

Circular economy country profile 2024 – Spain



Cover design: EEA
Cover image © Peder Jensen
Layout: ETC CE

Version: [If relevant]

Publication Date

EEA activity Circular economy and resource use

Legal notice

Preparation of this report has been co-funded by the European Environment Agency as part of a grant with the European Topic Centre on Circular economy and resource use (ETC CE) and expresses the views of the authors. The contents of this publication do not necessarily reflect the position or opinion of the European Commission or other institutions of the European Union. Neither the European Environment Agency nor the European Topic Centre on Circular economy and resource use is liable for any consequence stemming from the reuse of the information contained in this publication.

ETC CE coordinator: Vlaamse Instelling voor Technologisch Onderzoek (VITO)

ETC CE partners: Banson Editorial and Communications Ltd, česká informační agentura životního prostředí (CENIA), Collaborating Centre on Sustainable Consumption and Production (CSCP), Istituto Di Ricerca Sulla Crescita Economica Sostenibile (IRCrES), Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA), IVL Swedish Environmental Research Institute, PlanMiljø, Università Degli Studi Di Ferrara (SEEDS), German Environment Agency (UBA), Teknologian Tutkimuskeskus VTT oy, Wuppertal Institut für Klima, Umwelt, Energie gGmbH, World Resources Forum Association.

Copyright notice

© European Topic Centre on Circular economy and resource use, 2024

Reproduction is authorized provided the source is acknowledged. [Creative Commons Attribution 4.0 (International)]

More information on the European Union is available on the Internet (<http://europa.eu>).

European Topic Centre on
Circular economy and resource use
<https://www.eionet.europa.eu/etcs/etc-ce>

Contents

Introduction.....	2
Spain– facts and figures.....	4
Existing policy framework	8
Dedicated national and/or regional strategy, roadmap or action plan for circular economy	8
Dedicated local strategy, roadmap or action plan for circular economy.....	12
Circular economy policy elements included in other policies.....	13
Monitoring and targets	16
Assessment of circular economy performance.....	16
Circular economy monitoring frameworks and their indicators beyond the ones from Eurostat.....	23
Circular economy targets	23
Innovative approaches and good practices.....	25
Examples of public policy initiatives (national, regional or local)	25
Examples of private policy initiatives (sectoral).....	34
The way forward.....	38
Identifying and addressing barriers and challenges.....	38
Future policy plans	40
Annex 1: Spanish indicators published in the CE Strategy	43
Annex 2: First and Second CE Action Plans indicators	45

Introduction

The European Commission requested the EEA to produce EU country profiles that offer an updated view of the following elements:

- what circular economy policies are being implemented at a national level with a particular focus on elements that go beyond EU mandatory elements, and
- what are best practices with a focus on policy innovation.

With the EU Circular Economy Action Plan (CEAP 2020) "the Commission [...] encourages Member States to adopt or update their national circular economy strategies, plans and measures in the light of its ambition".

These country profiles originate in the work leading to the EEA More from less report (2016)¹, that presented an overview of approaches to material resource efficiency and to circular economy in thirty-two European countries. The More from Less report was followed by the 2019 EEA Report 'Resource efficiency and the circular economy in Europe 2019 – even more from less: An overview of the policies, approaches and targets of 32 European countries'².

It presented an updated and extended assessment of approaches and identified trends, similarities and new directions taken by countries in the connected policy areas of resource efficiency and the circular economy.

These reports, comprising a compilation of extensive survey responses from countries, were accompanied by 32 country profiles.

In the second quarter of 2022 a new survey with questions and guidelines was launched. Based on information reported by the Eionet network, in particular, the Eionet Group on Circular Economy and Resource Use, and after review and editing by the European Topic Centre on Circular economy and resource use (ETC CE), the 30 2022 CE country profiles³ were published alongside the EEA report 'Circular Economy policy innovation and good practice in Member States'⁴ (2022).

These 2024 CE country profiles are an update of the 2022 ones and based on the responses of 29 countries to the survey questions and guidelines that were launched in March 2024. The information in the countries' responses was again reviewed and edited by the European Topic Centre on Circular economy and resource use. A selection of Eurostat data was made to further complement these country profiles.

The main objectives of these assessments and its updates are to: • stimulate exchange of information and share good practice examples among country experts; • support policymakers in Eionet countries, the European institutions and international organisations by providing an updated catalogue of circular economy actions being undertaken in European countries.

This circular economy country profile is based on information reported by the Eionet network and, in particular, the Eionet Group members on Resource Efficiency and Circular Economy in the second quarter of 2024. Proposals for the further development or amendment of policies represent the view of the reporting country. For Spain, all input was provided by the General Subdirectorate for Waste of the Ministry for Ecological Transition and Demographic Challenge. The information was reviewed and edited by the European Topic Centre on Circular economy and resource use. A selection of Eurostat data was made to further complement this country profile.

¹ [More from less — material resource efficiency in Europe — European Environment Agency \(europa.eu\)](https://europea.europa.eu/en/press-releases/2016/06/16-06-2016)

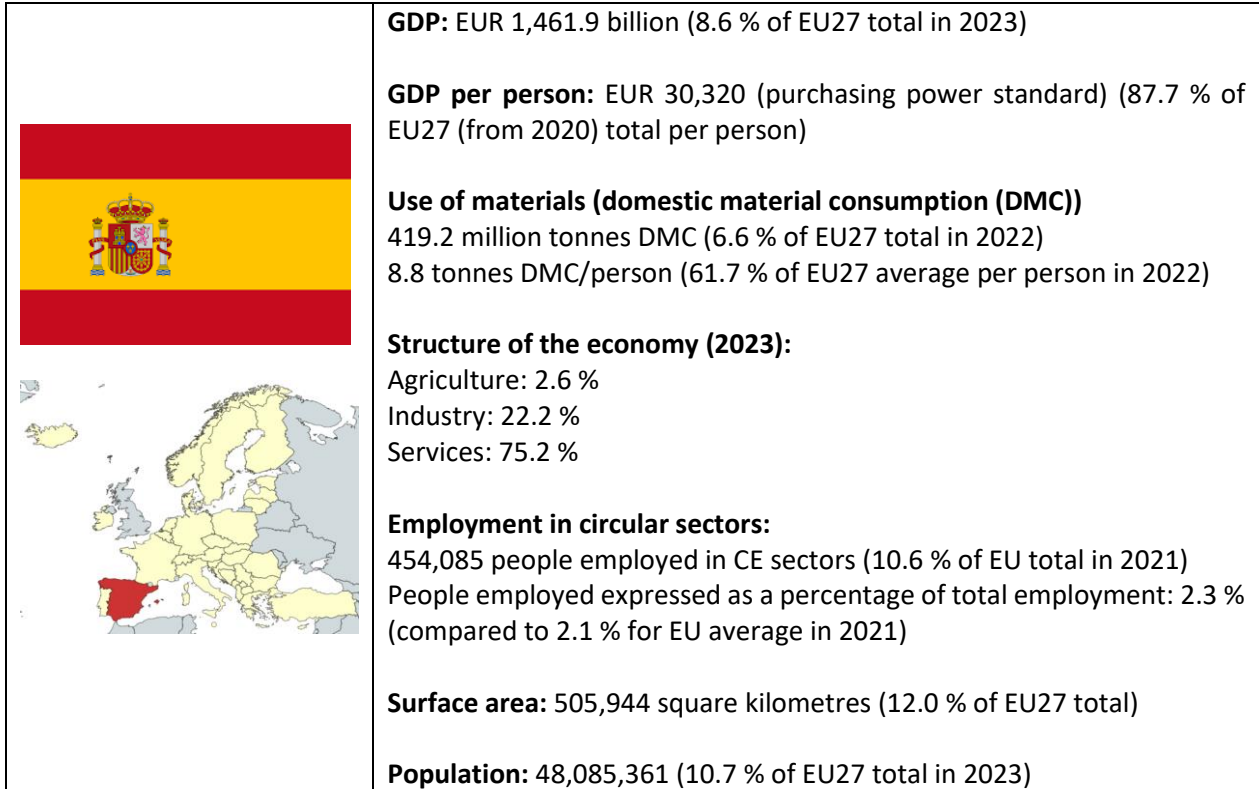
² [Resource efficiency and the circular economy in Europe 2019 — European Environment Agency \(europa.eu\)](https://europea.europa.eu/en/press-releases/2019/06/19-06-2019)

³ [Country profiles on Circular Economy in Europe — Eionet Portal \(europa.eu\)](https://europea.europa.eu/en/press-releases/2022/06/22-06-2022)

⁴ [draft-report-for-dg-env_final.pdf \(europa.eu\)](https://europea.europa.eu/en/press-releases/2022/06/22-06-2022)

The information is current as of September 2024, when members of Eionet verified the content of this profile.

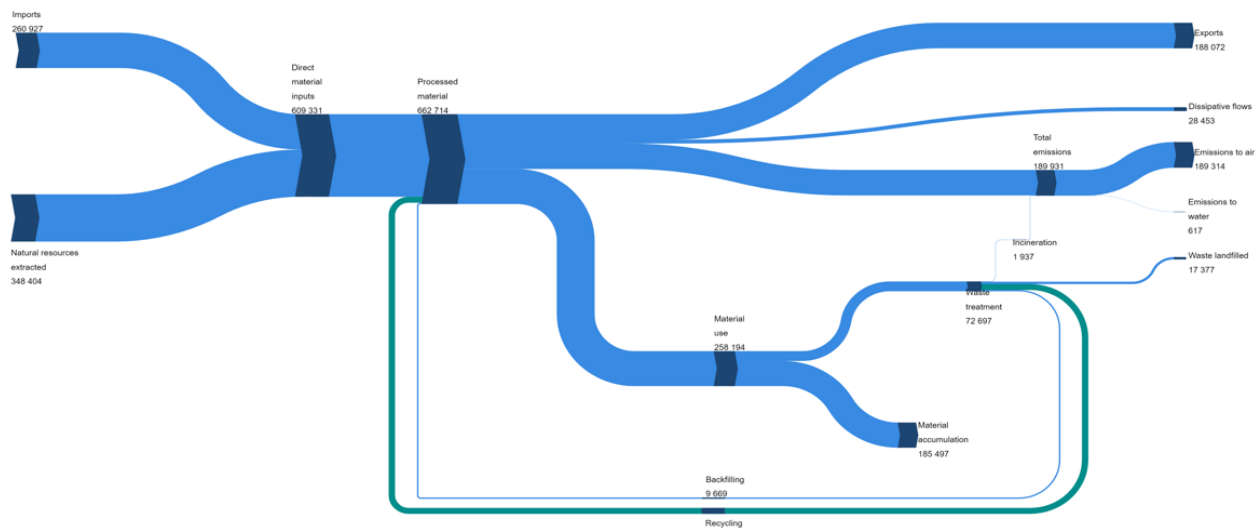
Spain– facts and figures



Note: all definitions and metadata used in this profile are taken, as shown, from Eurostat

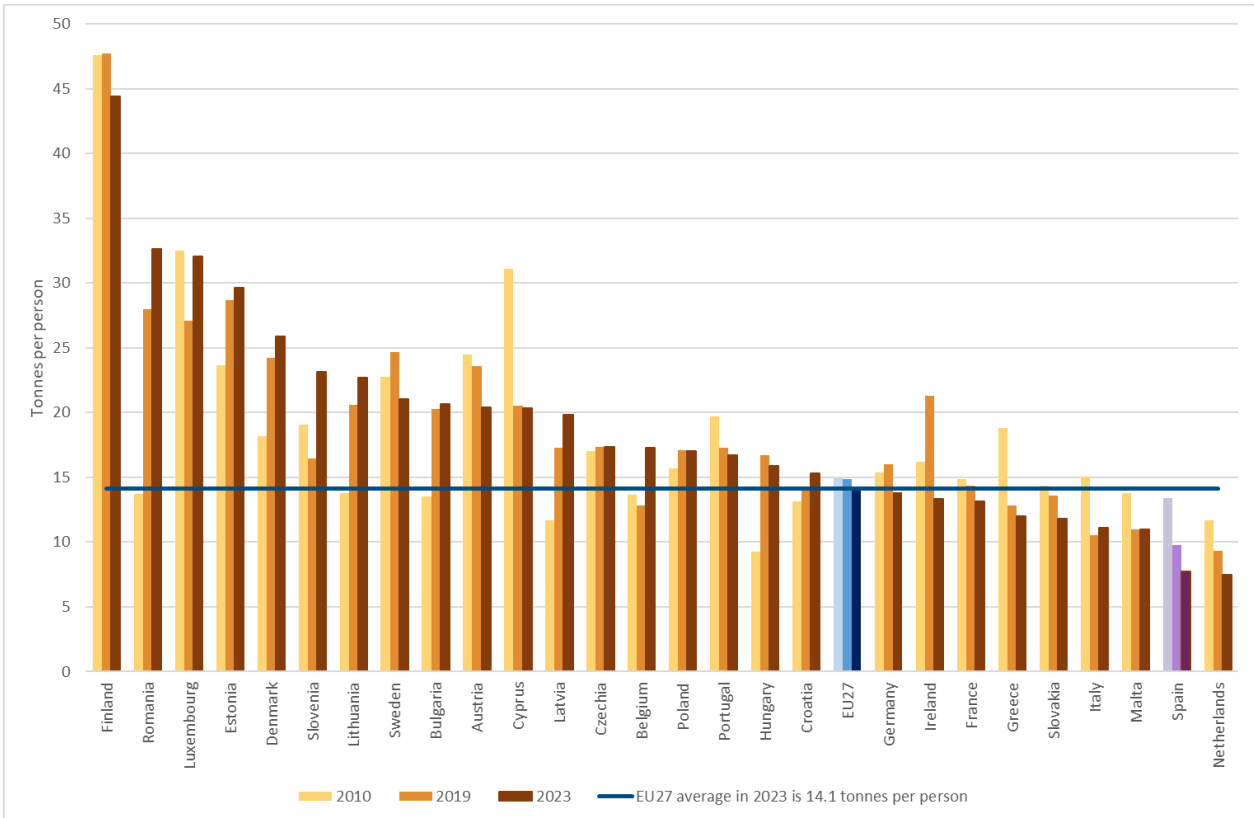
Source: Eurostat datasets, EU27 2021 EU27 2022 and EU27 2023 (accessed 21 August 2024)

Figure 1 Material flow diagram for Spain in 2022, thousand tonnes



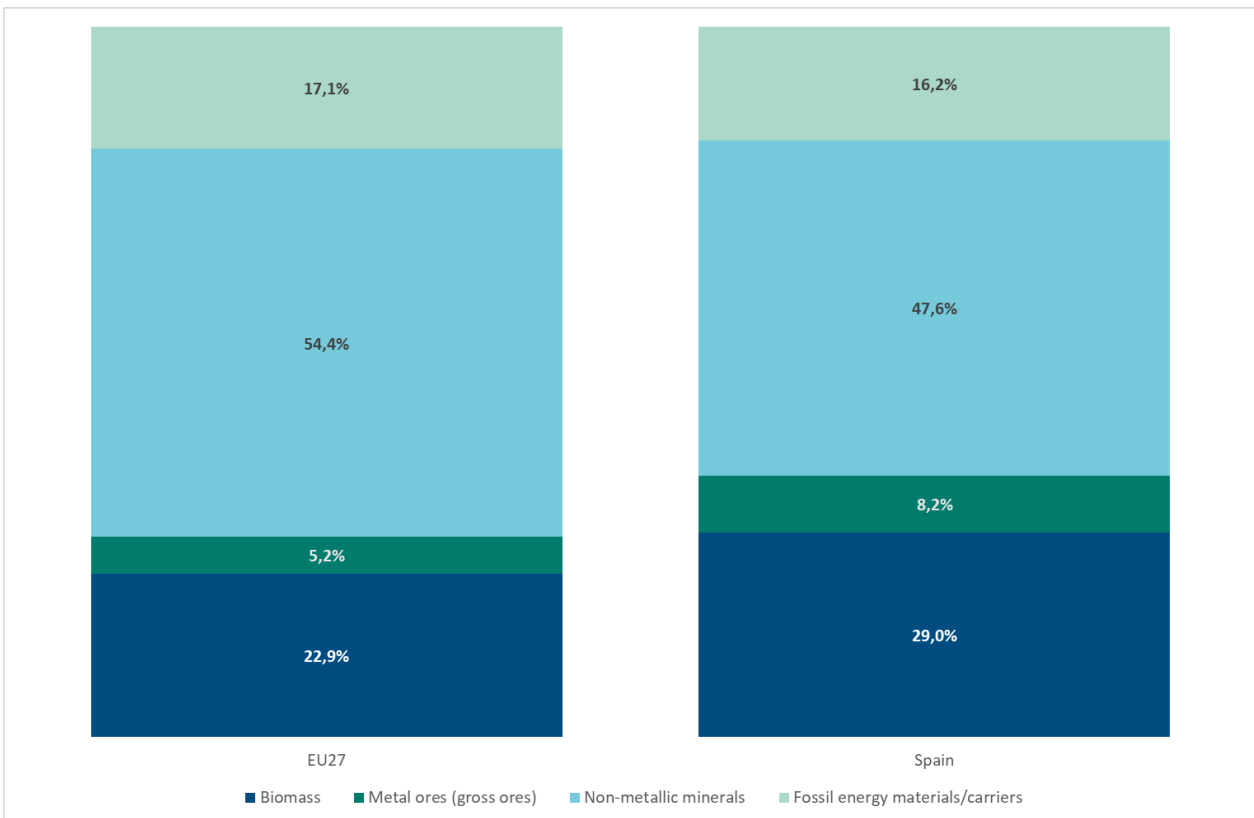
Source: Eurostat (2024) [env_ac_mfa], [env_ac_sd], [env_wassd] (accessed 21 August 2024)

Figure 2 Material footprint (raw material consumption), 2010,2019 and 2023, tonnes per person



Source: Eurostat (2024) [env_ac_rme] (accessed 21 August 2024)

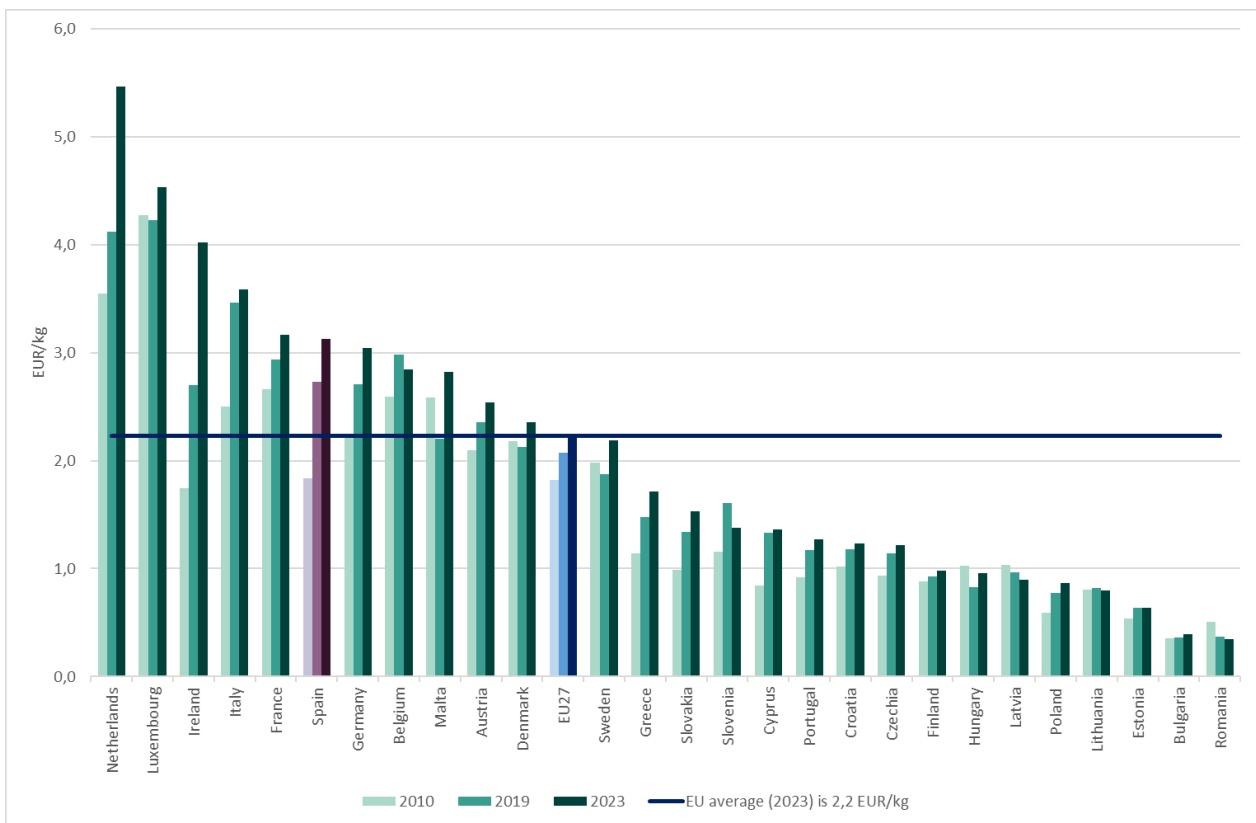
Figure 3 Domestic material consumption by selected material category, EU and Spain, 2023, per cent



Note: totals may not sum to 100 % due to rounding

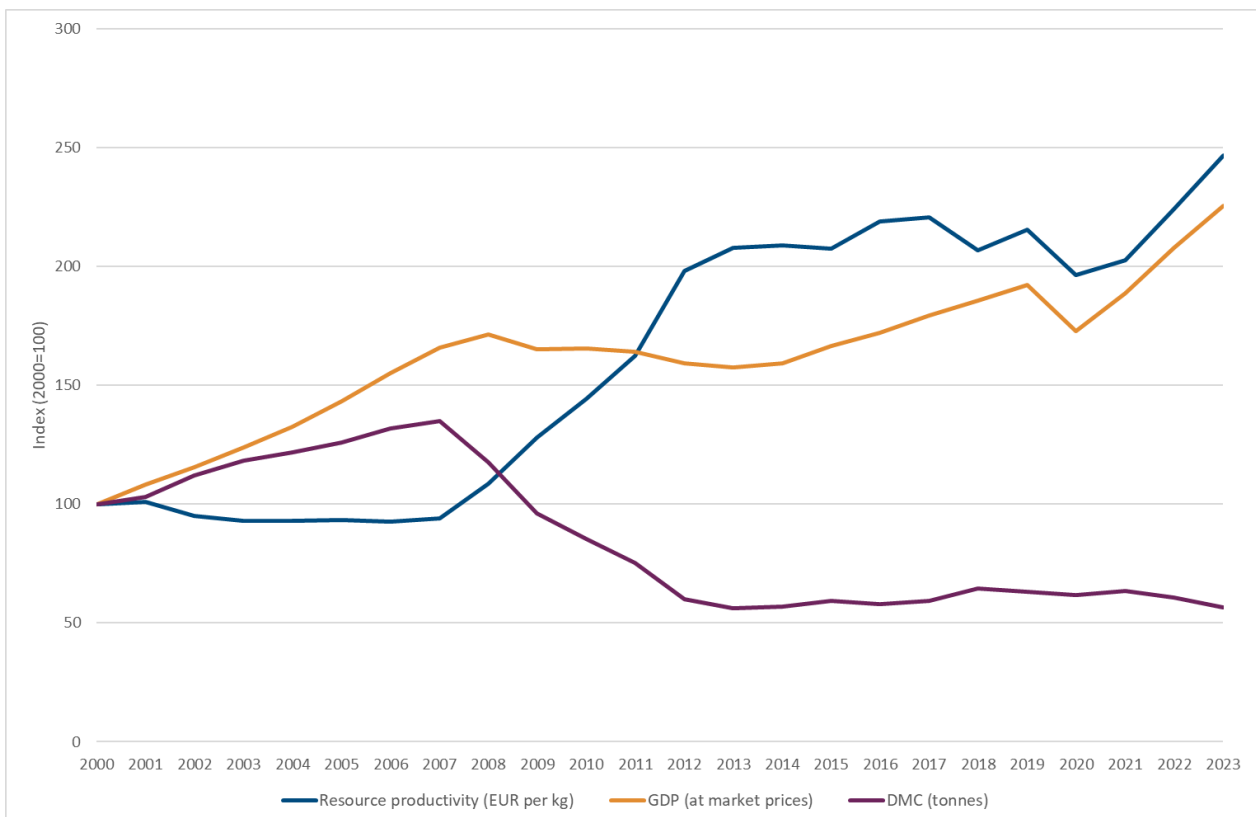
Source: Eurostat (2024) [env_ac_mfa] (accessed 21 August 2024)

Figure 4 Resource productivity (gross domestic product/domestic material consumption), EU27, 2010, 2019 and 2023, EUR per kilogramme



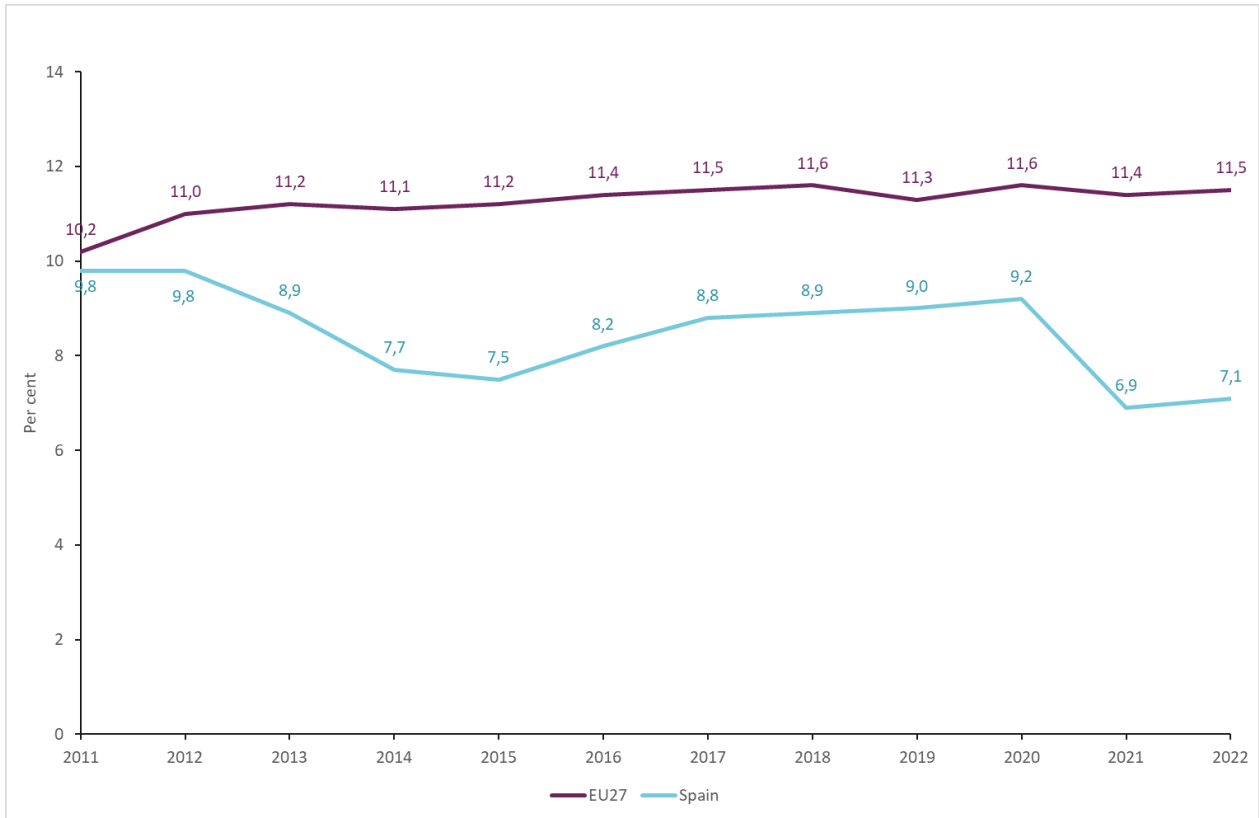
Source: Eurostat (2024) [env_ac_rp] (accessed 21 August 2024)

Figure 5 Gross domestic product, domestic material consumption and resource productivity trends, Spain, 2000–2023, index (2000=100)



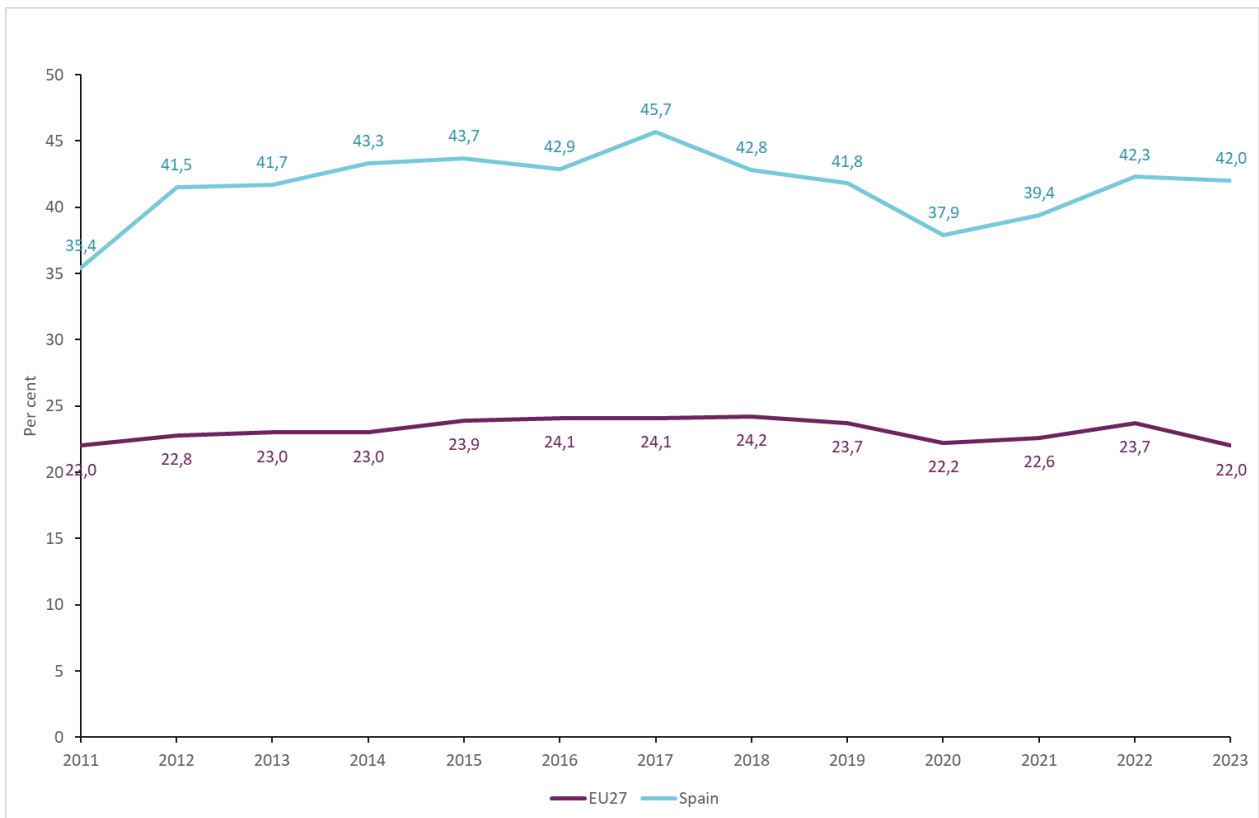
Source: Eurostat (2024) [env_ac_mfa], [env_ac_rp] & [nama_10_gdp] (accessed 21 August 2024)

Figure 6 Circular material use rate in Spain, 2011–2022, per cent



Source: Eurostat (2024) [env_ac_cur] (accessed 21 August 2024)

Figure 7 Material import dependency in Spain, 2011-2023, per cent



Source: Eurostat (2024) [cei_gsr030] (accessed 21 August 2024)

Existing policy framework

Dedicated national and/or regional strategy, roadmap or action plan for circular economy

Action Plan at National level

- **First Circular Economy Action Plan 2021-2023**

As previously stated in the 2022 Country Profile ⁽⁵⁾, the period of validity for the **First Circular Economy Action Plan** concluded in December 2023. Currently, a **final report is being prepared** to analyse all the information reported by the different participating units and the results of this evaluation will be available shortly. However, the First Action Plan **mid-term assessment has demonstrated a high degree of progress in the implementation of the measures**, since out of a total of 116 measures, approximately three quarters had been implemented or are being implemented.

- **Second Circular Economy Action Plan 2024-2026**

The Spanish Circular Economy Strategy "Spain 2030" ⁽⁶⁾ is being implemented in successive triennial action plans. Following the completion of the First Circular Economy Action Plan 2021-2023, **work is currently underway on the Second Circular Economy Action Plan 2024-2026**, which is expected to be published in the second half of 2024.

The Second Circular Economy Action Plan is expected to contain a total of 88 measures. It follows the same structure as the First Circular Economy Action Plan 2021-2023 and measures are divided into five axes (production, consumption, waste management, secondary raw materials, water reuse and purification) and three lines of action (awareness-raising and participation, research, innovation and competitiveness, employment and training).

As for the First CE Action Plan, the evaluation and monitoring of the Second CE Action Plan is sustained by two different indicators frameworks. The information regarding these indicators is fully provided in the Section "Monitoring and targets".

Regional Circular Economy Strategies and Action Plans

- **Andalusia region**

Law 3/2023 on the circular economy in Andalusia ⁽⁷⁾: this regional regulation was approved in April 2023 and came into force in May 2023. The principles and objectives of the law will be integrated into the development of planning instruments, including the creation of new sectoral and territorial plans at the regional and local level, as well as into the review of existing planning instruments.

This law establishes the Andalusian Circular Economy Office and introduces some new provisions related to green public procurement.

The Andalusian Circular Economy Office promotes circular economy at a regional level and is responsible for incorporating it into regulations. The Office will also provide advice to local authorities and private enterprises. Another notable aspect of the law is the creation of the Andalusian public Registry of life cycle analysis, which allows for the voluntary registration of life cycle analysis of products, works or services carried out in Andalusia.

The law introduces some different measures concerning, beyond green public procurement policy, the Pay-as-you-go services, durability and reparability criteria, and bidding for products and services included in the life cycle analysis (LCA) register, especially for key products. Other measures are about, for instance, the use of biostabilized material or compost in gardening, the use of recycled material and sustainable production in textiles, the use of recycled or artificial aggregates in construction, etc.

⁵ https://www.eionet.europa.eu/etcs/etc-ce/products/etc-ce-products/etc-ce-report-5-2022-country-profiles-on-circular-economy/spain-ce-country-profile-2022_for-publication.pdf

⁶ Executive summary in English: https://www.miteco.gob.es/content/dam/miteco/es/calidad-y-evaluacion-ambiental/temas/economia-circular/200714eeec_resumenejecutivo_en_tcm30-510578.pdf

Full document in Spanish: https://www.miteco.gob.es/content/dam/miteco/es/calidad-y-evaluacion-ambiental/temas/economia-circular/espanacircular2030_def1_tcm30-509532_mod_tcm30-509532.pdf

⁷ [BOJA23-067-00055-6439-01_00281478.pdf](https://www.boja.es/boja/BOJA23-067-00055-6439-01_00281478.pdf) (juntadeandalucia.es).

- **Principality of Asturias**

Circular Economy Strategy of the Principality of Asturias 2023 – 2030 (Asturias Circular) ⁽⁸⁾, approved in March 2023. This document aims to facilitate the transition towards a circular economy through four programs (addressing production, consumption, resource recovery and innovation and training), each with 15 lines of action (eco-design, efficient manufacturing, sustainable construction, responsible consumption, food wastage, circular public procurement, preparation to reuse, technical materials, biomaterials, water, energy, innovation in materials and processes, circular ecosystems for new economic activity, training for the circular economy, and awareness and dissemination) to achieve the defined strategic objectives.

The **strategic objectives** of Asturias Circular (to be achieved compared to current baseline data) are the following:

- O1 Increase efficiency in the extraction, transformation and use of resources:
 - Double the circularity index (circular material use rate) of Asturias by 2030.
 - Reduce the intensity of use of current materials by 30 %.
 - Reduce food waste by half in household and retail consumption and by 20 % in production and supply chains.
- O2 Maximum material recovery of waste and generation of new secondary raw materials:
 - Achieve 50 % material recovery of waste.
 - Increase the market for secondary raw materials by up to 5 %.
- O3 Use of new resources as alternative energy sources:
 - Double energy production of renewable gases from waste.
- O4 Promote the bio-economy:
 - Increase material recovery and annual production of materials from bioeconomy sectors by 20 %.
- O5 Use water efficiently and sustainably:
 - Increase water use efficiency by 10 %.
 - Increase recycled water by 20 %.

The strategy and the objectives included have a temporal scope of 2030, which aligns them with the Spanish Circular Economy Strategy and the United Nations' Sustainable Development Goals (SDGs).

- **Balearic Islands**

- **Moving towards a circular tourism system in the Balearic Islands** ⁽⁹⁾, published in March 2023. This document outlines the framework for implementing the Circular Economy Plan of the Balearic Islands in the tourism sector in six environmental areas (water, energy, materials, food, mobility and territorial management, both land and marine).
- **Law 3/2022 on urgent measures for promoting sustainability and circularity in tourism in the Balearic Islands** ⁽¹⁰⁾. The **objectives** of the law are as follows:
 - a) Reduce waste generation by 10 % before 2021 and 20 % before 2030 compared to 2010, based on kilograms per inhabitant and year, in line with the human pressure index (HPI).
 - b) Increase, before 2021, at least up to 50 %, by weight of each fraction, the joint preparation for reuse and recycling of materials from domestic and commercial waste. This percentage will have to be 65 % in 2030.
 - c) Recycle at least 75 % of non-industrial packaging waste before 2030.
 - d) Increase the preparation for reuse, recycling and material recovery of non-hazardous waste from construction and demolition, excluding category 17 05 04 (i.e. non-hazardous soil and stones), to at least 70 % by weight, before 2021. This percentage will have to be 80 % by 2030.
 - e) Achieve, before 2025, 3 % of preparation for the reuse of the total domestic waste managed, and 5 % by 2030. The aforementioned percentages will be achieved equally and separately for

⁸ <https://medioambiente.asturias.es/documents/646140/0/Estrategia+Asturias+Circular+2023-2030.pdf/f9b5d692-f4ee-f313-431d-0d6c634b394e> (in Spanish).

⁹ impulsabalears.org/pdf/general/BALEARS_CIRCULAR_ES.pdf (in Spanish).

¹⁰ [BOE-A-2022-13846-consolidado.pdf](https://boe-a-2022-13846-consolidado.pdf) (in Spanish).

commercial and industrial waste, without taking into account the organic fraction of domestic waste and pruning.

- f) Reduce food waste by up to 50 % by 2030 compared to 2020.
- g) Implement a strategy for the reuse and marketing of parts and components from out-of-use vehicles, with a target of at least 10 % of the total weight of the treated vehicles by 2021. By 2026, this percentage will have to increase to 15 %, and by 2030, up to 20 %.
- h) Establish a maximum percentage of 10 % in the disposal of waste through landfilling before the year 2030.
- i) The catering sector is to achieve the following beverage container reuse objectives by 2030: 1) bottled water containers: 40 %; 2) beer containers: 80%; and 3) soft drink containers: 70%.
- j) By 2030, achieve 15 % reuse rate of municipal packaging waste - other than restaurants and catering services.

- **Cantabria**

Draft Cantabrian Bioeconomy and Circular Economy Strategy (EcBEC). The general objective of the strategy is “to enhance the competitiveness and present and future resilience of Cantabria's territory through sustainable resource management, territorial cohesion and public-private collaboration”. Long-term strategic objectives have been established for 2030 and 2050 to achieve this goal. The preliminary strategy has been released for public information and is expected to be approved by 2024.

- **Castile and Leon**

Circular Economy Pact in Castile and Leon ⁽¹¹⁾, adopted in April 2024. The aim of this Pact is to engage society as a whole, including institutions and public and private entities, in promoting circular economy. This objective is achieved through the Declaration for the Circular Economy in the Region of Castile and Leon, which has been signed by the entities committed to the transition to a circular economy model. The Declaration aims to showcase the circular economy accomplishments and best practices by these entities. This will inspire society and the economic system as a whole. All signatories are committed to contributing to the objectives set out in the Circular Economy Strategy of the Region of Castile and Leon 2021-2030, by focusing their actions in three areas: planning and reporting, implementation of concrete actions, and communication and cooperation.

- **La Rioja**

La Rioja Circular Economy Strategy 2030 ⁽¹²⁾, approved in December 2022. The main aim of this strategy is to help La Rioja to achieve the “indicative objectives” proposed by the Spanish Circular Economy Strategy.

The strategy is divided into several axes corresponding to the priority productive sectors at the regional level (each of them has 16 specific lines). These axes include production, consumption; waste and wastewater management; and the secondary raw materials market. Production is divided into:

- the primary sector, including forestry, livestock, and agriculture subsectors, (particularly wine-growing, horticulture, and fruit-growing);
- the manufacturing sector, including the food and beverage industry; the wood, cork and furniture industry; the leather and footwear industry; the manufacture of metal products; and the manufacture of rubber and plastic products.

Moreover, there are three cross-cutting axes: awareness and participation; research, innovation and competitiveness; and employment and training.

The implementation of this strategy will be carried out through various action plans, so that the development of the First Circular Economy Action Plan of this strategy is planned for 2024.

¹¹ <https://medioambiente.jcyl.es/web/es/planificacion-indicadores-cartografia/pacto-economia-circular.html> (in Spanish).

¹² https://ias1.larioja.org/boletin/Bor_Boletin_visor_Servlet?referencia=23312379-1-PDF-550785https://ias1.larioja.org/boletin/Bor_Boletin_visor_Servlet?referencia=23312379-1-PDF-550785 (in Spanish).

- **Community of Madrid**

Law on Circular Economy of the Community of Madrid ⁽¹³⁾, approved in April 2024. The aim of this law is to establish the principles and regulations necessary for the effective implementation of the circular economy model in the Community of Madrid through the promotion of the efficient use of resources, extending the useful life of products, and ensuring the proper management of waste. This regulation will also contribute to sustainable economic growth by reintroducing waste into the production cycle as new resources. CE will be included in other local and regional plans, specifically, territorial and urban plans.

To achieve these objectives, the regional and local administrations will establish general guidelines for the following priority value chains: forestry, agri-food, and restaurant and catering services; construction, building, and infrastructure; electrical and electronic equipment and batteries; packaging; textile; transportation and mobility; and water.

Finally, the regulation focuses on a set of priority actions, including the following:

- Developing industrial symbiosis and public-private collaboration.
- Promoting life cycle analysis (LCA) as a methodological tool for assessing the environmental impact of different products, works or services and organizations throughout their life cycle.
- Implementation of information and traceability systems for the materials and waste flows.
- Supporting measures for an economy of functionality and service, through pay-as-you-go, and measures to facilitate the reparability of products, such as consumer access to spare parts and repair services to extend their useful life.
- Supporting measures to minimize the disposal of unsold products, in compliance with the waste hierarchy, in order to achieve the best environmental result.
- Promotion of the circular economy in public procurement, preferably in the following areas:
 - a) Reduction of water or energy consumption, including through technical requirements and levels of environmental behaviour, to be followed by contractors in the execution of the service. These measures shall include, where possible, the use of recycled water, the use of rainwater, energy efficiency or the use of energy from renewable sources.
 - b) The use of aggregates or other products from the recycling of construction and demolition waste or the recycling of other inorganic waste, in accordance with the provisions of applicable regulations in works and construction contracts. The legislation mandates the utilisation of a minimum proportion of 10% of the total aggregate materials employed in the project.
 - c) The use of a minimum percentage of rubber dust from the recovery of scrap tyres in contracts related to the paving of the motorway network of the Community of Madrid (specifically when the rubber is added to the bitumen -wet route-, according to the requirements outlined in the General Technical Requirements for Road and Bridge Works Specifications - PG3).
 - d) Use of recycled bituminous mixtures: it is required to use recycled asphalt containing at least 15 % by weight of recycled bituminous material.

- **Valencian Community**

Law 5/2022, of November 29/2022, on Waste and Contaminated Soil for the Promotion of the Circular Economy in the Valencian Community ⁽¹⁴⁾. The aim of this law is to establish the legal framework for waste prevention, production, and management, as well as the principles governing contaminated soils and to develop the instruments that promote the transition towards a circular economy in the Valencian Community.

The law establishes various entities related to waste and circular economy, such as the Valencian Agency for Waste and Circular Economy. This agency is responsible for waste management planning and compliance at the regional level. The Valencian Community Environmental Fund for Waste Policy and Circular Economy has been established to finance projects, processes, actions, infrastructures, and facilities that promote the circular economy and prevent waste generation.

¹³ <https://www.boe.es/caa/bocm/2024/097/m00011-00042.pdf> (in Spanish).

¹⁴ <https://www.boe.es/buscar/pdf/2023/BOE-A-2023-3348-consolidado.pdf> (in Spanish).

The law also established the following **objectives for the reduction of municipal waste in landfills** for each of the administrative areas of the Community of Valencia, without prejudice to the provisions of the Basic State Regulations on Waste ⁽¹⁵⁾:

- From 1 January 2025, the total amount of municipal waste landfilled shall not exceed 28 % by weight of the total amount of municipal waste generated.
- From 1 January 2030, the total amount of municipal waste landfilled shall not exceed 20 % by weight of the total amount of municipal waste generated.
- From 1 January 2035, the total amount of municipal waste landfilled shall not exceed 10 % by weight of the total amount of municipal waste generated.

Likewise, and also without prejudice to the provisions of the Basic State Regulations on Waste, the following **objectives are established to reduce the landfilling of the residual fraction of domestic and municipal waste** for each of the Valencian Community valorisation (i.e. recycling) plants:

- By 31 December 2022: the amount of residual waste destined to landfill must not exceed 44 % by weight of the residual fraction of waste input to the recovery plant.
- Since 31 December 2025: the amount of the residual fraction of the waste destined to landfill shall not exceed 36 % by weight of the residual fraction waste input to the recovery facility.
- Since 31 December 2028: the amount of the residual fraction waste destined to landfill shall not exceed 30 % by weight of residual waste input to the recovery facility.
- Since 31 December 2030: the amount of the residual fraction of waste destined to landfill shall not exceed 20 % by weight of residual fraction of waste input to the recovery facility.
- Since 31 December 2035: the amount of the residual fraction of waste destined to landfill shall not exceed 17 % by weight of the residual fraction of waste input to the recovery facility.

Dedicated local strategy, roadmap or action plan for circular economy

Several circular economy initiatives have been implemented at the local level. In the following some examples are provided.

- **The Local Urban Agenda and Fuenlabrada Action Plan** ⁽¹⁶⁾ were developed by the Fuenlabrada City Council in mid-2022. Fuenlabrada is a major city in the Madrid metropolitan area and has a high concentration of companies involved in waste recycling and treatment within its municipal boundaries. Furthermore, circular economy was identified as a key priority, encompassing a range of initiatives such as the industrial strategy, circular economy practices in waste management and in the refurbishment of industrial estates. Additionally, a circular economy director was appointed, with extensive expertise in this area.
- **The Action Plan of the Urban Agenda 2030 for Gijón** (Asturias) ⁽¹⁷⁾ includes proposals to achieve objective 10 of the Urban Agenda “Sustainable management of resources and circular economy”. These proposals include promoting the materials cycle, implementing a municipal circular economy strategy, establishing circular purchasing regulations, developing waste and by-product exchange networks between companies, establishing a strategy of proximity consumption, and promoting the compact city model.

¹⁵ Law 7/2022, on waste and contaminated soil for a CE

<https://www.miteco.gob.es/content/dam/mitesco/es/calidad-y-evaluacion-ambiental/sgecoci/Law%20on%20waste%20and%20contaminated%20Soil%20for%20a%20circular%20economy.pdf>

¹⁶ <https://fuenlabrada2030.es/wp-content/uploads/2022/09/au-fuenlabrada-2030-plan-de-accion.pdf> (in Spanish).

¹⁷ https://drupal.gijon.es/sites/default/files/2022-09/PLAN%20DE%20ACCI%C3%93N%20LOCAL%20AGENDA%20URBANA%20DE%20GIJ%C3%93N%20XIX%20XIX%202030_0.pdf (in Spanish).

Gijón has also developed the **Circular Economy Action Plan in the Tourism Sector of the city of Gijón** ⁽¹⁸⁾, which is divided into four priority axes (management and planning of circular tourism; efficient energy management and reduction of CO₂ emissions; efficient water and waste management; and responsible consumption and circular tourism offer), strategic lines and associated actions.

- **Circular Economy Strategy of Malaga City Council (Andalusia)**. This Strategy sets out the priorities at the local level, related to both service delivery and public procurement. The Strategy is structured around five strategic objectives:
 - Integrate the circular dimension into local urban policies in a coordinated way.
 - Create an enabling environment that facilitates the circular transformation of the local productive fabric.
 - Promote cooperation and awareness to change the current 'make, use and throw away' economic model.
 - Invest in innovation, infrastructure and skills.
 - Manage resources efficiently to maintain their value in the economy for as long as possible.

In addition, **Malaga** is developing the **eCityMalaga project** ⁽¹⁹⁾, a public-private collaborative economic initiative in the Malaga TechPark. The initiative aims to make the city's Technology Park a benchmark for sustainability and circularity in energy, transport, building, and resources by 2027. It will be the first urban space to implement a circular city model. To achieve this goal, the park will implement several initiatives, including expanding its forested area threefold, cutting waste by 50 %, and integrating services into digital platforms like public lighting. The Circularity Academy was also set up with the aim of training and informing companies operating in the technology park about this initiative.

- **The city of Barcelona** is pursuing the development of a circular economy with the objective of achieving a state of 'zero waste'. In order to attain this goal, the municipal government is implementing the Zero-Waste Plan of Barcelona ⁽²⁰⁾, which encompasses a range of measures, including promoting and enhancing green points, exchange markets for promoting the reuse of different objects, responsible consumption, and reuse and recycling. Additionally, the city is applying environmental taxation instruments to waste, such as the household waste collection tax, and individualising municipal waste collection (e.g. through door-to-door collection and the use of smart containers) to improve selective collection of the organic waste fraction.

Circular economy policy elements included in other policies

Circular economy policy element	Included in policy
<p>The objective of the new strategy is to establish the basis for the transformation of Spanish tourism, so that it contributes to a sustainable and continuous growth, allowing Spain to maintain its position as a global leader. The available funds will be allocated to tourism companies to support energy efficiency and circular economy projects concerning, inter alia, waste reduction, waste separation systems, waste reuse, consumption of zero-kilometre products, and the improvement of the supply chain traceability.</p>	<p>Sustainable tourism strategy of Spain 2030, adopted in June 2022 (in Spanish)</p>

¹⁸

https://www.gijonturismoprofesional.es/files/shares/Sostenibilidad/Econom%C3%ADa_Circular/Plan%20de%20Acci%C3%B3n%20Circular_GIJON_d.pdf (in Spanish).

¹⁹ <https://www.pta.es/ecitymalaga/> (in Spanish).

²⁰

<https://bcnroc.ajuntament.barcelona.cat/jsui/bitstream/11703/130442/1/01%20Plan%20Residuo%20Cero%20Barcelona%20-%20Resumen%20Ejecutivo-es.pdf> (Executive summary in Spanish).

<p>This Plan has the following objective: promoting the circular bioeconomy, recognising the leading role of the forestry sector, which is based on the use of raw materials of biological origin and provides ecological products for the construction sector and a multitude of industrial and food applications, replacing the use of coal, gas, steel, concrete, plastics and other synthetic materials.</p>	<p>Spanish Forestry Plan 2022-2032, adopted in December 2022 (in Spanish; Executive summary in English)</p>
<p>Promote the circular economy in companies and entities of the Social Economy (Action 10.3 of the Strategy).</p>	<p>Spanish Social Economy Strategy 2023-2027, adopted in May 2023 (in Spanish)</p>
<ul style="list-style-type: none"> • Document on General Criteria for Fishing for Litter ("caladeros limpios"). • General criteria for the management of abandoned, lost or discarded fishing gears (ALDFG). • Promote the establishment of waste collection points in fishing ports and optimise the traceability and management of waste generated in ports. • Encourage projects to improve waste management on board fishing vessels or in aquaculture facilities. 	<p>Programmes of Measures for the Marine Strategies, second cycle (2018-2024; in Spanish)</p>
<p>The Strategy aims to enhance the competitiveness of the industry by strengthening its strategic autonomy through measures that promote R&D and innovation in a circular economy. The resulting competitiveness will encompass all areas that contribute to shaping the digital future in a circular economy, while also respecting climate neutrality and ensuring innovative capacity.</p>	<p>Spanish Science, Technology and Innovation Strategy, 2021-2027 (EECTI)</p>
<p>The Strategic Framework for Energy and Climate includes:</p> <ul style="list-style-type: none"> • The Climate Change and Energy Transition Law (in Spanish; adopted in May 2021): the fifth additional provision concerns the promotion of the circular economy. • The National Integrated Energy and Climate Plan (PNIEC; adopted in January 2020): this National Plan is also complemented by the Circular Economy Strategy and the Pact for CE. The links between decarbonisation and the circular economy will be addressed in various actions, such as: <ul style="list-style-type: none"> - Reducing the use of non-renewable natural resources. - Promoting guidelines that increase innovation and overall efficiency of production processes. These two actions are perfectly aligned with the decarbonisation and energy efficiency dimensions addressed in the PNIEC. • The Spanish National Climate Change Adaptation Plan 2021-2030 (adopted in September 2020): circular economy can contribute to reducing the risks of climate change. As we reduce our net consumption of resources and raw materials that are scarce as a result of climate change, our 	<p>Strategic Framework for Energy and Climate (in Spanish)</p>

<p>dependence on them decreases; the reduction of production and transformative processes can lead to lower environmental impacts, reducing stress levels on species and ecosystems, increasing their resilience to the effects of climate change and preserving ecosystem services; waste prevention also reduces the risks associated with waste management and treatment facilities, not to mention the necessary contribution of circularity to reducing GHG emissions.</p> <ul style="list-style-type: none"> • The Just Transition Strategy (adopted in July 2022): measures have been deployed to promote business development and activities that will help to create a diversified, sustainable economic model through support programmes for business projects and small investment projects that have already helped to create more than 1,200 jobs in the areas most affected by the closures of the thermal power stations, in various activities such as the circular economy, the agri-food industry and rural tourism. • The Long-Term Decarbonization Strategy (in Spanish; adopted in November 2020): energy efficiency policies are closely linked to the promotion of the circular economy. • Energy Security Plan “Plan +SE” (adopted in October 2022): various measures contribute to the transition to a circular economy, such as measure 42 (accelerating energy efficiency measures in the tourism and commerce sector) or measure 66 (management of sustainable materials - mineral raw materials). • The Roadmap for the development of offshore wind and marine energy in Spain (adopted in September 2022) aims to be an international and European benchmark in industrial capacities and in the whole value chain of these energies, contributing to European industrial leadership in this field, developing capacities to take advantage of employment opportunities, and generating value chains throughout the life cycle with a Circular Economy perspective. 	
<p>The Roadmap for the sustainable management of mineral raw materials aims at strengthening the strategic autonomy of the country and the security of supply of key raw materials for the energy transition and digital development.</p> <p>To face the new geopolitics of raw materials and guarantee the success of the ecological transition, the Roadmap is aligned with European policies on raw materials (such as the EU Action Plan on Critical Raw Materials and REPowerEU), and with national instruments, such as the National Security Strategy or the Long-Term Decarbonisation Strategy 2050.</p> <p>The Roadmap contemplates four strategic orientations, and in the first place, it promotes efficiency and circular economy in the value chains of the supply of mineral raw materials, integrating and</p>	<p>Roadmap for the sustainable management of mineral raw materials, adopted in August 2022</p>

<p>specifying the objectives and lines of action of the Spain Circular 2030 Strategy for the extractive industry.</p>	
<p>In the context of the Spanish Urban Agenda, the Law on Quality in Architecture has been approved. The principle of quality in architecture requires the optimal management of resources, including the use of secondary raw materials; the precise application of materials and construction solutions based on the principle of circularity; planning throughout the life cycle of the building, from the design phase to demolition; reuse and recycling of the materials used.</p>	<p>Spanish Urban Agenda, adopted in February 2019 and Law on the Quality of Architecture, adopted in June 2022 (in Spanish)</p>
<p>The Regulation focuses on food waste prevention and awareness raising and establishes human consumption of food as an absolute priority.</p> <p>Objectives:</p> <ul style="list-style-type: none"> - Prevent and reduce food loss and waste by all actors in the food chain. - Establish a hierarchy of priorities. - Facilitate food donations. - Achieve more sustainable production and consumption; and raise awareness. - Proper food management. <p>The future bill introduces a priority hierarchy to avoid food waste.</p> <p>All the actors in the food chain must prepare a plan for the prevention of food loss/waste that allows identifying where the losses occur and implementing measures to minimize them and assign the food to alternative uses, following a hierarchy of priorities adapted to each case.</p> <p>The initiative also establishes measures of good practices, such as encouraging the sale of products with low aesthetic value, as well as the consumption of seasonal, local or organic products, or the adjustment of the best before dates to the need of preventing waste.</p>	<p>Draft Bill on the Prevention of Food Loss and Food Waste (in Spanish). The law will come into force on 2 January 2025, once approved.</p>

Monitoring and targets

Assessment of circular economy performance

The European Commission has set up a [monitoring framework](#) to keep track of progress towards a circular economy. This framework provides a holistic view as it:

- measures direct and indirect benefits of 'becoming circular' and
- values the contribution of a circular economy in living well within the limits of the planet
- addresses energy and material supply risks.

It consists of **5 thematic sections** with a total of **11 statistical indicators**, some of which have additional sub-indicators. In some cases policy targets exist which should be achieved in the future, and the indicators monitor progress towards these targets. The current monitoring framework is a revision of the original framework which was set up in 2018.

This section elaborates on the assessment of the Spain its progress in terms of observed trends over the last 5 years and what country characteristics or policy actions may explain differences between the country its performance and the average EU performance.

The circular economy monitoring framework for EU and Spain covers five thematic sections (production and consumption, waste management, secondary raw materials, competitiveness and innovation, global sustainability and resilience; see Table “Comparison of values and trends of the CE-Monitoring Framework indicators between Spain and the EU” below), as well as their subsections.

Analysed series include **data from 2016 to 2022**, depending on their availability and frequency of production (annual or biennial). In addition, it has been made a representation to appreciate trends and a calculation of their average and difference (measured as a percentage) **to compare Spain's situation with respect to EU average**. The analysis is carried out broadly and by thematic subsections, except for those specific indicators where there is a notable difference. Unavailable data are represented in the Table by black shaded boxes.

Before entering into the analysis, the following limitations must be noted:

- As it is normal, for most indicators Spain follows the same trend as the EU.
- With some exceptions, it is very difficult to attribute the cause for a change in the trend of such broad indicators to a specific issue or policy.
- The effects of the COVID-19 pandemic in 2020 and 2021 (and even in 2022) are reflected in many indicators’ trend and largely affect the period under analysis.

Production and consumption

With regard to the “Material consumption” subsection, **the trend of material footprint for the EU-27 average and Spain is inversely proportional**. This indicates that the discrepancy between Spain and EU-27 average has been gradually increasing.

Although the “Material footprint” indicator would require an in-depth study given its complexity, some points are raised that could explain the difference between Spain and EU-27 average. To this end, an analysis of the material consumption indicator in the Spanish economy by group (metallic minerals, non-metallic minerals, biomass and fossil fuels) ⁽²¹⁾ has been carried out, taking the last 15 years as a reference (a period that is influenced by the brick crisis of 2008). It emerges the following:

- **This indicator is highly influenced by the national reserves of different materials**, as well as their associated industry and commercial dynamics (the use of national raw materials or imports may alternatively prevail, depending on the market situation).
- As other EU countries with **large mineral reserves**, Spain is a country with a **large material footprint**.
- With reference to the material footprint, there is a wide disparity between the different material groups included in the indicator, so that the overall figure is distorted by the material groups characterised by **larger volumes of consumption**, such as **non-metallic minerals**. In addition, the statistics are also influenced by the mineral concentration processes, which usually take place in the country itself due to high transportation costs.

Since the group of non-metallic minerals is very relevant in Spain within the global material footprint data, this group has been analyzed in greater detail ⁽²²⁾. Some possible reasons of the high material footprint include the following:

- There is an important gypsum mining in Spain and the country is one of the main exporters, with a very high volume of trade.
- Spain is an important exporter of quality slate, although the traded volume is small.
- The export of ornamental rock is also relevant, although it depends on market demand.
- Spain is one of the main exporters of aggregates, although the demand for construction materials is currently not high (before the 2008 crisis, approximately 700,000 houses/year were built).
- Potash is exported for fertiliser production.

²¹

https://ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736176943&menu=ultiDatos&idp=1254735976603 (in Spanish).

²² https://www.miteco.gob.es/content/dam/miteco/es/energia/files-1/mineria/Estadistica/DatosBibliotecaConsumer/2021/Estadistica_Minera_Anual_2021.pdf (in Spanish).

- The **consumption of the biomass product group has remained stable** with a downward trend in the period considered, despite the population increase ⁽²³⁾ and the increase in the volume of exports of important materials produced by the agri-food sector. At first glance, it could be considered as an improvement in productivity of materials (more production covering the internal consumption of a larger population and more exports).
- From the trade balance perspective, the most influential group of products are **fossil fuels**, since it is the **most imported group of products in volume** in Spain. Even so, its consumption has been reduced in the last 15 years thanks, partially, to the energy policies based on renewables ⁽²⁴⁾.

On the other hand, **“Resource productivity” continues an upward trend, with Spain aligned with the rest of the EU.**

Regarding the **“Waste generation”** subsection, Spain follows the same trend as the EU in most indicators. It has to be highlighted that **waste generation per capita is almost 50 % below the EU-27 average** (based on 2022 data, awaiting publication).

Waste management

Except for specific fluctuations in some years, **recycling indicators trend is upward and similar to the EU-27 average**. Some differences emerge when specific waste flows are considered separately. In Spain, except for WEEE, **recycling of different packaging waste streams is increasing**, approaching the EU average, which follows a decreasing trend.

This shows that European waste directives and their successful incorporation into Spanish regulations are improving recycling rates to meet the established objectives, while gradually reducing waste disposal in landfills and incineration.

Additionally, waste management is expected to improve thanks to the investments, supported by the Spanish Recovery and Resilience Plan, in: separate collection of waste, new facilities for biowaste treatment, new facilities for preparing for reuse and recycling of separately collected waste (i.e. textile and plastic), new collection facilities (municipal recycling centres), and mixed municipal waste treatment facilities (only for the purpose of increasing resource efficiency or retrofitting to biowaste recycling operations).

Regarding the plastic packaging recycling rate, work is being done to strengthen the percentage of secondary raw material in plastic packaging placed on the Spanish market. This initiative will be extended to other streams and products (e.g. plastic bags).

Secondary raw materials

It is unclear why the **“Circular material use rate” indicator has recorded a change in trend respect to the EU-27 average**. One reason may be the **increase in the price of recycled materials**, which restricts their use to those products with a mandatory minimum recycled content. In this sense, the application of the forthcoming EU Ecodesign Regulation will be important to promote and energize the secondary raw materials market.

Competitiveness and innovation

Although **Spain’s indicators in this group show a very similar trend to the EU-27 average** and the number of Spanish people employed in circular economy is also aligned, it is worth highlighting the **large differences in terms of private investments and gross value added**. This situation may be partially reversed by the aid to circular economy provided by the PERTE (Strategic Projects for Economic Recovery and Transformation), which amounts to a total of 492 million Euros (over the years 2022-2026), with aid intensity ranging between 15 % and 60 % depending on the enterprise size.

²³

https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736177095&menu=ultiDatos&idp=1254735572981 (in Spanish).

²⁴ https://ine.es/prensa/cma_2022_fm.pdf (in Spanish).

In terms of innovation, the aid provided by the CE PERTE will also contribute to bringing Spain closer to the EU average, since it can also be used to finance the carrying out of industrial research projects, experimental development and business feasibility studies.

With regard to data/indicators on **employment in CE related sectors**, it has to be noted that the State Public Employment Service (SEPE), dependent on the Ministry of Labour and Social Economy, through its Occupations Observatory, periodically carries out **sectoral prospective studies** to find out which economic activities and occupations have the best employment prospects in the short and medium term. Thus, different sectors have been studied and, between 2018 and 2019, **a study on CE-related activities was developed**, with the aim of analysing the trends of the labour market, jobs with better prospects, as well as skills and training that are needed in the transition from the linear to the circular model.

This Report ⁽²⁵⁾, published in 2020, addresses a series of economic activities directly related to circular economy, such as: collection and treatment of wastewater; waste collection, treatment and recovery; decontamination activities; motor vehicle maintenance; repair of machinery, equipment and computers, household items and personal effects; rental of vehicles, machinery and other tangible assets; scrap metal and waste products wholesale trade, and second-hand goods retail trade. Information has also been collected on how the implementation of circular economy principles is impacting on large productive sectors, such as: agri-food sector; chemical industry; automobile industry; consumer goods (textiles and footwear); construction; and hospitality.

A detailed compilation of all these activities has been carried out, **covering more NACE codes ⁽²⁶⁾ than those considered by Eurostat for the “People employed in CE” indicator**, so it is considered that the results of this SEPE study more reliably reflect the employment situation linked to circular economy in Spain.

Based on this study, several indicators have been published in the Circular Economy Action Plans, including the following (year 2018):

- Number of workers trained in relation to circular economy in companies: 149,532 people.
- Gross added value of circular economy sectors: €25,329,104 million (equal to 2.11 % of GDP).
- People employed in circular economy sectors: 2.91 % of the total (549,815 people). This figure is significantly higher than the one provided by Eurostat (2.2 % in 2018 and 2.3 % in 2022).
- Number of companies included in CE-related activities: 64,036 companies.

In line with the 2020 Report, SEPE’s Occupations Observatory will prepare a new study on activities related to circular economy, with the additional objective of collecting updated information to establish indicators that serve as a reference to measure the evolution of CE-related economic activities.

A preliminary task to be undertaken by the study concerns the identification of CE-relevant economic activities. This will be done, by combining the analysis of (national and international) statistical sources with a field investigation based on interviews with institutions, entities, professional associations and companies involved in CE-related activities.

To facilitate this task, during the preparation of the second Circular Economy Action Plan, a review of circular activities was carried out, following the large expansion of NACE codes (more than 80) included in Commission Staff Working Document "Measuring progress towards the circular economy in the European Union – Key indicators for a revised monitoring framework" ⁽²⁷⁾, accompanying the communication COM(2023)306 final. The conclusion of this preliminary analysis is that currently, **in Spain, it is not feasible to cover all the economic activities within the circular economy proposed by the European Commission for the calculation of any indicator, because there is not sufficient disaggregated information.**

²⁵ <https://www.sepe.es/HomeSepe/que-es-el-sepe/comunicacion-institucional/publicaciones/publicaciones-oficiales/listado-pub-mercado-trabajo/economia-circular> (in Spanish).

²⁶ The 40 NACE codes included in the study are the following: 3311, 3312, 3313, 3314, 3315, 3316, 3317, 3319, 3600, 3700, 3811, 3812, 3821, 3822, 3831, 3832, 3900, 4520, 4540, 4677, 4779, 7711, 7712, 7721, 7722, 7729, 7731, 7732, 7733, 7734, 7735, 7739, 9511, 9512, 9521, 9522, 9523, 9524, 9525 and 9529.

²⁷ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=SWD%3A2023%3A306%3AFIN>

Comparison of values and trends of the CE Monitoring Framework indicators between Spain and the EU

Thematic sections		Circular economy indicator <i>(unit of measure)</i>	Region	2016	2017	2018	2019	2020 <i>(without UK)</i>	2021	2022	Trend	Average	Difference respect EU (%)		
PRODUCTION AND CONSUMPTION	Material consumption	Material footprint <i>(tonnes per capita)</i>	EU 27:			14,866	14,884	14,222	14,763	14,921		14,73	-30,10%		
			Spain:			11,016	10,280	10,040	10,350	9,797		10,30			
		Resource productivity <i>(€ per kg)</i>	EU 27:			2,0451	2,0719	2,0403	2,0648	2,1261		2,07	+26,99%		
	Spain:			2,6270	2,7359	2,4586	2,5243	2,7949		2,63					
		Green Public Procurement <i>(-)</i>	EU 27:												
			Spain:												
	Waste generation	Waste generation per capita <i>(kg per capita)</i>	EU 27:	5.074		5.235		4.815					5.041,33	-47,44%	
			Spain:	2.774		2.945		2.230					2.649,67		
		Generation of waste excluding major mineral wastes per GDP unit <i>(kg per 1.000 €)</i>	EU 27:	67		66		65						66,00	-5,05%
			Spain:	62		62		64					62,67		
Generation of municipal waste per capita <i>(Kg per capita)</i>		EU 27:			500	504	519	532	513				513,60	-9,27%	
		Spain:			475	472	449	467	467				466,00		
Food waste <i>(Kg per capita)</i>	EU 27:					130	131					130,50	-31,03%		
Spain:						90					90,00				
Generation of packaging waste per capita <i>(Kg per capita)</i>	EU 27:			173,84	173,25	177,49	177,87	188,69				178,23	-5,31%		
	Spain:			161,70	161,22	170,04	168,21	182,68				168,77			
Generation of plastic packaging waste per capita <i>(kg per capita)</i>	EU 27:			32,64	33,17	34,14	34,55	35,92				34,08	+5,03%		
	Spain:			34,53	35,37	35,75	36,00	37,34				35,80			

Thematic sections		Circular economy indicator <i>(unit of measure)</i>	Region	2016	2017	2018	2019	2020 <i>(without UK)</i>	2021	2022	Trend	Average	Difference respect EU (%)	
WASTE MANAGEMENT	Overall recycling rates	Recycling rate of municipal waste (%)	EU 27:			46,40	47,20	48,70	49,80	48,6		48,14	-18,70%	
			Spain:			34,80	38,00	<u>40,40</u>	<u>43,90</u>	38,6		39,14		
	Recycling rates for specific waste streams	Recycling rate of all waste excluding major mineral waste (%)	EU 27:	55		56,00		58,00					56,33	-16,57%
			Spain:	46		47,00		48,00					47,00	
		Recycling rate of overall packaging (%)	EU 27:		67,50	65,60	64,80	64,00	64,00				65,18	+5,95%
			Spain:		68,50	68,80	69,60	68,30	70,10				69,06	
		Recycling rate of plastic packaging (%)	EU 27:		41,70	41,40	41,10	37,60	39,70				40,30	+27,99%
	Spain:		47,90	50,70	51,50	51,40	56,40				51,58			
	Recycling rate of WEEE separately collected (%)	EU 27:		84,00	81,70	81,30	83,20	81,30				82,30	-0,90%	
		Spain:		83,10	86,20	79,70	85,80	73,00				81,56		
Thematic sections		Circular economy indicator <i>(unit of measure)</i>	Region	2016	2017	2018	2019	2020 <i>(without UK)</i>	2021	2022	Trend	Average	Difference respect EU (%)	
SECONDARY RAW MATERIALS	Contribution of recycled materials to raw materials demand	Circular material use rate (%)	EU 27:			11,60	11,30	11,60	11,40	11,5		11,480	-28,40%	
			Spain:			8,90	9,00	9,20	6,90	7,1		8,220		
	Trade in recyclable raw materials	End-of-life recycling input rates (EOL-RIR) (%)	EU 27:											
			Spain:											
		Imports from non-EU countries (tonnes)	EU 27:		4,0E+07	4,0E+07	4,1E+07	4,0E+07	4,1E+07				4,0E+07	-86,27%
			Spain:		5,8E+06	5,2E+06	5,8E+06	5,0E+06	5,9E+06				5,5E+06	
	Exports to non-EU countries (tonnes)	EU 27:		3,7E+07	3,7E+07	3,6E+07	3,7E+07	3,8E+07				3,7E+07	-94,05%	
		Spain:		2,6E+06	2,3E+06	2,0E+06	1,8E+06	2,2E+06				2,2E+06		
	Intra EU trade (tonnes)	EU 27:		8,5E+07	8,5E+07	8,5E+07	8,3E+07	9,2E+07				8,6E+07	-92,85%	
		Spain:		6,1E+06	5,9E+06	6,3E+06	5,8E+06	6,7E+06				6,1E+06		

Thematic sections		Circular economy indicator <i>(unit of measure)</i>	Region	2016	2017	2018	2019	2020 <i>(without UK)</i>	2021	2022	Trend	Average	Difference respect EU (%)
COMPETITIVENESS AND INNOVATION	Private investment, jobs and gross value added related to circular economy sectors	Private Investments <i>(million €)</i>	EU 27:		106.893	112.430	110.811	115.991	121.578			113.540,60	-95,17%
			Spain:		4.335	5.308	5.889	5.792	6.108			5.486,40	
		Persons employed <i>(% of total employment)</i>	EU 27:		2,0	2,0	2,0	2,1	2,1			2,04	+8,82%
	Spain:			2,1	2,2	2,2	2,3	2,3			2,22		
Gross value added <i>(million €)</i>	EU 27:		262.894	278.844	280.763	288.900	299.527			282.185,60	-92,41%		
	Spain:		19.142	20.543	22.452	22.057	22.931			21.425,00			
Innovation	Patents related to waste management and recycling <i>(number)</i>	EU 27:	325,76	309,21	316,13	385,71	206,55			308,67	-93,51%		
		Spain:	27,31	15,34	18,45	17,68	21,34			20,02			
Thematic sections		Circular economy indicator <i>(unit of measure)</i>	Region	2016	2017	2018	2019	2020 <i>(without UK)</i>	2021	2022	Trend	Average	Difference respect EU (%)
GLOBAL SUSTAINABILITY AND RESILIENCE	Global sustainability from circular economy	Consumption footprint <i>(planetary boundary)</i>	EU 27:			3,36	3,37	3,17	3,27	3,37		3,31	+2,72%
			Spain:			3,46	3,43	3,08	3,38	3,64		3,40	
	GHG emissions from production activities <i>(kg per capita)</i>	EU 27:		7.224,86	6.878,67	6.192,65	6.543,66	6.481,16			6.664,199	-24,20%	
		Spain:		5.688,64	5.286,03	4.559,96	4.797,27	4.925,20			5.051,420		
Resilience from circular economy	Material import dependency <i>(%)</i>	EU 27:		24,30	23,70	22,20	22,60	22,4			23,04	+77,17%	
		Spain:		42,80	41,80	37,60	39,10	42,8			40,82		
	EU self-sufficiency for raw materials <i>(%)</i>	EU 27:											
		Spain:											

Source: [Eurostat](https://ec.europa.eu/eurostat).

Notes:

- The two underlined figures in the section on the overall recycling rates show the most updated value provided by INE. Once refined after the statistical control, they will be reported shortly to Eurostat. Although the 2021 value is an estimate, the 2020 value is definitive.
- The Spanish punctuation system of thousands and decimal separators is maintained in this table.

Circular economy monitoring frameworks and their indicators beyond the ones from Eurostat

In Spain, **monitoring about CE is carried out within the framework of the Spanish Circular Economy Strategy**, which uses the same indicators set by the 2015 European CE Action Plan. As mentioned earlier, this document outlines generic indicators to be achieved by 2030, which will be implemented through three-year action plans. The **Circular Economy Action Plan establishes two types of indicators** ⁽²⁸⁾ to be met during its validity period:

- The **first type of indicators evaluates and monitors the progress made on the five axes and three action lines** by society as a whole. This will be done using a series of indicators included in First CE Action Plan (see Annex 1), which provide quantitative information based on the database of the National Statistics Institute (INE) and official registers.

Additionally, **three new indicators are planned to be included** in the monitoring framework of the forthcoming Second CE Action Plan. In line 2, the “Consumption Footprint” indicator has been added to reflect the environmental impact of consumption at a country level. Additionally, the “Green Public Procurement” indicator has been included to show the number of contracts that consider green or ecological criteria out of the total number of contracts formalized by public authorities. Finally, line 8 of the Action Plan "Employment and training" is monitored through a set of indicators of a more social nature, including the new indicator "Employment of women in NACE 38". This indicator provides information on the number of women employed in economic activities related to waste collection, treatment, disposal and recovery and is expected to cover more NACE codes as data collection and processing process are developed.

Both kinds of indicators (from the CE Strategy and Action Plans) are listed in Annex 1 and 2 of this document.

- On the other hand, there is a **second set of indicators in the forthcoming Second CE Action Plan to assess the degree of execution of the planned measures**. This system will be based on the use of result indicators, which will correspond to compliance targets for each of the measures included in the Action Plan undertaken by the General State Administration.

All these indicators and their sources can be consulted in the respective circular economy documents available on the MITECO's website ⁽²⁹⁾.

There is **another set of indicators (under development) more oriented to evaluate the perception and implementation of circular economy in Spanish business sector** through the signatory organisations of the Circular Economy Pact, which is presented within the Section “Examples of public policy initiatives”.

Finally, First Action Plan includes a tool to estimate the contribution of each measure to a low-carbon economy. The aim is to quantitatively assess the impact of implemented measures on reducing GHG emissions.

It has also to be noted that Autonomous communities can develop their own monitoring indicators for their regional circular economy strategies.

Circular economy targets

The **main objectives** related to the circular economy are those **established in the Spanish Circular Economy Strategy**. All these targets have a quantitative nature and have a general deadline of 2030:

- Reduce national material consumption relative to GDP by 30 % compared to 2010 levels.
- Reduce waste generation by 15 % compared to 2010 levels.
- Reduce food waste generation by 50 % per capita in retail and households and by 20 % in production chains and supply compared to 2020 levels.
- Increase reuse and preparation for reuse to 10 % of municipal waste generated.

²⁸ Currently, it is convenient to take the indicators of the Spanish CE Action Plan as the real monitoring framework of the CE in Spain (see note to Annex 1 Table).

²⁹ <https://www.miteco.gob.es/es/calidad-y-evaluacion-ambiental/temas/economia-circular/estrategia.html> (in Spanish).

- Improve water use efficiency by 10 %.
- Reduce GHG emissions to less than 10 million tons of CO₂ equivalent.

The new **Law 7/2022, on waste and contaminated soils for a circular economy** establishes a series of objectives that promote waste reduction, recycling, and reuse. These objectives include the following:

- Within the objectives set in the Waste Framework Directive (WFD) for the preparation for reuse and recycling of municipal waste generated (55 % by 2025, 60 % by 2030 and 65 % by 2035), a specific target has been established for **reuse** of textile waste, WEEE, furniture, and other reusable waste (at least 5 % by 2025, 10 % by 2030 and 15 % by 2035).
- In response to the rise in **single-use plastic** consumption the following **reduction targets** have been set with regard to cups and food containers:
 - By 2026, a 50 % reduction in weight compared to 2022 must be achieved.
 - By 2030, a 70 % reduction in weight compared to 2022 must be achieved.
- Furthermore, from 2023, for some of the above-mentioned plastic products delivered to the consumer, plastic packaging will have to be priced separately from the product and the price will have to be shown on the sales receipt.
- The Waste Framework Directive (WFD) sets targets for the separate collection of **plastic beverage bottles up to three litres** (70% by 2023, 77% by 2025, 85% by 2027 and 90% by 2029). If the targets for 2023 and 2027 are not achieved, a **deposit, return and refund system** for this packaging will have to be implemented throughout the country within two years to ensure that the targets are met in 2025 and 2029.
- Local entities must establish **separate collection of used cooking oils, hazardous household waste and bulky waste** (furniture and belongings) before December 31, 2024.
- In relation to **municipal waste**, by 2035, the percentage of **separately collected** municipal waste should be at least 50 % by weight of the total municipal waste generated.
- By April 2025, local authorities must establish a specific waste management fee, based on the quantity and type of waste generated, moving towards **pay-as-you-throw systems**.
- Additionally, on general terms, the destruction or landfilling of unsold surplus of non-perishable products such as textiles, toys or electrical appliances is prohibited.
- **Landfill reduction targets:**
 - By 2025, the amount by weight of municipal waste landfilled shall be reduced to 40 % or less of the total amount of such waste generated.
 - By 2030, the amount by weight of municipal waste landfilled shall be reduced to 20 % or less of the total amount of such waste generated.
- Regarding **waste from end-of-life vehicles**, qualitative objectives have been established. These include using renewable and recycled materials in vehicle manufacturing, improving the training of treatment centres and staff for the correct treatment of electric and hybrid vehicle batteries, and promoting the treatment of components that can be prepared for reuse and sold on the second-hand market.

The **final draft of the State Waste Management Framework Plan 2023-2035** is currently being prepared. In order to improve waste management, the Plan sets qualitative objectives, aligned with the new pieces of national waste regulations. Each objective is expected to be achieved within the specified period or by 2035 (when not otherwise indicated). The Plan aims to **prepare 75 % of non-hazardous construction and demolition waste for re-use, recycling, and other recovery operations**, including backfilling operations (excluding clean earth and stones).

At the end of 2022, a **new regulation on packaging and packaging waste** (Royal Decree 1055/2022 of 27 December on packaging and packaging waste) ⁽³⁰⁾ was adopted. This regulation outlines **new objectives**, including the following:

- **Reduce packaging weight** by 13 % in 2025 and 15 % in 2030 compared to 2010 levels.
- Ensure that all packaging placed on the market is recyclable by 2030 and, if feasible, reusable.

³⁰ <https://www.boe.es/buscar/pdf/2022/BOE-A-2022-22690-consolidado.pdf> (in Spanish).

- By 2030, the number of **single-use plastic beverage bottles** on the market should be reduced by 20 % compared to 2022.
- The goal for **beverage packaging in the hotel and catering sector (HORECA)** is to achieve a reuse rate of 30 % for packaged water containers, 80 % for beer containers, 60 % for soft drink containers, and 20 % for other beverage containers by 2025. By 2035, these targets should increase to 50 %, 90 %, 80 %, and 30%, respectively. These figures should be expressed in equivalent units, which correspond to containers with a capacity of 0.5 L.
- By 2030, 5 % by weight of the **total packaging consumed by households must be reusable**. By 2035, the objective will increase to 10 %.
- Similarly, 20 % and 30 % of total **commercial and industrial packaging by weight must be reusable**, respectively, by 2030 and 2035.
- By 2025, **extended producer responsibility systems for medicine packaging** must ensure separate collection by weight of at least 15 % of all medicine packaging waste. This target increases to 25 % by 2030 and 35 % by 2035. Additionally, recycling targets for medicine packaging of 10 % by 2025 and 15 % by 2030 must be met.

In order to achieve the above-mentioned objectives, a series of complementary measures, included in Component 12 "*Industrial Policy of Spain 2030*" of the Recovery, Transformation and Resilience Plan (RTRP), are being carried out. Specifically, these complementary measures concern the reform section C12.R2 *Waste policy and promotion of the circular economy* and the investment sections C12.I3 *Plan to support the implementation of waste regulations and the promotion of the circular economy* and C12.I5 *Aid scheme to support key sectors of the circular economy* (see the Section "Future policy plans").

Innovative approaches and good practices

Examples of public policy initiatives (national, regional or local)

➔ *Good practice national examples: Product-related policies, including on the R-strategies (repair, reuse, remanufacturing, etc.)*

- **Obsolescence studies**

In order to comply with the requirements established in Article 18 of Law 7/2022, of 8th April, to prevent the premature obsolescence of certain products, the Ministry for Ecological Transition and Demographic Challenge shall carry out specific studies that analyse the useful life of these products, and which serve as a basis for adopting measures aimed at preventing such obsolescence, reporting on this to the Council of Ministers and the Spanish Parliament within two years of the entry into force of the Law. In that sense, studies were prepared on the following products: washing machines, refrigerators, and printers. The work is planned to continue within the Second CE Action Plan.

Each report starts with a detailed analysis of the product characteristics and life cycle. In the second part, two products (a base case and an improved case) are compared from an environmental perspective (Life Cycle Analysis) and from an economic point of view (Life Cycle Cost Analysis), based on the extension or prolongation of the life cycle of the products through their durability, repairability and, indirectly, recyclability.

The studies encountered several limitations in terms of information and data quality. As a result, they have a strong theoretical background. Therefore, due to the lack of a common data base, Spain's suggestion is to evaluate products in a testing laboratory at European level, as the studies that have been carried out have only a theoretical nature.

- **Guide for the development of environmental criteria to be considered in the dismantling and repowering of wind power plants**

The guide ⁽³¹⁾, published in 2023, outlines recommended actions and best practices for dismantling and repowering wind power plants. This includes all the equipment that is part of such installations, from the wind turbines to the substations, control buildings and other infrastructures that make up a wind farm. It also covers current recycling processes and technologies and their state of development. This information aims to facilitate the understanding of how to manage waste generated at the end of a wind farm's useful life.

→ *Good practice national examples: Producer responsibility*

- **Register of Product Producer**

The electronic Waste Information System (eSIR) ⁽³²⁾ provides adequate information to monitor and control waste. One of the components of this system is the Register of Product Producer (created in 2018, apart from the EEE section that was created in 2005).

Producers have the obligation to provide information on the placing on the market of products affected by Extended Producer Responsibility (EPR). At the moment, operational sections consist of plastic bags, tyres, and packaging registers. Sections for used industrial oils and single-use plastics (SUP) are also planned in short/medium time.

- **Development of new EPR schemes.**

According to the Waste Law (Law 7/2022), textiles, furniture and furnishings, and non-packaging agricultural plastics EPR schemes will be developed within three years. Additionally, EPR on tobacco products with filters and filters marketed for use with tobacco products was subject to public consultation in April 2023 ⁽³³⁾ and the Draft Royal Decree on the management of waste from wet wipes and balloons containing plastic ⁽³⁴⁾ has been the subject of a prior public consultation (end of term 12 July 2024).

- **Study on the implementation of a Deposit and Refund System for mobiles**

The study analyses the technical and economic feasibility of implementing a reward-based collection system of small electrical and electronic equipment, such as old mobile phones, laptops, tablets, and accessories.

→ *Good practice national examples: Taxation*

The **Law 7/2022** introduces two economic instruments to reduce waste generation and improve its management.

- The **tax on non-reusable plastic packaging** ⁽³⁵⁾ aims to prevent waste; it is a special indirect tax implemented by the Ministry of Finance in January 2023, levied on the use of non-reusable plastic packaging in Spain. However, recycled plastic contained in non-reusable packaging is exempt, so the tax base is the quantity of non-recycled plastic, expressed in kilograms, contained in the products subject to the tax. The tax rate is €0.45 per kilogram of non-recyclable plastic contained in non-reusable plastic packaging.

³¹ [https://www.miteco.gob.es/content/dam/miteco/es/calidad-y-evaluacion-ambiental/sgecocr/documentacion/230321_Act.1.8_Gu%C3%ADa%20E%C3%B3lica%20\(maquetada\).pdf](https://www.miteco.gob.es/content/dam/miteco/es/calidad-y-evaluacion-ambiental/sgecocr/documentacion/230321_Act.1.8_Gu%C3%ADa%20E%C3%B3lica%20(maquetada).pdf) (in Spanish).

³² <https://www.miteco.gob.es/es/calidad-y-evaluacion-ambiental/temas/prevencion-y-gestion-residuos/flujos/envases/registro-productores-producto-seccion-envases.html> (in Spanish).

³³ https://www.miteco.gob.es/content/dam/miteco/es/calidad-y-evaluacion-ambiental/participacion-publica/230420prdtabacoversionfinal_tcm30-561443.pdf (in Spanish).

³⁴ <https://www.miteco.gob.es/content/dam/miteco/es/calidad-y-evaluacion-ambiental/participacion-publica/sgecocr/ecocr/240612%20Texto%20Consulta%20Publica%20Previa%20RD%20Toallitas%20H%C3%BAmedas%20y%20Globos.pdf> (in Spanish).

³⁵ <https://sede.agenciatributaria.gob.es/Sede/impuestos-especiales-medioambientales/impuesto-especial-sobre-envases-plastico-reutilizables.html> (in Spanish).

For more information on Title VII of Law 7/2022, "Tax measures to incentivise the circular economy", chapter I:

<https://www.miteco.gob.es/content/dam/miteco/es/calidad-y-evaluacion-ambiental/sgecocr/Law%20on%20waste%20and%20contaminated%20Soil%20for%20a%20circular%20economy.pdf>

- **Tax on the landfilling, incineration and co-incineration of waste** ⁽³⁶⁾. The use of this economic instrument is a key mechanism to achieve the targets for waste preparation for reuse and recycling. In order to guarantee uniformity in taxation between the autonomous communities and avoid the transfer of waste from one to another, the tax is configured as a common tax base applicable throughout Spain.

→ *Good practice national example: CE criteria in ecolabels and green public procurement (GPP)*

- **Promoting the European Union Ecolabel (Ecolabel)**: the EU Ecolabel has been promoted through the following actions:
 - Including Ecolabel as an award criterion in the Spanish GPP Plan ⁽³⁷⁾, adopted in 2019. Simultaneously, this topic is covered by the CE capacity building activities for public employees of the Ministry for Ecological Transition and Demographic Challenge to encourage the use of ecolabels in GPP. A GPP working group was set up which, in 2022, published a Guide for ecological edition ⁽³⁸⁾ to promote eco-publishing and ecological public procurement in official publications.
 - Award criteria (within the context of PERTE on CE, see L2 and textile and plastic calls within the Section “Future policy plans”).
 - Fostering the Ecolabel through specific or general dissemination campaigns, such as the following:
 - “Urge ecolabel in Chemicals” ⁽³⁹⁾,
 - I Conference on Ecoedition ⁽⁴⁰⁾ in the General State Administration (AGE), which recorded a high participation of consumers and manufacturers.
- The **national legal framework on public procurement** (i.e. the Act 9/2017, of November 8, on Public Sector Contracts – or LCSP - and the Royal Legislative Decree 3/2020) makes **GPP mandatory**, across all levels of government. More specifically, environmental considerations should be integrated across the different phases of the procurement procedure:
 - As conditions for the execution of contracts (art. 202 LCSP).
 - As technical specifications (art. 126.4 LCSP).
 - As technical or professional solvency requirements (art. 88 to 92 and 94 LCSP).
 - As award criteria. Notably, CE or environmental considerations should be integrated as qualitative criterion to better assess the relationship between quality and price (e.g. art. 145 LCSP).
 - As criteria to exclude abnormally low tenders (art. 149 LCSP).
 - As criteria for exclusion (article 71 LCSP).

Regarding to award criteria, in 2019, the **Green Public Procurement Plan 2018–2025** ⁽⁴¹⁾ was approved. The Plan's scope of action encompasses all public administrations. The Plan **sets out examples of environmental award criteria within a group of 20 priority goods, works and services in accordance with the EU Green Public Procurement**. As a novelty with respect to the European criteria, specific criteria have been included for holding events and conferences.

³⁶ <https://www.miteco.gob.es/content/dam/miteco/es/calidad-y-evaluacion-ambiental/sgecoci/Law%20on%20waste%20and%20contaminated%20Soil%20for%20a%20circular%20economy.pdf> For more information on Title VII of the Law 7/2022, "Tax measures to incentivise the circular economy", chapter II: <https://www.miteco.gob.es/content/dam/miteco/es/calidad-y-evaluacion-ambiental/sgecoci/Law%20on%20waste%20and%20contaminated%20Soil%20for%20a%20circular%20economy.pdf>

³⁷ <https://www.boe.es/boe/dias/2019/02/04/pdfs/BOE-A-2019-1394.pdf> (in Spanish).

³⁸ https://www.miteco.gob.es/content/dam/miteco/es/ministerio/servicios/publicaciones/libroecoedicion_digital_v5_tcm30-549217.pdf (in Spanish).

³⁹ https://www.miteco.gob.es/content/dam/miteco/es/calidad-y-evaluacion-ambiental/temas/productos-quimicos/los_quimicos_que_nos_rodean_web_tcm30-535678.pdf (in Spanish).

⁴⁰ https://www.youtube.com/watch?v=CGG8I4ujy_w (in Spanish).

⁴¹ <https://www.boe.es/buscar/act.php?id=BOE-A-2019-1394> (in Spanish).

The Plan incorporates the legal criteria related to sustainable production, including waste management and CE. It **integrates any novelty in EU criteria automatically without the need to approve them**.

Beyond these basic award criteria, other Ministries have developed specific sectoral criteria, as the following:

- Civil Guard's Supply Service (Ministry of the Interior): a minimum 50% recycled fibres in garments.
- Treasury: sustainability and CE award criteria to be included in Framework agreements ⁽⁴²⁾. Sustainability award criteria applied to different categories of vehicles, laptops and monitors, fuel, electricity service, software, supply of communications equipment, servers and storage systems. CE award criteria applied to printers, copiers and scanners, servers and storage systems, paper, audio-visual equipment, furniture.

→ *Good practice national examples: Industrial symbiosis*

- A key aspect of CE is the reintegration of Secondary Raw Materials (SRM) into the production cycle. This reduces the dependence on virgin raw materials, while ensuring the supply of environmentally and economically viable alternatives. In this sense, the term SRM is related to the legal concepts of **by-product and end-of-waste criteria**. Specific orders for SRM approval should be adopted to establish the conditions under which quality materials can be obtained and used. This will provide operators with a guarantee of the quality/characteristics of these products.

This approach enables waste from certain industries to be repurposed for other processes, creating synergies between sectors and fostering industrial symbiosis.

By-product (new provisions to promote regional symbiosis and reduced administrative burdens): on the one hand, **Law 7/2022** establishes the conditions under which a substance or object, resulting from a production process, the primary purpose of which is not the production of such substance or object, may be considered as a by-product and not as waste. As established in Article 4.5 of Law 7/2022, the Ministry for Ecological Transition and Demographic Challenge shall evaluate and declare a substance or object as a by-product, with general effect across Spain, in certain specific cases upon application by an autonomous community or ex officio.

On the other hand, Article 4.4 of Law 7/2022 ⁽⁴³⁾ sets out the circumstances under which the autonomous community is the competent authority for declaring a product or object a by-product. Once a product/object has been declared as a by-product, it must be included into the **Register of By-products of the Electronic Waste Information System** (still under preparation).

Above all, the assessment and approval of new by-products, where appropriate, shall be carried out either by the Ministry or by the autonomous community by means of an authorisation. Beforehand, the Waste Coordination Committee is informed. Prior to the approval, EU is notified according to Directive (EU) 2015/1535.

When a by-product declaration is operative, companies which generate by-products or those that use them must keep a date-stamped register.

⁴² <https://contratacioncentralizada.gob.es/acuerdos-marco> (in Spanish). Catalogue of framework agreements: <https://contratacioncentralizada.gob.es/catalogo> (in Spanish).

⁴³ Article 4.4 of Law 7/2022 establishes that the competent authorities of the autonomous communities shall evaluate and authorize, if appropriate, substances or objects to be considered as by-products when originating from a production facility located in their territory, provided that they are intended for a specific industrial activity or process in the territory of the autonomous community itself or, when intended for an activity or process in the territory of another autonomous community, following a favourable report from the latter, which shall be deemed to have been issued if there is no express and duly justified statement to the contrary within a period of one month. These authorisations shall only be valid for the authorised use of the by-product in the activity or industrial process of destination.

The Ministry's website ⁽⁴⁴⁾ provides access to the following information:

- List of applications for by-product declaration already evaluated ⁽⁴⁵⁾. The list comprises the 44 applications that have been evaluated by the Ministry for Ecological Transition and the Demographic Challenge, along with the final decisions. A considerable number of applications have been rejected on the grounds that they did not meet the required evaluation criteria.
- List of applications for by-product declarations under evaluation ⁽⁴⁶⁾. The list is a work in progress and will continue to evolve. Nevertheless, according to the most recent update (October 2022), the list includes 22 applications.
- List of applications for by-product declaration with ministerial orders in preparation ⁽⁴⁷⁾. Following their evaluation, in October 2022, a total of 9 applications were approved and work is underway to develop the necessary regulations to govern them.
- List of ministerial orders approving the by-products declarations, which concern residues from the agri-food industry, polyurethane foam scrap, residues of polymeric material and fatty pomace ⁽⁴⁸⁾.

End-of-waste status (new provisions to promote regional symbiosis and reduced administrative burdens): Article 5 of Law 7/2022 establishes that certain types of waste, which have undergone a recovery operation, including recycling, may cease to be waste, for the purposes of the Law, provided that all conditions listed in the article are met.

In addition, Article 5.3 states that if specific criteria have not been established by the EU or the Spanish Government, an autonomous community, upon request by the waste manager who must submit adequate documentation, may establish that waste recovered in a facility located within its territory ceases to be waste, so that it may be used in a specific activity or industrial process within the same autonomous community, or in another autonomous community, subject to a favourable report from the latter. In such cases, the authorisation shall cover specific criteria ⁽⁴⁹⁾ and, where necessary, set limit values for polluting substances, taking into account possible adverse impacts on human health and the environment.

⁴⁴ <https://www.miteco.gob.es/es/calidad-y-evaluacion-ambiental/temas/prevencion-y-gestion-residuos/comision-coordinacion/procedimiento-evaluacion-subproducto.html> (in Spanish).

⁴⁵ <https://www.miteco.gob.es/es/calidad-y-evaluacion-ambiental/temas/prevencion-y-gestion-residuos/comision-coordinacion/procedimiento-evaluacion-subproducto.html> (in Spanish).

⁴⁶ https://www.miteco.gob.es/content/dam/miteco/es/calidad-y-evaluacion-ambiental/temas/prevencion-y-gestion-residuos/solicitudesenevaluacion_tcm30-437572.pdf (in Spanish).

⁴⁷ https://www.miteco.gob.es/content/dam/miteco/es/calidad-y-evaluacion-ambiental/temas/prevencion-y-gestion-residuos/solicitudesinformadasfav_tcm30-509569.pdf (in Spanish).

⁴⁸ -Order APM/189/2018, of 20 February, determining when production residues from the agri-food industry intended for animal feed are considered by-products in accordance with Law 22/2011, of 28 July, on waste and contaminated soils.

-Order APM/397/2018, of 9 April, determining when polyurethane foam scrap used in the production of composite foams is considered a by-product under Law 22/2011, of 28 July, on waste and contaminated soils.

-Order TEC/852/2019, of 25 July, determining when residues of polymeric material used in the manufacture of agricultural film for silage are considered by-products in accordance with Law 22/2011, of 28 July, on Waste and Contaminated Soils.

-Order TED/92/2022, of 8 February, establishing that fatty pomace from oil mills is considered a by-product when it is intended for the extraction of crude olive pomace oil.

⁴⁹ Regulatory determination of the specific criteria shall include:

- a) Waste authorised as input material for the recovery operation.
- b) Authorised treatment procedures and techniques.
- c) Quality criteria for materials that cease to be waste after the recovery operation, in line with the applicable product standards, including limit values for pollutant substances, where appropriate.
- d) The requirements for management plans to demonstrate compliance with end-of-waste status criteria, in particular for quality control and self-monitoring and accreditation, where appropriate.
- e) The requirement to have a declaration of conformity.

The autonomous communities shall inform the Waste Coordination Committee and the waste production and management register of any declaration of end-of-waste status granted on a case-by-case basis. This information shall be made available to the public.

Currently, the Ministry's website ⁽⁵⁰⁾ provides access to the following information:

- End-of-waste projects under evaluation. In light of the last update, there are currently three projects under evaluation.
 - European regulations on end-of-waste criteria.
 - Approved ministerial orders on end-of-waste status ⁽⁵¹⁾ which concern processed waste oils, specific recovered fuels, processed used oils, recovered paper and cardboard, granulated rubber and rubber powder, and thermoplastic waste.
- **Market Impact Study on Secondary Raw Materials in Spain:** the aim of this study is to develop a mechanism to measure the impact of the implementation of the Ministerial orders on by-products and end-of-waste criteria approved by the General State Administration. Furthermore, this study supports the achievement of one of the main objectives of the CE, which is to extend the lifespan of materials in the production cycle. This can be achieved by incorporating materials and waste (provided that they have obtained the declaration of by-products and end-of-waste, respectively) in the same or in another production cycle, as appropriate.

The study, which is based on surveys of the companies benefiting from the approved orders, aims to **determine the actual implementation of the standards by the affected sectors and tries to estimate the volume of material that will be reintegrated into the production cycle as SRM** (Secondary Raw Materials).

The main conclusion of the study is that, with regard to specific compounds (such as polyurethane foams and polymeric materials), it is **challenging to ascertain the identity of the materials and actors involved**. In the case of fatty pomace, because of the considerable number of entities engaged in the utilisation of this substance, the survey only addressed the

⁵⁰ <https://www.miteco.gob.es/es/calidad-y-evaluacion-ambiental/temas/prevencion-y-gestion-residuos/comision-coordinacion/procedimiento-evaluacion-subproducto.html> (in Spanish).

⁵¹ -Order APM/205/2018, of 22 February, establishing criteria for determining when processed waste oil from the treatment of used oils for use as fuel ceases to be waste in accordance with Law 22/2011, of 28 July, on waste and contaminated soils.

-Order APM/206/2018, of 22 February, establishing criteria for determining when recovered fuel from the treatment of MARPOL type C waste for use as fuel in ships ceases to be waste in accordance with Law 22/2011, of 28 July, on Waste and Contaminated Soils.

-Order TED/363/2020, of 20 April, amending Order APM/205/2018, of 22 February, establishing criteria for determining when processed used oil from the treatment of used oil for use as fuel ceases to be waste in accordance with Law 22/2011, of 28 July, on Waste and Contaminated Soils, and Order APM/206/2018, of 22 February, establishing criteria for determining when recovered fuel from the treatment of MARPOL type c waste for use as fuel in ships ceases to be waste in accordance with Law 22/2011, of 28 July, on Waste and Contaminated Soils.

-Order TED/426/2020, of 8 May, establishing criteria for determining when recovered paper and cardboard destined for the production of paper and cardboard ceases to be waste in accordance with Law 22/2011, of 28 July, on Waste and Contaminated Soils.

-Order TED/1522/2021, of 29 December, establishing criteria for determining when granulated rubber and rubber powder obtained from the treatment of used tyres and destined for certain applications cease to be waste in accordance with Law 22/2011, of 28 July, on Waste and Contaminated Soils, and amending Orders TED/426/2020, of 8 May, APM/205/2018, of 22 February, and APM/206/2018, of 22 February, which respectively establish criteria for determining when recovered paper and cardboard intended for the production of paper and cardboard, processed waste oil from the treatment of used oils for use as fuel and recovered fuel from the treatment of MARPOL type C waste for use as fuel in ships cease to be waste in accordance with Law 22/2011 of 28 July on Waste and Contaminated Soils.

-Order TED/646/2023, of 9 June, establishing the criteria for determining when thermoplastic waste that has undergone mechanical treatment and is destined for the manufacture of plastic products ceases to be waste, in accordance with Law 7/2022, of 8 April, on Waste and Contaminated Soils.

principal groups and representatives within the sector. In other sectors, the brief period during which the regulation had been in place made the respondents often unaware of the potential consequences of non-compliance. However, the implementation of the standard has led to an improvement in the quality of the product, with no further processing being necessary.

- **SRM marketplace: Symbiosis industrial web**, managed by Catalunya administration. The web began to work in 2017.
 - Any company willing to buy and sell by-products, wastes and secondary raw materials can sign in to become a user;
 - Users can publish and search as many offers and requests as they wish;
 - Users can filter by type of waste, by material or by location.“Symbiosis industrial web” provides a secure and efficient environment to negotiate with other users and transform wastes into resources.

➔ *Good practice national examples: Change in consumption patterns and consumer behaviour*

- **Data on food waste in homes and outside homes** (additional information beyond legal requirements): the Ministry of Agriculture, Fisheries and Food developed the panels for the quantification of food waste in Spanish households and outside households. The report on **food waste in Spanish households** provides insight into the level of waste generated and consumer behaviour in the domestic sphere. The report is divided into two main study blocks: Unused Product Waste (⁵²) and Recipe Waste (⁵³). For each of these two categories, the report examines the waste generated for type of family unit (by region, social class, etc.) and for each type of food or recipe. The results are presented in both volume and percentage. The document also includes information on the panel's methodology, glossary, main conclusions derived from the data obtained, content, structure, and global data (⁵⁴). The report on **food waste outside households** quantifies food waste generated, based on a representative sample of the population. Open data are available and an excel file can be used to run multiple queries on four main study blocks (food, drinks, snacks, and appetizers) (⁵⁵).
- **Sustainable Communication Guide: "How to Include Environmental Information in Your Strategies and Campaigns"**. Additionally, the Ministry of Social Rights, Consumer Affairs, and the 2030 Agenda has published in March 2024 a Sustainable Communication Guide: "How to Include Environmental Information in Your Strategies and Campaigns" targeting companies and providing detailed information on how to identify greenwashing and the legislation related to it. The guide also informs about upcoming legislative changes, both from the Government of Spain and from the EU (⁵⁶).

⁵² Unused food waste is defined as food that has been discarded as purchased, without having undergone any processing at home.

⁵³ Recipe waste is defined as food that has been discarded after it has been cooked or used in some type of preparation.

⁵⁴ Link to data on food waste in Spanish households 2022:

https://www.mapa.gob.es/en/alimentacion/temas/desperdicio/12datosdesperdicioalimentarioenloshogares2022_tcm38-649591.xlsx (in Spanish).

Link to the “Report on food waste in Spanish households 2022”:

https://www.mapa.gob.es/en/alimentacion/temas/desperdicio/informedesperdiciohogares2022anualfinal_tcm38-659643.pdf (in Spanish).

⁵⁵ Link to data on food waste outside households 2022:

https://www.mapa.gob.es/en/alimentacion/temas/desperdicio/4datosdesperdicioalimentarioenelconsumoextradomestico2022_tcm38-649593.xlsx (in Spanish).

Link to the “Report of on food waste outside households 2022”:

https://www.mapa.gob.es/en/alimentacion/temas/desperdicio/informedesperdicioextradomestico2022anualfinal_tcm38-659644.pdf (in Spanish).

⁵⁶ <https://consumo.gob.es/sites/default/files/prensa/guia-sostenibilidad-INTERACTIVA.pdf> (in Spanish).

→ *Good practice national examples: Education and awareness-raising*

- **Education and awareness raising program among students.**

Consumópolis school contest ⁽⁵⁷⁾ is a competition involving young people in the third cycle of primary education, compulsory secondary education and basic vocational training, aimed at promoting responsible and circular consumption. Nationwide, 12,000 students and 2,371 teams took part in Consumópolis from 2005 to 2024.

- **Citizen awareness raising program ⁽⁵⁸⁾:** it consists of the creation and dissemination of information material through various media, in order to spread priority messages that promote the participation of society to a circular economy, helping to guide consumption choices that have a direct impact on resource use and waste generation, preventing waste generation and promoting quality recycling.

- **Food loss awareness raising program ⁽⁵⁹⁾:** it consists of annual awareness campaigns aimed at the general public, focusing on the prevention of food waste and the recovery of foods that make up Spain's gastronomic and cultural heritage. Dissemination of information through the media is planned for key periods when food waste reaches higher levels, such as the Christmas period.

- **Capacity building program:** within the framework of the Empleaverde+ Program ⁽⁶⁰⁾, this program is co-financed by the European Social Fund Plus. It is endowed with a budget of up to 30 million Euros and will promote training projects aimed at facilitating access to the labour market and fostering professional retraining in line with various themes, circular economy, among others. The application period ends on 2 June 2024 ⁽⁶¹⁾.

→ *Good practice national examples: Public-private partnerships*

- **Circular Economy Council**

The Circular Economy Council ⁽⁶²⁾ is a model of public-private collaboration and it is composed of economic, environmental, and social entities involved in the transition towards a circular economy, as well as academic experts.

The Council complements the governance of the Spanish Strategy for the Circular Economy and has a dual function: to channel and express the concerns, needs and proposals of the sectors they represent, and to facilitate the dissemination of information and feedback by the administrations. In addition, it serves to discuss about the concerns of other business partners to work together in the value chain, especially in the development of action plans.

The first Circular Economy Council was established in 2022.

- **Circular Economy Pact ⁽⁶³⁾**

⁵⁷ <https://consumopolis.consumo.gob.es/que-es-consumopolis> (in Spanish).

⁵⁸ <https://www.miteco.gob.es/es/calidad-y-evaluacion-ambiental/temas/economia-circular/sensibilizacion-participacion.html> (in Spanish).

⁵⁹ <https://www.mapa.gob.es/es/alimentacion/temas/desperdicio/sensibilizacion/sensibilizacion%20campanas.aspx> (in Spanish).

⁶⁰ <https://empleaverde.es/> (in Spanish).

⁶¹ More information on call for proposals, co-financed by the European Social Fund Plus to promote the ecological transition through training activities aimed at unemployed people, workers and entrepreneurs, is available at the following link: https://fundacion-biodiversidad.es/en/convocatorias_emplea/call-for-grants-for-the-acquisition-or-improvement-of-skills-for-the-ecological-transition-within-the-framework-of-the-empleaverde-2024-program-co-financed-by-the-esf/.

⁶² <https://www.miteco.gob.es/es/calidad-y-evaluacion-ambiental/temas/economia-circular/estrategia.html> (in Spanish).

⁶³ https://www.miteco.gob.es/content/dam/miteco/es/calidad-y-evaluacion-ambiental/temas/economia-circular/210316pactoecdef_tcm30-425902.pdf (in Spanish). First Monitoring Report and degree of progress of signatories to the Pact: https://www.miteco.gob.es/es/calidad-y-evaluacion-ambiental/temas/economia-circular/iinformedeindicadores2017-2019_tcm30-510491.pdf (in Spanish).

It was signed in 2017 on the occasion of the Spanish Circular Economy Strategy Debate Day. 395 companies, most of which consisting of national business associations, support this initiative which promotes the integration of circular economy principles into company strategies and policies. The pact commits the signatories to work on the guidelines of the Circular Economy Strategy and promotes the establishment of objectives and criteria that will allow the adoption of legislation and technical standards for the circular economy.

- **Circular Economy Newsletter** ⁽⁶⁴⁾

The Circular Economy Newsletter aims to become a communication and dynamization tool for the circular economy in Spain. It includes both the actions undertaken by Ministry for Ecological Transition and Demographic Challenge, as well as those implemented by other public administrations, together with innovative projects and other relevant information for all the sectors interested in the circular economy.

- **Catalogue of Best Practices in Circular Economy** ⁽⁶⁵⁾

The Catalogues of Best Practices in Circular Economy (CBPCE) disseminate good circular economy practices and facilitate the collaboration between different actors in the value chain, favouring the search for commercial partners. Chapter 3 of each catalogue summarizes the methodology used to select good practices. The third edition (2022) includes examples of pilot projects.

➔ *Good practice national example: Women and the CE*

Women's Green Entrepreneurship and Women's Entrepreneurship in Rural Areas ⁽⁶⁶⁾

This report of March 2023 is the result of a project whose ultimate objective is the development, through a gender approach, of a system of indicators and a database on women's entrepreneurship in the green sector, in rural areas and at the intersection of both. Further, the goal is to carry out an in-depth analysis of women's entrepreneurship in green activities and/or in rural areas, based on the available data at the national and European Union (EU) levels.

In the analysis of green and/or rural women's entrepreneurship, the activities of the green sector are divided into the following two large groups, so as to provide statistically representative data:

- Group I - Circular economy, Waste Management and Decontamination.
- Group II - Remaining green activities.

➔ *Good practice: regional example*

Agroalnext programme ⁽⁶⁷⁾: it has seven action lines, four of which are dedicated to the circular economy. The aim is to reduce losses, emissions, and waste generated by the agri-food sector.

The Navarra Foral Community coordinates the scientific-technical activities carried out by the seven communities participating in the programme: Aragón, Asturias, Navarra Foral Community, Valencian Community, Extremadura, La Rioja, and Murcia Region. The programme aims to bridge the gap between knowledge and technological innovation, promoting and supporting the digital and ecological transition of the sector towards innovative, safe, and resilient models. It promotes the four pillars of sustainability - environmental, social, economic, and governance.

The seven communities participating in the programme share objectives, commitments, and tools, taking advantage of existing collaboration and synergies between them. They all participate in achieving results such as new technologies, solutions, methodologies, and tools for the joint benefit of the sector, relying on the collaboration of the main R&D ecosystem players in each of the regions.

⁶⁴ <https://www.miteco.gob.es/es/calidad-y-evaluacion-ambiental/temas/economia-circular/boletin-de-economia-circular.html> (in Spanish).

⁶⁵ <https://www.miteco.gob.es/es/calidad-y-evaluacion-ambiental/temas/economia-circular/buenas-practicas-economia-circular.html> (in Spanish).

⁶⁶ https://www.miteco.gob.es/content/dam/miteco/es/ministerio/planes-estrategias/igualdad-de-genero/executive_summary_MITECO_women_entrepreneurship_green_rural_2023.pdf

⁶⁷ <https://www.agroalnext.es/> (in Spanish).

The programme runs from 1 July 2022 to 30 September 2025.

Examples of private policy initiatives (sectoral)

→ Good practice examples: electronics & ICT

- **Eco Rating** ⁽⁶⁸⁾

Involved entities: Ihobe (the Basque Environmental Agency) and five of Europe's leading telephone operators ⁽⁶⁹⁾ using advanced European Union standards and legislation (UIT-T, ETSI and ISO).

Eco Rating is an environmental rating system that assesses the environmental impact of the entire process of manufacturing, transporting, using and disposing of mobile phones.

The Eco Rating methodology assesses the environmental performance of mobile phones over their entire life cycle (production, transport, use, and end-of-life disposal) to produce a final score. It uses information provided by manufacturers on the mobile devices they supply to mobile operators. The assessment combines 16 different environmental indicators and six different material efficiency criteria to give a single score for each device. These indicators include raw material extraction, device manufacturing, logistics, consumer use and end-of-life disposal, as well as usability, durability, reparability, and recyclability.

This methodology is under constant review and has been updated in 2023 to take into account new device technologies, updated Life Cycle Assessment (LCA) standards and/or new environmental legislation ⁽⁷⁰⁾.

Eco Rating was presented and discussed by the operators during the initiative at Mobile World Congress (MWC) 2022. The initiative started with the participation of 24 European countries and has expanded to new countries in Europe, Latin America and Africa.

- **LEVEL-UP: extending the life of obsolete heavy industrial equipment** ⁽⁷¹⁾

Involved entities: AIMEN “Centro de Aplicaciones Láser” in collaboration with several companies ⁽⁷²⁾.

The LEVEL-UP project, developed from October 2019 to September 2023, consists of developing a digital system that offers different technological products and services for the reconditioning, upgrading, improving functionalities and operability, maintaining, repairing, and remanufacturing obsolete machinery or heavy industrial equipment, so as to maximise their useful life and economic value, and maintaining the technical, environmental and economic competitiveness in the customers’ market.

These innovations will be developed in order to deliver the following specific benefits:

- Increasing the useful life of obsolete heavy industrial machinery and equipment by implementing different digital technologies that monitor the real state of the machine, offering predictive maintenance for them and the repair or remanufacture of their components.
- Encouraging the adoption of circular business models, such as servitisation, by manufacturers of heavy industrial equipment, with the aim of maximising its useful life and economic value in the market.

⁶⁸ <https://www.ecoratingdevices.com/>. See also the II Catalogue of good practices in CE: <https://www.miteco.gob.es/es/calidad-y-evaluacion-ambiental/temas/economia-circular/buenas-practicas-economia-circular.html> (in Spanish).

⁶⁹ Deutsche Telekom, Orange, Telefónica, Telia Company and Vodafone.

⁷⁰ Information on the new Eco Rating methodology (version 3), applicable from 1 January 2023: <https://www.ecoratingdevices.com/Eco-Rating-2024-Methodology-R05.pdf>

⁷¹ <https://levelup-project.aimen.es/project>. See also the III Catalogue of good practices in CE: <https://www.miteco.gob.es/es/calidad-y-evaluacion-ambiental/temas/economia-circular/buenas-practicas-economia-circular.html> (in Spanish).

⁷² FAGOR, DANOBAT, IDEKO (Spain), INEGI, SO-FIES TOSHULIN and TRIMEK, among other companies.

- Generating new digital and circular jobs in repair, remanufacturing and functional upgrading of industrial equipment.

This project is funded by the European Commission's Horizon and is featured in the III Catalogue of Best Practices by the Ministry for Ecological Transition and Demographic Challenge.

- **Collaboration for the preparation for re-use of household appliances**

Involved entities: AERESS collaborating with a leading company in the household appliances sector in Spain ⁽⁷³⁾. AERESS is a non-profit association that represents 37 entities of the social economy specialised in socio-labour integration and waste management. It is present in 13 autonomous communities.

Since 2016, both actors have collaborated within the framework of regulations on Waste Electrical and Electronic Equipment (WEEE), promoting the preparation for reuse of appliances, to comply with national and community laws based on the waste hierarchy and circular economy ⁽⁷⁴⁾.

The Spanish company supplies appliances from its DIDO (direct to home) service to AERESS' preparation centres for reuse, where they are repaired and sold as second-hand products. This collaboration not only complies with legislation, but also promotes Corporate Social Responsibility (CSR) and generates employment for people in or at risk of social exclusion.

The preparation for reuse process complies with the repair protocols established by current regulations, ensuring product quality and safety. The alliance has been recognized as a good practice in the circular economy by the Ministry for Ecological Transition and Demographic Challenge.

This partnership has been acknowledged for its efforts towards employment integration and adherence to the 2030 Agenda Sustainable Development Goals. Currently, 14 AERESS preparation centres participate in this alliance, collecting and preparing thousands of kilograms of waste electrical and electronic equipment for reuse. In 2022, they collected almost 3,800 electrical and electronic devices, weighing over 187,000 kg.

➔ *Good practice example: plastic*

Life Plasmix: recovery of plastic mix and recycling of polypropylene (PP) and polystyrene (PS) from undifferentiated collection ⁽⁷⁵⁾

Involved entities: several companies ⁽⁷⁶⁾ along with Anaip, Andaltec, and the University of Granada.

LIFEPLASMIX's main objective is to demonstrate how to recover and recycle the plastic mix waste contained in Municipal Solid Waste (MSW), avoiding its incineration and landfilling. It aims at valorising PP, PS (standard and high impact, GPPS+HIPS) and EPS (expanded and extruded, EPS+XPS) into high quality recycled pellets ready to be used in new products, including food packaging (one of the most demanding markets).

Demonstration has been done through innovative technologies in a preindustrial recycling plant located in Alhendín (Granada, Spain), which is expected to produce 3,769 ton/year of recycled material. LIFEPLASMIX implements the first preindustrial pilot demonstration of a new cost-effective recycling solution based on optical separation, washing and extrusion.

A solution that will lead to 90 % PP, PS & EPS waste deposit reduction (MSW contains 2 % of PLASTIC MIX, a waste fraction that is currently neither recovered and nor recycled).

⁷³ BSH Electrodomésticos España S.A, which manufactures and markets appliances under the global brands Bosch, Siemens, Gaggenau, and the local brand Balay.

⁷⁴ <https://www.economiasolidaria.org/project/convenio-de-colaboracion-bsh-aeress/> (in Spanish).

⁷⁵ <https://lifepiasmix.com/en/plasmix/>. See also the III Catalogue of good practices in CE: <https://www.miteco.gob.es/es/calidad-y-evaluacion-ambiental/temas/economia-circular/buenas-practicas-economia-circular.html> (in Spanish).

⁷⁶ FCC Medio Ambiente, S.A.U. in collaboration with Lindner Was- htech (Germany), Pellenc Selective Technologies (France), and Standle Selecciona.

Results will foster the achievement of EU waste targets, by increasing plastic recycling rate from 31 % to 42 %, meaning a reduction of 11 % of total plastics in MSW landfilled and incinerated. After several years of work, LIFE Plasmix is now in its final phase. When the project is completed, the Ecocentral plant will recycle over 3,700 tonnes per year of PP and PS waste through optical separation, washing and extrusion. The ultimate goal is to replicate this technology and implement it on a large scale from 2026.

LIFE Plasmix is also included in the III Catalogue of Best Practices of the Ministry for Ecological Transition and Demographic Challenge and was presented during the Science Week organised by the University of Granada in November 2022. In addition, the project has been published in the Journal of Environmental Chemical Engineering, which is specialised in innovative research for the development of technologies in favour of carbon neutrality, circularity and sustainability. This project is funded by the EU Environment and Climate Action Programme (LIFE).

→ *Good practice example: packaging*

Circularcaps: Alliance for the collection and recycling of used coffee capsules ⁽⁷⁷⁾

Involved entities: Circularcaps is a non-profit organisation formed by 25 coffee producers under the umbrella of the Spanish Coffee Association (AECafé), based on the recycling system launched a multinational company ⁽⁷⁸⁾ in Spain in 2010. Its objective is to create, develop and manage an ambitious collective system for the collection and recycling of used coffee capsules.

Circularcaps was created with the aim of having a single recycling system for aluminium and plastic coffee capsules, which would guarantee a comprehensive solution for the sector.

Thanks to a collaborative model involving consumers, distributors, local authorities and companies in the sector, plastic, aluminium and coffee grounds are being given a second life.

Steps of the process:

- 1) Collection and transport: 5,679 collection points throughout the country, present in all provinces, and the network is being extended to cover the whole of Spain. There is a locator on the website to find the nearest collection point.
- 2) Recycling: recycling plants process the capsules to separate the different materials (including coffee grounds).
- 3) Second life: the system allows coffee grounds, aluminium and plastic to be given a second life:
 - Coffee grounds are transformed into nutrient-rich compost for agricultural use.
 - Plastic capsules are crushed, and the resulting granules can be used to make other products such as boxes, components for office chairs, street furniture, etc.
 - The aluminium from the capsules, which is infinitely recyclable, is transformed into new everyday items such as pens, mechanical pencils, etc.

→ *Good practice example: textiles*

Study on textile overconsumption behaviour and recommendations for achieving sustainable textile consumption

Involved entities: CECU (Confederation of Consumers and Users) and Ministry of Consumer Affairs (new Ministry of Social Rights, Consumer Affairs and 2030 Agenda).

CECU conducted a survey on consumption behaviour and textile overconsumption ⁽⁷⁹⁾. The project was funded by the Ministry of Consumer Affairs. The survey was conducted between 31 July and 10 August 2023 and collected information from 2,000 people on fashion consumption and reuse, as well as on measures for achieving sustainable fashion. The results show that 76.6 % of the respondents are aware of fast fashion and associate it with negative impacts, such as disposable fashion (38.9 %), unsustainability (35.3 %), and unfair manufacturing conditions (32.1 %).

⁷⁷ <https://lascapsulassereciclan.com/> (in Spanish). See also the III Catalogue of good practices in CE: <https://www.miteco.gob.es/es/calidad-y-evaluacion-ambiental/temas/economia-circular/buenas-practicas-economia-circular.html> (in Spanish).

⁷⁸ Nestlé.

⁷⁹ https://cecu.es/wp-content/uploads/2023/12/Informe-sobreconsumo-textil_cecu2023.pdf (in Spanish).

However, despite the high level of awareness of fast fashion, consumers admit to buying “fast fashion” clothes that they rarely wear. The price is one of the most influential factors affecting the purchase decision.

In this context, CECU has produced a report with “Recommendations for achieving sustainable textile consumption”⁽⁸⁰⁾. This report, which was also funded by the Ministry of Consumer Affairs, includes a series of measures to combat overconsumption of textile products and focuses on sustainable textiles at the design stage.

→ *Good practice example: construction and buildings*

Circular Economy Observatory in the Cement Industry

Involved entities: Cement and Environment Work Foundation (CEMA) collaborating with the Cerdà Institute.

This Circular Economy Observatory is a leading example of an industry's commitment to environmental transparency, with few equivalents in other sectors. From 2004 to date, the cement sector has provided comprehensive data on the material and energy recovery of waste from cement plants. This information is validated by an independent third party.

The Observatory responds to the commitment of workers and companies in the cement sector to the circular economy. Through a dedicated website⁽⁸¹⁾, all stakeholders may have access to detailed information and key indicators on the specific contribution of the cement industry to the circular economy and its ongoing development.

The Observatory provides access to:

- The quantities of waste destined to material and energy recovery in cement plants from 2004 to the latest available year.
- Integrated environmental authorisations allowing the use of alternative raw materials and fuels.
- An analysis of landfill costs in different areas of Spain and at European level.
- Savings in CO₂ emissions resulting from the use of fuels made entirely or partly from biomass.
- The updated regulatory framework for the use of waste in cement plants.

With this initiative, the CEMA Foundation promotes the sustainable use of resources and provides reliable indicators to quantify the contribution of the cement industry to the circular economy.

→ *Good practice example: water*

The reuse of treated water at a mining-hydrometallurgical complex

Stakeholders involved: groundwater authorities, wastewater treatment plant operators and mining companies.

The project⁽⁸²⁾ focuses on the reuse of treated wastewater at a mining and hydrometallurgical complex located in Andalusia. To this end, the facility covers part of its supply needs by reusing wastewater from a wastewater treatment plant located close to the facility. The new plant started operating in March 2022.

Once the treated water reaches the industrial facilities, it is destined to a dual use. Firstly, it is subject to a second treatment to adapt its characteristics to those required by the hydrometallurgical plant during the industrial process. The second fraction is then transported to a wastewater reclamation plant, where it is purified to a quality suitable for reintegration into the underground public hydraulic domain. This is achieved through deep re-injection (environmental use) and in accordance with all the relevant regulations set out by the competent water administration.

⁸⁰ <https://cecu.es/wp-content/uploads/2023/12/Recomendaciones-para-alcanzar-un-consumo-textil-sostenible.pdf> (in Spanish).

⁸¹ <https://www.recuperaresiduosencementeras.org/> (in Spanish).

⁸² https://www.juntadeandalucia.es/medioambiente/portal/landing-page-%C3%ADndice/-/asset_publisher/zX2ouZa4r1Rf/content/econom-c3-ada-circular-y-simbiosis-industrial/20151#collapseService4 (in Spanish).

→ *Good practice example: agriculture*

Good CE Practices in the wine industry, ENORREGION Project.

The Government of La Rioja is collaborating with professionals and organizations in the Rioja wine sector to create this guide. The guide, which was published in 2023, aims at the green and digital transformation of the wine value chain, among other things. To this end, two of the priority action lines focus on the generation of knowledge to achieve leadership in research, development and innovation, as well as training at different educational levels in the wine sector ⁽⁸³⁾.

→ *Good practice example: tourism sector*

Guidelines for CE in tourism ⁽⁸⁴⁾.

The State Trading Company for the Management of Innovation and Tourist Technologies, S.A.M.P. (SEGITTUR in Spanish), a subsidiary of the Ministry of Industry and Tourism, published in 2023 a manual outlining the steps involved in transforming a tourist destination into a circular economy. This document is designed to assist tourism destinations and businesses in developing a comprehensive roadmap aligned with the existing sustainable tourism planning strategies. It also provides guidance on the initial steps to take in this transition process, outlining specific key actions that can be readily implemented.

To this end, it sets out a series of guidelines for establishments to promote the transition to a circular economy and make their activity more sustainable. It provides a methodology to follow and incorporates examples of good practices that can serve as support and inspiration for other establishments.

The way forward

Identifying and addressing barriers and challenges

Catalogues of Best Practices in Circular Economy provide information on the main challenges and barriers faced by participating companies in implementing circular economy activities. Besides, the Circular Economy Council (see the Section “Examples of public policy initiatives”) and regional authorities were consulted and provided further information.

The main barriers and difficulties included in the third and final Catalogue (2022) are listed below, together with possible solutions.

Barriers to the development of circular business models:

- Lack of implementation of the circular strategy/process.
- Resistance to change within the organisation itself.
- Difficulties in transforming a specific industrial process into a circular one.
- Low return on investment/ High initial investments.
- Some production models are too complex to create a fully circular system.
- Barriers to accessing financing.

Barriers to the development of circular technologies:

- Absence of legal standards and definitions.
- Poor quality of secondary raw materials.
- Barriers to accessing relevant information and applicable assessments.
- Lack of useful applications of recycled materials.

⁸³ <https://www.larioja.org/larioja-client/cm/innovacion/images?idMmedia=1480622> (in Spanish);

<https://www.larioja.org/innovacion/es/buenas-practicas-economia-circular-proyecto-enorregion> (in Spanish).

⁸⁴ <https://www.segittur.es/wp-content/uploads/2023/05/Manual-Economia-Circular-Destinos.pdf> (in Spanish).

- Limited level of innovation in the private sector that hampers the evolution of the production system and the sustainability of products.

Solution options (brainstorming):

- Legal definition of the quality of recycled material.
- Directory of data sheets with information on the qualities of the materials according to their destination, which must comply with European legislation and standards.
- Standards development in parallel with the approval of a minimum recycled material content in the Ecodesign Regulation for Sustainable Products.
- Regulatory tools supporting repair operations.

Administrative barriers:

- Insufficient recognition of the value of by-products/secondary raw materials.
- Lack of human resources to support circular economy

Solution options (brainstorming):

- Promote by-products and end-of-waste criteria at the EU level.
- Promotion of activities related to waste prevention.
- Improve traceability at all levels, not just in waste management.
- Reduce VAT in repair/remanufacture operations.

New regulations, measures and initiatives have been introduced to boost CE and address the abovementioned barriers/challenges, including the following:

- A new domestic regime for the approval of by-products and end-of-waste criteria, as outlined in the Section “Examples of public policy initiatives” (“Industrial symbiosis”).
- Aid scheme for CE.
- Pact on CE to promote the adoption of CE strategy/ plans by companies (see “Public-private collaboration” within the Section “Examples of public policy initiatives”).
- Special fiscal regime for product donations.
- Special reduction of municipal waste management fees by local authorities when a non-profit social economy entity contributes to reducing food waste (First final provision of the Waste Law) ⁽⁸⁵⁾.
- At least 50 % of the amount awarded by public administration must be reserved to contracts with social economy entities participating in textile waste collection and treatment (19th Additional provision of waste law) ⁽⁸⁶⁾.
- Food hierarchy to reduce food waste (art. 19 of the Waste Law) ⁽⁸⁷⁾.
- Ban on the destruction or landfilling of textiles, toys, and electronic devices (art. 18.2 of the Waste Law) ⁽⁸⁸⁾.
- Good practice guidelines for charitable giving ⁽⁸⁹⁾.

For further information, see art 18 and Annex V and VI of the Waste Law ⁽⁹⁰⁾.

⁸⁵ <https://www.miteco.gob.es/content/dam/mitesco/es/calidad-y-evaluacion-ambiental/sgecoci/Law%20on%20waste%20and%20contaminated%20Soil%20for%20a%20circular%20economy.pdf>

⁸⁶ See previous footnote.

⁸⁷ See footnote n. 85.

⁸⁸ See footnote n. 85.

⁸⁹ https://www.mdsocialesa2030.gob.es/agenda2030/documentos/guia_buenas_practicas_dsca2030.pdf (in Spanish).

⁹⁰ See footnote n. 85.

Future policy plans

The **Spanish Recovery, Transformation and Resilience Plan (RTRP)** and its Addendum ⁽⁹¹⁾ provide access to the European Recovery and Resilience Facility, in line with the principles of the European Green Deal, where **40.29% of the Spanish budget is allocated to green transition**.

The Plan includes a total of 30 components and CE is considered as a cross-cutting issue in some investments (at least 15 aid state schemes). Specifically, **Component 12 entitled "Industrial Policy of Spain 2030"** ⁽⁹²⁾, developed through Investments 3 and 5 (i.e. "Plan to support the implementation of the Spanish Circular Economy Strategy and Waste Regulations" and "Aid scheme to support key sectors of the circular economy"), **is exclusively devoted to CE**.

Thus, to boost CE across Spain, on the one hand, **C12 promotes different types of reforms** to reduce waste generation and improve the management of waste whose generation cannot be avoided. These reforms consist of some pieces of new legislative and planning instruments (among which the Spanish CE Strategy stands out), which constitute the main mechanism for harmonising and coordinating all the different organisational and competence levels of the Spanish administration. These instruments also aim at reinforcing internal coordination of waste management policies. On the other hand, investments contribute to increasing municipal recycling rates and promoting circularity in private enterprises through the Strategic Projects for Economic Recovery and Transformation on Circular Economy (PERTE on CE)

The **PERTE on Circular Economy** ⁽⁹³⁾ **is part of component 12 of the Spanish RTRP and has two lines of action:**

- **Action Line I (C12I5), which focuses on three key sectors** of the economy: textiles and fashion, plastics, and renewable energy equipment. This Action Line has a **budget of 300 million Euros** (100 million €/sector).
- **Action Line II (C12I3), which is devoted to all NACE activities**, has a **budget of 192 million Euros**.

Regarding to waste management, C12.I3 supports the improvement of existing selective collection systems and investments in collection points to promote recycling and the construction of new waste treatment plants. These investments also support digital solutions in CE. To this end, 591,250 million of Euros have been distributed to local administration through Autonomous Communities for the period 2021-2026, as indicated by the Recovery and Resilience Facility (RRF) ⁽⁹⁴⁾.

Further 348,409 million of Euros are going to be allocated in 2024.

Regarding to **investments of the RTRP to support waste management**, they address the following points:

- Line 1: implementation of new separate collection schemes, with a particular focus on bio-waste, and the improvement of existing facilities.
- Line 2: construction of specific facilities for the treatment of separately collected bio-waste.
- Line 3: construction of new facilities for preparing for reuse and recycling of other separately collected waste streams.
- Line 4: investments related to collection facilities (such as clean points), sorting (packaging, paper, etc.), improvement of existing mechanical-biological treatment plants.

⁹¹ Link to the RTRP: <https://planderecuperacion.gob.es/> (in Spanish). Link to the Addendum:

https://planderecuperacion.gob.es/sites/default/files/2023-10/02102023_adenda_plan_recuperacion_documento_completo.pdf (in Spanish). Link to COM(2023)576 final,

Proposal for a Council Implementing Decision Amending Implementing Decision (EU) (ST 10150 2021; ST 10150 2021 ADD 1 REV 1) of 13 July 2021 on the approval of the assessment of the recovery and resilience plan for Spain:

<https://data.consilium.europa.eu/doc/document/ST-13695-2023-INIT/es/pdf> (in Spanish);

<https://data.consilium.europa.eu/doc/document/ST-13695-2023-ADD-1-REV-1/es/pdf> (in Spanish).

⁹² <https://planderecuperacion.gob.es/politicas-y-componentes/componente-12-politica-industrial-espana-2030> (in Spanish).

⁹³ https://www.miteco.gob.es/content/dam/miteco/es/calidad-y-evaluacion-ambiental/temas/economia-circular/perteenec_tcm30-537854.pdf (in Spanish).

⁹⁴ For further details, please refer to the box entitled "Acuerdos Conferencia Sectorial Medio Ambiente" in the link provided below: <https://www.miteco.gob.es/es/calidad-y-evaluacion-ambiental/temas/prevencion-y-gestion-residuos/normativa-y-planificacion.html> (in Spanish).

Regarding to “**Digitisation Instruments**”, the following lines will be financed through the **RTRP**:

- The electronic waste information system (eSIR) has incorporated new registers and inventories, in accordance with the provisions of Law 7/2022. The system will also be improved by including new functionalities. Additionally, the eSIR will be integrated with the Register of emissions and contamination sources (PRTR España) ⁽⁹⁵⁾ to have a common database and reduce administrative burdens. Big Data and AI analysis tools will be incorporated to improve knowledge and production and management of waste and contaminated land in Spain.
- Automation and digitalisation of administrative procedures, management and telematic processing of files and databases related to waste regulations.
- Information analysis and data processing.
- Development of digital tools to support local authorities in the implementation of municipal waste management fees, which allow payment per generation.
- Digitisation tools applying to public waste collection and treatment facilities.
- Integration of ICT to improve waste monitoring, control and inspection tasks.

With regard to **PERTE on CE, operational work is based on grants awarded on a competitive basis for the implementation of projects and actions** contributing to the sustainability and circularity of industrial/business processes and, hence, improving the related competitiveness and innovation, through the following eligible investments: Reduce consumption of virgin raw materials; R&D on eco-design; Improving waste management and Digitally transform processes through infrastructures and systems. As reported above, the aid scheme consists of two action lines.

Action Line I: actions in key sectors: textiles, plastics and capital goods for the renewable energy industry:

- Call for grants for promoting circular economy in the textile, fashion, clothing and footwear sector ⁽⁹⁶⁾.
- Calls for grants for the plastic sector ⁽⁹⁷⁾.

Calls for the awarding of grants, on a competitive basis, for projects that contribute to improving the sustainability and circularity of business processes in the textile and fashion sector and in the plastic sector (second call), improving the competitiveness and innovation of the industrial fabric within the framework of a circular economy.

Both the abovementioned calls for proposals are issued in accordance with Order TED/167/2024 of 20 February ⁽⁹⁸⁾ approving the regulatory framework for the granting of subsidies through a competitive application process.

With a **budget of 97.5 million Euros**, the grants will have a minimum amount of 100,000 Euros and a maximum of 10,000,000 Euros per project and beneficiary entity. Additionally, eligible beneficiaries include private companies (large companies and SMEs), social economy entities, and groups of these entities, including start-ups.

Eligible actions are those defined in the Order that reduce the consumption of virgin raw materials, reduce the generation of waste and/or improve waste management in one of the following categories and subcategories:

- R&D: eco-design of products and processes and improvement of textile waste management.
- Digitalization to innovate processes and organization.
- Reduction of the consumption of virgin raw materials.
- Improvement of the management of waste from post-consumption.

Another unique feature of this aid scheme is that **companies establish objectives and indicators for their investment projects, which allows to monitor progress towards their implementation.**

The evaluation criteria are set in Annex 1 of the Order. This investments management structure allows to promote CE in SMEs (alone or with the help of large companies). Additionally, it rewards those

⁹⁵ <https://prtr-es.es/> (in Spanish).

⁹⁶ <https://www.pap.hacienda.gob.es/bdnstrans/GE/es/convocatorias/753040> (in Spanish).

⁹⁷ <https://www.pap.hacienda.gob.es/bdnstrans/GE/es/convocatorias/768798> (in Spanish).

⁹⁸ <https://www.boe.es/boe/dias/2024/02/26/pdfs/BOE-A-2024-3722.pdf> (in Spanish).

companies which have already incorporated sustainability into their policies in order to communicate the relevance of this actions and allows them to continue to grow in terms of sustainability.

- Calls for grants for the promotion of CE in **renewable energy equipment's**. Within the framework of the RTRP, **the procedure to provide grants** to strengthen the renewable energy equipment's necessary for the transition to a net-zero emission economy (⁹⁹) **is being approved**.

These grants are linked to Components C31.I3 "Aid and investment in the renewables and storage value chain" and C12.I5 "Aid line to support the circular economy". To this end, aid lines are set up, dedicated to public and direct support for projects that develop the industrial value chain, facilitating a wider deployment of these technologies.

Action Line II: Cross-cutting actions to promote the circular economy in companies.

This includes aid aimed at projects to promote the circular economy in any sector, especially in those with more room for improving their circularity and excluding the sectors addressed by Action Line I.

The aid financed under Order TED/1211/2022 of 1 December (¹⁰⁰), provides support for:

- Reduction of the consumption of virgin raw materials.
- Research, Development and Innovation on eco-design.
- Improvement of private waste management.
- Digital transformation of processes through infrastructures and systems.

A total of **351 applications were submitted (90 applications were grouped under a single application), of which 102 were selected** and 2 were withdrawn.

A total of **€165,515,124.99 has been awarded**, minus the waivers (€ 372,651.16). The leftover budget will finance a second call.

Considering the type of beneficiary (¹⁰¹), **63% of the grants have been awarded to large companies**. The four sectors that have obtained most financing are, in order, NACE C17, E38, C24 and C10 (¹⁰²).

The projects financed belong to the four categories, with those in category "Improvement of waste management" receiving most of the funding (more than €100 million), followed by "Reduction of raw materials" (more than € 52.65 million), "R&D ecodesign" (almost € 6 million) and "Digital transformation" (€ 3.56 million).

As a result, **311 new jobs will be created**.

⁹⁹ <https://www.miteco.gob.es/es/energia/participacion/2024/detalle-participacion-publica-k-663.html> (in Spanish).

¹⁰⁰ <https://www.boe.es/boe/dias/2022/12/07/pdfs/BOE-A-2022-20700.pdf> (in Spanish); <https://www.pap.hacienda.gob.es/bdnstrans/GE/es/convocatorias/664774> (in Spanish); https://fundacion-biodiversidad.es/en/convocatorias_del_pr/call-for-grants-for-the-promotion-of-the-circular-economy-in-companies-for-the-year-2022/ (in Spanish).

¹⁰¹ <https://www.pap.hacienda.gob.es/bdnstrans/GE/en/convocatorias/664774/concesiones> (in Spanish).

¹⁰² C17: Manufacture of paper and paper products; E38: Waste collection, treatment and disposal activities; materials recovery; C24: Manufacture of basic metals; C10: Manufacture of food products.

Annex 1: Spanish indicators published in the CE Strategy

INDICATORS	UNIT	SOURCE	YEAR AND VALUE PUBLISHED IN EEEC	
National consumption of materials	<i>thousand of t</i>	INE	2018	422,974.2
Self-sufficiency in the production of critical raw materials in the EU	<i>% (mass)</i>	European Commission DG GROW	2016	n.a.
Green Public Procurement	<i>No., €</i>	European Commission	n.a.	n.a.
Generation of municipal waste per capita	<i>Kg/inhab.</i>	EUROSTAT	2018	475
Waste generation (excluding waste from mineral waste) as a share of GDP	<i>Kg/€</i>	EUROSTAT	2016	62
Waste generation (excluding waste from mineral waste) relative to household consumption of materials	<i>% (mass)</i>	EUROSTAT	2016	17.2
Food waste generation	<i>t</i>	EUROSTAT	2014	66
Preparation for reuse	<i>%</i>	PROs	2017	n.a.
Municipal waste recycling rate	<i>% (t)</i>	EUROSTAT	2018	35
Recycling rate of waste excluding mineral waste	<i>% (t)</i>	EUROSTAT	2016	46
Packaging waste recycling rate	<i>% (t)</i>	EUROSTAT	2017	68.5
Plastic packaging waste recycling rate	<i>% (t)</i>	EUROSTAT	2017	47.9
Wood packaging waste recycling rate	<i>% (t)</i>	EUROSTAT	2017	67.5
Waste electrical and electronic equipment recycling rate	<i>% (mass)</i>	EUROSTAT	2017	41
Organic waste recycling rate	<i>Kg/inhab.</i>	EUROSTAT	2017	84

INDICATORS	UNIT	SOURCE	YEAR AND VALUE PUBLISHED IN EEEC	
Construction and demolition waste recycling rate	%	EUROSTAT	2016	79
End-of-life product waste recycling rates	%	European Commission DG GROW	2016	n.a.
Circular material use rate	%	EUROSTAT	2017	7.4
Imports from non-EU countries	t	EUROSTAT	2016	668,219
Export to non-EU countries	t	EUROSTAT	2016	1,317,559
Intra EU-trade in recyclable raw materials	t	EUROSTAT	2016	5,435,184
Extra EU-trade in recyclable raw materials	t	EUROSTAT	2016	796,630
Gross investment in tangible goods	%	EUROSTAT	2017	0.1
Number of jobs	%	EUROSTAT	2017	2.04
Value added at factor cost	%	EUROSTAT	2017	1.05
Patents related to recycling and secondary raw materials as a representation of innovation	No.	European Commission Joint Research Centre	2015	19.82
Greenhouse gas contribution in waste sector	CO ₂ eq. (Kt)	MITECO	2018	13,471

Note: The values of the indicators included in the Spanish Circular Economy Strategy are provided for information purposes only. The updating of these indicators is not relevant as many of them have undergone changes in concept by Eurostat itself, breaks in historical series due to changes in methodology, retroactive changes in values, etc. It is preferable to take the indicators of Action Plan as a framework for monitoring circular economy in Spain.

Annex 2: First and Second CE Action Plans indicators

AXE/ACTION LINE	INDICATOR	SOURCE	YEAR	VALUE	UNIT	DESCRIPTION
PRODUCTION	Materials Productivity Index (MPI)	INE	2021 (provisional)	2,787.36	€/t	Amount of GDP generated per unit of national consumption of materials measured in EUR per ton.
PRODUCTION	ISO 14001 Certifications "Environmental Management Systems"	ISO	2022	14,778	No.	Total number of ISO 14001 "Environmental Management Systems" certifications implemented in Spain.
PRODUCTION	Organizations with EMAS in circular economy sectors	Own elaboration based on EU EMAS REGISTER data	2023	12.49	%	Percentage of EMAS registered organizations belonging to economic activities involved in circular economy and aggregated by INE activity class (Class).
CONSUMPTION	National Consumption of Non-Energy Materials (NCNEM)	INE	2021	360,971,118	t	Total amount of non-energy materials used directly by economy.
CONSUMPTION	National Consumption of Energy Materials (NCEM)	INE	2021	77,540,991	t	Total amount of energy materials used directly by economy.
CONSUMPTION	Ratio between National Consumption of Non-Energy Materials of Biological Cycle (NCNEM-BC) and Technical Cycle (NCNEM-TC)	INE	2021	61.32	%	Ratio between national consumption of non-energy materials of biological cycle and national consumption of non-energy materials of technical cycle.
CONSUMPTION	Ecolabel products	European Commission - EU Ecolabel	2023	13,729	No.	Total number of products (goods and services) with EU Ecolabel in the 24 different product groups.
CONSUMPTION	Average expenditure per household on repair and maintenance of products	INE	2022	790.18	€	Average expenditure of Spanish households on repair and maintenance of the following 4-digit expenditure codes (ECOICOP): 0314, 0322, 0431, 0432, 0721, 0723, 0915 and 0923.*

AXE/ACTION LINE	INDICATOR	SOURCE	YEAR	VALUE	UNIT	DESCRIPTION
CONSUMPTION	Consumption footprint	COM/JRC	2021	4.8E+27	-	<p>The consumption footprint reflects the environmental performance at country level by consumption area (Accessories, Food, Household Items, Accommodation and Mobility) in 16 impact categories considered.</p> <p>The value for Spain is provided as a contribution to impact in a single weighted score (i.e., following the weighting and normalization steps).</p> <p>Regarding the contribution by product, in the global calculation of impact categories (all consumption areas considered), the highest values are represented by pork, vacuum-packed meat and sunflower oil.</p>
CONSUMPTION	Green Public Procurement	MHAC	2020	20.8	%	<p>Green Public Procurement is the process by which public authorities seek to procure goods, services and works with a reduced environmental impact during their life cycle compared to goods, services and works with the same primary function that were procured instead.</p> <p>This indicator refers to number of contracts concluded subject to 2014 EU Directives (harmonised procurement) following a tendering procedure in which selection criteria (in particular technical or professional solvency requirements) or special green/green performance conditions have been incorporated, out of total number of contracts concluded; except for small contracts, contracts based on framework agreements or contracts resulting from dynamic purchasing systems.</p>
WASTE MANAGEMENT	Recycling rate	INE MITECO	2020	54.71	%	Percentage waste destined for recovery treatment operations (except energy recovery) relative to the total waste managed in Spain
WASTE MANAGEMENT	Total business expenditure on waste management (industrial sector)	INE	2021	1,282.54	Mill.€	Indicator resulting from the sum of current expenditure plus investment in waste management by companies.
WASTE MANAGEMENT	GDP/Waste generation	INE	2020 (provisional)	12,949.83	€/t	Wealth measured in GDP per ton of waste generated. This value should be increasing to verify the decoupling of waste generation from economic growth.

AXE/ACTION LINE	INDICATOR	SOURCE	YEAR	VALUE	UNIT	DESCRIPTION
SECONDARY RAW MATERIALS	Trade balance of recycled raw materials	EUROSTAT	2021	-10,417,048	t	This indicator is based on the International Trade in Goods Statistics (ITGS) published by Eurostat, but refers exclusively to trade in recycled raw materials. The scope of "recyclable raw materials" is measured in terms of relevant product codes of the Combined Nomenclature used in the International Trade in Goods Statistics, resulting in the selection of five classes: (1) plastic; (2) paper and paperboard; (3) precious metal; (4) iron and steel; and (5) copper, aluminium and nickel.
SECONDARY RAW MATERIALS	Circular material use rate	EUROSTAT	2022	7.10	%	Circular material use rate, also known as circularity rate, is defined as the ratio of circular material use to overall material use. The indicator measures proportion of material recovered and fed back into the economy, thus saving the extraction of primary raw materials, in overall material use. A higher circularity rate value indicates that more secondary materials have replaced primary raw materials, thus reducing primary material extraction.
SECONDARY RAW MATERIALS	Percentage of generated sludge that is used and its destination.	INE ESSA	2020	Sludge used: 95.5 Agriculture, forestry and gardening: 86 Incineration or energy use: 9.5	%	Percentage of sludge generated in wastewater treatments that is used and its destination.
SECONDARY RAW MATERIALS	Percentage of recycled material in thicker plastic bags	MITECO	2022	56.60	%	Average percentage of recycled material in HDPE and LDPE bags of thickness greater than or equal to 50 microns.
SECONDARY RAW MATERIALS	Tyre rate	MITECO	2022	0.958	%	Ratio between number of retreated and used tyres placed on market compared to new tyres for all categories of Motorcycle, Scooter and Moped / Touring / Truck, 4x4, All Terrain and SUV / Agricultural / Public Works and Industrial / Handling, Massif, Quad, Kart, Gardening and others / Truck and Bus.
WATER REUSE AND PURIFICATION	Wastewater treated for reuse	INE	2020	10.90	%	Percentage of wastewater reused compared to total wastewater treated in wastewater treatment plants under municipal jurisdiction, including wastewater not coming from distribution network (rainwater, own extraction, or other sources).
WATER REUSE AND PURIFICATION	Destination of reused water	INE ESSA	2020	Agriculture: 72.4 Industry: 2.5	%	Percentage of water reused from municipal wastewater treatment plants by destination (sector or use).

AXE/ACTION LINE	INDICATOR	SOURCE	YEAR	VALUE	UNIT	DESCRIPTION
				Gardens and recreation sport areas: 17.2 Sewer cleaning and street sweeping: 2.4 Other uses: 5.5		
WATER REUSE AND PURIFICATION	Total business expenditure on wastewater management	INE	2021	746.26	Mill. €	Indicator derived from the sum of current expenditure plus investment in wastewater management by companies.
AWARENESS RAISING AND PARTICIPATION	Number of signatories of Circular Economy Pact	MITECO	2023	401	No.	Number of signatories to the Pact for Circular Economy.
AWARENESS RAISING AND PARTICIPATION	Number of actions published in the catalogue of best practices in circular economy	MITECO	2022	110	No.	Number of actions published in the 2 MITERD catalogues of best practices in circular economy.
AWARENESS RAISING AND PARTICIPATION	Number of workers trained in circular economy in companies	SEPE	2018	149,532	No.	Number of workers trained on demand in companies whose economic activities are related to circular economy. NACE 2009 division: 33, 36, 37, 38, 39, 45, 46, 47, 77 and 95.
RESEARCH, INNOVATION AND COMPETITIVENESS	Gross value added related to circular economy sectors (% of GDP)	Own elaboration with INE and SEPE data	2018	25,329.104 (2.11 % GDP)	Mill. €	Represents the gross value added (GVA) of Spain according to economic activities involved in circular economy and aggregated by branch of activity of the INE (Class).
RESEARCH, INNOVATION AND COMPETITIVENESS	Number of LIFE projects related to circular economy	European Commission - LIFE Program	2014-2022	131	No.	Number of projects with themes related to circular economy from LIFE Programme's calls 2014-2022 presented (or with participation) by Spanish entities.
RESEARCH, INNOVATION AND COMPETITIVENESS	Total budget of LIFE projects related to circular economy	European Commission - LIFE Program	2014-2022	287,160,274	€	Total budget of projects related to circular economy from LIFE Programme's calls 2014-2022 presented (or with participation) by Spanish entities.
EMPLOYMENT AND TRAINING	People employed in circular economy	Own elaboration with INE and SEPE data	2018	2.91 (549,815 employed people)	%	Jobs are expressed in number of people employed and as a percentage of total employment for economic activities involved in circular economy and aggregated by INE branch of activity (Class).
EMPLOYMENT AND TRAINING	Number of companies in circular economy activities	Own elaboration with INE and SEPE data	2018	64,036	No.	Total number of companies according to economic activities involved in circular economy and aggregated by branch of activity of the INE (Class).

AXE/ACTION LINE	INDICATOR	SOURCE	YEAR	VALUE	UNIT	DESCRIPTION
EMPLOYMENT AND TRAINING	Training related to circular economy	MEFP	2018	134	No.	Number of professional qualifications, vocational training degrees, certificates of professionalism, master's degrees, bachelor's degrees, postgraduate degrees and doctorates related to circular economy in Spain.
EMPLOYMENT AND TRAINING	Women occupation in NACE 38	INE	2022	11.7 (13.43 %)	Thousands of people (and %)	Number of women employed in NACE 38 (Collection, treatment and disposal of waste; recovery) according to statistics of the Economically Active Population Survey (EPA) of INE. It is considered that 100% of economic activities included in this NACE are linked to circular economy. Occupation" includes persons aged 16 and over in paid employment (public and private sector) and self-employed (employers, entrepreneurs without employees and self-employed workers, members of cooperatives and persons on family allowances). The figure (in %) of number of employed women compared to total of both sexes in this NACE is also reported.

*Note: ECOICOP: European Classification of Individual Consumption According to Purpose: -0314 Cleaning, repair and hire of clothing; - 0322 Repair and hire of footwear; - 0431 Materials for the maintenance and repair of the dwelling; - 0432 Services for the maintenance and repair of the dwelling; - 0721 Spare parts and accessories for personal transport equipment; - 0723 Maintenance and repair of personal transport equipment; - 0915 Repair of audiovisual, photographic and information processing equipment; - 0923 Maintenance and repair of other major durables for recreation and culture.

European Topic Centre on
Circular economy and resource use
<https://www.eionet.europa.eu/etcs/etc-ce>

The European Topic Centre on Circular economy and
resource use (ETC-CE) is a consortium of European
institutes under contract of the European
Environment Agency.

