Policy brief – June 2026

The evolution of Europe's plastic packaging taxes

This policy brief has been written by **Liliia Akatova**

Summary

- The environmental costs of plastics include marine pollution, air pollution from incineration, and adverse health impacts, particularly in countries that import plastic waste.
- The UK, Portugal and Spain have introduced packaging taxes to reduce plastic waste, increase recycling rates and support the transition to a circular economy.
- The effectiveness of these taxes depends on complementary measures and market conditions such as the availability of recycled plastics, material verification requirements and the price of virgin plastics.
- Plastic packaging taxes can be undermined by limited recycling capacity, substitution with alternative harmful materials and insufficient consumer education.
- Portugal's plastic packaging tax is unique in that it is specifically designed to change consumer behaviour, targeting demand instead of supply.
- Evidence from the UK suggests that plastic packaging taxes can change producer behaviour, increase recycled content and decrease plastic packaging volumes.
- The plastic packaging tax rate in Spain is nearly twice that in the UK. Revenue from plastic packaging tax has gradually declined in the UK as producers have changed their behaviour, but has remained broadly stable in Spain, due to the specifics of the tax.
- Spain's standardised certification for recycled content strengthens enforcement but leads to higher administrative costs, while the UK's self-reported verification system poses traceability risks.
- Countries that have or are introducing a plastic packaging tax should use tax revenues and investment to scale up recycling and reprocessing infrastructure, build recycling capacity, stimulate ecological innovation and promote consumer education.
- These countries should also create robust, harmonised verification requirements for recycled content, embed these taxes in packaging policies that account for products' entire lifecycle and consider introducing a uniform tax on all single-use packaging materials.

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Introduction

Plastic packaging waste has become a pressing environmental challenge in Europe. Over 30 kilogrammes of such waste are generated per person per year in the EU and the UK (Department for Environment, Food and Rural Affairs, 2025; Eurostat, 2025). While plastic recycling rates have increased from 20–25% to over 40% in the EU and around 50% in the UK since 2005, the rate of increase has slowed in recent years (ibid.).

In response, policymakers have deployed a range of circular economy instruments, including deposit return schemes, extended producer responsibility and environmental taxation. Several countries[1] in Europe, including the UK, Spain, and Portugal, have introduced taxes on plastic packaging to influence producer and consumer behaviour. At the EU level, the introduction of the "plastics own resource" in 2021 created a direct fiscal incentive for Member States to reduce non-recycled plastic packaging waste, while also providing a revenue stream for the Multi-Annual Financial Framework (MFF) 2021–27, the EU budget (see Box 1). To offset the costs associated with the plastics own resource and stimulate recycling, EU countries such as Italy are considering introducing their own national plastic packaging taxes.

This policy brief examines how governments design and implement plastic packaging taxes, drawing on evidence from the UK, Spain and Portugal. These cases offer a diverse perspective on policy objectives, tax design and implementation choices, providing valuable insights for jurisdictions considering similar measures. The analysis focuses on existing taxes, the realised and projected revenues they will generate, and early evidence of their impact.

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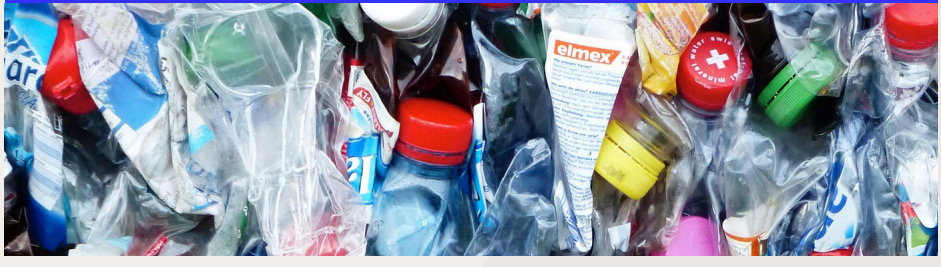
Box 1. The EU's plastics own resource

The EU's plastics own resource is an environmental tax paid by Member States on non-recycled plastic packaging waste at a rate of €0.80 per kg. Introduced in 2021, it provides a new revenue stream under the MFF 2021–27 and encourages Member States to reduce their plastic packaging waste, improve their recycling infrastructure and accelerate the transition towards a circular economy. In 2023, revenues from the tax reached €7.2 billion, 4% of the EU's total revenue (European Court of Auditors, 2024). To date, most Member States pay their contribution from general budgets, rather than dedicated environmental taxes. The European Commission proposed to increase the contribution to €1 per kg for MFF 2028–34, but this met with a backlash from industry, which called on the EU to maintain the current rate and earmark the own resource revenues for circular economy investment (Plastics Europe, 2025).



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1. The scope and design of plastic packaging taxes differ significantly across EU Member States in relation to product coverage, exemptions, tax bases and rates. As a result, what constitutes a tax in one country may be classified as a fee, levy or excise mechanism in another. Therefore, this brief focuses on three informative case studies rather than an exhaustive review of all relevant measures.

Comparison of plastic packaging taxes

Plastic packaging taxes in the UK, Spain, and Portugal differ in their objectives, scope and design, reflecting distinct policy priorities and regulatory contexts (see Table 1).

In Spain, Portugal and the UK, plastic packaging taxes have a strong focus on supply-side measures, aiming to reduce the use of non-recycled plastic and targeting broader systemic changes, such as shifting towards a circular economy. Spain and Portugal explicitly link these objectives to the EU-wide regulation of waste and single-use plastics, including the Single-Use Plastic Directive and the Packaging and Packaging Waste Regulation. Portugal's tax also has a unique demand-side objective in targeting consumption at the point of sale.

Table 1. Plastic packaging taxes in the UK, Spain and Portugal

	UK	Spain	Portugal
Objective	• Encourage the use of recycled plastic • Reduce plastic waste volume • Promote recycling technologies • Facilitate the transition to a circular economy	• Encourage reuse and recycling of plastic • Improve waste management • Facilitate the transition to a circular economy	• Reduce the consumption of single-use packaging (behavioural change) • Reduce the volume of waste • Facilitate the transition to a circular economy
Implementation timeline	The tax came into force on 1 April 2022	The tax came into force on 1 January 2023	The contribution came in force on 1 July 2022
Tax rate	£228.82 per tonne of non-recycled plastic packaging[2] (~£0.23 or €0.26 per kg)	€0.45 per kg of non-recycled plastic contained in non-reusable packaging	€0.30 per single-use plastic packaging for ready-to-eat meals, plus VAT (13% or €0.04)
Point of taxation	Manufacture in or import into the UK	Manufacture, import or intra-EU purchase	Introduction into consumption (first sale of packaging by producer/importer for use in, for example, restaurants)
Scope of taxed products	Plastic packaging containing less than 30% recycled plastic	• Non-reusable plastic packaging • Semi-finished plastic products used in the manufacture of packaging • Plastic products designed to enable closure, marketing or presentation of packaging (e.g., caps)	Single-use packaging, including composite packaging, for the purchase of ready-to-eat meals for takeaway or delivery
Type of revenue	Contributes to the UK government's general revenues	Contributes to the Spanish government's general revenues	50% – state budget 20% – Environmental Fund 20% – Trade Modernisation Fund 5% – Portuguese Environment Agency 3% – Tax and Customs Authority 1% – General Inspection of Agriculture, Sea Environment and Spatial Planning 1% – Economic and Food Safety Authority
Notable exemptions	• Containing 30% or more recycled plastic • Low volume (less than 10 tonnes of packaging per year) • Medical use • Intended for export	• Low volume (less than 5 kg of non-recycled plastic per month (~0.06 tonnes per year) • Hygiene and medical use • Intended for export	• Fully recyclable mono-material with at least 25% recycled content • Social or humanitarian use • Intended for export or transportation to the Azores or Madeira

Sources: HMRC (2020); HMRC (2026); Agencia Tributaria (2026); Spain's Law 7/2022 on waste and contaminated soils; Assembleia da República (2020; 2023).

Plastic packaging tax rates differ across the three countries. In the UK, the Plastic Packaging Tax (PPT) is levied on producers and importers, targeting non-recycled plastic. The rate has gradually increased from £200 per tonne in 2022–23 to £228.82 per tonne in 2026–27 (HM Revenue

2. Applies from 1 April 2026. The rate is gradually increased each tax year in line with the Consumer Price Index (CPI).

and Customs [HMRC], 2026). Spain also targets producers and importers (under Law 7/2022), applying a flat rate of €0.45 per kg of non-recycled plastic packaging, almost twice as high as the UK's €0.26 per kg.

Portugal adopts a distinct approach, levying a per-unit charge on single-use plastic packaging for ready-to-eat meals. Although the tax is legally imposed on producers and imports, it is designed to be passed on to consumers via an added charge at the point of sale. On 1 January 2024, Portugal lowered the producer levy from €0.30 to €0.10 per unit, while mandating pass-through to keep the consumer-facing charge at a minimum of €0.30, plus VAT (Assembleia da República, 2023). This measure is intended to prompt consumers to change their behaviour, while encouraging producers to invest additional resources into the development of sustainable packaging solutions (ibid.).

The scope of taxed products also differs between countries. In the UK, packaging is considered plastic when it contains more of that material than any other by weight. Only packaging that contains less than 30% recycled content is taxable, effectively exempting packaging that contains 30% or more (HMRC, 2026). Spain instead taxes the non-recycled share of single-use plastic packaging, meaning that partially recycled packaging is partially taxable (Agencia Tributaria, 2026). This difference in design creates distinct incentives: the UK's system encourages compliance up to the 30% threshold, whereas Spain's promotes a continuous increase in recycled content. In contrast, Portugal's initial focus on single-use plastic packaging for ready-to-eat meals has progressively extended to all single-use packaging, regardless of the material it uses (Assembleia da República, 2023).

Use of the resulting revenues further distinguishes Portugal from the UK and Spain. In both the UK and Spain, these revenues accrue to general tax revenues. Portugal earmarks half of the proceeds for specific purposes, allocating a significant share of them to environmental and trade funds to support circular economy initiatives and sustainable business models (ibid.). Although all three countries exempt packaging intended for export, their other exemptions also differ. Both Spain and the UK exempt low volumes but at different annual thresholds: less than 0.06 tonnes in the former country, and less than 10 tonnes in the latter (Agencia Tributaria, 2026; HMRC, 2026).

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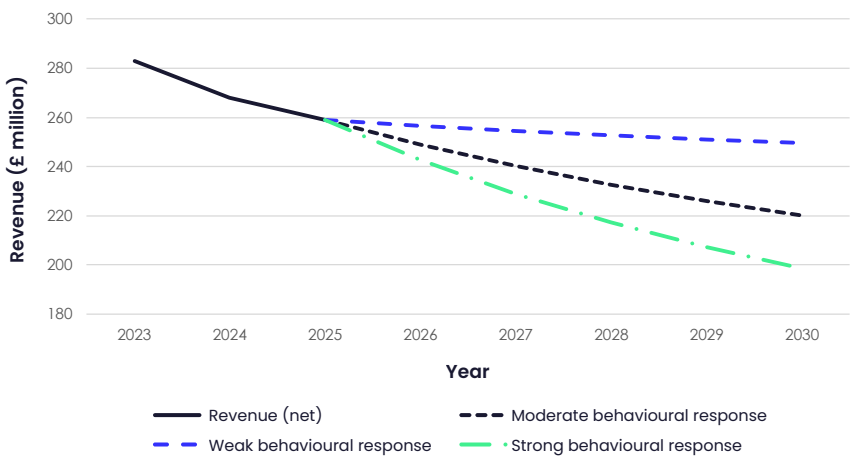
Realised and projected revenue

For policymakers, revenue trends matter not only as an indicator of behavioural responses to plastic packaging taxes but also because they determine the availability and predictability of funds for compliance enforcement and infrastructure development. This is particularly true when, as now, European governments lack fiscal space.

Publicly available data from HMRC and the Agencia Tributaria covers revenues from plastic packaging taxes to date. Projections for 2026–30 in the three scenarios in this analysis reflect weak, moderate and strong behavioural responses. (Due to data limitations,[3] revenue from Portugal's tax is not included in this analysis.) Given the uncertainty about these responses, the novelty of the taxes, the differences in their design, and infrastructure constraints in both the UK and Spain, it would be misleading to directly compare tax performance between the two countries.

3. As Portugal's revenue data since 2024 is not publicly available, there is an insufficient basis for trend analysis or revenue projections. Moreover, because Portugal significantly expanded the scope of its tax to cover all single-use packaging in 2024, the country's 2023 data is not representative of the tax as it currently operates.

Figure 1. Realised and projected revenues from the UK's Plastic Packaging Tax, 2023–30



Source: HMRC (2025a). Notes: These illustrative scenarios assume convex annual declines in taxable plastic packaging of approximately 1% (weak); 3–4% initially, slowing to 2–3% (moderate); and 5–7% (strong). Rates of decline decelerate by 10% annually to reflect diminishing marginal behavioural responses.

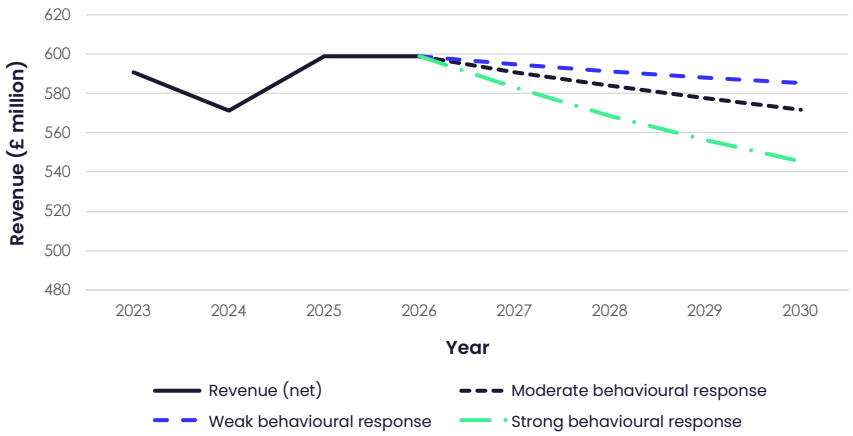
In the UK, PPT revenues declined from £283 million in the first year to £268 million in 2023–24 and £259 million in 2024–25 (see Figure 1). Projections for 2026–30 suggest that the decline in revenue will continue in any of the scenarios. The moderate behavioural response scenario projects that the rate of decline in taxable plastic packaging will marginally slow in the next five years. In this scenario, net revenue will be around £220 million in 2029–30. The weak behavioural response scenario follows a more conservative approach, under the assumption that the UK has already made most of its efficiency gains in plastic recycling. This assumption is underpinned by the fact that the country will lack the recycled plastic and plastic reprocessing capacity required to meet rising demand, especially in the short term (Dove et al., 2025; University of Birmingham, 2025). In this scenario, net revenue remains relatively flat, decreasing to around £250 million in 2030. The strong behavioural response scenario reflects more rapid change fuelled by the recent reforms of the PPT. By counting chemically recycled plastic as recycled content in a mass balance approach, the tax increases firms' flexibility in compliance and strengthens their incentives to use such content (HMRC, 2025b; University of Birmingham, 2025). This scenario assumes a faster annual decline in net revenue due to a rise in recycled content, leading to a sharp revenue drop to approximately £199 million by 2030.

In Spain, net plastic packaging tax revenues fluctuated slightly from €591 million in 2023 to €572 million in 2024 and €599 million in 2025 (see Figure 2). The drop in revenue in 2024 was due to delays in refund processing (Agencia Tributaria, 2024). The increase in 2025 resulted from a decline in submitted refunds and a rise in plastics imports (Agencia Tributaria, 2025). As gross revenue remained broadly stable in 2023–24, the projections in this analysis assume that net tax revenues will remain stable in 2026 before declining in 2027, as producers adjust packaging designs and increase recycled content (Agencia Tributaria, 2024). The initial delay in the response to the tax

"Projections for 2026–30 suggest that the decline in revenue will continue in any of the scenarios."

is linked to firms' limited understanding of it prior to its rollout (Cañas Rivera, 2023; Cobos Gómez and García Carretero, 2024).

Figure 2. Realised and projected revenues from Spain's plastic packaging tax, 2023–30



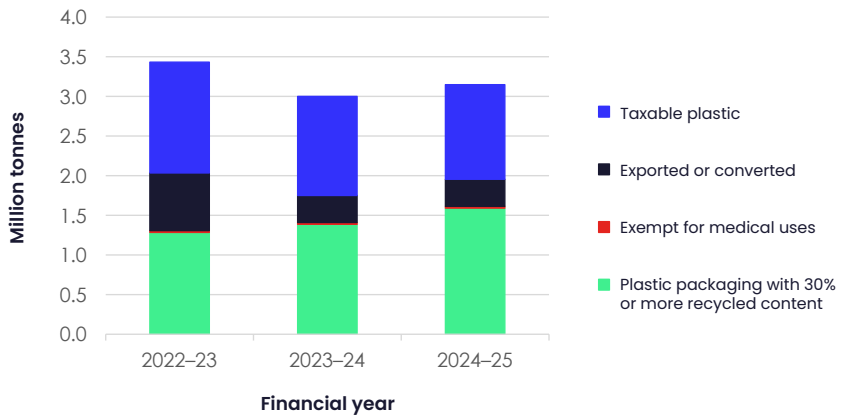
Sources: Agencia Tributaria (2024); Agencia Tributaria (2025). Notes: These illustrative scenarios assume a revenue plateau in 2025–26, followed by convex annual declines from 2027 onwards of approximately 0.5–0.8% (weak), 1–1.5% (moderate) and 2–3% (strong). Decline rates decelerate by 10% annually to reflect diminishing marginal behavioural responses.

In a moderate behavioural response scenario, revenues decline to roughly €572 million in 2030. In contrast, a weak behavioural response reflects persistent issues with a lack of plastic reprocessing and recycling facilities, and the limited availability of recycled plastics (Cañas Rivera, 2023). In this scenario, revenues decline only slightly to €585 million in 2030. With a strong behavioural response, revenues decline to around €545 million in 2030. The change is driven by producers' investment in packaging eco-design and increased uptake of recycled content in response to the tax (Ibid.). However, this scenario should be treated with caution: given the high costs of compliance with the tax, such investment is unlikely to occur at scale in the short to medium term (Cobos Gómez and García Carretero, 2024).

Overall, recent revenue trends and infrastructure constraints suggest that a moderate trajectory is the most likely scenario for both Spain and the UK in the short to medium term. Therefore, the strong behavioural response should only be achievable with complementary policies and faster capacity expansion. More broadly, these scenarios point to potential tension between fiscal and environmental objectives, particularly at a time when constrained public finances could push governments to maintain stable revenue streams. Declining revenue from plastic packaging taxes should be interpreted as a sign of policy success, as reduced plastic use has wider economic and environmental benefits in, for instance, lowering waste-management and clean-up costs. Nonetheless, this trend should be interpreted with caution, given that it may partly reflect compliance challenges, particularly in systems based on self-reporting, such as the UK's.

"Declining revenue from plastic packaging taxes should be interpreted as a sign of policy success."

Figure 3. Taxable and exempt plastic packaging under the UK's Plastic Packaging Tax, 2022–25



Source: HMRC (2025a).

Early impacts and infrastructure challenges

Evidence from the UK's PPT suggests that the share of exempt plastic packaging with 30% or more recycled content increased in the first three years of implementation. This packaging accounted for around 51% of total plastic packaging manufactured in and imported into the UK in 2024–25, up from 38% in 2022–23 (see Figure 3). The share of plastic that was taxable decreased from around 41% to 38%, leading to a gradual reduction in tax revenues (see Figure 1). Notably, the total tonnage of plastic packaging fell by around 6%, from 3.4 million tonnes in 2022–23 to 3.2 million tonnes in 2024–25, even as the number of registered businesses increased by 1.9%. This pattern is consistent with early responses such as reductions in the weight of packaging and other design changes. Overall, the evidence suggests that there were modest reductions in plastic packaging volumes and modest increases in the use of recycled content.

The goal of reaching 30% recycled content in plastic packaging was first included in the voluntary UK Plastics Pact, launched by Waste and Resources Action Programme (WRAP) and the Ellen MacArthur Foundation in 2018 – long before the introduction of the PPT in April 2022. By 2021, recycled content in UK plastic packaging had risen to 22%, up from 8.5% in 2018 (WRAP, 2022). By 2025, the share of recycled content had risen to 28%, maintaining the momentum of change (WRAP, 2025). Further progress in plastic recycling will likely depend on an alignment of fiscal incentives, policy and industry commitments.

Despite these positive early trends in the growth of recycled content, certain challenges remain. A widely recognised bottleneck in both the UK and the EU is the limited availability of recycled plastics, especially food-grade recyclates authorised for use in food-contact applications (Dove et al., 2025; Ecosurety and RECOUP, 2026). Insufficient plastic reprocessing and recycling capacity also contributes to the problem: in the UK, maximum operational capacity covers only 40% of plastic

"A widely recognised bottleneck in both the UK and the EU is the limited availability of recycled plastics."

packaging on the market (Ecosurety and RECOUP, 2026). Recycling capacity declined rapidly in the EU and the UK in 2024, caused by rising operating costs and reduced competitiveness of European recycled content relative to imported virgin plastics and recyclates (Plastics Recyclers Europe, 2025; University of Birmingham, 2025). Rising demand for recycled plastic is projected to widen the supply deficit, reaching a shortfall of up to 3.5 million tonnes in the EU and the UK by 2030, and increasing their reliance on imports (Conversio Market & Strategy and BKV, 2025). The low price of virgin plastic currently acts as a price cap for recycled plastics, reducing incentives to invest in recycling infrastructure. These constraints raise concerns about the industry's ability to comply with plastic packaging tax requirements in the long term.

Policy risks

Evidence from the implementation of plastic packaging taxes points to several policy risks. These taxes may encourage producers to switch to alternatives that can be even more environmentally harmful than plastic. These substitution effects have occurred in response to the introduction of plastic bag taxes, which prompted a shift towards unregulated alternatives that could produce higher greenhouse gas emissions across their lifecycles, such as paper and cotton bags (Abate and Elofsson, 2024). Therefore, while substitution can reduce plastic pollution, it may come with harmful environmental trade-offs (ibid.). This is a potential risk under the current tax regimes for plastic packaging (Dove et al., 2025), but one solution could be to apply a uniform tax on all harmful substitutes (Abate and Elofsson, 2024). In Portugal, these substitution effects are less likely to occur, because the government has extended the tax to all single-use packaging. In Spain and the UK, by contrast, there is a need for stronger incentives to avoid single-use packaging across the board, thereby countering substitution effects.

Appropriate packaging is key to extending the shelf life of food products and guaranteeing food safety. Food waste has a substantial environmental footprint: in the EU, it accounts for around 16% of agricultural greenhouse gas emissions (European Parliament, 2025). Plastic packaging is critical for preserving product quality and reducing food waste; however, the availability of recycled food-grade plastic remains limited due to stringent regulatory requirements, contamination risks and insufficient recycling infrastructure (Operato et al., 2025). Higher taxation may incentivise premature substitution away from plastic packaging in the food industry, shifting environmental impacts away from plastic waste and towards increased food waste through higher spoilage rates. Given the EU's commitment to reduce food waste by 30% by 2030, the availability of recycled food-grade plastic will be key in aligning plastic packaging taxation with food waste reduction goals and avoiding further environmental trade-offs (European Parliament, 2025).

Compliance risks pose a significant challenge, particularly regarding the verification of recycled content. In the UK, PPT compliance relies primarily on self-reported documentation and due diligence checks, without a clearly defined certification authority or harmonised methodology for verifying recycled content (British Plastics Federation, 2024). This creates uncertainty around assessment and enforcement, especially for imported plastic packaging, where reliance on

"Compliance risks pose a significant challenge, particularly regarding the verification of recycled content."

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self-reported documentation may increase fraud risks. Spain has adopted a more standardised verification framework. Since 2024, self-declaration is no longer accepted, and tax exemptions or reductions require a product-level recycled plastic certificate that is compliant with the UNE-EN 15343:2008 standard and issued by an accredited entity (under Law 7/2022). While Spain's plastic packaging tax provides a more robust compliance framework, it also leads to higher administrative and certification costs for businesses (Cañas Rivera, 2023; Cobos Gómez and García Carretero, 2024).

The absence of demand-side instruments is a crucial policy risk in the UK and Spain – in contrast to Portugal, whose tax targets consumers by design. Consumer awareness and commitment are key drivers of circular economy transitions, but a lack of consumer education continues to present one of the largest barriers to the circular economy uptake in the EU and the UK (Kirchherr et al., 2018). Law 7/2022 acknowledges the importance of consumer education, such as providing information on reuse systems and reusable alternatives, but Spain's implementation of the legislation has been insufficient to drive behavioural change (Cañas Rivera, 2023). Clear communication strategies, such as unified branding and simple messaging, could improve public understanding of recycling and strengthen plastic packaging taxation policies (University of Birmingham, 2025). Overall, the current design of these policies in Spain and the UK ensures that few costs are passed on to consumers, limiting the effects on their behaviour. This is in stark contrast to demand-side levies such as charges on plastic bags at the point of sale, which have proven successful in influencing consumer decisions but may still heighten the substitution risks discussed above (Thomas et al., 2019).

Photo: Tommao Wang, Unsplash

"Tax authorities should introduce robust material verification requirements for recycled content."

Policy recommendations

To create meaningful system change, tax authorities should reinvest plastic packaging tax revenues – and attract public and private investment – in a circular economy. This is underpinned by the following considerations:

- Limited and often outdated plastic reprocessing and recycling infrastructure, alongside broader system constraints such as the low price of virgin plastics, is a bottleneck in efforts to increase the use of recycled plastic content across Europe.
- Revenue recycling and further investment could support compliance monitoring and enforcement, fund the expansion of and upgrades to plastic reprocessing and recycling capacity, and incentivise innovation in plastic recycling technologies.
- Reinvested revenues could support education campaigns for consumers, strengthening their behavioural responses to plastic recycling policy.
- Portugal's earmarking of some tax revenues for circular economy investment provides a lesson in how to support wider reductions in plastic demand.

Tax authorities should introduce robust material verification requirements for recycled content. This would boost compliance and create a level playing field not only between domestic and foreign producers, but also between recycled and virgin plastics. Tax authorities should consider several factors when adopting this approach:

- Material verification requirements need to be robust to prevent fraud and guarantee the traceability and transparency of recycled content. The use of certification schemes and third-party auditing would lend credibility to producers.
- In the absence of harmonised requirements, European recycled plastics face a competitive disadvantage relative to cheaper virgin plastics and imported recyclates, which may not be subject to equivalent compliance standards.
- The Spanish case could be seen as an example of best practice, with the UNE-EN 15343:2008 standard used to validate recycled content.

Tax authorities should design plastic packaging taxes to minimise environmentally harmful material substitution. In doing so, they should account for the fact that:

- The evidence suggests that taxes targeting only plastic can incentivise substitution with alternative materials that have equal or higher environmental impacts across their lifecycles, shifting rather than reducing the burden on the environment.
- To counter this risk, plastic packaging taxes should be embedded in broader packaging policy frameworks that are consistent with products' lifecycles, as illustrated by Portugal's extension of the tax base to all single-use packaging for ready-to-eat meals.
- Applying a uniform tax to all alternative forms of harmful packaging could close the material substitution loophole in a fiscally sustainable manner.

Looking ahead

With plastic packaging taxes gaining popularity in Europe and beyond, it is increasingly important for policymakers to track developments across jurisdictions and draw lessons from early adopters. This is particularly true given that most such instruments are designed around similar objectives, and that greater regulatory alignment can help governments achieve these shared goals while providing clearer and more consistent signals to the plastic packaging industry.

However, the evidence suggests that plastic packaging taxes are not sufficient by themselves. Their effectiveness is highly dependent on complementary policies, including investment in recycling and reprocessing infrastructure, robust verification and compliance systems, stimulation of demand for recycled plastic, and consumer education. As more countries consider introducing plastic packaging taxes, policy design choices in areas such as scope, enforcement and revenue use will shape fiscal outcomes and the credibility of these instruments, as well as their long-term impact on the environment.

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"Plastic packaging taxes are not sufficient by themselves. Their effectiveness is highly dependent on complementary policies."

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The author declares no conflict of interest in the writing of this report. The views in this brief are those of the author and are independent of the host and funding institutions. All errors and omissions remain the author's own.

Declaration of the use of AI:
The author used Claude Sonnet 4.6 for code generation and debugging, and Copilot (Premium) for language editing. Claude Sonnet 4.6 was used to assist in writing and troubleshooting R scripts used to process revenue data and generate projections; all code was reviewed, tested and validated by the author before use in the analysis. Copilot (Premium) was used to improve the clarity and readability of selected draft sections, including the executive summary and policy recommendations. No substantive arguments, analytical conclusions or empirical claims were generated by either tool. All outputs were reviewed and, where necessary, corrected by the author, who remains fully responsible for the content of the publication.

Acknowledgements
The author would like to thank Daisy Jameson, Neïla Khelifi, Stefania Cerruti, Alia Yusuf, Aleksandra Cavoski, Robert Lee, Andrew Dove and José María Cobos for their review comments. Chris Raggett edited the brief, with typesetting by Zoe Kay.

This policy brief is intended to inform decision-makers in the public, private and third sectors. It has been reviewed internally and externally before publication.

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