

Resizing Fashion

Designing sustainable e-commerce

Key messages

- E-commerce has become a blind spot within sustainable fashion policy.
- By reducing transaction costs and purchasing friction, e-commerce makes buying faster and easier, encouraging impulse purchases and increasing environmental impacts.
- E-commerce platforms use dark patterns and strategies to increase consumer's basket size and the frequency of their purchases, even circular offerings such as reuse and resale platforms exhibit the same behaviours, undermining the benefits of circularity through rebound effects.
- The availability of cheap imports through e-commerce platforms also undermines circular businesses and the progress of circular economy in Europe, thus harming competitiveness.
- E-commerce also generates serious risks to health and wellbeing, due to the availability of products that are not compliant with EU health and safety regulations.

Policy Recommendations

- Increase compliance and monitoring of e-commerce marketplaces to ensure that existing EU regulations also apply to products sold on e-commerce platforms.
- Increase transparency and reporting on e-commerce strategies that are intended to increase basket size and promote overconsumption.
- Regulate and penalise problematic e-commerce strategies including bans on specific tactics such as: fake scarcity, buy now pay later add ons, free returns/shipping and air shipping for non-essential products.
- Create a comprehensive e-commerce framework that fundamentally shifts platform purpose, business model, and consumer culture towards sustainable consumption.



Current Status and Trends

The growth of online shopping and e-commerce offering has coincided strongly with increased consumption in recent decades. As of 2024, 72% of the EU population buys goods and services online, rising to 83% in Western and Northern Europe (Cassetti, 2024). Owing to the speed, convenience, and competitive prices, e-commerce has become the dominant channel for clothing purchases, with 70% of individuals in the EU 27 having purchased clothes, shoes or accessories online in 2024 (Cassetti, 2024). All the major fashion brands now have online offerings in addition to physical stores, and the recent rise of high-volume fashion brands like Shein, Temu and Cider are almost entirely internet based.

Online fashion retail sales in Germany 2006–2024 (in billion euros)

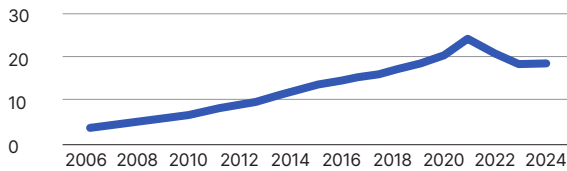


Figure 1. Online fashion retail sales in Germany 2006–2024 Source: Statista

In 2024 4.6 billion low-value consignments (goods with a value not exceeding €150), entered the EU market equalling to 12 million parcels per day, 91% of which came from China. This is twice as many as in 2023 and three times as many as in 2022 (European Commission, 2025). This is only made possible with the use of carbon intensive air freight, which is 14 times more carbon intensive than maritime shipment (Public Eye, 2024). Orders are often sent directly to consumers, rather than as bulk imports, and owing to their ‘low value’ they are able to bypass import duties, taxes, or extensive customs (Zia, 2025), keeping prices artificially low and carbon impacts high.

Low Value parcels entering the EU (no. parcels per day, millions)

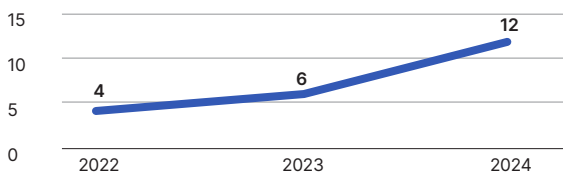


Figure 2. Low Value parcels entering the EU Source: European Commission

In recent years there has been a growth in buy-now-pay later (BNPL) technologies that accompany many e-commerce platforms, remove financial constraints at the point of purchase. The BNPL market and platforms currently sits at nearly \$11 billion in valuation, and it’s expected to reach more than \$59 billion by 2030. (Shopify, 2024) It is particularly popular among young consumers, with an adoption rate of 36.6% (Pangarkar, 2025).

There has also been a proliferation of in-app shopping services, where the entire shopping experience from product discovery to check-out takes place on a social media platform such as Tik Tok, Instagram and Facebook. These so-called ‘Social commerce’ sales are expected to grow three times as fast as traditional e-commerce to \$1.2 trillion in 2025, with the highest number of social commerce purchases expected in clothing (Accenture, 2022).

Annual buy now, pay later (BNPL) spending in Germany in 2024–2025, with a 2030 forecast (BNPL transaction value in million U.S. dollars)

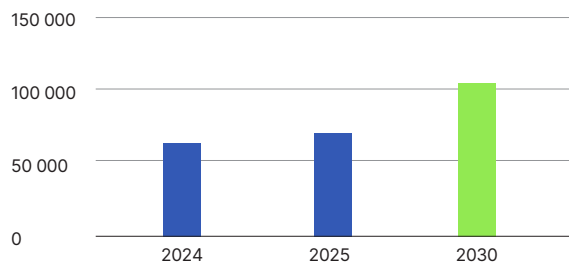


Figure 3. Annual BNPL spending in Germany in 2024–2025, with a 2030 forecast Source: Statista

Impacts

Wellbeing Impacts

- There have been many reports that the products being sold on e-commerce platforms are not in compliance with EU health and safety regulations, presenting significant health risks for consumers (Greenpeace Europe, 2025).
- The use of personal data by e-commerce platforms to make more targeted suggestions, presenting challenges in terms of data protection and privacy (European Commission. Joint Research Centre., 2020).
- The growth in Buy Now Pay Later Services, is removing friction and financial constraints in consumption decisions, harming consumer wellbeing due to increase in financial debt/insecurity (HM Treasury, 2024).
- As e-commerce expands, brick-and-mortar retailers are increasingly unable to compete, contributing to store closures, declining local employment, and weakening community life in many European towns and cities (NBER, 2022; OECD, 2026)

Environmental Impacts

- Textile consumption in the EU, in 2020, had the 4th highest impact on the environment and climate change from a global life cycle perspective, after food, housing, and mobility (EEA, 2022).
- The environmental concerns regarding e-commerce are well documented. One of the concerns which has received significant policy attention is the waste associated with product returns and unsold goods (EEA, 2024; Roberts et al., 2023), along with packaging waste and transportation emissions.
- The growth in consumption of low-quality garments facilitated through e-commerce platforms is a key driver of increased waste volumes, contributing to significant environmental impacts.
- Due to complex logistics arrangements and the avoidance of custom checks many of the products sold on online platforms are often not in compliance with EU environmental regulations, containing harmful chemicals and safety hazards (Greenpeace Europe, 2025; Nordic Council of Ministers, 2024).

Greenpeace (2025) testing of garments purchased on Shein revealed:

- 18 of 56 products (32 %) exceeded EU REACH limits; including children's clothing (3 items)
- 7 products (jackets) exceeded PFAS limits by up to 3,300 times.
- 14 products exceeded phthalates limits, six by 100 times or more.



What is behind the trend?

Unpacking Systemic Lock-ins: The Friction Remover

Together with domain experts we mapped two key reinforcing loops (As shown in Figure 4) which explain the trends and impacts observed in relation to e-commerce and overconsumption.

Today's online fashion platforms are designed to promote fast and frequent consumption maximising sales and thus **retailer profits**. The widespread **availability** of new garments listed daily on many fashion online platforms, reduces **emotional durability** of garments leading to **impulse buying** and rapid purchase and disposal cycles among consumers (As shown in Figure 4 R1).

Furthermore, e-commerce platforms have developed specific strategies that are designed to increase basket size (As shown in R2 Figure 4). Elements such as low-stock messages, countdown timer at checkouts, limited time offers all seek to promote scarcity encouraging frequent purchasing in both primary and secondary online markets (Ori 2025). E-commerce platforms use a range of design features and commercial strategies including; free delivery above a spending threshold, free returns, continuous product recommendations, one-click checkout, saved payment details, and rapid delivery to remove the practi-

cal and psychological barriers that normally slow purchasing decisions. By removing friction - making it faster, easier, and lower-risk to buy additional items - these features encourage impulse purchases and increase overall consumption (Koh & Seah, 2023; Hachfeld and Busch, 2022).

Brands such as Shein and Temu, as well as luxury houses like Gucci, Louis Vuitton and Dior, increasingly use gamified marketing strategies, including user profiles, interactive challenges, livestreams, and reward systems, to capture consumer attention and encourage more frequent purchases and larger basket sizes. Young consumers are particularly responsive to these interactive, reward-driven features (McKinsey, 2023). Combined with rising smartphone and social media use, the growth of in-app shopping makes purchasing faster and easier, contributing to impulse buying, especially among younger generations (Nyrhinen et al., 2023; Wahnbaeck & Roloff, 2017). These dynamics are only likely to deepen as companies develop increasingly sophisticated e-commerce offerings, for example with the US launch of an in chat check out feature on ChatGPT and the proliferation of AI shopping assistants with built-in payment features (Bellan, 2025).

Research has shown that even second-hand e-commerce platforms, are adopting similar design and tactics, promoting fast and continuous consumption and undermining the benefits of circular strategies. (Eggert et al., 2025).

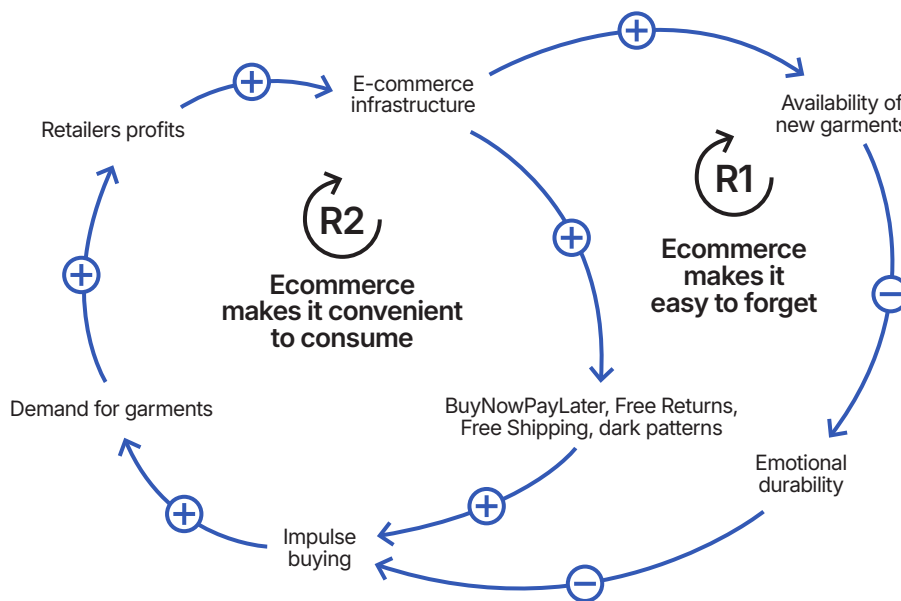


Figure 4. The Friction Remover: Systems Mapping of e-commerce and overconsumption

A causal loop diagram defines the relationship between different parts of the system. In this diagram, + arrows indicate that two variables move in the same direction. In contrast, - arrows indicate that two variables move in opposite directions.

Reinforcing Loop (R): A reinforcing loop is a feedback loop that amplifies change. Whatever direction the system is moving in growth or decline, it will continue accelerating in that same direction becoming a systemic lock-in.

Current Progress in Fashion Policy

GAPS AND CHALLENGES

In early 2025, the Commission published an EU toolbox for safe and sustainable e-commerce (European Commission, 2025). The toolbox particularly aims to ensure that imported product shipped directly to consumers comply with EU rules and trading practices. The actions aim to improve market surveillance and address the loopholes being exploited by fashion brands that are taking advantage of duty relief clauses for low value parcels. However, whilst ensuring greater compliance these measures can reduce visible problems in the short term, they leave the underlying business models unchanged, allowing businesses to find new loopholes and for the same issues to re-emerge overtime.

A Transformative Policy Framework

The Iceberg Model illustrates that the most influential drivers of fashion's impacts lie beneath the surface in the system's structures and mental models. Addressing these root causes requires policies that go beyond

In Systems Thinking a “Fix That Fails” pattern occurs when a policy or intervention treat immediate issues rather than address underlying causes. This short-term relief masks the persistence of deeper problems such as excessive consumption and platform business models, which continue to recreate the harms it seeks to prevent.

symptom-focused measures (REACT and ANTICIPATE) and instead target the incentives, power structures and mental models (outlined in Figure 4) that lock in overconsumption (REDESIGN and DISRUPT).

While REACT and ANTICIPATE measures alone cannot transform the system, they nonetheless serve an important role within the policy mix—particularly in

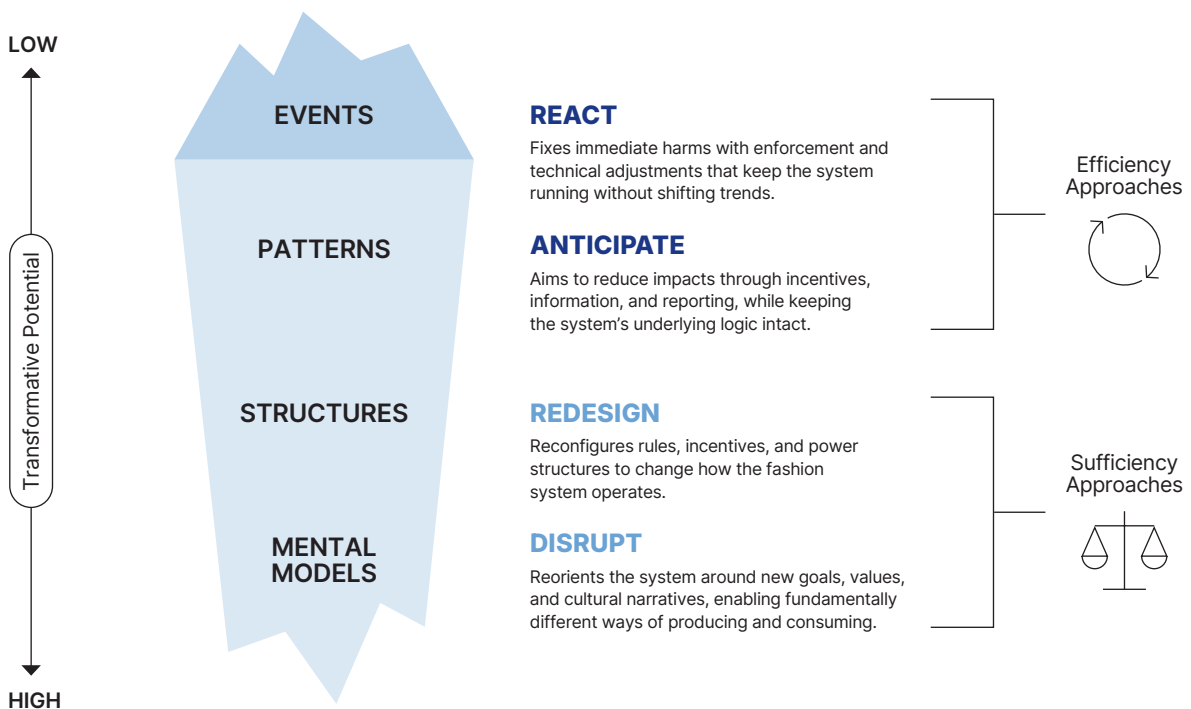


Figure 5. The Iceberg Model: A Systems Approach for Policy Making based on Donella Meadows leverage framework. (Hot or Cool)

the short run—while the deeper structural and cultural changes needed for long-term transformation are being mobilised. That said, policy makers must not delay action and need to act with urgency to ensure that transformative measures (REDESIGN and DISRUPT) are included within the policy mix. Without them, incremental improvements will be consistently outpaced by the growth in production, consumption, and environmental pressure.

The next section presents a non-exhaustive analysis of co-created policies operating at various levels of transformation and, where appropriate, provides recommendations on how to adapt existing processes to support effective implementation.

REACT

Fixes immediate harms with enforcement and technical adjustments that keep the system running without shifting trends.

In the immediate term, the EU should begin by recognising e-commerce marketplaces as economic operators within EU law and bolster its market surveillance to ensure existing product legislation applies to all products sold within the EU, including those offered by online platforms (Zia, 2025).

ANTICIPATE

Aims to reduce impacts through incentives, information, and reporting, while keeping the system's underlying logic intact.

Emerging Extended Producer Responsibility (EPR) schemes for garments could become a powerful tool for disincentivising brands and retailers from adopting e-commerce strategies designed to fuel overconsumption. In the short run, EPR schemes could mandate that companies disclose the tactics and strategies they employ on e-commerce platforms. This would help to provide more transparency into platform design, helping to understand the mechanisms used to increase basket size and promote fast consumption, laying the foundation for future regulation.

REDESIGN

Reconfigures rules, incentives, and power structures to change how the fashion system operates.

Table 1 presents several regulatory proposals that alter the competitive strategies available to e-commerce companies. These practices currently drive impulse purchasing, overconsumption, and rapid logistics.

STRATEGY	TECHNIQUE	POLICY PROPOSAL
Scarcity & Urgency	Timers, stock alerts	Ban fake scarcity; transparency on sale frequency
Personalization & Nudging	AI recommendations, behavioural ads	Algorithmic transparency; opt-in for tracking
Gamification	Rewards, games, referrals	Odds disclosure; ban for minors
Remove financial constraints	Buy Now Pay Later Services	Ban for certain non-essential product categories such as clothing and accessories or for low value items, introduce affordability checks to prevent financial risk to consumers.
Fast Turnover & Newness	Daily arrivals, micro-trends	Tax/surcharge for companies introducing large volumes of new items each week. Incentivize platforms to offer easily accessible repair services, second-hand options, or rental models alongside new fashion items.
Dark Patterns	Auto-adds, pre-ticked boxes	User experience fairness audits; prohibit misleading patterns
Removing friction	One Click Check-outs Free returns and free shipping over certain value Social media advertising and social commerce	Regulate one-click check out Ban free returns and free shipping, and provide transparency on environmental costs involved Tax/surcharge on ad spend and social media regulation (see policy brief on Advertising)
Fast Shipping	Next Day Delivery, Express Shipping	Tax or ban on airfreight for non-essential products and services to increase shipping costs

Table 1. Regulatory Proposals for addressing E-commerce's role in driving Overconsumption.

Regulating individual strategies would help to shift business models and consumer behaviour by changing the underlying incentives of the system.

Eventually EPR fees could be eco-modulated based on companies' use of e-commerce strategies that are known to accelerate overconsumption. Companies that employ such strategies would face higher EPR fees, while those that actively avoid them or adopt alternatives aligned with durability, repair, and waste prevention, would be rewarded with lower fees. Proposals for higher EPR fees for free returns and free shipping have already been made, given the significant evidence of the environmental harms resulting from such company policies (Roberts et al., 2023). Again, fees must be sufficiently high to incentivise companies to change their marketing strategies and wider business model rather than simply absorbing the costs or passing them on to the consumers.

DISRUPT

Reorients the system around new goals, values, and cultural narratives, enabling fundamentally different ways of producing and consuming.

A comprehensive framework for sustainable e-commerce

As with many technologies, the pace and scale of transformation is often too quick for regulators to keep up and to ensure adequate protections for consumers.

In the 20 years since e-commerce first launched, new tactics and strategies have been developed that significantly undermine sustainable consumption. Today's e-commerce platforms are designed to make purchasing as easy and fast as possible, encouraging rapid and continuous consumption and enabling high-volume business models to flourish. The most common tactics that e-commerce sites use to maximise basket size and in-

The rising popularity of wardrobe management apps – such as Indyx, Whering and Acloset, show how digital technologies can be leveraged to help consumers maximize the value from what they already own, plan outfits, and reduce impulse purchases (Jiang, G., & Macintyre, L, 2025).

crease frequency of purchases are listed in the table below along with regulatory proposals for how these strategies could be addressed to promote more sustainable consumption behaviours. There are huge opportunities to create a transformative framework for E-commerce, that shifts the goal of platform design from increasing basket size to supporting sustainable consumption.

This policy brief serves as a primer to bring attention to the overlooked role that e-commerce plays in driving overconsumption. Policy makers need to investigate further, working with consumer groups, digital design experts, and behavioural scientists to ensure the interface, algorithms, and business model of online retailers is oriented toward helping users buy less, buy better, and extend product lifecycles, rather than pushing volume. The expansion of the EU Digital Services Act, which aims to make online platforms fairer and more contestable, presents an opportunity to do so, by embedding sustainability criteria and harmonising with the ambitions for sustainable consumption laid out in the EU's Circular and Sustainable Textile Strategy.



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