

Waste management country profile

with a focus on municipal and packaging waste

Spain

March 2025



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Key messages

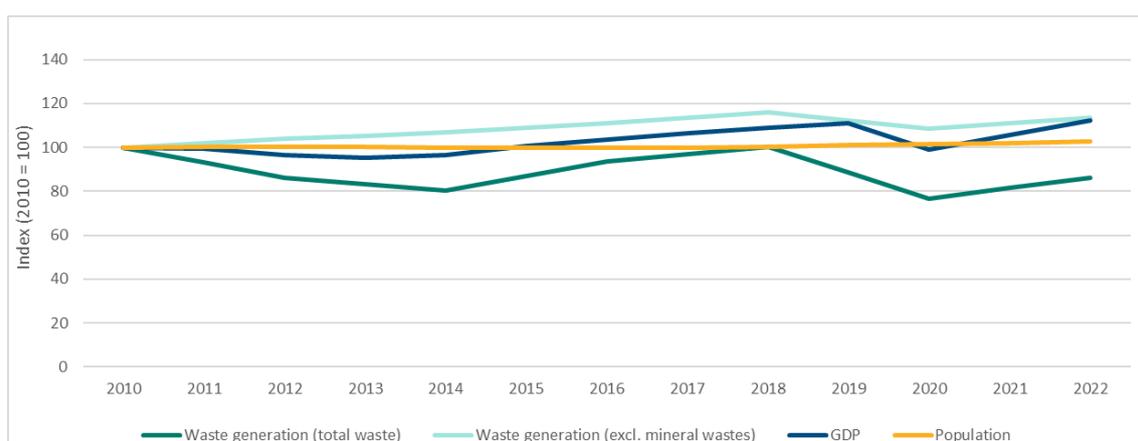
- Spain's total waste generation follows a decreasing trend, while waste generation excluding major mineral waste has increased overall. Overall, waste generation follows roughly the trends in economic growth.
- Spain already reports a packaging recycling rate above the 2025 recycling target, however, the recycling rate might be overestimated.
- Spain has recently managed to slightly increase the preparing for reuse and recycling rate, and to reduce landfilling of municipal waste, but still significantly more efforts are required to reach the 2025 target on preparing for reuse and recycling, and the 2035 reduction target on landfilling.
- There is a need to improve the effectiveness of the separate collection system, especially for bio-waste, and to incentivise sorting at source. Plastic packaging waste also needs more attention. The effects of the new policies, introduced in 2022 with the Law on Waste and Contaminated Soil in a Circular Economy, remain yet to be seen.

Trends in waste generation and treatment

Total waste generation

The total amount of waste generated in Spain has decreased over the last 12 years (Figure 1), mainly driven by mineral and solidified wastes, particularly from the mining and quarrying sectors. If major mineral wastes are excluded, the waste generation trend shows an overall small increase. The increment is largely driven by sorting residues and recyclables. Spain's GDP decreased in 2020, most likely due to the Covid-19 outbreak, which led to a temporary drop in waste generation as well. Overall, there appears to be no decoupling between waste generation and economic growth.

Figure 1 Generation of waste (total and excluding major mineral wastes), population and economic development, 2010-2022



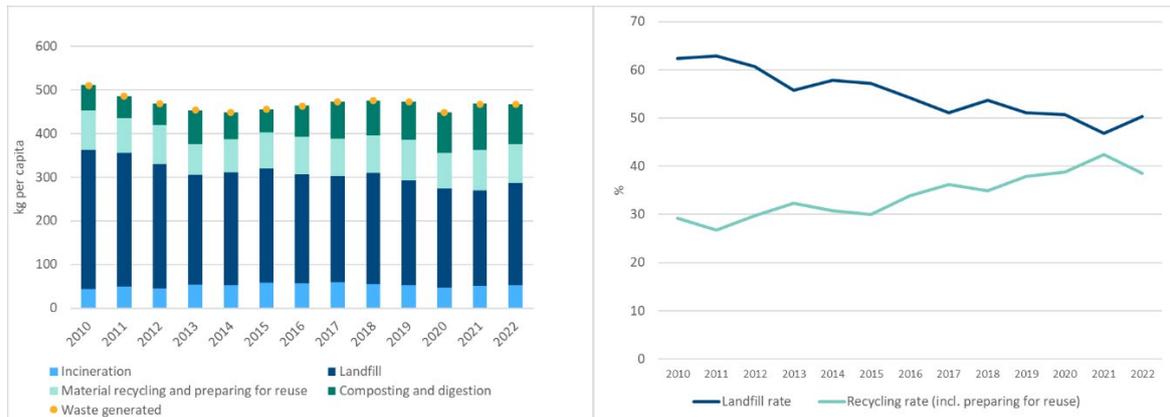
Source: Eurostat (2024b, 2024c, 2024g)

Note: Waste generation data for odd years are interpolated.

Municipal waste

Spain's municipal waste generation shows a small decrease over the last 10 years (Figure 2, left). In 2022, Spain generated 467 kg/cap of municipal waste, which is slightly below the (estimated) EU-27 average of 513 kg/cap.

Figure 2 Municipal waste management (left) and rates of recycling (incl. preparing for reuse) and landfill (right), 2010-2022



Source: Eurostat (2024e)

Note: As of the reference year 2020, new reporting rules apply for calculating recycled municipal waste pursuant to the targets laid down in Article 11.2(c-e) of Directive 2008/98/EC. Spain has implemented the new reporting rules (with a number of limitations), and data calculated using both methodologies are reported to Eurostat. However, the data shown in the figure above are calculated using the old calculation rules.

The preparing for reuse and recycling rate of municipal waste shows a moderate increase from 29% in 2010 to 39% in 2022 (Figure 2, right), which is significantly below the (estimated) EU-27 average of 49%. The share of incineration remained stable during this timeframe and was 11% in 2022. Spain heavily relies on Mechanical biological treatment (MBT) for the pretreatment of mixed municipal solid waste. Currently, the composted and digested category includes some outputs from MBT plants, such as municipal bio-waste treated and recovered in these plants, as well as other recovered materials subsequently sent to recycling. However, as of 2027, these outputs (from the municipal bio-waste treated) will not be considered recycled waste according to the Waste Framework Directive, indicating an urgent need to speed up the separate collection and treatment of bio-waste in Spain. (ETC/CE, 2022a)

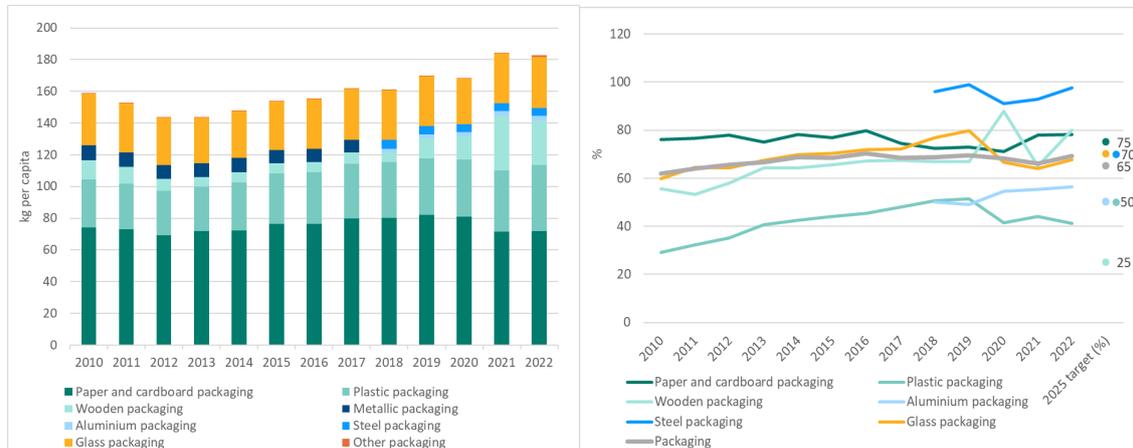
Spain has also reported data to show compliance with the preparing for reuse and recycling target of 55% for 2025, as laid down in the Waste Framework Directive. The difference between these data, following the reporting obligation of the Waste Framework Directive, and the data shown in Figure 2 (voluntary reporting) is below 1 percentage point for the preparing for reuse and recycling rate in 2021. For 2022, the reported preparing for reuse and recycling rate according to the reporting obligation - still awaiting validation by Eurostat - is 1-5 percentage points higher than the voluntarily reported data in Figure 2 (Eurostat, 2024d).

The landfill rate in Spain shows a moderate decrease, from 62% in 2010 to 50% in 2022 (Figure 2, right), indicating that Spain still relies heavily on landfilling.

Packaging waste

Packaging waste generation in Spain has shown a moderate increase since 2010 (Figure 3, left). The country generated 183 kg/cap in 2022, which is close to the (estimated) EU-27 average of 186 kg/cap in the same year ⁽¹⁾.

Figure 3 Packaging waste generation (left) and recycling rates (right), 2010-2022



Source: Eurostat (2024f)

Note: There is a break flagged in the time series of waste generation data for paper/cardboard, wooden and other packaging in 2021; of recycling data for plastic, glass, wooden, and other packaging in 2020; of wooden packaging generation and recycling data in 2019 and 2020; and of other packaging generation in 2022. As of the reference year 2020, the rules for calculating recycled packaging waste have changed, pursuant to Article 6a of Directive 94/62/EC. Spain has applied the new calculation rules since the reference year 2024 (Eurostat, 2024a).

Spain's overall packaging waste recycling rate shows a small increase between 2010 and 2022, reaching 69% in 2022 (Figure 3, right). The overall packaging recycling rate is strongly influenced by paper and cardboard packaging as this is the largest fraction. In 2022, the recycling rates for all materials except plastics were above the 2025 recycling targets. The shift to the new reporting rules in 2020 seems to have led to decreases in recycling rates especially for plastic, glass, and steel packaging. However, there are indications that the generated packaging waste is underreported and thus the recycling rate overestimated (ETC/CE, 2022a).

Policies in place to encourage waste prevention measures and to increase recycling

Legislative framework and waste management plans

In 2022, the new Law 7/2022 on Waste and Contaminated Soil for a Circular Economy was published. This Law implements the modifications introduced by Directive (EU) 2018/851 on waste and by the Directive on single-use plastics. Article 12 assigned to the 'Ministerio para la Transición Ecológica y el Reto Demográfico' (MITERD) the task to develop the National Waste

⁽¹⁾ The EU-27 average might be influenced by the situation that not all Member States already fully apply the reporting rules for packaging waste as defined in the Commission Implementing Decision 2019/665.

Framework Plan and to establish the basic goals regarding waste generation prevention and reduction, as well as separate collection and reuse and recycling measures. In addition, and according to the Política de Cohesión 2021-2027, Spain must have a National Waste Framework Plan and waste management plans for its Autonomous Communities (ETC/CE, 2022a).

The national Spanish Waste Management Plan is called the National Waste Framework Plan (PEMAR) 2023-2035. Its main goals are to guide the Spanish waste policy, to provide all the measures needed to alleviate the inefficiencies detected in previous policies, and to promote actions which can guarantee the achievement of legislative goals and deliver better environmental results. PEMAR refers to municipal waste, industrial waste, waste with specific legislation, and hospital and agricultural waste, among others. Additionally, the strategy for the reduction of biodegradable waste is also included in PEMAR (ETC/CE, 2022a).

Waste prevention policies

Spain's National Waste Prevention Programme (NWPP) 'Programa estatal para la prevención de residuos' is a stand-alone document covering the years 2014-2020 (MITECO, 2013). The programme aimed to reduce the annual generation of waste by 10% by 2020 compared to 2010, measured in tonnes. The primary goals of the NWPP connected to waste prevention were to promote product reuse and their lifetime extension (EEA, 2023c). A new NWPP is under development and is expected to be approved by the end of 2024, together with the update of PEMAR (MITECO, 2024a).

Spain's NWPP prioritised the following waste streams: food waste, construction and demolition waste, hazardous waste, household waste, municipal waste, paper waste, packaging waste, waste tyres, end-of-life vehicles, end-of-life furniture, end-of-life toys and books, textile waste, waste electrical and electronic equipment (WEEE), manufacturing waste, and bulky waste (EEA, 2023c).

In addition, Spain has adopted several waste prevention targets within its circular economy strategy 'España Circular 2030' (MITECO, 2020), to be achieved by 2030:

- 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.

Actions to tackle food waste and loss include campaigns informing about the differences between best-before and expiration dates, as well as guidelines. Such guidelines include the 'Guide to good hygiene practices for food waste reduction in restaurants and retail trade', published by the Catalan Food Safety Agency, and the 'Guidelines on food donation of surplus food' published in 2020 by the ELIKA-Basque Foundation for Agro-food Safety of the Basque Country. Another measure against food waste and loss was an official certificate by the Region of Castilla-La Mancha for companies and producers fighting food waste (EEA, 2023c). Competent authorities at the national and regional levels will also have to include measures to reduce food waste in their waste prevention programmes, complementing the provisions established in the national prevention programme. The Law on Waste and Contaminated Soil for a Circular Economy includes concrete measures for reducing food waste, including:

- Food business operators must prioritise, in the following order, the donation of food and other redistribution of food for human consumption, or the processing of unsold products that are still fit for consumption; the feeding of animals and the manufacture of animal feed; the use as by-products in other industries; and as a last resort the waste treatment, for the production of compost and digestate for the use on land with the aim of benefiting soil.
- In the corresponding regulations on the financing of waste collection services, local authorities will be able to establish reduced local charges for food business operators that set up, in collaboration with non-profit and charity organisations, management systems that reduce food waste in a significant and quantifiable manner.

Moreover, the national circular economy strategy 'España Circular 2030' includes measures related to food redistribution, as well as measures to valorise food resources and create new market opportunities. (MITECO, 2024a)

Furthermore, Spain promoted the reduction of packaging and the use of reusable or refillable packaging within public procurement, and eco-design for vehicles. Also, the founding of shops for repair and second-hand electrical and electronic equipment (EEE), furniture, toys, books, and textiles were promoted (EEA, 2023c).

The NWPP was monitored every two years using several indicators. Examples of indicators are the total amount of waste generated per year, the generated amount of WEEE per year, the amount of discarded tyres per year, and the number of public awareness campaigns on prevention conducted per year. The results were presented in the annual report published by the Ministry of Agriculture, Food and the Environment. No information regarding the foreseen budget for implementing the NWPP could be found in the NWPP. (EEA, 2023c)

According to 2021 data reported to the EEA according to Commission Implementing Decision (EU) 2021/19(EEA, 2024), Spain reused:

- 4777 tonnes of textiles,
- 21168 tonnes of electrical and electronic devices, and
- 32332 tonnes of furniture.

It should be noted that these data have been reported for the first time. As the reporting process matures, it is expected that these data will strengthen but for now, caution is advised in drawing insights from the dataset. More information about the interpretation and limitations of the dataset is available (EEA, 2024).

Policies to encourage separate collection and recycling

The Law on Waste 7/2022 requires the separate collection of waste paper, metals, plastics, glass, and bio-waste from households since the beginning of 2024, while textile waste, bulky waste, hazardous household waste, and used cooking oil have to be collected separately by the end of 2024 (ETC/CE, 2022a). The Ministry of the Ecological Transformation and the Demographic Challenge is currently carrying out a study on the implementation at the level of the municipalities (MITECO, 2024a).

The implementation of separate collection systems is the responsibility of the local authorities, and there are different systems in place. The most widespread separate collection system

consists of using four different waste bins for lightweight packaging, glass packaging, paper and cardboard, and mixed residual waste. Door-to-door separate collection of bio-waste is mainly limited to some towns and suburbs in areas of intermediate population density. This system is usually complemented by a network of civic amenity sites that allow the separate collection of other waste streams such as WEEE, bulky waste, or textiles. (ETC/CE, 2022a)

Pay-as-you-throw schemes that could incentivise waste producers to sort at source are scarcely applied and are usually volume-based (EEA, 2023b). The Law on Waste and Contaminated Soil for a Circular Economy introduced a few provisions aiming at advancing the implementation of pay-as-you-throw schemes such as specific and differentiated fees that reflect the real cost of municipal waste management (EEA, 2023b). In addition, the Law introduced a national tax of EUR 0.45 per kg levied on non-reusable non-recycled plastic packaging.

In Spain, the Extended Producer Responsibility (EPR) system in place for cans, plastics, beverage cartons, paper and cardboard, and glass packaging only covered household packaging until 2024 (ETC/CE, 2022a); as of 2025, EPR systems for commercial and industrial packaging will also be operational. For the household packaging EPR system, different fees are applied for different packaging materials such as steel and aluminium in metal packaging, or PET, HDPE and LDPE in the plastic packaging group (MITECO, 2024a). These fees are calculated to cover the extra cost of the selective collection of packaging waste and are only based on the type of material. The Law on Waste and Contaminated Soil for a Circular Economy did not include more advanced fee modulation apart from the possibility of introducing eco-modulation in generic terms. However, the recently adopted packaging decree includes a system of advanced fee modulation and introduced Extended Producer Responsibility (EPR) schemes for commercial and industrial packaging (ETC/CE, 2022a).

Currently, Spain has no mandatory deposit-return system (DRS) in place. The Law on Waste and Contaminated Soil for a Circular Economy established separate collection targets for single-use plastic bottles: 70% by weight of what was put on the market by 2023, and 90% by 2027. If those objectives are not met, Spain will implement a deposit-return system at the national level (ETC/CE, 2022a). Recent data for the reference year 2023, published in November 2024, indicate a collection rate of 41.3%, and the Ministry concluded that a DRS should be implemented within two years (MITECO, 2024b).

Policies and instruments to discourage landfilling or incineration

Spain has a national landfill tax, set by the Law on Waste and Contaminated Soil for a Circular Economy, which establishes the minimum baseline for a landfill tax for regional authorities. The national landfill tax is EUR 40 per tonne for municipal solid waste and EUR 30 per tonne for rejects from the treatment of municipal solid waste (ETC/CE, 2022a), which is close to the average of the EU-27 Member States applying landfill taxes (EUR 39-46 per tonne (EEA, 2023a)). The landfilling of waste without prior treatment, of separately collected waste, and of unsold surpluses of non-perishable products is banned. However, this ban is not fully implemented.

The Law on Waste and Contaminated Soil for a Circular Economy also sets a tax on incineration at the national level, which can be increased by regional authorities in their regions (EEA, 2023b). A Ministerial Order established a list of waste that can be prepared for reuse or recycling and that cannot be destined for incineration (EEA, 2023b). The incineration taxes, depending on the incineration facilities, are the following:

- EUR 15 per tonne of municipal solid waste and EUR 10 per tonne of treatment rejects for incineration facilities coded as R01, and
- EUR 20 per tonne of municipal solid waste and EUR 15 per tonne of treatment rejects for incineration facilities coded as D10 and other incineration facilities.

Prospects for meeting the targets on recycling and landfilling

Spain has been identified to be at risk of missing the 2025 targets of 55% for the preparing for reuse and the recycling of municipal waste, for the 2035 target to reduce landfilling of municipal waste to 10%, as well as for the recycling of plastic packaging, aluminium packaging and paper and cardboard packaging, but was assessed to be on track to meet the 2025 target for total packaging waste (ETC/CE, 2022b). Spain reports a recycling rate for total packaging of 70%, well above the target of 65%.

Spain has made some progress in increasing the preparing for reuse and recycling rate for municipal waste and reducing the landfill rate, but still needs to speed up its progress towards reaching the 2025 target for the preparing for reuse and recycling of municipal waste, which stood at 39% in 2022. Besides, Spain is 40 percentage points above the 2035 landfill target, thus it also needs to speed up progress to divert municipal waste away from landfilling. With respect to packaging waste, more efforts are needed to move towards higher recycling rates, especially for plastic packaging waste.

Consequently, the European Commission issued a number of policy recommendations to improve Spain's waste management performance (EC, 2022, 2023)

- Support preparing for reuse of municipal waste and reuse systems for packaging.
- Further develop and optimally use waste treatment infrastructure related to the higher steps of the waste hierarchy, and ensure proper treatment capacity dedicated to separately collected bio-waste.
- Implement restrictions on landfilling of all waste that is suitable for recycling, and incentivise municipalities to improve the effectiveness of waste collection and recycling by means of implementing landfill taxes.
- Introduce enforcement mechanisms to clarify the allocation of responsibilities and strengthen the coordination of the regional and local authorities and Extended Producer Responsibility (EPR) organisations to meet the recycling targets.

References

EC, 2022, *Environmental Implementation Review 2022 Country Report - SPAIN*, COMMISSION STAFF WORKING DOCUMENT No SWD/2022/273 final, Directorate-General for Environment (<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52022SC0256&qid=1715939262346>).

EC, 2023, *The early warning report for Spain*, COMMISSION STAFF WORKING DOCUMENT No SWD(2023) 183 final (<https://eur-lex.europa.eu/legal->

content/EN/TXT/?uri=CELEX%3A52023SC0183&qid=1732466267521) accessed 7 December 2023.

EEA, 2023a, *Economic instruments and separate collection systems — key strategies to increase recycling*, EEA Briefing (<https://www.eea.europa.eu/publications/economic-instruments-and-separate-collection>) accessed 12 February 2025.

EEA, 2023b, *Technical note accompanying the EEA briefing ‘Economic instruments and separate collection – key instruments to increase recycling’ — European Environment Agency*, File (<https://www.eea.europa.eu/publications/economic-instruments-and-separate-collection/technical-note-accompanying-the-eea/view>) accessed 18 January 2024.

EEA, 2023c, *Waste Prevention Country Profile - Spain*, EEA (https://www.eea.europa.eu/themes/waste/waste-prevention/countries/2023-waste-prevention-country-fact-sheets/spain_waste_prevention_2023) accessed 12 April 2024.

EEA, 2024, *Reuse flows according to the implementing decision (EU) 2021/19 Information on the database structure and use*, No Database version 1, European Environment Agency (EEA) (<https://sdi.eea.europa.eu/catalogue/srv/api/records/50b2430b-8218-471c-86ea-65236a870a28/attachments/Reuse%20metadata%20annex%20Version%201.pdf>) accessed 5 March 2024.

ETC/CE, 2022a, *Early Warning Assessment Related to the 2025 Targets for Municipal and Packaging Waste - Spain*, European Environment Agency (EEA) (<https://www.eea.europa.eu/publications/many-eu-member-states/early-warning-assessment-related-to>).

ETC/CE, 2022b, *Spain-Early Warning Assessment Related to the 2025 Targets for Municipal and Packaging Waste*, European Environment Agency (EEA) (<https://www.eea.europa.eu/publications/many-eu-member-states/spain/view>).

Eurostat, 2024a, *Country-specific notes referring to data on Packaging and Packaging Waste*, 10/10/2024, (https://ec.europa.eu/eurostat/cache/metadata/Annexes/env_waspac_esms_an_3.pdf) accessed 28 October 2024.

Eurostat, 2024b, ‘GDP and main components (output, expenditure and income) [nama_10_gdp]’ (https://ec.europa.eu/eurostat/databrowser/view/nama_10_gdp__custom_9301905/default/table) accessed 15 October 2024.

Eurostat, 2024c, ‘Generation of waste by waste category, hazardousness and NACE Rev. 2 activity (env_wasgen)’ (https://ec.europa.eu/eurostat/databrowser/view/env_wasgen/default/table?lang=en) accessed 22 October 2024.

Eurostat, 2024d, *Information provided by Eurostat on provisional data in response to the reporting obligation in Art. 37(1) Waste Framework Directive related to the target on the preparing for reuse and recycling for municipal waste (Art. 11(2c)).*

Eurostat, 2024e, ‘Municipal waste by waste operations [env_wasmun]’ (https://ec.europa.eu/eurostat/databrowser/view/ENV_WASMUN/default/table) accessed 22 October 2024.

Eurostat, 2024f, 'Packaging waste by waste management operations (env_waspac)' (https://ec.europa.eu/eurostat/databrowser/view/ENV_WASPAC__custom_842634/default/table?lang=en) accessed 28 October 2024.

Eurostat, 2024g, 'Population change - Demographic balance and crude rates at national level [demo_grind]' (https://ec.europa.eu/eurostat/databrowser/view/demo_gind__custom_9301558/default/table) accessed 15 October 2024.

MITECO, 2013, *Programa estatal para la prevención de residuos 2014-2020*, Ministerio para la Transición Ecológica y el Reto Demográfico (MITECO) (https://www.miteco.gob.es/content/dam/miteco/es/calidad-y-evaluacion-ambiental/planes-y-estrategias/Programa%20de%20prevencion%20aprobado%20actualizado%20ANFABRA%2011%2002%202014_tcm30-192127.pdf) accessed 12 April 2024.

MITECO, 2020, *España Circular 2030 Circular Economy Spanish Strategy*, Ministry for Ecological Transition and Demographic Challenge of Spain (https://www.miteco.gob.es/es/calidad-y-evaluacion-ambiental/temas/economia-circular/200714eeec_resumenejecutivo_en_tcm30-510578.pdf) accessed 18 October 2024.

MITECO, 2024a, Information provided during the Eionet review of the draft EEA country profile on waste management for Spain, Ministry for the Ecological Transition and the Demographic Challenge of Spain.

MITECO, 2024b, *INFORME RELATIVO AL CÁLCULO DE LA RECOGIDA SEPARADA DE BOTELLAS DE PLÁSTICO DE UN SOLO USO PARA BEBIDAS EN EL AÑO 2023.*, Ministry for Ecological Transition and Demographic Challenge of Spain (https://www.miteco.gob.es/content/dam/miteco/es/calidad-y-evaluacion-ambiental/sgecociir/plasticos--sup/INFORME%20RECOGIDA%20SEPARADA%20BOTELLAS%20SUP%20A%3%91O%202023_.pdf) accessed 27 November 2024.