

The Cost of Amazon's Plastic Denial on the World's Oceans

E-commerce giant fails to commit to company-wide plastic reduction and ignores shareholder calls for action



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Executive Summary

Amazon is in denial about its growing plastic problem. This is bad news for the world's oceans, which are being devastated by plastic pollution. It is also bad news for the company's shareholders, who voted for Amazon to report on its plastic packaging footprint and to determine how to reduce it.¹ The company has refused to fully account for its rapidly increasing plastic footprint and failed to prioritize plastic reduction as part of its global sustainability strategy and goals.²

- **Oceana estimates Amazon's plastic packaging waste in 2021 totaled 709 million pounds, an 18% increase over Oceana's 2020 estimate (599 million pounds). This amount of plastic would, in the form of air pillows, circle the planet more than 800 times.³**
- **Using plastic waste pollution data from a peer-reviewed study published in *Science* in 2020,⁴ Oceana estimates that up to 26 million pounds of Amazon's plastic waste produced in 2021 will end up in the world's waterways and seas.**

Amazon refuses to outline a plan and commit to a company-wide reduction in plastic use. By doing so, Amazon ignores its shareholders — nearly 49% of the company's shares voted in favor of transparency and action at the company's 2022 Annual General Meeting.⁵ This is the most support that a shareholder-led resolution has received in the company's history.⁶ At least 53 shareholding companies declared (publicly or to investors) their intention to vote in favor of the resolution, including the world's largest asset manager, Blackrock.⁷

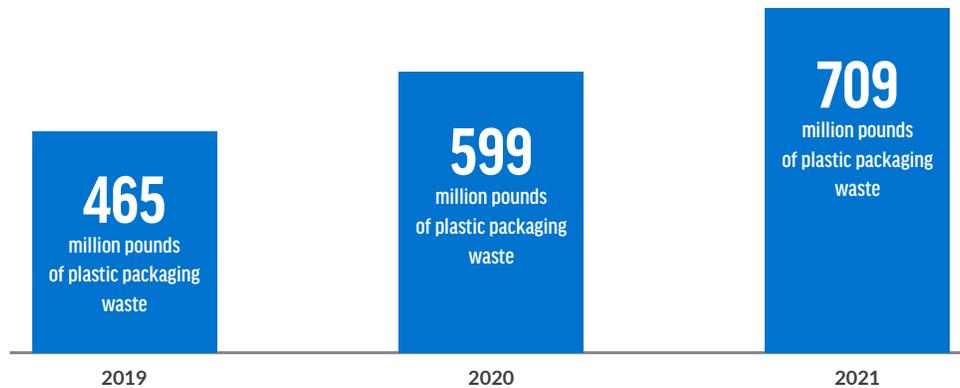
Plastic pollution, including the type of plastic used in Amazon's packaging, is devastating the world's seas. Studies have estimated that individuals from 55% of seabird species, 70% of marine mammal species, and 100% of sea turtle species have ingested or become entangled in plastic.⁸ Amazon's plastic packaging is made from the most common form of marine plastic litter in nearshore ocean areas — plastic film — which is the deadliest type of plastic to marine animals.⁹

Amazon's plastic footprint grew by 18% from 2020 to 2021, according to Oceana's estimates. Yet the company has not come forward with a global commitment or plans to reduce its plastic packaging use. Amazon customers overwhelmingly want the company to address this problem. Oceana surveyed more than 5,000 Amazon customers in the United States, Canada, and the United Kingdom in 2020 and found that 86% were concerned about plastic pollution and its impact on the oceans.¹⁰

Despite Amazon's commitment to transparency for its other sustainability efforts (such as its climate initiative), until recently, the company has not been transparent about its global plastic packaging footprint. On Dec. 13, 2022, Amazon released a blog which stated, "[i]n 2021, we reduced average plastic packaging weight per shipment by over 7%, resulting in 97,222 metric tons [just over 214 million pounds] of single-use plastic being used across our global operations network to ship orders to customers."

Oceana acknowledges this step towards transparency. The reported figure, however, represents only part of the company's global plastic packaging footprint. In contrast to Oceana's estimate, Amazon's disclosure excludes orders made on Amazon's e-commerce

Figure 1. Estimates of Amazon's plastic footprint over the last three years



platforms that are fulfilled through third-party sellers and it is unclear how much of Amazon's total sales this represents. When Oceana inquired, Amazon declined to disclose this information. While Amazon claims to have reduced average plastic packaging weight per shipment by over 7% in 2021, it has not disclosed by how much its global plastic packaging footprint grew from 2020 to 2021. Amazon's sales are widely reported to have grown by double digits in this time period. As sales increase, the company's plastic footprint grows too. Oceana estimated a plastic footprint growth of 18%, accounting for the plastic reduction measures Amazon has taken in some countries (such as India).

Although recent scientific research shows that the plastic film used by Amazon is a problem for the seas, Amazon appears to be in denial. The company, in response to Oceana's last estimate, referred to a 2021 study¹¹ noting that "the latest peer-reviewed scientific research finds that the majority of plastic waste that ends up in the ocean comes primarily from takeaway food and drink, and fishing activities."¹² While the study in question did find marine plastic pollution from takeaway food and drink to be a significant problem, the authors also found that the type of plastic used by Amazon, plastic film, was the most common form of marine plastic macro-litter found in nearshore ocean areas.¹³ Items made from plastic film such as bags, wrappers, and industrial packaging were the first, fourth, and eighth most common types of litter found across all aquatic environments surveyed. Amazon's plastic goes into the same waste streams as other types

of plastic. It also pollutes the environment, which is evident to anyone who sees Amazon bubble wrap and mailers scattered across front yards, streets, and fields on trash-collection day.

Despite its "Climate Pledge" to reach net-zero carbon by 2040,¹⁴ Amazon appears to not take responsibility for the full climate impact of all products sold through its website, nor for the packaging used to ship them. According to reports based on the company's climate submissions, the company excluded 99% of its online sales from its total carbon emissions calculations.¹⁵ Taking a different approach to its competitors (e.g., Target and Walmart), Amazon accounts only for the carbon emissions of products with an Amazon brand label, which make up about 1% of its online sales. Other products sold directly by Amazon and products sold by third-party vendors through its website are excluded.

Amazon, instead of committing to report on and reduce its plastic footprint, promotes recycling as a solution to its large and growing plastic packaging waste problem. Recycling is a false solution. Only 9% of all plastic waste ever produced has been recycled.¹⁶

The company's website and 2021 sustainability report reference plastic recycling programs several times.¹⁷ The publications offer no evidence that any of these efforts reduce the company's total plastic packaging waste footprint.

Amazon's plastic packaging is – as previously noted – made from a type of plastic known as plastic film, the "plastic shopping bag" category of plastic. Amazon has communicated, publicly and to its shareholders, that it "recognize[s] that plastic film is a difficult material to process, and most municipal recycling programs do not accept it."¹⁸ Despite this, the company continues to promote recycling as a solution to its customers rather than committing to action that would reduce the chance of its plastic packaging polluting the environment and the world's oceans. Oceana surveyed Amazon Prime customers in 2021 and found clear confusion: 75% of those contacted reported sending their plastic packaging to the landfill, intentionally and unintentionally.¹⁹

Amazon is considered one of the most innovative companies on the planet and has demonstrated its ability to create viable solutions to replace and reduce its plastic packaging. Examples include Amazon's paper-padded mailer and returnable packaging in markets like India, where plastic use has been limited through government regulation. According to Amazon and local accounts obtained by Oceana, the company no longer uses plastic packaging for shipments originating from its own fulfillment centers in Germany, which is the company's second largest market. Amazon

can solve its plastic problem but is choosing not to do so on a global basis, despite the severe impact of plastic pollution on our oceans and planet.

To tackle the company's growing plastic problem, Oceana calls on Amazon to:

- Make a company-wide commitment to reduce the total amount of plastic packaging it uses by at least ⅓ below current (2022) levels by 2030.
- Publicly report on the company's plastic packaging footprint, taking into account all products sold through Amazon's website, and independently verify this data.
- Publicly report on and take responsibility for the full climate impact of all products sold through Amazon's website and all packaging used to ship these items.





E-Commerce Growth and Plastic Packaging

- **E-commerce accounted for 21% of all retail sales globally in 2021.**²⁰
- **Amazon is currently the largest retailer – both online and offline – in the world.**²¹
- **The e-commerce industry used nearly 3.4 billion pounds (1.5 billion kg) of plastic packaging in 2021.**²²

The surge in online shopping and shift away from traditional brick and mortar retail continued in 2021.²³ E-commerce represented 21% of all retail sales globally, up from 15% in 2019.²⁴ Estimated at USD \$4.89 trillion in 2021, e-commerce sales are expected to reach \$6.39 trillion in 2024.²⁵

Amazon is currently the world's biggest retailer. The company is larger than both Walmart and the Chinese e-commerce giant Alibaba, according to Forbes' ranking

of the world's largest publicly traded retail companies.²⁶ In 2021, Amazon continued to grow at double digit rates.²⁷

Globally, the e-commerce industry used nearly 3.4 billion pounds (1.5 billion kg) of plastic packaging in 2021, 18.3% more than the previous year.²⁸ That number is projected to more than double by 2027, as shown in Table 1. Currently about 36% of all plastic produced globally is used to create packaging, 85% of which ends up in landfills.²⁹

By product type, protective packaging had the largest share of the plastic packaging market (35%) in 2021 (Figure 1). The fastest growth by volume is expected for plastic pouches and bags. This is the type of secondary packaging (e-commerce packaging) that Amazon adds on top of the original product packaging after the product is ordered online.

The E-Commerce Industry Produced 3.4 Billion Pounds of Plastic Packaging Waste in 2021

Table 1. Total e-commerce industry's annual (and projected 2022-2027) plastic packaging waste

Year	2020	2021	2022	2023	2024	2025	2026	2027
million kg	1,297	1,534	1,763	2,017	2,295	2,601	2,935	3,298
million pounds	2,857	3,382	3,888	4,447	5,060	5,735	6,471	7,271

Source: Mordor Intelligence

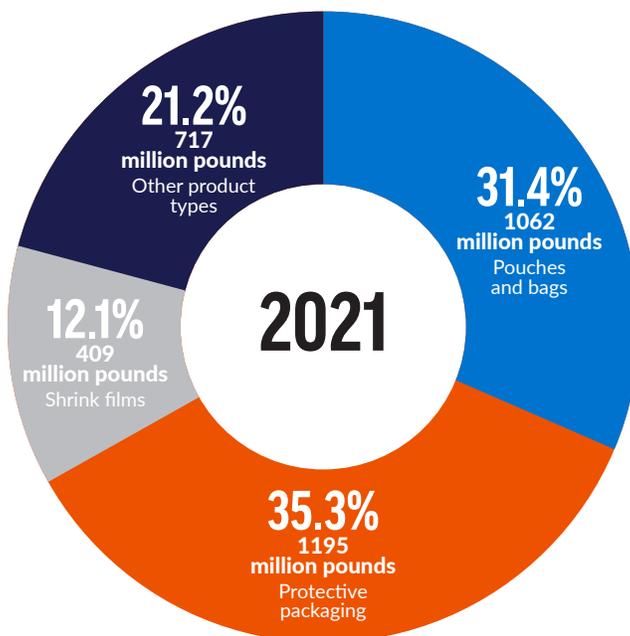


As shown in Figure 2, protective packaging (including bubble wrap and the air pillows Amazon frequently uses) makes up 1.2 billion pounds (542 million kg), or 35%, of total plastic packaging weight. Plastic pouches and bags (including Amazon mailers, envelopes, bags, and bubble-lined bags) make up more than 1

billion pounds (482 million kg), or 31%, of total plastic packaging weight. Shrink films make up 409 million pounds (186 million kg), or 12%, of total plastic packaging weight. Meanwhile, 717 million pounds (325 million kg), or 21% of the total weight, are a mix of other plastic products like foams or gel packs.

Bubblewrap, Air Pillow, and Plastic Mailers are Ubiquitous

Figure 2. Global e-commerce plastic packaging market by product type in 2021



Source: Mordor Intelligence

Amazon's Plastic Packaging Pollution: 2021 Estimates

- **Amazon's plastic packaging footprint was estimated to be 709 million pounds in 2021, an 18% increase from 2020.**
- **Up to 26 million pounds of Amazon's plastic produced in 2021 will end up in freshwater and marine ecosystems.**

Estimate of Amazon's Total Plastic Packaging Footprint

Oceana estimated Amazon's plastic packaging footprint by analyzing e-commerce and packaging market data.³¹ Oceana also requested data directly from Amazon about its plastic footprint. Two days before the publication of this report, the company provided information on the amount of plastic packaging it uses for part of its business — orders sent through Amazon-owned and operated fulfillment centers across its global operations network. The company claimed that past Oceana estimates were 300% higher than its actual plastic usage, but when asked, declined to specify whether its claim referred to plastic packaging used for sales of Amazon branded merchandise, sales from Amazon's fulfillment centers, or for all sales through Amazon's e-commerce platforms globally (the latter is what Oceana is estimating). According to reporting by investigative journalist Will Evans at Reveal, the company has only reported on the carbon emissions of products with an Amazon brand label, which make up about 1% of its online sales.³¹

As of December 2021, Amazon hosted online retail platforms in 20 countries. Through these platforms,

Amazon sells its own products and also enables third-party sellers to sell their products through its "Amazon Marketplace" service. Items purchased from third-party sellers can either be shipped directly by the seller or shipped (fulfilled) by Amazon, through its network of fulfillment centers. In calculating Amazon's plastic packaging footprint, Oceana estimated the company's global footprint as a whole (including Amazon Marketplace sales), and the individual footprints of nine countries, which we estimate account for a combined 93% of Amazon's e-commerce revenue, based on publicly available estimates.³²

According to industry analysts, e-commerce businesses produced nearly a combined 3.4 billion pounds of plastic packaging waste in 2021. Table 2 provides an overview of the e-commerce plastic packaging used in the key markets examined individually through our analysis, as well as in China (the largest producer of e-commerce plastic packaging waste). Amazon is the dominant e-commerce company in most of the countries listed.



The E-Commerce Industry Produced 3.4 Billion Pounds of Plastic Packaging Waste in 2021

Table 2. Total e-commerce industry's annual plastic packaging waste by country in 2021

Country	Million pounds	Million kilograms
China	853	387
United States	706	320
Japan	253	115
United Kingdom	245	111
India	217	98
Germany	194	88
Canada	146	66
Spain	42	19
Brazil	29	13
Mexico	22	10
Other countries	674	306
Total	3,382	1,534

Source: Mordor Intelligence



Oceana obtained estimates of Amazon's market share in each of the nine countries selected for detailed analysis. We assume that Amazon's plastic packaging footprint correlates with its market share, based on discussions with e-commerce packaging experts who agreed that this is a valid method to estimate Amazon's packaging use, given the absence of available data from Amazon. Applying the market share estimates to the figures presented in Table 2, we calculated Amazon's plastic packaging footprint for each of the nine countries (Table 3). Assuming that the remaining 7% of Amazon's revenue in its other markets has the same proportionate footprint as the analyzed countries, we estimated that the total plastic packaging footprint of Amazon in 2021 was 709 million pounds (322 million kg).

Amazon Produced An Estimated 709 Million Pounds of Plastic Packaging Waste in 2021

Table 3. Estimate of Amazon's plastic packaging footprint

Country	Plastic Packaging Waste in E-Commerce (kg) 2021	Estimated Amazon Market Share (%) 2021	Calculated Amazon Plastic Packaging Footprint 2021	
			in pounds	in kg
	Source: Mordor Intelligence	Source: Various ³³		
Brazil	13,268,630	24.4	7,137,558	3,237,546
Canada	66,189,372	42.2	61,579,258	27,931,915
Germany	87,770,695	54.0	104,490,555	47,396,175
India*	98,336,444	19.6	14,872,102	6,745,880
Japan	114,822,832	26.4	66,829,148	30,313,228
Mexico	10,060,231	13.2	2,927,626	1,327,951
Spain	19,243,480	50.0	21,212,281	9,621,740
United Kingdom	111,125,084	37.8	92,597,379	42,001,515
United States**	320,430,791	41.4	287,461,251	130,390,385
Total for nine countries	841,247,559		659,107,159	298,966,334
Other countries with Amazon stores (7% of estimated revenue)			49,986,560	22,673,549
TOTAL			709,094,563	321,639,883

* The estimate of Amazon's plastic packaging footprint in India has been reduced by 65% to reflect the company's commitment – as of June of 2020 – to eliminate single-use plastic packaging throughout their fulfillment centers in India. This commitment does not apply to orders fulfilled through third-party vendors that sell on Amazon.

** The estimate of Amazon's plastic packaging footprint in the United States has been reduced by 2,500 US tons to reflect the company's reported replacement of 70% of mixed material bubble mailers with recyclable paper padded mailers in 2021.

Estimate of Aquatic Plastic Pollution from Amazon's Plastic Packaging

In a 2020 peer-reviewed scientific study published in the journal *Science*, Borrelle et al. estimated that between 19 and 23 million metric tons, or 11%, of plastic waste generated globally in 2016 entered freshwater and marine ecosystems, which includes major rivers, lakes, and the oceans.³⁴

The study also estimated and forecasted the annual amount of inadequately managed plastic waste entering aquatic ecosystems from 2016-2030 in 173 countries, representing 97% of the world's population. Based on this model, Oceana calculated the estimated percentage of Amazon's e-commerce plastic packaging waste that entered major rivers, lakes, and the oceans in 2021 for each of the nine countries included in our analysis (Table 4). In our calculations, we used each country's upper estimate of the rate of plastic waste entering aquatic systems under the "business as usual"

forecast scenario developed by Borrelle et al. These country-specific upper estimates were considered the most appropriate to apply given plastic packaging's low recycling rate and therefore greater likelihood of ending up in the waste disposal system and potentially in aquatic ecosystems.

We also estimated the amount of plastic packaging waste that reached aquatic ecosystems in all of the remaining countries in which Amazon operates that were not included in our country-by-country analysis. To do so, Oceana applied Borrelle et al.'s global average estimate of the rate of plastic waste entering marine ecosystems for 2021 under the study's "business as usual" scenario, which is 15.27%. In total, up to 26 million pounds (12 million kg) of Amazon's plastic packaging waste produced in 2021 is estimated to end up in freshwater and marine ecosystems.

Up to an Estimated 26 Million Pounds of Amazon's Plastic Produced in 2021 Will End Up in Freshwater and Marine Ecosystems

Table 4. Estimate of Amazon's aquatic plastic pollution footprint

Country	Estimated Leakage to Waterways, Lakes, and Oceans	
	in pounds	in kg
Brazil	747,987	339,282
Canada	721,926	327,461
Germany	997,025	452,244
India	4,960,410	2,250,007
Japan	5,964,133	2,705,288
Mexico	224,401	101,787
Spain	278,941	126,526
United Kingdom	1,294,914	587,364
United States	3,033,346	1,375,904
Other countries	7,950,395	3,606,243
TOTAL	26,173,510	11,872,104

Amazon's Plastic is Not Magic

- **The type of plastic commonly used in Amazon's packaging – plastic film – is the most common form of marine plastic litter in nearshore ocean areas.**
- **Amazon's plastic packaging can be lethal to marine animals if it finds its way into the oceans.**

Plastic Film is the Most Common Form of Marine Plastic Litter in Nearshore Ocean Areas

In Amazon's public response to Oceana's December 2021 report,³⁵ which estimated the company's contribution to aquatic plastic pollution in 2020, the company stated that Oceana used "outdated assumptions about the sources of plastic waste entering our oceans" and that "[t]he latest peer-reviewed scientific research finds that the majority of plastic waste that ends up in the ocean comes primarily from takeaway food and drink, and fishing activities."³⁶ Amazon, in its response, cited a study authored by Morales-Caselles et al.³⁷ This reference and assertion by the company is troubling because while the study does find that plastic from takeout food is a problem it also finds that **plastic film is the most common form of marine plastic macro-litter in nearshore ocean areas.**

Items made from plastic film such as bags, wrappers, and industrial packaging were the first, fourth, and eighth most common types of litter found across all aquatic environments surveyed, respectively, by Morales-Caselles et al. According to the lead author of the study, this represented 27% of the litter found in

the aquatic environment.³⁸ Much of Amazon's plastic packaging, including plastic bags, bubble-lined plastic bags, paper mailers with air bubble padding, air pillows, and bubble wrap, are made from plastic film. It may be difficult to determine the origin of plastic film, and especially if the plastic film has deteriorated after long periods of time at sea. In a broad-scale study like the one Amazon referenced, it is likely that plastic films originally used as e-commerce packaging would fall into the general categories of bags, wrappers, and industrial packaging.

Amazon's plastic packaging does not have magical qualities. It cannot chart its own course away from open dumpsites and prevent itself from being littered or blown by the wind into nearby environments. It carries a high risk of ending up in the oceans or other natural environments because it cannot easily be recycled. Amazon writes in its sustainability report that "[n]ot all the materials we use can be easily recycled with current systems, so we look for innovative solutions to recycle these challenging materials. One example is plastic film, which is not commonly accepted through municipal recycling programs."³⁹

Amazon ships products internationally to over 100 countries worldwide. The likelihood that the plastic shipping packaging (or other forms of plastic waste) enters the ocean or other aquatic ecosystems, is influenced by where that waste is generated and inadequately managed. Oceana has obtained the most up-to-date country-specific scientific estimates,⁴⁰ and we combined these estimates with the best available e-commerce trade data to estimate Amazon's contribution to this problem.

Importantly, Amazon also neglected to acknowledge another key finding of the Morales-Caselles et al. study. **Eighty percent of the more than 12 million litter items that were included in the study's analysis were made of plastic.**⁴¹ The study found that plastic litter is highly prevalent and persistent in natural environments, which underscores why Amazon must address its plastic problem. Companies that are significant producers and consumers of plastic – in particular, single-use plastic – have a shared responsibility to address this problem.

Plastic Film is Deadly to Marine Life

Amazon's plastic packaging can be lethal if it finds its way into marine ecosystems. Flexible plastics – including plastic films such as bags and wrappers – are responsible for the biggest proportion of large marine animal deaths caused by oceanic debris. Whales, dolphins, and sea turtles are the most impacted.⁴² Soft plastics, such as bags and other packaging, may be neutrally buoyant in seawater and float in the water column where these animals search for food. Along with plastic fibers, soft plastics are among the most common types of plastic ingested by marine vertebrates.⁴³ Scientists studying these deaths have recommended that reducing the production and use of flexible film-like plastics at their source is the least expensive option to address this problem and most likely to be successful.⁴⁴

Plastic film may float in the ocean but over time it sinks. Once this film is in marine environments, algae and other marine biota will grow on it, making it heavier and eventually causing it to fall down the water column to the seabed.⁴⁵ Another disturbing finding of the 2021 Morales-Caselles et al. study referenced by Amazon: Of the seven aquatic environments where litter was surveyed, plastic items made up the largest proportion of total macro-litter in the deep seafloor (77%).⁴⁶

Plastic films are among the most destructive items in the seabed because the plastic entangles and scrapes corals, sponges, and other marine organisms, exposing these animals to a higher risk of disease and increasing

their vulnerability to parasites.⁴⁷ When plastics break up into microplastics, they may bind with other toxic chemicals in the marine environment. Filter-feeding animals at the bottom of the sea – like mussels, clams, oysters, and even those in the water column such as whales – then eat these microplastics, which can be harmful to them.⁴⁸

Possibly more disturbing still: Scientists have recently discovered a link between marine plastic pollution and ocean acidification. A laboratory study published in 2022 showed the potential for plastic to lower the pH of seawater as it breaks down over time.⁴⁹ Scientists have referred to ocean acidification as climate change's "evil twin" because the two issues are inextricably linked. As greenhouse gases warm the globe, increasing amounts of carbon dioxide are also being absorbed into the ocean, changing its chemical makeup. As this happens, the oceans are becoming more acidic, with undeniably dire – but still poorly understood – consequences for marine animals and ecosystems. If plastic pollution continues to flow into our oceans unabated, there is a risk that this will contribute to the acidification of our oceans, too.



Amazon is Ignoring Its Shareholders

- **48.9% of Amazon's shareholder votes backed a resolution asking the company to address its growing plastic packaging problem.**
- **Amazon has yet to disclose its total plastic packaging footprint or outline a plan to reduce it.**

Amazon's Shareholders Have Asked for Transparency

In May 2022 at Amazon's annual meeting, 48.9% of the company's shareholder votes backed a resolution asking the e-commerce giant to address its growing plastic packaging problem. The resolution, filed by the nonprofit organization As You Sow, called for the company to issue a report on its plastic packaging footprint and commit to reducing that footprint going forward. Although it fell just short of a majority, the resolution received more support than any other shareholder resolution in the company's history according to regulatory filings, with over 181 million shares voting in favor.

Ahead of the annual meeting, Oceana called on Amazon employees (who are also company shareholders) at Amazon's headquarters in Seattle, Washington and Arlington, Virginia to win support for the resolution. This effort included canvassers, mobile billboards, 1,000 yard signs, 500 posters, and a LinkedIn campaign. Oceana also sent a letter to Amazon shareholders outlining five reasons to support this resolution and created a dedicated website for the endeavor.



In its letter to investors, Oceana outlined five reasons to vote "yes" on the plastic shareholder resolution.

- 1** | The company faces growing concern and demand to formally measure and take action to reduce its plastic footprint
- 2** | Amazon is a major generator of plastic packaging waste
- 3** | The company's response to its plastic problem does not adequately address the issue of plastic pollution and requires action by the company's shareholders
- 4** | The plastic crisis in the oceans requires urgent action by corporate leaders like Amazon
- 5** | Plastic is made from fossil fuels and is a significant contributor to climate change

Additionally, Oceana rallied support for the resolution from Signatories to the UN Principles for Responsible Investment (PRI). Many of the institutional investors owning Amazon shares are members of the PRI. As such, they have pledged to seek disclosure on Environmental, Social, and Governance (ESG) issues from the companies they invest in. Oceana called on these investors to honor their commitment to the PRI and vote in favor of the resolution, which would seek such disclosure on the important ESG issue of plastic pollution.

At least 53 companies declared (publicly or to investors) their intention to vote in favor of the resolution, including the world's largest asset manager, Blackrock. In 2021/2022, the plastic resolution at Amazon's annual meeting was one of only 71 Environmental and Governance shareholder proposals that Blackrock supported out of a total of 321 (22%).⁵⁰ Providing rationale for their voting decision, Blackrock stated:

"...Amazon does not explicitly disclose the total amount of plastic used; therefore, it is difficult for stakeholders to determine how effectively the company is managing this material risk and their progress year over year. As a result, we supported this shareholder proposal, as we believe it is in the best economic interests of our clients for Amazon to enhance their disclosure on this material long-term business risk."⁵¹



Why is Amazon Ignoring Its Shareholders?

Shareholder resolutions are non-binding, which means that even if a majority vote is secured, this won't necessarily force a change in company policy. Even so, companies often take some form of action if 30% to 40% of votes are cast in favor.⁵² A strong result indicates that this is an issue of significant concern for shareholders and ignoring this signal is not likely to be in the interest of the company, nor its board.

Despite the near majority vote, **Amazon has chosen to ignore its shareholders.** In the months following its annual meeting, the company did not respond publicly on the issue of plastic pollution, nor has it shown an openness to fulfilling the requests of the resolution in correspondence or meetings with Oceana. In these discussions, the company has questioned the importance of both ESG disclosures relating to plastic packaging use and of publicly announced corporate commitments. This contradicts the approach Amazon has taken on climate through co-founding "The Climate Pledge" in 2019, which commits companies to reach net-zero carbon emissions by 2040 and records progress through public reporting.

Amazon's 2021 sustainability report restates the company's goal to reach net-zero emissions by 2040, as well as its own calculated carbon emissions, and a few other climate-related environmental commitments. Missing from the report, however, is a company-wide goal on plastics or data indicating how much plastic packaging it uses and its progress towards plastic reduction. The title of the report is "Delivering Progress Every Day," which leads us to question how progress can be adequately assessed if Amazon is not fully transparent with how large its global plastic packaging footprint is and how it is working to reduce it. **Why is Amazon denying it has a plastic problem?**

2022 was not the first year the issue of plastic packaging was raised at Amazon's annual meeting. In 2021, a similar resolution secured 35.5% of the vote.⁵³ The company will expose itself to several categories of risk by continuing to ignore its shareholders on this issue.

Regulatory Reform Will Force Amazon to Address Its Plastic Problem

- **Upcoming and recently-introduced legislation in the United States, India, European Union, and China has restricted (or will restrict) the type and amount of plastic that e-commerce retailers can use and the items they can sell.**
- **Policymakers in Amazon's largest markets should be cognizant of the potential positive impact that bans or restrictions on e-commerce plastic packaging can have.**

In response to increasing concern for the plastic pollution crisis facing our planet, countries are revising and introducing legislation to ban or restrict the use of the most damaging and superfluous single-use plastic items. These legislative changes will restrict not only the type and quantity of plastic packaging that e-commerce retailers like Amazon can use, but also the items that these businesses can sell through their retail platforms.

UNITED STATES

In the United States – Amazon's largest market – the company will soon no longer be able to deny its plastic packaging problem due to new state-level legislation designed to reduce single-use packaging.

In 2022, the state of California created a new law that mandates the reduction of single-use plastic packaging and high recycling rates – the Plastic Pollution Prevention and Packaging Producer Responsibility Act (SB 54).⁵⁴ SB 54 is the boldest plastic reduction policy that has been enacted in the United States to

date, marking a significant step towards reducing the country's reliance on single-use plastic. While several states have phased out specific plastic items like bags, SB 54 is the first state law to mandate source reduction of all single-use plastic packaging, requiring producers to slash the total amount sold and distributed by at least 25% by 2032. The legislation, because of its direct reduction and high recycling requirements, **will effectively require Amazon to significantly reduce its plastic packaging footprint, and report on these efforts to state authorities.**

If it were a sovereign nation, California would be the fifth largest economy in the world. California is the largest market in the United States, accounting for nearly 15% of the United States Gross Domestic Product (GDP).⁵⁵ Past California state legislation around emission standards for vehicles has driven nationwide change in how cars are manufactured for sale in the United States.⁵⁶ The new plastic bill in California will undoubtedly have a similar impact on large national brands subject to the law, such as Amazon.

INDIA

India is an important overseas market for Amazon, with e-commerce spending in the country expected to double in size by 2025, reaching \$130 billion.⁵⁷ Recognizing this potential for growth, Amazon has been trying to expand its business through deploying strategic investments in India,⁵⁸ where it competes with other leading online retailers such as the Walmart-owned e-commerce giant Flipkart.

In June 2018, India's Prime Minister, Narendra Modi, and India's central government pledged to ban single-use plastics by 2022. But in October 2019, the ban was delayed. Taking matters into his own hands, 16-year-old Delhi resident Aditya Dubey started a petition to stop Amazon and Flipkart from using what the petition described as "excessive" plastic packaging in India. Through his legal guardian, Aditya pleaded to the country's National Green Tribunal, who requested that the Indian Central Pollution Control Board (CPCB) take action.⁵⁹ The CPCB informed Amazon that, in line with India's Extended Producer Responsibility for plastic waste, "**Primary responsibility for collection of [...] packaging is of Producers, Importers, and Brand Owners who introduce the products in the market. They need to establish a system for collecting back the plastic waste generated due to their products.**"⁶⁰

Two years later, the Indian Government followed through on its initial pledge. In August 2021, the Indian Ministry of Environment, Forest, and Climate Change amended India's Plastic Waste Management Rules, prohibiting identified single-use plastic items deemed as having low utility and likely to be littered.⁶¹ This ban, which went into effect July 2022, includes cotton swabs, cups, glasses, cutlery, straws, trays, packaging film around sweet boxes, invitation cards, cigarette packets, banners less than 100 microns in thickness, and stirrers. In addition, the ban prohibited plastic carry bags less than 75 microns in thickness beginning September 2021 and bags less than 120 microns will be banned starting December 2022. **Amazon, and any other business operating in India, is prohibited from manufacturing, importing, stocking, distributing, selling, or using any of these items.**

EUROPEAN UNION

The European Union is responsible for a significant share of Amazon's net sales. Germany is Amazon's second largest market globally, behind only the United States.⁶² In addition to Germany, Amazon has marketplaces in France, Italy, Spain, the Netherlands, Sweden, and Poland – and ships to all other European Union countries.



Much like India, the European Union has introduced a ban on single-use plastic items. As of July 2021, single-use plastic plates, cutlery, straws, balloon sticks, and cotton swabs cannot be sold in European Union countries.⁶³ Cups, food and beverage containers made of expanded polystyrene, and all products made of "oxo-degradable" plastic are also banned. As a result, **Amazon and all other retailers cannot sell or distribute any of these items.**

In 2019, the European Commission announced its "European Green Deal," a new growth strategy that prioritizes the transition to a circular economy and identifies packaging waste reduction as an important policy goal.⁶⁴ The European Commission plans to achieve this goal through revising several pieces of legislation, including its Packaging and Packaging Waste Directive. **Once adopted, the legislation will apply to e-commerce packaging in each of these markets.**

Leading up to negotiations about what will be included in the revised Directive, environmental nonprofit organizations have called for new laws that would require e-commerce companies to report on the amount of plastic packaging they use annually; industry-wide reduction goals for plastic packaging; and targets to reach 50% reusable packaging by 2030, and 80% by 2035 in e-commerce, for all goods shipped within the European Union.⁶⁵

If Alibaba Can Do It, So Can Amazon

China is home to the largest e-commerce market in the world, accounting for 52.1% of all retail e-commerce sales worldwide in 2021.⁶⁶ These sales amounted to over USD \$2 trillion in 2021⁶⁷ spent by 824.5 million digital consumers.⁶⁸ The largest player in this market is Alibaba, listed third behind Amazon and Walmart in Forbes' ranking of the world's largest publicly traded retail companies.⁶⁹ Alibaba owns three e-commerce platforms in China: Alibaba.com, Taobao, and Tmall. Together with its closest competitor, JD.com, Alibaba controls a joint market share of more than 60% in China.⁷⁰ Amazon used to have a presence in China. The company announced in 2019 that it would be shutting down its domestic e-commerce marketplace business in the country, succumbing to the stiff competition of its Chinese-owned competitors.⁷¹

The Chinese e-commerce market is also a massive producer of plastic packaging waste. Analysts estimate that in 2021 China used 853 million pounds of e-commerce plastic packaging (Table 2, Chapter 1). This is over 20% more packaging than the United States used in the same year (706 million pounds). Packaging waste from China's e-commerce market is clearly a significant threat to the marine environment. Thankfully, change may be on the horizon.

In 2021, the Chinese Government released draft regulations on the use and reporting of single-use

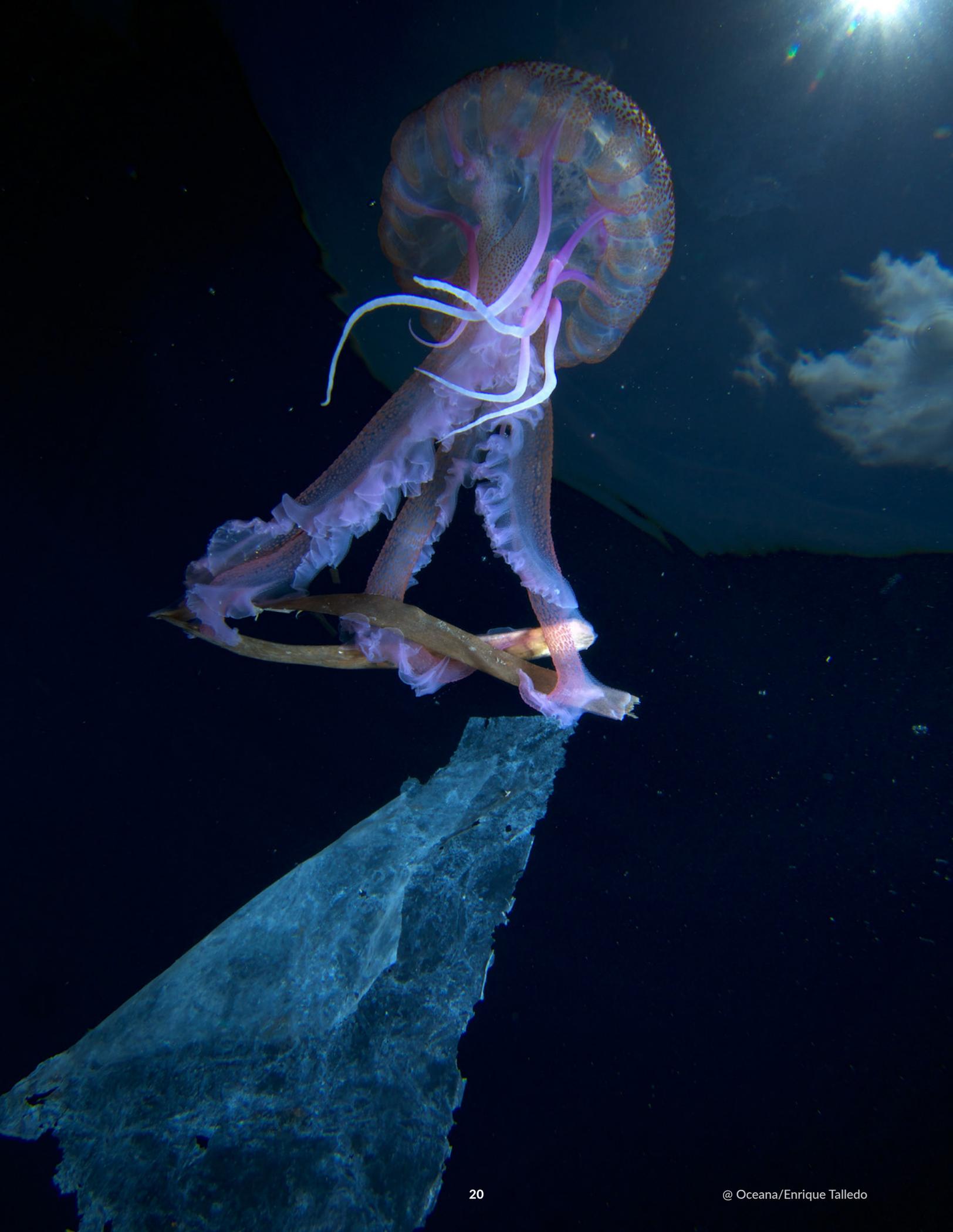
plastic products. The scope of these regulations included e-commerce businesses, which would be required to set rules to reduce and substitute single-use plastics and report on their use of single-use plastics through a national reporting system.⁷² The draft regulations also require e-commerce platforms to establish a framework allowing consumers to judge whether businesses on the platform comply with national regulations for the ban and restrictions on plastics.⁷³

Some of the largest e-commerce companies in the world will soon need to make company-wide reductions in their use of single-use plastic packaging and routinely disclose the amount of plastic packaging they use. If companies can make these changes in the world's largest e-commerce market, why can't Amazon?

The world is waking up to the mountain of plastic trash piling up in our environment. Legislation is needed and is being passed. Policymakers in Amazon's largest markets should be cognizant of the potential impact that bans or restrictions on e-commerce plastic packaging can have, especially when there are few large, corporate entities that hold outsized influence in the markets where they operate. And, as the largest retail company in the world, **Amazon should be a leader in this change, taking responsibility for its plastic problem before this responsibility is forced upon the company.**



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Amazon Can't Recycle Its Way Out of Its Plastic Problem

- **Amazon acknowledges that most municipal recycling programs do not accept plastic film.**
- **75% of surveyed Amazon Prime customers are – intentionally and unintentionally – sending their plastic packaging to the landfill.**

Amazon's plastic packaging is – as previously noted – made from a type of plastic known as plastic film, the “plastic shopping bag” category of plastic. Amazon has communicated publicly and to its shareholders that they “recognize[s] that plastic film is a difficult material to process, and most municipal recycling programs do not accept it.”⁷⁴ Despite this, Amazon promotes recycling as a solution to its large and growing plastic packaging waste problem. There are several references to plastic recycling programs in the company's recent sustainability report and on the company's website – Amazon Second Chance – that offers information for customers about how to recycle plastic packaging and links to alternative recycling sites. Recycling is not the solution the company should be relying on. Only 9% of all the plastic waste ever produced has been recycled.⁷⁵

Customers who visit Amazon's Second Chance website and click on images of plastic packaging (such as the blue and white Amazon plastic mailer) are told that “some cities offer curbside recycling. Where not available, use designated store drop-off locations where plastic film is accepted” and then are given a link to find “your drop-off location.”

In 2021, Oceana sent mystery shoppers into 186 stores in 25 cities in both the United States and United Kingdom – identified as local recycling “drop-

off locations” for plastic packaging through the links from the Amazon Second Chance website. The secret shoppers found that **in 41% of these stores, representatives said they could not accept Amazon plastic packaging.** Managers at more than 80% of the stores visited told the secret shoppers that they did not know their store was listed as a drop-off location for the recycling of Amazon packaging. Additionally, when the secret shoppers looked into the plastic recycling bins, they only saw Amazon packaging in the bins in 17% of the stores surveyed. Several of the bins were labeled as accepting “plastic bags only,” which would presumably confuse Amazon shoppers unaware that their plastic mailers and other packaging are supposed to go in the “plastic bags only” bin.

When interviewed by Oceana, local municipal recycling officials in both the United States and the United Kingdom confirmed that they are not able to recycle Amazon's plastic packaging. They explained that this packaging continues to be put in recycling bins and contaminates other plastic.

Oceana also conducted a multi-part study in the same 25 cities in the United States and United Kingdom to investigate what happens to Amazon's plastic packaging waste (including what customers do with their packaging). Oceana surveyed 1,400 Amazon Prime customers about how they dispose of their packaging and found that **three out of four customers are sending their plastic packaging to the landfill, intentionally and unintentionally.** 39% of the Amazon customers surveyed put their plastic packaging in their curbside recycling bins even though this means the plastic packaging will likely end up being landfilled. 83.8% of those who reported placing their plastic in



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the bin believed the plastic would be recycled. 35.5% said they simply put their Amazon packaging in the trash; 19.3% said they set the packaging aside; and only 5.9% said they bring the packaging to store drop-off locations (like the ones linked to by Amazon's Second Chance website). 91.4% of those surveyed said that they thought Amazon should reduce its use of plastic packaging. Nearly 95% of the Amazon Prime customers surveyed are concerned about plastic pollution's impact on the oceans.

Oceana's research found that Amazon customers do not know that municipal recycling facilities will not accept Amazon packaging for recycling (and instead put it into the landfill). And **the plastic film recycling system is ineffective at best.**

How Amazon is Reducing Its Plastic Packaging Footprint

- To date, Amazon's efforts to reduce its use of plastic packaging have been piecemeal. They are introduced regionally, often in response to trends towards regulatory reform.
- As the largest retailer in the world, Amazon should not be limiting the deployment of sustainability strategies to the regions where it is pushed to do so.

Amazon is making efforts to reduce its use of plastic packaging, as the company reported in its latest sustainability report.⁷⁶ But to date, these efforts have been piecemeal. The company's initiatives are introduced regionally, often following regulatory reform. Such is the case in India, where the country banned single-use plastics in 2022, and in the United Kingdom, where a plastic packaging tax was introduced the same year. Amazon does not only operate in a small handful of countries, however. **It is the largest**

retailer in the world and should not be limiting the deployment of sustainability strategies to the regions where it is pushed to do so. As mentioned in the company's sustainability report, one of Amazon's recently introduced leadership principles is "Success and Scale Bring Broad Responsibility." Oceana is calling on the company to align to this principle and take responsibility for its contribution to plastic pollution in all markets where it operates.

Plastic-Free Alternatives for Single-Use Packaging

Examples of actions taken by Amazon regionally that could be committed to globally include the following:

- Replacing mixed material bubble mailers with recyclable paper padded mailers (70% of mailers were replaced in the United States in 2021).



- Replacing single-use plastic delivery bags with recyclable paper delivery bags, cardboard envelopes, or boxes (plastic bags were replaced in India in 2020, in Europe in 2021, and in Japan in 2022).
- Replacing bubble wrap and plastic air pillows with recyclable paper material (air pillows were replaced in India in 2020, in Australia in 2021, and in Europe in 2022).

Amazon has yet to announce action they have taken or plan to take towards specifically addressing plastic packaging waste in its other markets, including Brazil, Mexico, Egypt, and the United Arab Emirates. These are among the top 20 countries where scientists have estimated the largest amount of plastic waste escapes to aquatic environments⁷⁷ and are also all countries where Amazon has a significant market presence.

The company has not publicly committed to reducing its use of plastic packaging worldwide. Two markets where Amazon has made notable commitments on reducing plastic packaging are India and Germany. To understand the status and impact of these commitments, Oceana hired investigative journalists to conduct research on the ground in these two countries. The findings of their investigations follow.

Case Study: India

As a result of legal action pursued by 16-year-old Delhi resident Aditya Dubey in 2019, India's Central Pollution Control Board informed Amazon it was their responsibility to "establish a system for collecting back the plastic waste generated due to their products."⁷⁸ Amazon quickly took steps to reduce its plastic use in India.

In September 2019, Amazon announced that it would use paper cushions in India to replace plastic dunnage (such as air pillows and bubble wrap) in outer boxes across its fulfillment centers.⁷⁹ It also unveiled a plan to expand its Packaging-Free Shipping program and later

reported that 40% of its orders were being shipped in their original boxes and not repackaged by Amazon.⁸⁰ On June 29, 2020, Amazon announced it had achieved a 100% successful transition away from single-use plastics for shipments originating from their fulfillment centers in India, less than a year after its declaration to act. Unfortunately, Amazon qualified this claim by noting that it still uses some plastic in packaging material, which it claims are 100% recyclable through the available collection, segregation, and recycling channels.⁸¹

Oceana's investigations in India revealed that as of



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October 2022, Amazon has, for the most part, reduced the amount of plastic packaging it uses for orders shipped through its fulfillment centers, in alignment with its public commitments. The company has not committed to reduce plastic use by its marketplace sellers,⁸² some of whom ship products in Amazon branded plastic bags. As a result, Amazon's plastic packaging continues to be a problem in India.

Amazon has claimed that they continue to "educate sellers, who directly fulfill customer orders, to join in this directional change in packaging."⁸³ Based on interviews by a local investigative journalist hired by Oceana, the Amazon sellers' viewpoint was different. One seller reflected that "[t]hey have no strict policy

or guidelines for plastic usage – we use bubble wrap, cello tape, and all kinds of plastics. When they come to collect our products, they're okay with anything as long as the label with all the details is there." Another seller revealed that the Amazon representative that listed them "specifically asked [them] to use plastic for dispatching the items as it would be easy to pack and waterproof. They even suggested a local wholesale market's name where [they] could buy the plastic bags from."

The investigative journalist hired by Oceana was able to order a pack of 100 Amazon-branded plastic mailers through Amazon India. When these bags arrived, they were shipped in an Amazon-branded plastic bag, and also packaged separately inside an Amazon-branded plastic bag. Notwithstanding the fact that Amazon allowed the sale of this product on its platform, the company appeared to allow the use of Amazon's name, a registered trademark, on the plastic mailers.

Through placing orders on Amazon.in, the investigative journalist based in India found a range of additional issues. Shipments that were fulfilled by Amazon arrived without outer plastic packaging, air pillows, or bubble wrap but on occasion were sealed with plastic tape—not the 100% plastic-free and biodegradable tape that the company began using in 2020.⁸⁴

Additionally, the journalist was able to purchase single-use plastic items (plastic stirrers) on Amazon.in that have been banned in India.⁸⁵ The purchase was made from a third-party seller, who shipped the product in plastic packaging.

Although Amazon has largely met its commitment to eliminate single-use plastic packaging from orders originating from its fulfillment centers in India, according to Oceana's investigation, it is clear that issues still remain. **If the company is serious about eliminating harmful single-use plastic packaging in India, it needs to require its sellers to reduce plastic packaging as well. It should also stop the sale of plastic items that have been banned in India.**

Case Study: Germany

In November 2021, news accounts surfaced reporting that Amazon had pledged to cut its use of plastic packaging in Germany by the end of the year.⁸⁶ This commitment has the potential to be impactful, as Germany is Amazon's second largest market globally.⁸⁷ In September 2022, the company publicly confirmed through two separate blogs that Amazon does not use single-use plastic packaging (bags and pouches), nor does it use plastic air cushions when shipping from German logistics centers.⁸⁸ The company specified that paper and cardboard packaging had replaced single-use plastic packaging for orders from Amazon itself, as well as those from third-party providers who handle shipping through Amazon. Along with a few other caveats, the company also explained that – like in India – their commitments excluded orders shipped directly from third-party sellers, because in these cases Amazon had no control over the selected outer packaging.

Through placing orders on Amazon.de, the investigative journalist based in Germany found that Amazon Germany appeared to be meeting its commitments to eliminate plastic packaging from its fulfillment centers, aligning with its public communications. Items ordered through Amazon did not arrive with any outer plastic packaging, air pillows, or plastic tape. Unlike in India, items ordered from Amazon's own brands were free of inner plastic packaging. Only one item that was purchased and shipped from a third-party seller, was wrapped with bubble wrap – but this was a large glass vase, an item that would be exempt from Amazon's commitment even if shipped through the company's own fulfillment centers.

In Germany, like India, Amazon customers can still purchase single-use plastic packaging (e.g., pouches) on Amazon.de from third-party sellers, despite Amazon's commitment to eliminate its own single-use plastic. Still, the journalist was not able to find Amazon-branded pouches available for purchase through the German site. Other plastic items for sale on Amazon.de would be banned in the European Union if typically used by consumers only a single time, though they

were labeled “reusable” instead of single-use (e.g., “400 pieces of reusable plastic cutlery” at a price of 18.99 Euros).⁸⁹

In October 2022, the journalist in Germany joined a public tour of an Amazon fulfillment center in Leipzig, Germany. On this tour they were able to see where employees pick, pack, and ship customer orders around Germany. During the tour it quickly became apparent that plastic was being used widely on the warehouse floor, including plastic film to wrap products on pallets, cellophane tape to fasten products, bubble wrap on products high in product towers, and other bits of plastic seen on packages being transported around the warehouse on conveyor belts. When asked to explain the use of plastic with regards to Amazon’s plastic-free pledge in Germany, the tour leader explained that the commitment referred only to product delivery and not product storage in the warehouse.

Though the situation appears promising in Germany, Amazon has remaining issues to improve in the country. The company must work with its marketplace sellers to reduce their use of plastic packaging and ensure that single-use plastic items that are banned in the European Union (e.g., plastic cutlery) are not sold through its website.

In both India and Germany, the company has shown that they can make reductions in their use of plastic packaging, even over relatively short periods of time. **It is in Amazon’s power to make the same commitments in all countries where they operate – and they owe it to their customers and the oceans to do so.**



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Amazon Will Fall Short in Meeting Its Climate Pledge Without Addressing Plastic

- **Amazon does not take responsibility for the full climate impact of all products sold through its website, nor for the packaging used to ship them.**
- **To reduce emissions related to its use of plastic packaging, the company must innovate and invest in reusable packaging systems.**

In 2019, Amazon co-founded The Climate Pledge, a corporate commitment to reach net-zero carbon emissions by 2040 — 10 years ahead of the Paris Agreement.⁹⁰ To date, the Pledge has been signed by over 300 businesses, including Amazon, who together have committed to achieve net-zero through three principal areas of action: regular reporting on greenhouse gas emissions; implementing decarbonization strategies; and neutralizing any remaining emissions with quantifiable and permanent offsets.

Amazon's efforts towards meeting its own pledge, however, have recently faced scrutiny. In an article published in *Reveal*, reporter Will Evans exposed the company's decision to exclude 99% of its online sales from its total carbon emissions calculations.⁹¹ According to the story, unlike its competitors (e.g., Target and Walmart, who account for all of their emissions), **Amazon accounts only for the carbon emissions of products with an Amazon brand label, which make up about 1% of its online sales.** Amazon's numbers exclude other products sold directly by Amazon and products sold by third-party vendors through its website. It's unclear if Amazon is accounting

for the emissions caused by manufacturing and disposing of the packaging used to ship these excluded items. In Amazon's 2021 sustainability report, Amazon includes "Amazon-branded product emissions (e.g., Amazon-branded product manufacturing, use phase, and end-of-life)" in its "Emissions from indirect sources (Scope 3)". In including "Other indirect emissions (e.g. packaging)" the company does not make any further specifications as to what this includes (or excludes).⁹²

Amazon enables all sales made through its website, regardless of whether Amazon manufactured or directly sold the products in question. These sales would not have happened had Amazon not facilitated them.

Amazon should take responsibility for the full climate impact of all products sold through its website and all packaging used to ship these sales.





Plastics and climate change are irrefutably linked, but Amazon has yet to highlight how reducing plastic packaging could help the company meet its net-zero emissions target. Plastic is predominantly made from fossil fuels and its manufacturing process can be carbon intensive. The plastic packaging then needs to be transported to its place of (usually single) use. Once plastic is disposed of or destroyed, its end-of-life processes lead to differing and sometimes undetermined contributions to global greenhouse gas emissions.⁹³

According to a World Bank report, it is currently estimated that 11% of plastic waste is incinerated.⁹⁴ This number is likely even higher taking into consideration domestic, often illegal, backyard burning of waste. The percentage of plastic packaging that is burned could be higher still, given that plastic films

are difficult to recycle. Burning plastic releases not only carbon dioxide, but also other gases that are harmful to human health. In recent years, we are seeing a worrying trend towards the burning of plastic as fuel for cement kilns or for generating electricity.⁹⁵ These practices delay the transition to renewable and legitimately “clean” energy, such as wind and solar.

Made from fossil fuels, plastic is now used as a fossil fuel, creating consequences for our environment and climate. **As the largest retailer in the world and an enormous consumer of single-use plastic, Amazon can and must help end our reliance on a material that is devastating the world's oceans.** To reduce its plastic packaging-related emissions, Amazon needs to innovate and invest in reusable packaging systems⁹⁶ and where not possible, develop packaging that is lightweight, fully recyclable, fully recycled, and not made from plastic.

Conclusion and Recommendations

As the world's largest retailer, Amazon is shaping how people around the world buy and receive goods. It has the power to implement company-wide changes that would significantly reduce the amount of single-use plastic consumers use on a day-to-day basis, including the plastic that ends up in our oceans. But Amazon isn't doing this.

Amazon claims to understand, "Success and Scale Bring Broad Responsibility" but the scale of the company's strategies to reduce plastic do not match its vast footprint. The company is not being fully transparent about its efforts, nor accountable to the progress and impact of its commitments.

To tackle its growing plastic problem, Oceana calls on Amazon to:

1



Make a company-wide commitment to reduce the total amount of plastic packaging it uses by at least $\frac{1}{3}$ below current (2022) levels by 2030.

2



Publicly report on the company's plastic packaging footprint, taking into account all products sold through Amazon's website, and independently verify this data.

3



Publicly report on and take responsibility for the full climate impact of all products sold through Amazon's website and all packaging used to ship these items.



Endnotes

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Oceana is the largest international advocacy organization dedicated solely to ocean conservation. Oceana is rebuilding abundant and biodiverse oceans by winning science-based policies in countries that control over one-quarter of the world's wild fish catch. With more than 225 victories that stop overfishing, habitat destruction, pollution, and the killing of threatened species like turtles and sharks, Oceana's campaigns are delivering results. A restored ocean means that 1 billion people can enjoy a healthy seafood meal, every day, forever. Together, we can save the oceans and help feed the world. Visit oceana.org to learn more.