordinul-ministrului-mediului-si-dezvoltarii-durabile-nr-1798-2007
Order of the ANRSC 82/2015 modified by Order no 520/2018	Approval of framework regulation for sanitation services	Approval of the framework regulation for localities sanitation services. https://lege5.ro/App/Document/gyydgnjsgu/ordinul-nr-82-2015-privind-aprobarea-regulamentului-cadru-al-serviciului-de-salubritate-a-localitatilor
Order of the ANRSC 109/2007	Methodological norms of establishment, adjustment or change of tariffs for specific activities of the sanitation of localities	Methodological norms for establishing, adjustment, or changing of tariffs for specific activities of the localities' sanitation services. https://lege5.ro/App/Document/geytkobsha/ordinul-nr-109-2007-privind-aprobarea-normelor-metodologice-de-stabilire-ajustare-sau-modificare-a-tarifelor-pentru-activitatile-specifice-serviciului-de-salubritate-a-localitatilor
Order of the ANRSC 111/2007	Approval of framework Terms of Reference for sanitation services	Specifications are approved framework localities sanitation services. https://lege5.ro/App/Document/geytkobtga/ordinul-nr-111-2007-privind-aprobarea-caietului-de-sarcini-cadru-al-serviciului-de-salubritate-a-localitatilor
Order of the ANRSC 112/2007	Approval of framework service supply contracts on sanitation services	Approving the performance criteria for annual evaluation of public hospital manager, after which the management contract may be extended or cancelled before the deadline. https://lege5.ro/App/Document/geytkobtge/ordinul-nr-112-2007-privind-aprobarea-contractului-cadru-de-prestare-a-serviciului-de-salubritate-a-localitatilor
MO no. 1441 of May 23, 2011	On establishing the methodology for setting up and managing the financial guarantee for manufacturers of electrical and electronic equipment	https://lege5.ro/App/Document/gi2tomrrga/ordinul-nr-1441-2011-privind-stabilirea-metodologiei-de-constituire-si-gestionare-a-garantie-financiare-pentru-producatorii-de-echipamente-electrice-si-electronice