

Circular economy country profile 2024 – Greece



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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 Greece, all input was provided by the General Secretariat of Natural Environment and Water of the Greek Ministry of Environment and Energy. 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://www.euro.peco.eu/en/more-from-less-material-resource-efficiency-in-europe)


² [Resource efficiency and the circular economy in Europe 2019 — European Environment Agency \(europa.eu\)](https://www.euro.peco.eu/en/resource-efficiency-and-the-circular-economy-in-europe-2019)

³ [Country profiles on Circular Economy in Europe — Eionet Portal \(europa.eu\)](https://www.eionet.europa.eu/portal/en/country-profiles-on-circular-economy-in-europe)

⁴ [draft-report-for-dg-env_final.pdf \(europa.eu\)](#)

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

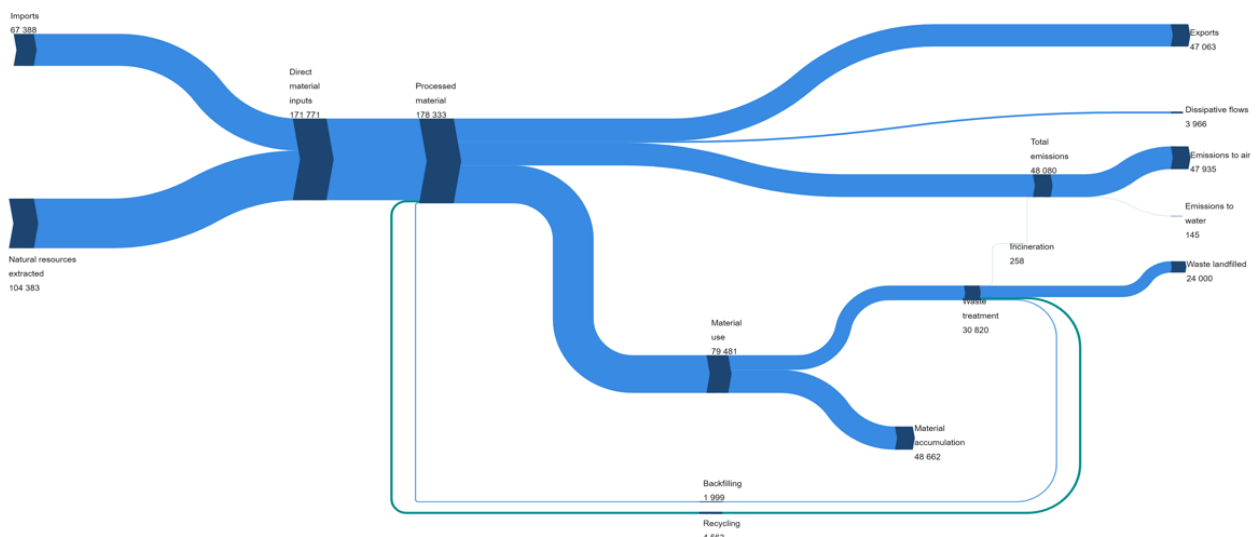
Greece – facts and figures

	<p>GDP: EUR 220.3 billion (1.3 % of EU27 total in 2023)</p>
	<p>GDP per person: EUR 20,920 (purchasing power standard) (67.1 % of EU27 (from 2020) total per person)</p>
	<p>Use of materials (domestic material consumption (DMC)) 113.6 million tonnes DMC (1.8 % of EU27 total in 2022) 10.9 tonnes DMC/person (76.5 % of EU27 average per person in 2022)</p>
	<p>Structure of the economy (2023): Agriculture: 4.3 % Industry: 18.0 % Services: 77.7 %</p>
	<p>Employment in circular sectors: 59,634 people employed in CE sectors (1.4 % of EU total in 2021) People employed expressed as a percentage of total employment: 1.3 % (compared to 2.1 % for EU average in 2021)</p>
	<p>Surface area: 132,049 square kilometres (3.1 % of EU27 total)</p>
<p>Population: 10,413,982 (2.3 % of EU27 total in 2023)</p>	

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

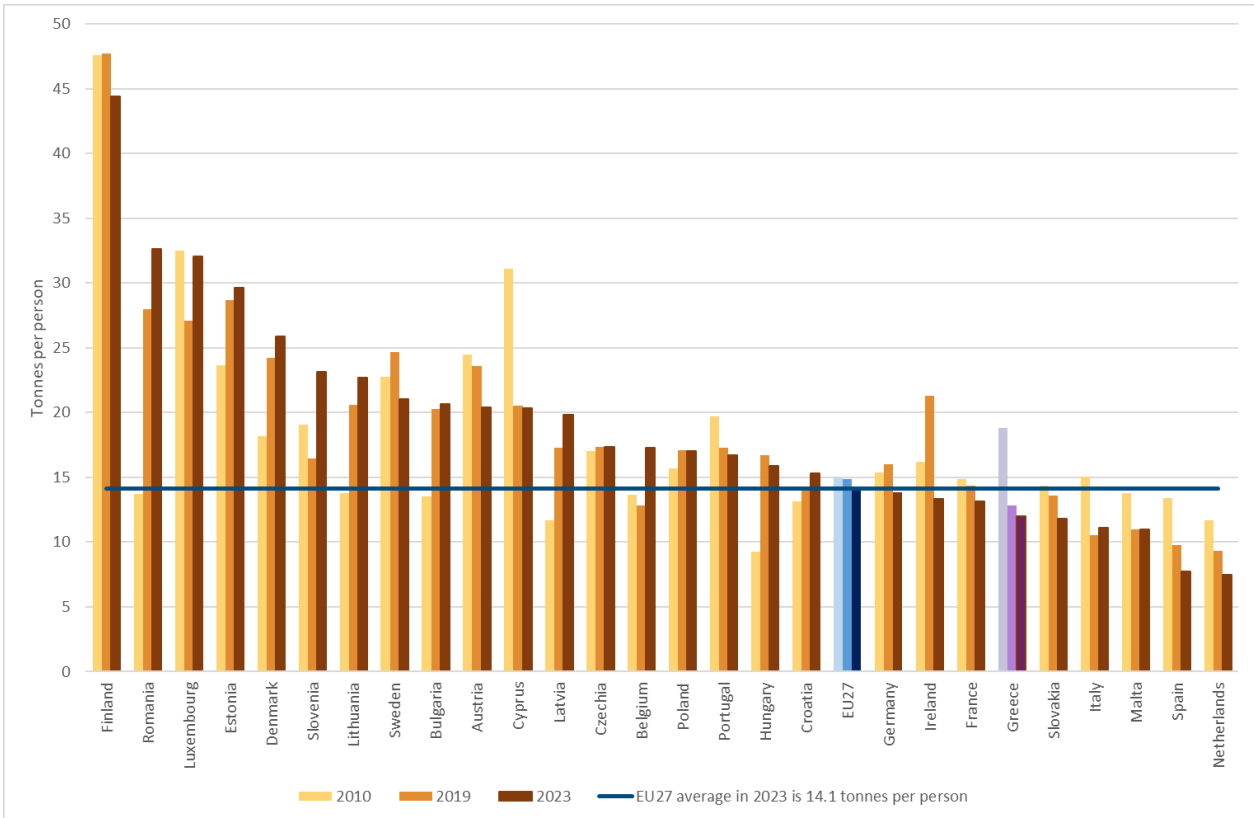
Source: Eurostat datasets, EU27 2021 EU27 2022 and EU27 2023 (accessed 21 August 2024)

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



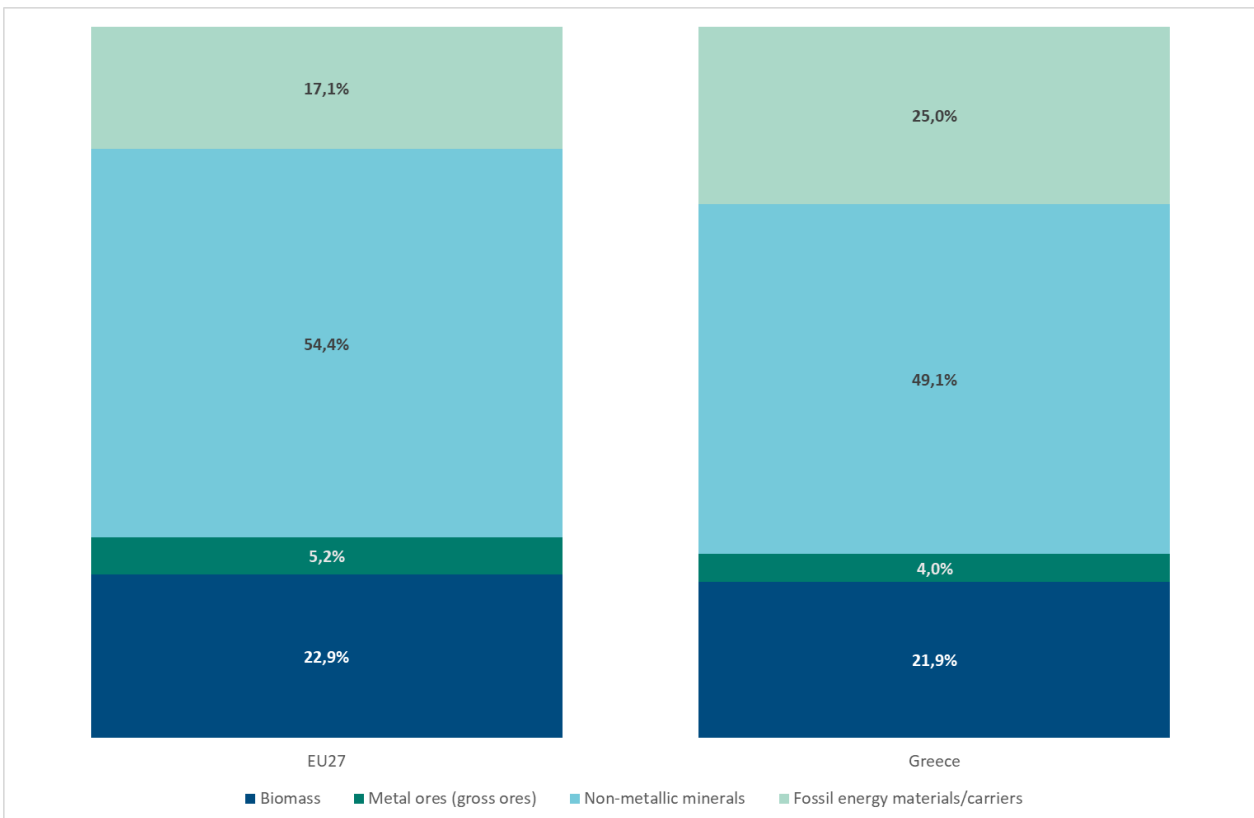
Source: Eurostat (2024) [env_ac_mfa], [en_ac_sd], [env_wasdd] (accessed 21 August 2024)

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



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

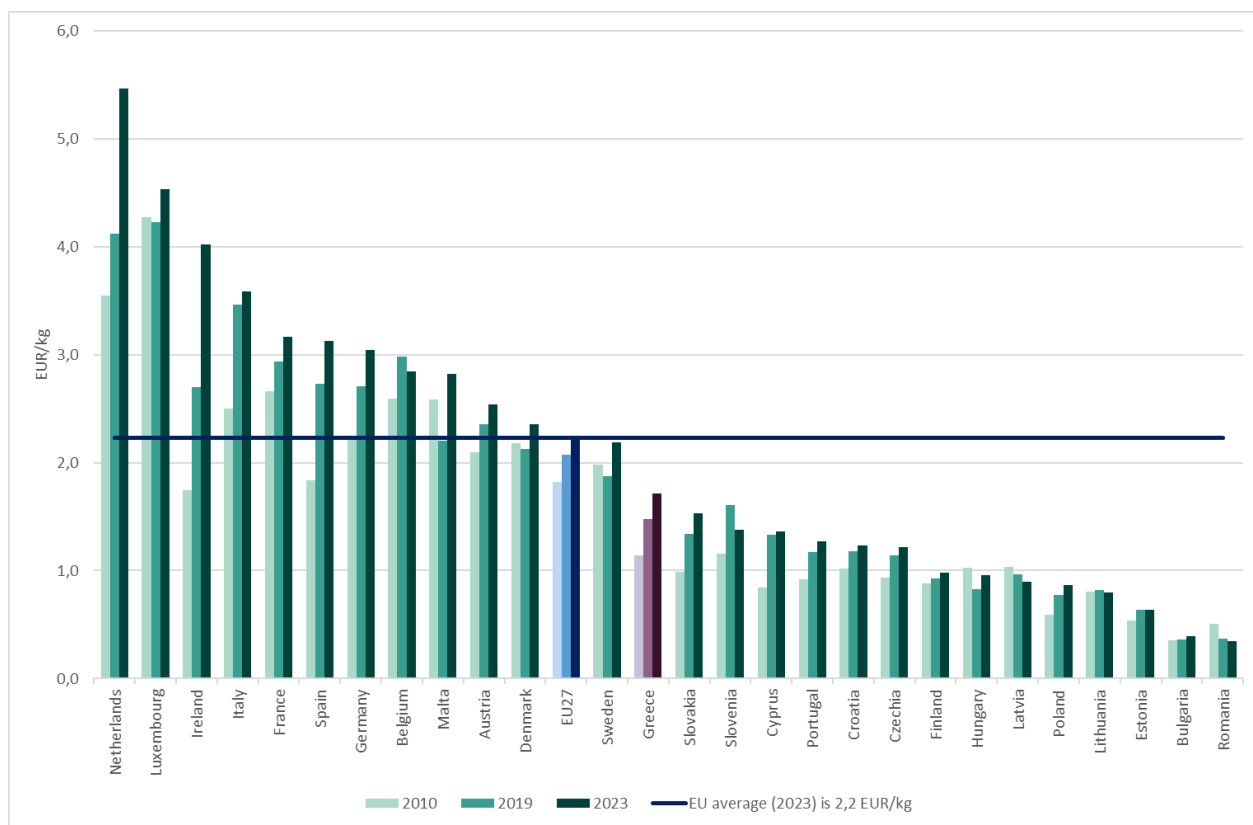
Figure 3 Domestic material consumption by selected material category, EU and Greece, 2023, per cent



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

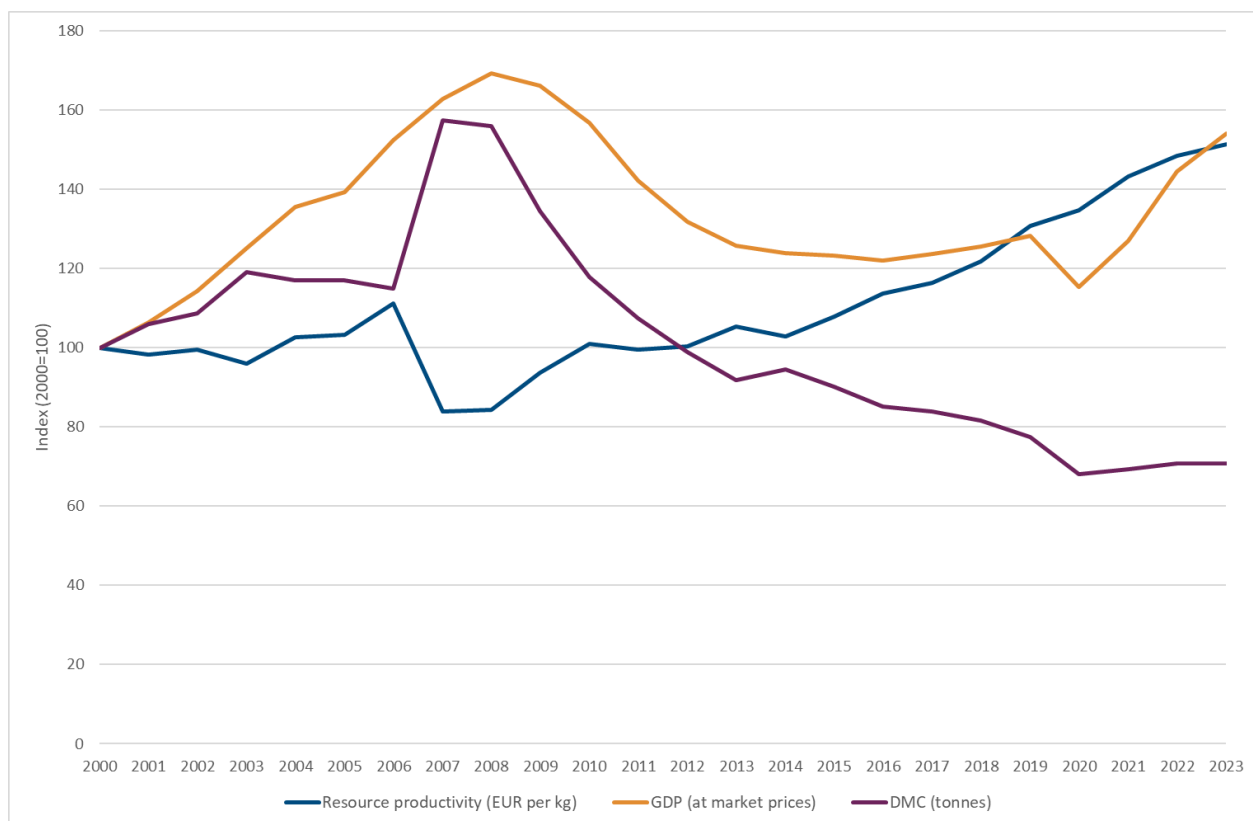
Source: Eurostat (2024) [env_ac_mfa] (accessed 21 August 2024)

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



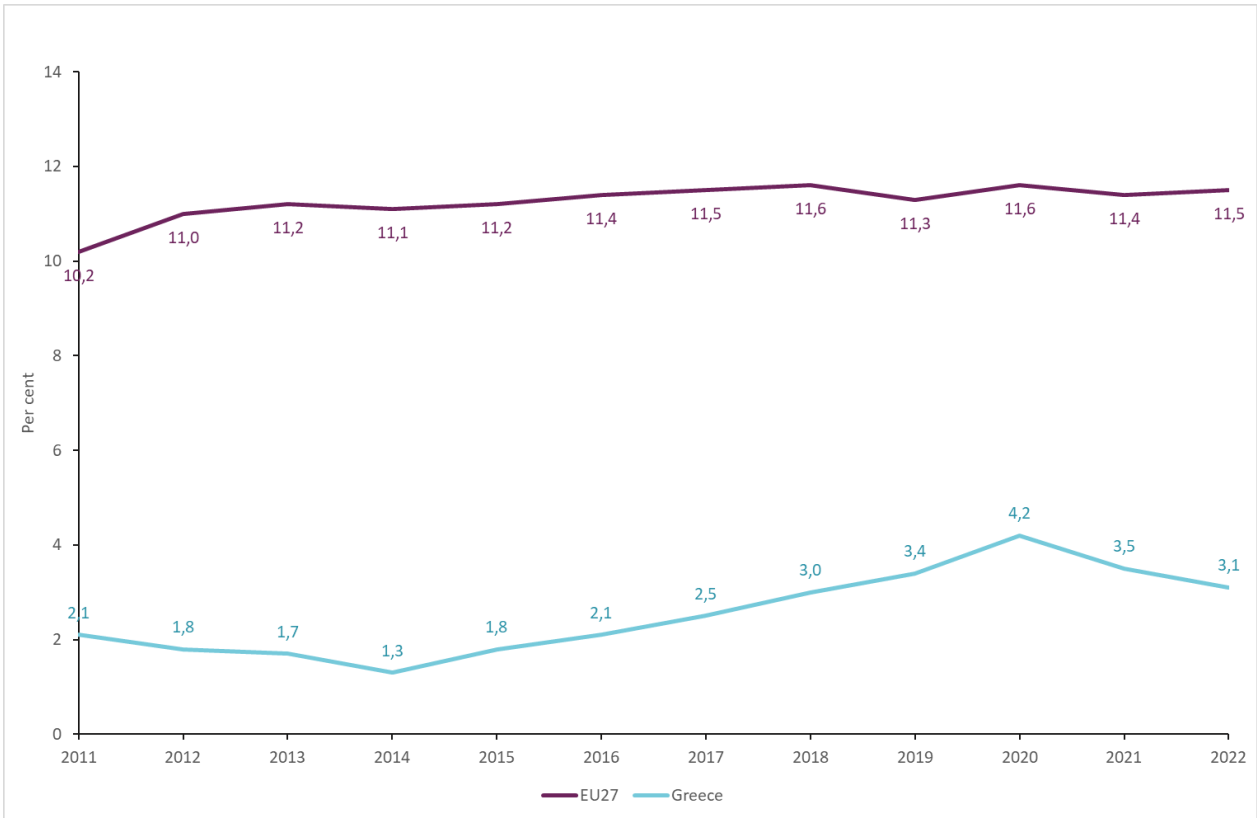
Source: Eurostat (2024) [env_ac_rp] (accessed 21 August 2024)

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



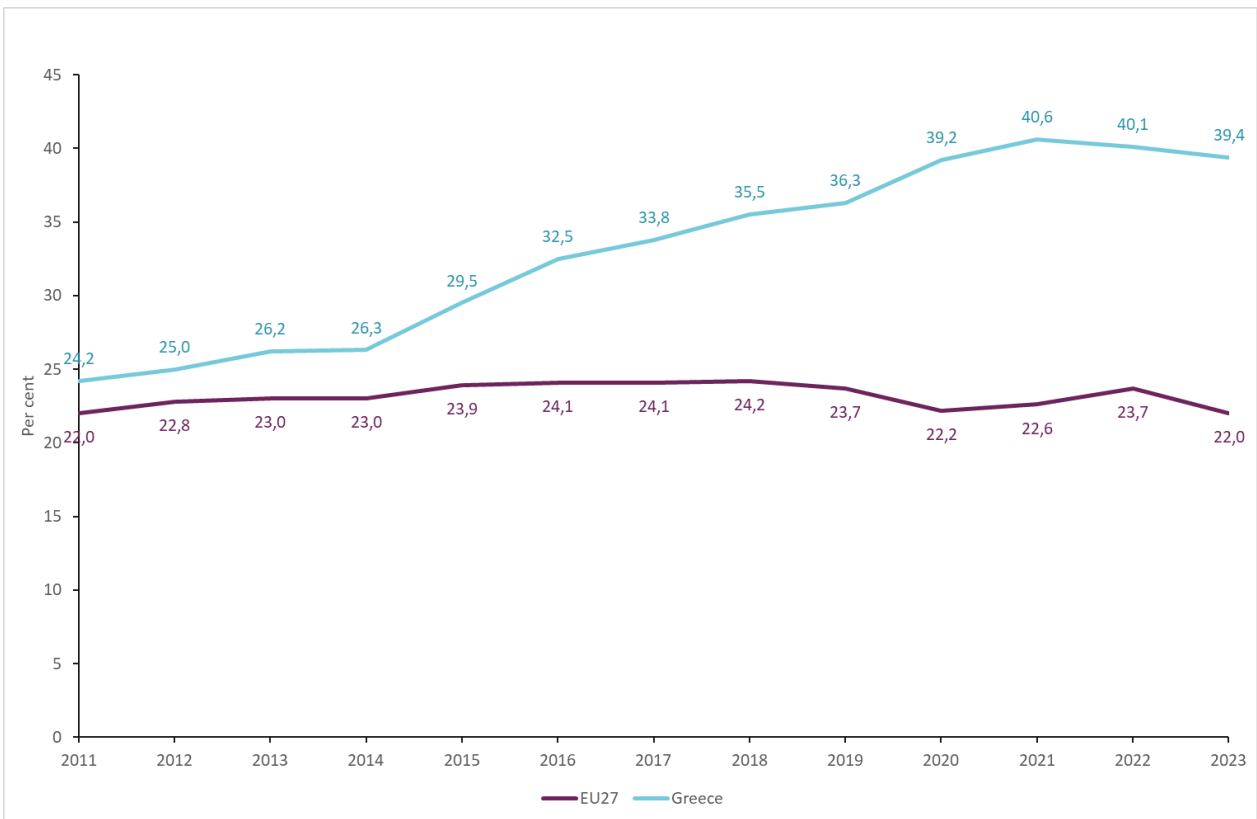
Source: Eurostat (2024) [env_ac_mfa], [env_ac_rp] & [nama_10_gdp] (accessed 21 August 2024)

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



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

Figure 7 Material import dependency in Greece, 2011-2022, 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

According to the 2022 CE Country Profile ⁽⁵⁾, the Greek Governmental Economic Policy Council endorsed the **National Circular Economy Strategy** in December **2018**, with its two-year action plan, which did not produce the expected outcome.

In the light of the developments at the EU level with the European Green Deal and the 2020 EU Circular Economy Action Plan, the Hellenic Ministry of Environment and Energy drafted a **new National Circular Economy Action Plan** (National CEAP) for the implementation period **2021-2025**, which was officially adopted by the Minister's Council Act No 12 of 29.4.2022 ⁽⁶⁾. The new Action Plan, which is fully aligned with the revised national waste legislation and planning and has largely integrated the **previous** two-year action plan, includes **71 actions under the following** pillars:

- sustainable production and industrial policy;
- sustainable consumption;
- less waste with more value;
- priority-product value chains that are considered resource intensive and have a high circularity potential, i.e. electronics and information and communications technology (ICT), batteries and vehicles, packaging, plastics, textiles, construction and buildings, food, water and nutrients;
- horizontal action on governance, regulatory and institutional arrangements and monitoring of the plan's implementation.

Several **initiatives of the National CEAP** are **being implemented** to advance circularity at the national level, such as:

- the revision of the regional and local waste management plans;
- a food-waste prevention program, specifying the general direction of the 2030 National Waste Prevention Program (NWPP) on food waste;
- specific CE action plans in lignite-dependent areas, which are structured in seven individual programs with special measures and axes ⁽⁷⁾;
- financing of new separate collection, recycling and recovery infrastructures, and upgrading of existing ones, to support the achievement of the National Waste Management Plan (NWMP) targets;
- economic incentives and disincentives to boost the waste hierarchy and reduce municipal waste generation, such as:
 - extended producer responsibility (EPR) schemes in additional streams, such as textiles, furniture, agricultural plastics, medicines, toys and fishing gear containing plastic, and
 - deposit refund system for beverage bottles;
 - environmental fees for certain single-use plastic products (bags, cups for beverages, food containers and bottles containing polyvinyl chloride -PVC-) and economic incentives for own-use of food containers;
 - eco-modulation of fees within an EPR scheme addressing plastic packaging to encourage reusability, recyclability and recycled content;
 - tax incentives for donations of used products (e.g. food, medicine, textiles and clothes) .
- standardisation of treatment and preparation processes for waste recycling;
- preparation of a guide for municipalities on the Pay As You Throw (PAYT) scheme;
- establishment of a platform to provide technical support to municipalities undertaking innovative CE activities;
- development of a guide to promote circular cities;
- development of CE targets and indicators and establishment of a National CE Observatory.

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

⁶ <https://ypen.gov.gr/wp-content/uploads/2022/03/SXEDIO-DRASHS-KO-8.pdf> (in Greek).

⁷ <https://www.sdam.gr/node/156> (in Greek).

Circular economy policy elements included in other policies

Circular economy policy element	Included in policy
<ul style="list-style-type: none"> - Put the waste hierarchy into practice, especially by enhancing separate collection and infrastructure to attain high levels of recycling and material/energy recovery. - Support of industrial symbiosis to increase the use of secondary raw materials/fuels and boost the recycling market. - Use of economic instruments to encourage the application of the waste hierarchy (e.g. landfill tax, PAYT, EPR for additional streams). - More effective use of EU and national funds for a fair transition to a circular economy. - Specific planning of the management of municipal waste generated by the tourism sector. 	National Waste Management Plan (in Greek)
Introduction of Recovery Recycling Facility concept (see below).	Modified National Waste Management Plan (2023; in Greek)
<ul style="list-style-type: none"> - Promotion of sustainable consumption and understanding that waste is a resource; - Enhancement of public awareness to advance waste prevention action. - Adoption of waste reduction targets, such as for single-use plastics and food. 	National Waste Prevention Programme (in Greek)
<ul style="list-style-type: none"> - Making the circular economy a policy priority to attain a reduction in greenhouse gas (GHG) emissions. - Promotion of a bioeconomy and the valorisation of organic waste as a renewable resource. 	National Energy and Climate Plan
Green public procurement (GPP) targets in 15 categories of products/services, out of which eight (i.e. copying and graphic paper, computers and monitors, interior lighting, air conditioning equipment, lubricants, road transport vehicles and services & road lighting and traffic signals) are mandatory.	GPP National Action Plan as amended and supplemented

The key national policy tools that have incorporated circular economy elements are the revised NWMP and the NWPP, which were approved in 2020 and 2022 respectively and cover the period up to 2030. These strategic documents are coherent and ensure strong synergies with the implementation of the National CEAP.

Since 2022, **the NWMP has been modified** by the Minister’s Council Act No 5 of 18.4.2023 to further enhance recycling and improve waste management performance, introducing the concept of “Recovery Recycling Facility - RRF”. RRFs are facilities in which mechanical sorting of the separately collected recyclable materials and biological treatment of the separately collected organic fraction of municipal waste is carried out, either by aerobic process or by anaerobic digestion. RRFs will also receive a certain amount of residual municipal waste, which will decrease over time and which will be subject to mechanical and biological treatment (MBT). All MBT plants will be gradually transformed into RRFs. The NWMP also supports energy recovery from waste, as a mean to meet the target of landfilling no more than 10% of municipal solid waste by 2030.

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 Greece 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.

A internal **partial assessment of the country's performance on waste management** has been carried out on the basis of a **subset of CE indicators**, based on the latest Eurostat data referring to 2020-2021:

- In 2020, a **decrease in municipal waste generation** is noted, 499 kg/capita, which is below the EU average (519 kg/capita), mostly due to the COVID pandemic, while in 2021 municipal waste generation was 509 kg/capita, also below the EU27 average (532 kg/capita).
- Based on 2021 data, the **majority of municipal waste is landfilled** (80.64%), with only 17.50% being recycled (EU27 average 49.8%), while the recycling rate of bio-waste slightly decreased to 3.68%. The decrease in the recycling rate is also due to the new rules, set by Decision (EE) 2019/1004 concerning the reporting on waste data.
- The **recycling rate of packaging waste in 2021 was 54.1%, slightly below the EU target (55%)** (EU27 average 64.0%). The individual recycling targets of packaging waste materials have been met, with the exception of glass and wood.

The most important reasons that explain the differences between the country's performance and the average EU are provided below:

- The **current infrastructure is not sufficient to support municipal waste management**, which would contribute to the transition towards circularity (low separate collection rates). However, several measures are expected to assist in the transition to a sound municipal waste management, in line with the circular economy concept, namely **actions that are planned or on-going** for: (i) increasing the efficiency of the current (as stipulated by the modification of the NWMP) and planned infrastructure, in order to enhance the recovery of recyclables; (ii) improving bio-waste treatment processes, so as to produce high quality compost; (iii) implementing PAYT schemes; (iv) widening EPR schemes to additional waste streams; (v) enforcing the landfill tax.
- The **satisfactory recycling rate of individual waste streams** (e.g. packaging waste materials -paper-cardboard, metals, plastic-, WEEE, batteries, waste oils) is largely the result of the established **EPR schemes**.

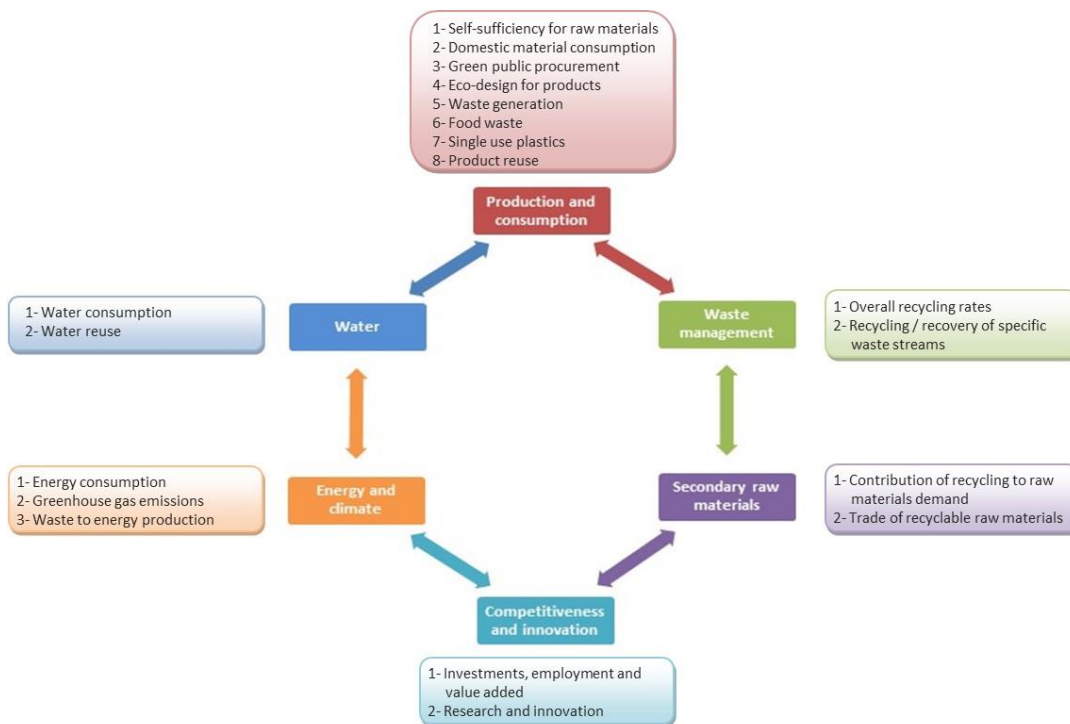
Persons employed in circular economy sectors, expressed as percentage of total employment (numerator in full-time equivalent - FTE), is one of the indicators of the thematic area "Competitiveness and innovation" of the National Observatory for the Circular Economy. Eurostat values shall be used, as there is not any estimate of the informal/voluntary economy and/or better information/data on employment in CE related sectors than what is now captured by the Eurostat data.

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

Monitoring the progress of the transition to a circular economy is considered vital to assessing the level of sufficiency and effectiveness of the related policies and objectives. It is also the basis for examining the potential of setting new priorities and actions to transform the Greek economy from the linear to the circular model of production and consumption. In this context and **within the framework of the integrated project LIFE-IP CEI Greece** ⁽⁸⁾, which is coordinated by the Hellenic Ministry of Environment and Energy, the **national framework for monitoring circular economy** in Greece was created and adequate **indicators** were developed. They form the information basis to be used by the **National Observatory for the Circular Economy** which will systematically monitor the progress in the implementation of the national policies and objectives related to the transition to a circular economy in Greece. The Observatory is expected to be operational by the end of 2024.

The key elements for monitoring circular economy in the country are fully interrelated to the EU monitoring framework, as also reflected in the National CEAP for 2021-2025, whilst considering that the national energy and climate policy is closely linked to the circular economy context, and that water is a sectoral priority policy that drives sustainable water resource management. **Six (6) thematic areas** covered by **19 indicators** form the structure of the national CE monitoring framework, as schematically presented below.

The structure of Greece’s national circular economy monitoring framework



In each thematic area, indicators linked to national policies are provided, which are derived from the national institutional framework (e.g. framework law on waste, law on single-use plastics), but also from national plans that contribute to the implementation of CE in the country (e.g. national waste management plan, national waste prevention plan, national green procurement plan, national energy and climate plan). In addition to the EU monitoring framework indicators, other indicators that broaden/enrich thematically (e.g. re-use indicators) or specifically (e.g. sectoral indicators) the monitoring of the implementation of national policies/measures were explored. Following the assessment of the indicators’

⁸ <https://circulargreece.gr/>

relevance to different policies and of the availability of reliable and commonly accepted data (either existing statistical data or data from other official sources of information), **56 economic, environmental and social indicators were selected** ⁽⁹⁾.

Starting from 2025, **biannual reports will be drafted and published by the National Observatory**, presenting aggregated data of all indicators and providing an assessment of the progress of Greece in implementing the transition towards a more circular economy.

The Observatory has been set up since 2023 and **data are being collected** for the initial set of 56 indicators. This work is expected to be **completed in the end of 2024**, when the values of CE indicators will be accessible to the public. The activities of the Observatory will be announced through the information and communication channels of the LIFE IP CEI GREECE project, presentations at events and networking (using communication tools such as social networks, project website, newsletters etc.).

Circular economy targets

Apart from the EU imposed waste targets, the following targets related to the CE dimension “sustainable production and consumption” have been set, which are aligned to the National CEAP:

- **30% and 60% reduction in the consumption of plastic cups for beverages and food containers by 2024 and 2026 respectively in relation to 2022 levels**, in line with the mandate of SUP Directive (art. 4, Law 4736/2020). These are regarded as the most problematic plastic products and the Directive’s overall aim is to move to reusable products, as well as single use products with lower environmental footprint, especially in the marine environment.
- **30% reduction of food waste per capita at retail and consumer level by 2030 in relation to 2022 levels** (art. 20, Law 4819/2021). This is essential to promoting a more sustainable retail and consumer behaviour that will reduce resource and environmental pressures and contribute to the achievement of the SDG target 12.3.
- **Reducing municipal waste landfilling to 10% by 2030** (art. 5, JMD YΠEN/ΔΔΑ/90439/1846/2021).
- **GPP targets for 15 categories of products/services** (GGP NAP 2021-2023), ranging from 20% to 80% of the public procurements, depending on the category. The targets are **mandatory for 8 product categories**: copying and graphic paper, computers and monitors, imaging equipment, LED lamps for interior lighting, air conditioning machines, lubricants (regenerated and biodegradable), road transport, road lighting and traffic signals.

Several **initiatives/measures support the achievement of the above-mentioned targets**:

- **Food waste target**: initiatives that incentivise the redistribution of food surplus (e.g. Boroume ⁽¹⁰⁾, CMT ⁽¹¹⁾, FoodBank ⁽¹²⁾), the alliance for the reduction of food waste in Greece (voluntary agreement), separate collection of biowaste by hotels and restaurants, and tax reduction measures.
- **Reduction of municipal waste landfilled**: implementation of PAYT schemes; widening the scope of EPR (e.g. by applying it to pharmaceutical household waste, sleeping mattresses, furniture, textiles, toys and sports equipment); increasing the imposed landfill tax together with the efficiency of the treatment processes, so as to produce higher quality compost and to decrease the amount of the residual landfilled fraction.

In addition, **boosting the introduction of secondary raw materials in domestic production is a tangible goal of the National Strategy for Circular Economy**, which is reflected in its new Action Plan for the period

⁹ For further information on selected indicators see: https://circulargreece.gr/wp-content/uploads/2022/07/LIFE-IP-CEI-GR_D1D2_CE-indicators-website.pdf and <https://ceobservatory.com/%ce%b4%ce%b5%ce%b9%ce%ba%cf%84%ce%b5%cf%82/#1678866679853-c65da60d-fad1> (in Greek).

¹⁰ <https://www.boroume.gr/en>

¹¹ <https://www.kath.gr/en>

¹² <https://foodbank.gr/en/>

2021-2025 ⁽¹³⁾ through actions to promote the production of more circular products and products containing secondary raw materials, industrial symbiosis, bioeconomy development, the formulation of a national policy for sustainable products, the development of end-of waste criteria, as well as the market development for secondary materials and fuels.

Innovative approaches and good practices

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

→ Good practice example: national initiative on “green islands”

GR-eco Islands is a national initiative of the Greek Government aiming to **transform Greek islands into models of green economy**, energy autonomy, digital innovation and ecological mobility. Actions included in GR-eco Islands aim at increasing the use of renewable energy sources and the promotion of energy efficiency, the sustainable management of waste and water, e-mobility and the electrification of transport, the creation of digital infrastructure and the green transformation of agriculture and tourism.

Under the GR-eco Islands initiative, a **preliminary co-operation agreement** has been signed in December 2023 between the Ministry of Environment and Energy and a private company ⁽¹⁴⁾, to transform **Poros island into a “green island”**. Among others, the agreement concerns the transformation of the waste management system of the island, to minimize the quantities of waste being landfilled (circular economy approach in waste management).

→ Good practice example: network for the protection of the marine environment

The **Blue Municipalities Network** ⁽¹⁵⁾ practically engages in activities at institutional and operational levels. As regards its institutional role, the Network serves essentially as a bridge connecting local authorities, civil society, research and academic institutions, the market, and the central government. It contributes to the **exchange and promotion of CE policies and practices** from local to national levels. It also forms partnerships with other institutional bodies in the fields of **research** and **innovation** with the aim of submitting well-founded project proposals and advocate them at a central level.

This Network develops holistic **actions for the prevention and decontamination of the marine environment, along with educational and research activities**, as well as practices related to marine litter management. All these activities contribute to increasing awareness among the members of local communities and promoting environmental democracy. Additionally, innovative pilot programs are implemented in collaboration with international groups to highlight good practices and produce primary data. Furthermore, European programs are implemented among the network members in cooperation with European organizations.

→ Good practice example: circular cities

The **Circular Cities Forum** ⁽¹⁶⁾ is a **voluntary initiative** of 15 institutional, social, and economic bodies from central and local government, industry, economy, environment, science and academia. Participants to this initiative are six General Secretariats from five ministries, namely the Ministries of Economy and Finance, Environment and Energy, Rural Development and Food, Development, Digital Governance. Local governance is represented through the Union of Regions

¹³ <https://ypen.gov.gr/wp-content/uploads/2022/03/SXEDIO-DRASHS-KO-8.pdf> (in Greek).

¹⁴ <https://ypen.gov.gr/symfonia-elladas-masdar-ton-iae-gia-ton-metaschimatismo-tou-porou-sto-epomeno-gr-eco-island/> (in Greek).

¹⁵ <https://bluemunicipalities.org/en/municipalities/>

¹⁶ <https://circularcitiesforum.org/> (in Greek).

of Greece, the Central Union of Greek Municipalities, and the Network of Solid Waste Management Agencies. Members include the Union of Greek Banks, the Association of Waste recycling and energy recovery industries and enterprises (SEPAN), the Hellenic Confederation of Professionals Craftsmen and Merchants (GSEVEE), the Hellenic Solid Waste Management Association, and three universities (NTUA, AUTH, UNIWA).

Within this initiative, **14 actions are being implemented** for the transition of waste management and businesses (industry, craft, trade) to the circular economy. The goal is to work so as to contribute, through shared policy proposals, to the achievement of the following broader **goals**:

- To accelerate the transition of cities to **circular waste management models**.
- To promote **information sharing**, awareness and **innovation** on production of products with a low footprint, the transformation of consumers into responsible and motivated CE actors through incentives, and the development of **technological solutions** for the circular management of resources.
- To facilitate **networking** with other agencies and bodies, in Greece and abroad, for the development and exchange of good practices for a circular economy.

Examples of private policy initiatives (sectoral)

→ Good practice example: network promoting CE with regard to multiple materials

The **Just Go Zero** project ⁽¹⁷⁾ is a **circular economy initiative in Greece, promoted by a network of private partners**, aiming at the implementation of circular economy in closed communities and to give added value to similar actions on islands or other isolated areas. It is based on four pillars: **education, digitization, reverse logistics, and resource management**. Recycling and energy recovery are the core actions of the project aiming to turn waste into a resource and to minimize (to zero) waste landfilling. **Materials that are managed include** the following: **recyclables** (paper, plastic, glass, and aluminium), **organic waste** (coffee residues, coffee capsules, cooking oil, and food remains), and **special categories** (batteries, light bulbs, print cartridges, electrical appliances, and cigarettes butts).

The results of this private initiative, especially its communication actions to citizens, are extremely positive and are expected to inspire local authorities, in the context of fulfilling their binding obligations, regarding the separate collection of waste for recycling, but also to implement similar information and awareness campaigns. The Ministry of Environment and Energy has already collaborated with the project to disseminate its good practices that seek to maximize recycling and achieve zero landfilling of waste.

From the beginning of 2022 until today, in Tilos, where this program is implemented, more than 350 tons of waste materials have been recycled and diverted from landfills. On the island, an information center (Point Zero) has been set up where both residents and visitors can be informed on the project and receive an answer to any question about the program.

→ Good practice example: recycling of plastics from fishing and shipping activities

BlueCycle ⁽¹⁸⁾ is a Blue and Circular Economy initiative, funded by the Athanasios C. Laskaridis Charitable Foundation, with the aim of **utilizing plastic waste from fishing and shipping activities**, so as to create high quality raw material, suitable for reintegration into industry and to promote a holistic approach to tackling the problem of plastic waste ending up in the sea. The **BlueCycle lab**, which is part of the initiative, focuses on the valorisation of collected marine plastic waste, including end-of-life and discarded fishing gear, cords and ropes. This waste undergoes a certified process and turns into **pellets**, ready to be used by industry, or into **filament for 3D printing**. The BlueCycle lab also carries out research on the sustainability of materials; new uses, design and

¹⁷ <https://www.justgozero.com/en/>

¹⁸ <https://bluecycle.com/schetika-emas/>

development of products and services; artistic works made from marine plastics from fishing and shipping activities; and quality control of manufactured products, such as furniture ⁽¹⁹⁾.

➔ *Good practice example: food*

In response to the need to develop strong and reliable mechanisms to limit food waste and support weaker social groups, the **Thessaloniki Central Market (CMT)** ⁽²⁰⁾, since April 2018, has established systems for the collection, sorting and distribution to charities, social structures and social grocery stores that **provide food resources to those in need of edible but non-marketable fresh fruits and vegetables** at a local level, in the context of the corporate social responsibility.

Since 14 July 2022 CMT, as a partner of LIFE IP CEI GREECE project, is engaged in the implementation of **demonstration actions to prevent food waste generation**, which include:

- collection of unsold food from the Central Markets or from cooperating bodies (traders, farmers);
- sorting and temporary storage;
- operation of food redistribution system;
- networking with local public benefit organizations; and
- systematic monitoring of all the above activities through the use of new technologies (e.g. QR codes, smartphone application, database).

The way forward

Identifying and addressing barriers and challenges

The factors that hinder the transition to a circular economy in the country are expected to be the same as those reported in the 2022 CE Country Profile ⁽²¹⁾, based on the CE survey carried out in the period December 2020 - January 2021. However, **the relevance of “consumer behaviour” as an obstacle to moving towards a CE should be lower than in 2022**, as, since then, the benefits of the transition to a CE model have been communicated and highlighted through the awareness campaigns of LIFE IP CEI GREECE Project ⁽²²⁾.

According to the 2022 CE Country Profile ⁽²³⁾:

“Within the framework of the integrated project LIFE-IP CEI Greece ⁽²⁴⁾ that is coordinated by the Hellenic Ministry of Environment and Energy, a **nationwide survey on the CE** was carried out in December 2020 and January 2021. This involved all types of stakeholders that could contribute to the transition to a more CE in Greece, covering a broad range of players, from public authorities, waste management bodies and industry actors to academic and research institutions, and other organisations representing the economic, business and civil society of the country. The survey aimed to gain an insight into the views and perceptions of the stakeholders regarding their areas of interest, the key challenges, priorities and enablers, including the trends in the practices and avenues of growth in the implementation process of the CE.

¹⁹ <https://bluecycle.com/en/the-products/>

²⁰ <https://www.kath.gr/en>

²¹ https://www.eionet.europa.eu/etcs/etc-ce/products/etc-ce-products/etc-ce-report-5-2022-country-profiles-on-circular-economy/greece-ce-country-profile-2022_for-publication.pdf

²² https://circulargreece.gr/wp-content/uploads/2021/09/LIFE-IP-CEI-GR_A1-2_%CE%911D3_TR_1.0_%CE%88%CE%BA%CE%B8%CE%B5%CF%83%CE%B7-%CE%B1%CF%80%CE%BF%CF%84%CE%B5%CE%BB-%CE%AD%CF%81%CE%B5%CF%85%CE%BD%CE%B1%CF%82.pdf (in Greek).

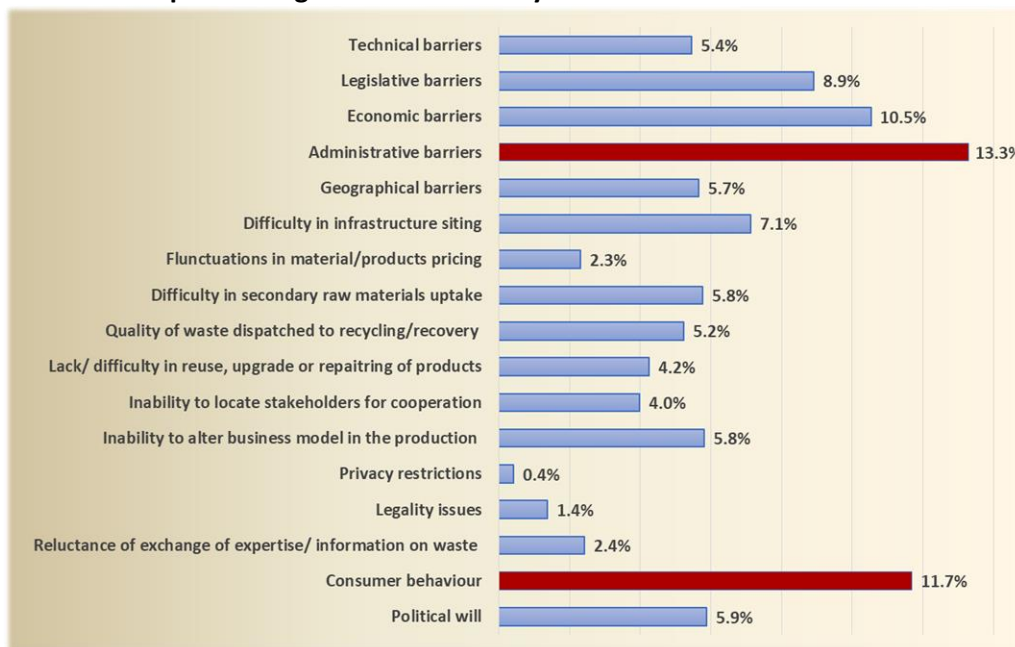
²³ https://www.eionet.europa.eu/etcs/etc-ce/products/etc-ce-products/etc-ce-report-5-2022-country-profiles-on-circular-economy/greece-ce-country-profile-2022_for-publication.pdf

²⁴ <https://circulargreece.gr/>

The outcomes of the survey with regard to the challenges in implementing CE, (presented in the Figure below), show that **administrative barriers and consumer behaviour are considered to be the most significant factors hindering the transition to a CE in Greece**. Other important barriers are associated with economic and legislative obstacles that largely influence the companies' opportunities for moving to a CE. It has, however, to be noted that the significance of legislative barriers could be less than shown since the survey was carried out before the completion of the revision process on the key legislative and policy tools related to CE, such as the legislation on waste, the new National CEAP and the GPP National Action Plan. In addition, economic barriers associated with the availability of financial resources could also be of less significance since the new finance framework now boosts investment in the CE.

According to the results of the survey, the **financial tools** for promoting investment related to the CE and the strengthening of **capacity building among stakeholders and education of citizens are shown to be the main enablers**. Other policy initiatives that would fuel the transition to a CE are economic instruments for the promotion of sustainable products/services, information/awareness campaigns, economic instruments for waste-to-energy production, the development of a recycling market, and GPP".

Barriers to implementing a circular economy in Greece



Future policy plans

The **National Recovery and Resilience Plan** was amended on 7th December 2023 to include a REPowerEU chapter ⁽²⁵⁾. Some examples of investments that are considered directly relevant to CE are presented below:

- **REPowerEU investments - Component 5.2**

It includes investments to support energy efficiency, the deployment of new renewable energy sources, energy storage and carbon capture and storage, including pilot projects for biomethane and renewable hydrogen production and the promotion of carbon capture and storage (CCS) technologies in hard-to-abate industries, aiming to foster industry decarbonisation. The objective of the investment **"Pilot projects for Biomethane and Renewable Hydrogen"** is to foster

²⁵ <https://greece20.gov.gr/en/the-complete-plan> See also the Proposal for a Council Implementing Decision on the approval of the assessment of the recovery and resilience plan for Greece, COM(2021)328 final: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52021PC0328>

sustainable bio-methane and renewable hydrogen in Greece through the provision of financial support to companies. Concerning bio-methane, the investment shall support either the construction of new biogas production plants and/or the transformation of existing biogas plants to produce sustainable biomethane and the liquefaction, compression and storage of the produced sustainable biomethane. For the production of sustainable biomethane other technologies shall be employed: a) thermochemical and hydrothermal processes (exclusively for the production of sustainable bio-methane); b) biological processes (biophotolysis and fermentation); c) biogas enrichment from anaerobic digestion of biomass materials, which shall be used exclusively for the production of sustainable bio-methane (biogas production could be supported if it also includes upgrading biogas to sustainable bio-methane); and d) methanation, which shall be produced only from bio-waste. **The production of bio-methane shall be promoted through the energy recovery of the organic component of municipal waste, sewage treatment plant sludge, agricultural and industrial effluents**, among others (excluding plastic waste). The production of recycled carbon fuels is not supported by this investment. The production of renewable hydrogen and sustainable bio-methane needs to comply with the Renewable Energy Directive and its delegated acts (Directive 2018/2001/EU).

Moreover, **further investments and reforms that are considered directly relevant to the CE within the National Recovery Plan** include the following:

Renovate investments (component 1.2)

It includes investments to reduce carbon dioxide emissions, support for the achievement of the climate neutrality of urban areas and the enhancement of the climate resilience of cities and their building stock. The investments in the renovation of buildings, i.e. energy renovation of residential buildings, improvement of energy efficiency of buildings and processes of private companies, energy upgrades of public sector buildings, require the economic operators to carry out the construction work to ensure that at least 70 % (by weight) of non-hazardous construction and demolition waste generated on the construction site are prepared for re-use, recycling and other material recovery, including backfilling operations, using waste as a substitute for other materials, in accordance with the waste hierarchy and the EU Construction and Demolition Waste Management Protocol.

Recharge and refuel investments (component 1.3)

It includes investments contributing to the green transition through providing support to enterprises carrying out operations related to the low-carbon economy and climate change resilience. The Product-E Green investment aims, among other things, at the supply-side of e-mobility. It will provide support for the development of more than 10 sites with research and development departments for innovative products and services, such as the recycling of electric car batteries and the regular reuse of raw materials, including lithium and cobalt, or the design of electric vehicles and regular or high-power charge points.

Sustainable use of resources, climate resilience and environmental protection (component 1.4)

This includes reforms and investments that are anticipated to increase the efficiency in using natural resources and support the transition towards a CE based on waste prevention, reuse and recycling.

- The **Urban wastewater and sludge management infrastructures from wastewater treatment investment** promotes circular and sustainable water consumption. The upgrading, expansion and modernisation of wastewater treatment plants involve the reuse of treated water, whilst the implementation of sewage sludge management infrastructure is expected to contribute to an increase in sewage recovery/recycling.
- The **Waste management law for the implementation of sustainable landfilling and recycling reform** includes the establishment of a National Waste Regulator to boost the implementation of the waste hierarchy and supports the transition towards a CE. It comprises a revision of the existing waste management legislation with a view to enabling the transition towards a CE. The updated legislative package on waste is already in force. In particular, the reform will introduce incentives for municipalities to achieve higher recycling rates; enforce separate collection of biowaste, metal, paper, glass and plastic; extend existing EPR schemes, upgrade the operation of recycling sorting facilities,

and simplify the legislation around green points, i.e. centres that serve for collecting recyclable waste and used items separately. The reform supports the achievement of targets to increase reuse and recycling rates of municipal solid waste to 60 % and reduce the landfill rate to 10 % by 2030 (Law 4819/2021). The national waste regulatory authority that will be put in place in the context of this reform, shall, *inter alia*, be responsible for ensuring the soundness of the pricing policy, supervising the implementation of waste management across the country, and supervision of the proper functioning of the regional and local waste management utilities.

Additionally, a **proposal for a new law**, which was under public consultation²⁶ until 12 September 2024, aims to introduce the following provisions:

- Implementation, from the end of 2025, of a single, **nationwide deposit-and-refund system for plastic and aluminum bottles**. In the full development of the system, approximately 15,000 return points are expected to be set up for the convenience of the consumer. At these points, the consumer will return the bottles and collect the price of the guarantee.
- Implementation of a service for the **separate collection of recyclables and bio-waste**, in small island and mountainous municipalities with less than 10,000 inhabitants and provision of appropriate collection infrastructure to the remaining municipalities.
- Regulation of issues related to the implementation of **EPR principle** (alternative waste management) with the aim of submitting a new business plan for the relevant producers, which will also include the collection of recyclable materials, which is expected to increase the relevant revenues from recycling.

The creation of strong waste management bodies is also foreseen, as well as the possibility of direct intervention by the Ministry of Environment and Energy regarding emergencies in waste management and prevention, which generate adverse effects on the environment and human health, as well as fines.

- The **Drinking water supply and saving infrastructure investment** aims to improve the availability and quality of drinking water, and reduce infrastructural leaks and public health risks.
- The **new Water and Wastewater Regulatory Authority**, which is the single body responsible for implementing the rational management of water resources and is designed by the Hellenic Ministry of Environment and Energy, has already been established and is expected to be fully operational by the end of 2024.

Other important CE initiatives not included in the National Recovery Plan, which have mostly been introduced by the revised national legislation on waste, are presented below.

- **Reuse**: the establishment of reuse centres in municipalities with population exceeding 20,000 by 2024 and encouragement of inter-municipal cooperation schemes by the regional waste management bodies to serve the remaining municipalities (art. 18, Law 4819/2021).
- **Extended producer responsibility schemes**: new EPR schemes have been established for textiles; agricultural plastic products, such as greenhouse plastics; and expected to extend to medicine intended for home consumption; mattresses; furniture; toys and sports equipment; light personal electric vehicles and electric bicycles (art. 10, Law 4819/2021).
- **Separate collection schemes**: the introduction of separate collection obligations on specific economic activities for individual waste streams in order to speed up recycling rates (Law 4819/2021):
 - four packaging waste streams in public areas, such as cinemas, theatres, concert halls, commercial centres, hotels, hospitals, restaurants, airports and ports; the same obligation in areas of municipal jurisdiction, such as sports facilities, nurseries and playgrounds;
 - printed paper in central government bodies' buildings;
 - printed paper and packaging waste, portable batteries and biowaste in primary and secondary schools;
 - suitable areas for the separate collection of at least four waste streams in new buildings;

²⁶ <http://www.opengov.gr/minenv/?p=13404>

- biowaste resulting from major biowaste producers' operations, such as catering companies, food processing facilities, food markets, supermarkets and hotels.
- **Food waste:** introduction of the food waste hierarchy; setting of a national food waste reduction target at retail and consumer level for achievement by 2030; establishment of an electronic food-waste registry to monitor food-waste generation; promotion of food donation by setting minimum requirements and economic incentives for donors (art 20, Law 4819/2021).
- **Plastics:** the Hellenic Ministry of Environment and Energy is party the Plastics Economy Global Commitment since 2022.

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

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