

# Amazon's Plastic Problem Revealed

How Amazon is flooding  
our communities,  
environment, and oceans  
with hundreds of millions  
of pounds of plastic  
packaging and how  
they can stop



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**Amazon has a plastic problem. Oceana analyzed e-commerce packaging market data as well as a recent scientific report, published in *Science*, about predicted growth in plastic waste, that projects plastic pollution of aquatic ecosystems by country and found that Amazon has a large and rapidly growing plastic pollution footprint.**

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# Executive Summary

- **Report estimates that Amazon generated enough plastic packaging waste in 2019 to circle the Earth 500 times (in the form of plastic air pillows) and that up to the equivalent of a delivery's van worth of its plastic packaging is polluting the world's freshwater and marine ecosystems every 70 minutes**
- **Most of Amazon's plastic packaging, despite claims of recyclability, is not recycled and the company has already, in India, taken action to reduce plastic packaging on a countrywide basis**
- **Oceana, with the support of hundreds of thousands of individuals, is calling on Amazon to reduce plastic and to offer plastic-free choices around the world**

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Amazon has a plastic problem. Oceana analyzed e-commerce and packaging market data<sup>1</sup> as well as a recent scientific report, published in *Science* about predicted growth in plastic waste, that projects plastic pollution of aquatic ecosystems by country<sup>2</sup> and found that Amazon has a large and rapidly growing plastic pollution footprint. E-commerce plastic packaging becomes plastic waste immediately after a package is opened and almost all plastic waste is landfilled, burned,<sup>3</sup> or enters and pollutes the environment including waterways and oceans<sup>4</sup>, where plastic can harm marine life<sup>5</sup>. Amazon should listen to its customers and offer plastic-free shipping options. Customer surveys sponsored by Oceana found an overwhelming concern about plastic pollution's impact on the ocean and a desire for Amazon and other e-commerce companies to use less plastic packaging. Oceana calls on the company to report on and to take immediate steps to reduce its plastic use.

In 2019, according to Oceana's analysis, explained in detail on page 12, Amazon generated an estimated 465 million pounds, or 211 million kilograms (kg), of plastic packaging.

This is the plastic used to ship purchases made on Amazon and includes air pillows or bubble wrap to prevent products from moving within a package, and plastic mailers or plastic-lined paper envelopes to ship smaller products. Amazon packages can be double-packed, with the original product, already packaged, surrounded with plastic filling and an outer Amazon box.

According to news reports, Amazon shipped over 7 billion packages in 2019 – roughly one for every person on the planet.<sup>6</sup> The company uses so much plastic packaging that it would circle around the Earth more than 500 times if expressed in the form of e-commerce's ubiquitous air pillows.<sup>7</sup>

Based on data derived from the scientific report about plastic pollution of aquatic ecosystems,<sup>8</sup> Oceana estimates that in 2019, up to 22.44 million pounds (10.18 million kg) of Amazon's plastic packaging has ended up in the world's freshwater and marine ecosystems as pollution.<sup>9</sup> This amount is roughly equivalent to a delivery van's worth of plastic being dumped into major rivers, lakes, and the oceans every 70 minutes.<sup>10</sup>

The amount of pollution from Amazon's plastic packaging waste could increase rapidly because of the company's exponential growth. In 2020, driven by the COVID-19 pandemic, analysts expect the company's revenue to grow by more than a third.<sup>11</sup> Additionally, the company's sales are increasing rapidly in low- and middle-income countries where the rate of plastic waste entering and polluting the oceans is high.<sup>12</sup>

Plastic is a major source of pollution for the world's oceans. Scientists now estimate billions of pounds of plastic washes into the ocean every year.<sup>13</sup> Plastic packaging harms marine life and biodiversity when it enters the marine environment. Sea turtles and other animals mistake the kind of plastic used by Amazon – such as plastic bags – for food. Recent studies estimated that 90% of all seabirds and more than half of all sea turtle species studied – 52% – were found to have ingested plastic.<sup>14,15</sup>

Amazon has, according to news reports and company presentations, prioritized the use of flexible lightweight packaging, made of plastic to, it says, meet its climate change targets. The company is replacing non plastic packaging with plastic packaging for shipments it makes around the world.<sup>16</sup> Yet it is not reporting on the issues related to its use of plastic in their sustainability reports.<sup>17</sup> And, this is a company, as previously referenced, that ships billions of packages.

Amazon's embrace of plastic packaging is highly problematic because it increases plastic use, plastic waste, and pollution. Additionally, plastics are made from fossil fuels and are a major contributor to climate change.<sup>18</sup> Life cycle assessments that favor plastic often do not fully consider the material's full environmental impact, particularly on the oceans.<sup>19</sup>

In response to questions regarding its plastic use, Amazon has said that it is pushing to make more of its packaging "recyclable."<sup>20</sup> However, the type of plastic used in Amazon's packaging is effectively not recycled.<sup>21</sup> Amazon's claim of recyclability is an empty promise and will not reduce Amazon's plastic waste footprint or its impact on the oceans.

Amazon's plastic packaging – including mailers, bubble wrap, inflatable pillows, and more – is referred to as "plastic film" in recycling terms and has little to no value on the recycling market.<sup>22</sup> Most often, it is landfilled, burned, or pollutes the environment, including the oceans.<sup>23</sup> Only 4% of post-consumer polyethylene plastic film, including bags and wraps, was recycled in the United States, according to a 2017 industry report about film recycling.<sup>24</sup> Additionally, most municipal recycling programs in the U.S., Canada, and the United Kingdom (UK) do not accept plastic film.<sup>25</sup>

When customers search on Amazon how to recycle their plastic packaging in the U.S., Canada, or the UK, – whether a plastic pillow, plastic mailer, or other types of packaging – they will likely be informed on Amazon's websites that "some local authorities will collect this material as part of household recycling"<sup>26</sup> and be served links to secondary websites for more information about how to recycle the packaging in question. These secondary websites state that plastic film is not accepted by most household recycling programs and offer – via postal code search – a list of grocery stores where customers can theoretically go to drop off their plastic packaging, often many miles away from their home.<sup>27</sup>

Oceana polled Amazon Prime customers in the U.S. and asked if they have followed Amazon's recommendations for finding stores that will take their plastic packaging waste and found that 98% of respondents said they had not done so and that less than 2% (1.67%) had made a special trip to bring their plastic packaging to the grocery stores for recycling.<sup>28</sup>

Amazon's customers overwhelmingly want the company to reduce plastic packaging.<sup>29</sup> Oceana surveyed Amazon customers in the U.S., Canada, and the UK in 2020 and found that 86% were concerned about plastic pollution and its impact on the oceans, 92% were upset that plastic recycling does not work, and 87% wanted Amazon and other major online retailers to offer plastic-free packaging choices at checkout and/or other measures that would reduce plastic.<sup>30</sup> In addition, more than 660,000 people have signed a petition calling on Amazon to offer plastic-free choices.<sup>31</sup>

Amazon has made commitments to reduce its carbon footprint<sup>32</sup> and should do the same with its plastic footprint. It must disclose its plastic use by country and expand and improve packaging programs and policies that discourage

using often unnecessary plastic packaging and encourage the shipping of products in reusable containers.

It is important to note that Amazon is one of the most innovative companies on the planet and has already demonstrated its ability to quickly switch to “carbon-neutral,” non-plastic solutions. As former Amazon manager Rachel Johnson Greer has said “the company can do this, it is really a matter of will.” Amazon’s packaging and materials lab has for example created a lightweight paper mailer<sup>33</sup> that has the potential to significantly reduce the company’s plastic footprint, if used in place of plastic mailers.

Most importantly, Amazon has already demonstrated that it can swiftly reduce its use of plastic packaging on a large scale when it eliminated non-recyclable plastic packaging from fulfillment centers in India. On June 29, 2020, Amazon India announced it had achieved a 100% successful transition away from single-use plastics.<sup>34</sup> Amazon also reported that 40% of its orders were being shipped in their original boxes<sup>35</sup> without an outer box or other packaging in India.

Given Amazon’s recent reported exponential growth in the wake of the global pandemic – the company reported a 40% increase in sales in the second quarter of 2020 compared with the second quarter of 2019<sup>36</sup> – and its rapidly growing footprint in countries with high levels of plastic entering the sea as pollution, it is urgent that Amazon address and deal with its plastic problems.

Oceana, with the support of hundreds of thousands of individuals, is calling on Amazon to reduce its plastic footprint by listening to its customers, innovating to reduce and reuse plastic on a global basis, without replacing it with other single-use materials as it has already done in individual markets, and to be fully transparent and accountable about its plastic footprint and environmental impact.





# Amazon's exponential growth: 7 billion packages shipped in 2019

- **Amazon sales increased 40% from Q2 2019 to Q2 2020**
- **Amazon's own dedicated delivery system is now approaching the size of FedEx and UPS in terms of packages delivered**
- **Billions of deliveries contain or are shipped in throwaway plastic**

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Amazon shipped approximately 7 billion packages worldwide in 2019, either directly or from its marketplace sellers, according to news accounts.<sup>37</sup> This is equivalent to nearly one package for every person living on Earth. And, in 2020, after the onset of the COVID-19 pandemic, Amazon's second-quarter earnings report showed an over 40% increase in sales compared to the second quarter of 2019.<sup>38</sup>

The U.S., Germany, the UK, and Japan are Amazon's biggest markets, representing 89% of global net sales of \$258 billion USD as shown in the chart below.<sup>39</sup> However, sales in other countries such as India are growing rapidly. Canada is another major market for Amazon, with more than \$7 billion USD in sales in 2019.<sup>40</sup> The company has dedicated sales websites in 19<sup>41</sup> countries and ships to currently 130 countries,<sup>42</sup> – and so generates waste, and likely contributes to ocean plastic pollution, worldwide.

Amazon's own dedicated delivery system has also grown rapidly and is now approaching the size of FedEx and UPS in terms of packages delivered.<sup>43</sup> This system includes Amazon-branded freighters, cargo planes, warehouses, and delivery vans to handle transporting packages, including the "last mile" from its warehouses right to consumers' doorsteps. In 2020, in the U.S. – its biggest market – Amazon is delivering nearly two-thirds of packages itself.<sup>44</sup> The company largely controls the types of packaging it uses for delivery and as a result, has the ability to quickly address the plastic problem.





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# Bubble wrapping the world: E-commerce and plastic packaging waste

- **Almost a third of the world's population is now buying online**
- **Amazon dominates in almost all countries it sells in**
- **E-commerce industry used nearly 2.1 billion pounds (1 billion kg) of plastic packaging in 2019**

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The number of overall online buyers is forecasted to reach 2.1 billion in 2021, up from 1.66 billion in 2016.<sup>45</sup> Almost every third person on the planet is now buying products online, and COVID-19 has further accelerated this shift. Estimated at \$3.53 trillion in 2019, e-commerce sales are expected to more than double, with a revenue of \$6.54 trillion in 2022.<sup>46</sup>

People still buy most goods offline, in brick and mortar shops, but online shopping is gaining ground quickly. As a percentage of total global retail sales, e-commerce sales have increased from 7.4% in 2015 to 10.2% in 2018 and are projected to grow to almost one-quarter of the total retail market by 2023.<sup>47</sup>

Outside of China, Amazon is the largest e-commerce player in the world, with – as of 2019 – 48% estimated market share in Canada,<sup>48</sup> 37.3% in the U.S.,<sup>49</sup> 31.2% in India,<sup>50</sup> 30% in the UK,<sup>51</sup> 49% in Germany,<sup>52</sup> and 20.2% in Japan.<sup>53</sup>

E-commerce packaging is the secondary or protective packaging materials that are added to a product to allow its effective shipment through an e-commerce – as opposed to a traditional retail – channel.

Packaging in e-commerce is often unnecessary and oversized. An estimated 98% of product packaging shipped in e-commerce was created for traditional retail stores and in shapes, sizes, and formats designed to grab the eye of a potential buyers' attention browsing in a store rather than to be optimized for shipping to customers who purchased the product online.<sup>54</sup> Leading industry analysts estimate that half of e-commerce packages ship with up to 55% empty space.<sup>55</sup>

E-commerce and mail-order retail use about seven times more cardboard packaging per dollar of sales than traditional retail. And, while e-commerce or mail-order sales made up about 17% of U.S. retail spending in 2017, they accounted for more than half of all cardboard box shipments.<sup>56</sup> Products bought online are either shipped in cardboard boxes or plastic bags (called mailers), and cardboard boxes are filled with additional packaging, including plastic pillows, bubble wrap, foamed polystyrene peanuts, and other forms of plastic packaging.

Globally, the e-commerce industry used nearly 2.1 billion pounds (1 billion kg) of plastic packaging in 2019, according to analysts and that number is estimated to double by 2025, as shown in table 1. The highest growth by volume is expected for flexible plastic and plastic mailer markets over the medium term.<sup>57</sup> This is the type of secondary or protective packaging that Amazon adds on top of the original product packaging.

### E-commerce industry estimated to double plastic packaging use by 2025

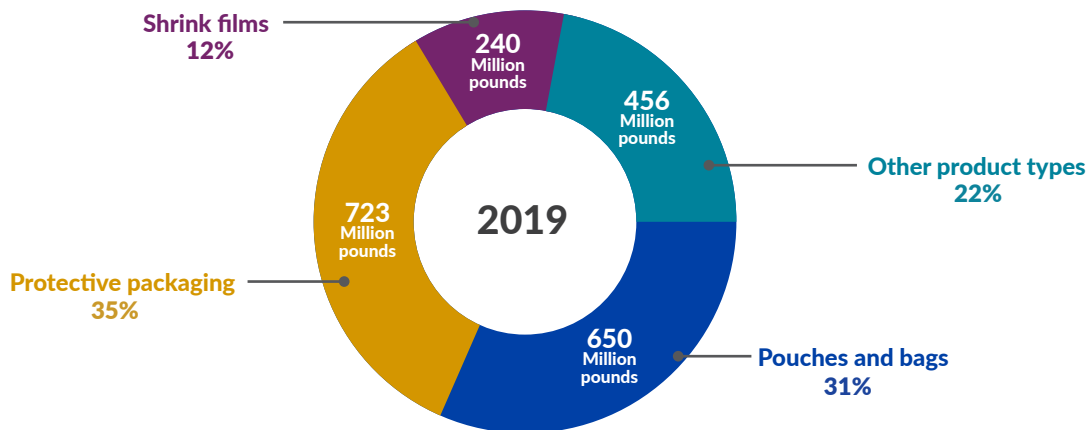
Table 1. Global E-Commerce Plastic Packaging Market, 2019-2025 (in millions of pounds)<sup>58</sup>

| Year   | 2019        | 2020          | 2021          | 2022          | 2023          | 2024          | 2025          | Annual Growth Rate <sup>59</sup> |
|--|-------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------------------------|
| Amount in millions of pounds (in millions of kg) | 2,077 (942) | 2,339 (1,061) | 2,657 (1,205) | 3,027 (1,373) | 3,452 (1,566) | 3,950 (1,792) | 4,533 (2,056) | 14.2%                            |

As shown in figure 1, protective packaging (including bubble wrap and the kinds of air pillows that Amazon frequently uses) makes up 723 million pounds (331 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 650 million pounds (295 million kg), or 31%, of total plastic packaging weight. Shrink films make up 240.3 million pounds (109 million kg), or 12%, of total plastic packaging weight, and 456.4 million pounds (207 million kg), or 22%, of the total weight are a mix of other plastic products like foams or gel packs.

### Bubblewrap, air pillows, and plastic mailers are ubiquitous

Figure 1. Global e-commerce plastic packaging market by product type, 2019<sup>60</sup>



These estimates, given the recent dramatic increase in online and Amazon sales since the onset of the COVID-19 pandemic, are conservative. Consumers are now doing more shopping online to get their purchased goods, including groceries and health-care supplies, delivered to their homes.<sup>61</sup>

# Amazon's plastic footprint

- Amazon produced an estimated 465 million pounds (211 million kg) of plastic packaging waste in 2019, enough, in the form of air pillows, to circle the Earth over 500 times
- Up to 22.44 million pounds (10.18 million kg) of Amazon plastic packaging waste polluted freshwater and marine ecosystems in 2019, equivalent to one delivery van's worth every 70 minutes
- Amazon plastic packaging waste that reaches the oceans is expected to grow at a much faster rate than sales

Amazon uses plastic mainly in the form of air pillows or bubble wrap to prevent purchases from moving within an Amazon package and uses plastic mailers or plastic-lined paper envelopes to ship purchases (in place of boxes).<sup>62</sup> Amazon packages can be double-packed, with the original, already packaged, product surrounded with plastic filling and an outer Amazon box.<sup>63</sup> Additionally, the inner original product packaging itself often contains plastic.

Amazon uses more than 15 different types of plastic packaging.<sup>64</sup> Its plastic mailers and plastic padded mailers have replaced cardboard packages for smaller items like clothes, gel packs, and dry ice plastic films. Insulated pouches and insulation bags are used for food delivery.



Source: Global e-commerce plastic packaging market

## Methodology

Oceana used data from packaging industry analysts showing the total amount of plastic packaging used in the biggest and fastest growing e-commerce country markets, including China, the U.S., the UK, Japan, India, Germany, Canada, Brazil, Spain, and Mexico.<sup>65</sup> Oceana then referenced published industry analyses and market research data to assess Amazon and Amazon Marketplace market share in these countries based on revenue.<sup>66</sup> To determine Amazon's plastic footprint, Oceana combined market share with e-commerce plastic packaging data, assuming that each e-commerce company's share in plastic packaging in weight is commensurate with its market share in the e-commerce market.

Globally, the total amount of plastic packaging used in the e-commerce industry is currently estimated to be almost 2.1 billion pounds (1 billion kg), as shown in table 1, and is projected to double to slightly more than 4.4 billion pounds (2 billion kg) by 2025.<sup>67</sup> Plastic packaging used in the e-commerce industry becomes plastic waste immediately after it is used.

According to industry analysts, in 2019, e-commerce businesses in China generated the most plastic packaging waste of the countries assessed, with an estimated 488.4 million pounds (221.5 million kg). E-commerce businesses in the U.S., which generated 469 million pounds (213 million kg) were second. The table below provides an overview of e-commerce plastic packaging use in the other key markets included in the analysis.

## E-commerce industry produced 2 billion pounds of plastic packaging waste

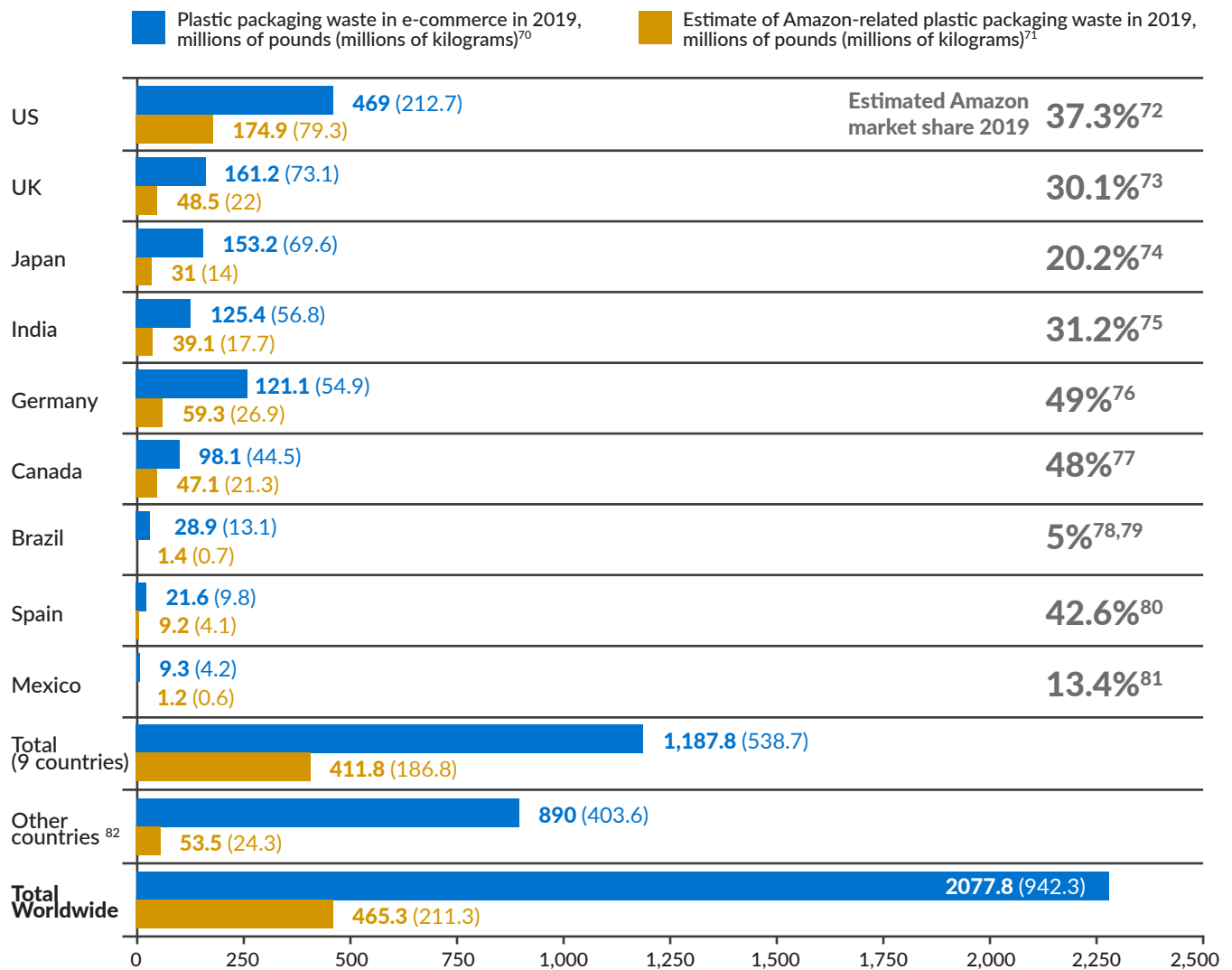
Table 2. Total e-commerce industry's annual plastic packaging waste <sup>68,69</sup>

| Country   | Plastic packaging waste in millions of pounds (millions of kilograms) |
|---|---|
|  China           | 488.4 (221.5)   |
|  United States   | 469.0 (212.7)   |
|  United Kingdom  | 161.2 (73.1)  |
|  Japan           | 153.2 (69.6)  |
|  India           | 125.4 (56.8)  |
|  Germany         | 121.1 (54.9)  |
|  Canada          | 98.1 (44.5)   |
|  Brazil          | 28.9 (13.1)   |
|  Spain           | 21.6 (9.8)  |
|  Mexico          | 9.3 (4.2)   |
|  Other countries | 401.6 (182.1)   |
|  <b>Total</b>    | <b>2,077.8 (942.3)</b>  |

Amazon is the dominant e-commerce company in all these markets except China and Brazil, with estimated market shares ranging from 20.2% in Japan to 49% in Germany, as shown in figure 2. In China, Alibaba dominates the market and Amazon has left the country.

**Amazon's dominant market share and resulting plastic packaging waste**

**Figure 2. Amazon's plastic packaging waste by country estimated by market share**



Based on the assumption that Amazon's share of plastic waste is as high as its market share,<sup>83</sup> its plastic packaging waste in the nine countries included in Oceana's estimate in figure 2 amounts to 411.8 million pounds (186.8 million kg). According to analysts, Amazon revenue in these countries represents an estimated 88.5% of its total global revenue.<sup>84</sup> We assume that the amount of plastic packaging waste generated in the nine countries included in the figure above, therefore represents 88.5% of the total Amazon packaging waste. That brings the total estimate for Amazon's plastic packaging waste in 2019 to 465 million pounds (211 million kg). The company uses so much plastic packaging that it would circle around the Earth more than 500 times if expressed in the form of e-commerce's ubiquitous air pillows.

According to a recent peer-reviewed scientific study published in *Science*,<sup>85</sup> the authors estimate 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.<sup>86</sup>

They estimated the annual amount from 2016 to 2030 of inadequately managed plastic waste entering aquatic ecosystems from 173 countries, representing 97% of the world's population.<sup>87</sup>

Based on this model, Oceana calculated the estimated percentage of total e-commerce plastic packaging waste entering major rivers, lakes, and the oceans in 2019 for specific countries.<sup>88</sup> We used these ratios to estimate the plastic packaging waste generated by Amazon in these countries (shown in figure 2) to determine the possible pollution of major rivers, lakes, and the sea by Amazon plastic packaging<sup>89</sup>.

To estimate the amount of plastic packaging waste reaching aquatic ecosystems generated in the remaining countries in which Amazon operates (but which are not included in this country by country analysis), Oceana applied the Borelle study's estimated 11% global average of plastic waste entering marine ecosystems.

In total, up to 22.44 million pounds (10.18 million kg) of Amazon plastic packaging waste is estimated to have entered freshwater and marine ecosystems in 2019, roughly equivalent to a delivery van's worth of plastic being dumped into the sea, rivers, and lakes every 70 minutes.<sup>90</sup>

In 2020, the amount of Amazon plastic waste entering aquatic ecosystems is likely to be much higher, because analysts forecast that sales will grow by 34.8% worldwide this year.<sup>91</sup> E-commerce sales (for Amazon and other companies) were already forecasted to double by 2025 before the COVID-19 pandemic. Consequently, under current conditions, plastic waste ending up in the oceans from e-commerce may more than double by 2025 from 2019 levels. In addition, analysts predict that Amazon will increase its sales significantly in India, Mexico, Brazil, and other countries where the rate of plastic pollution finding its way into seas, lakes, and rivers is particularly high – up to 27.9% for India, 6.3% for Mexico, and 8.3% for Brazil.<sup>92</sup> Consequently, the overall amount of Amazon plastic packaging waste that reaches the oceans is expected to grow even at a much faster rate than sales.

This expected rapid growth (particularly in areas with high rates of plastic pollution of aquatic ecosystems), combined with a forecasted exponential increase in plastic packaging waste has the potential to accelerate the current rate of ocean plastic packaging pollution unless Amazon takes substantive steps now to reduce its plastic footprint.



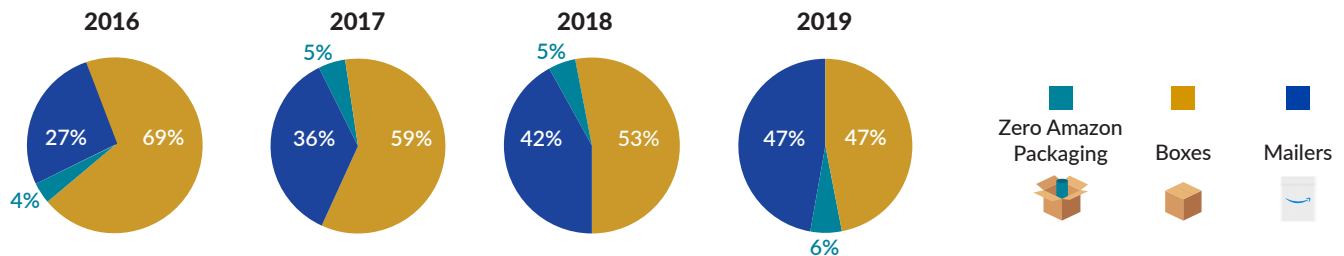
# Amazon's embrace of plastic packaging

- Industry analysis shows rapid year-over-year growth in use of plastic packaging
- Amazon is increasing its use of lightweight plastic packaging to reduce its carbon footprint
- Plastics are made from fossil fuels and are a major contributor to climate change

Amazon, unlike many companies, is moving away from non-plastic packaging and towards plastic packaging, including bubble lined paper mailers and different types of plastic mailers as shown in figure 3 below.<sup>93</sup> Industry analysis shows rapid year-over-year plastic packaging growth, which means large increases for Amazon (one of two dominant e-commerce players globally). The company's website states that because of its prioritization of flexible packaging, "Since 2015, [it has] reduced the weight of outbound packaging by 33% and eliminated more than 900,000 tons of packaging material, the equivalent of 1.6 billion shipping boxes."<sup>94</sup> But, it appears that the company has increased its use of plastic to achieve this reduction in weight.

## Amazon's move towards plastic packaging

Figure 3. Amazon's annual plastic packaging waste



In recent years, Amazon has prioritized use of lightweight plastic packaging to reduce its carbon emissions while ignoring the negative impacts of plastic pollution and that plastics are made of fossil fuels. (source: Kim Houchens Presentation, AWS re:Invent 2019 conference)



### Flexible packaging made of plastic

Amazon's Director of Customer Packaging Experience has written that flexible packaging, which is often made of plastic (such as plastic bags, mailers, and folders), "uses less material than similar-sized boxes, weighs less, and conforms around the product, taking up less space than a box during shipping. That means flexible packaging makes it possible to pack more orders in each load, resulting in fewer trips, less fuel burned, and a smaller carbon footprint."<sup>95</sup>

In many ways, Amazon's description of its packaging harkens back to the 1950s and the hyperbolic language used to promote the then new lightweight and space age material, plastics – without acknowledging the very real costs of using plastics. The company has also announced that it is now leveraging machine learning algorithms to increase the number of packages that can be shipped in flexible packaging rather than in cardboard boxes, noting that its "solution matches each of the hundreds of millions of products you can order from Amazon with the most optimal packaging."<sup>96</sup>

Amazon is justifying its push to lightweight packaging and plastics as part of an effort to reduce the company's carbon footprint.<sup>97</sup> For several years, its employees, customers, and investors, along with non-governmental organizations, have been urging Amazon to provide transparency about its carbon footprint and for action to reduce its CO<sub>2</sub> emissions.<sup>98</sup> It published its first sustainability report in 2019 and co-founded the Climate Pledge the same year – a commitment to be net zero carbon across its business by 2040.<sup>100</sup> Following the announcement of this pledge, in their 2020 Sustainability report, Amazon revealed that its carbon emissions increased by 15% in 2019.<sup>101</sup>

Amazon's embrace of plastic packaging and rationale for doing so is highly problematic because it results in prioritizing lightweight plastic materials and increases plastic use, waste, and pollution, with negative implications for the climate. Plastics are made from fossil fuels and are a major contributor to climate change. It is impossible to fight one problem without fully considering the other. Climate change and the plastics crisis are intrinsically linked. If plastic was a country, it would be the planet's fifth-largest emitter of greenhouse gases.<sup>102</sup>

Studies have shown that the plastic industry contributes to climate change by using fossil fuels, including petroleum and natural gas, to create plastic, which emits greenhouse gases at every stage of its lifecycle, from production and transportation to disposal. The climate problems created by plastic do not end when plastic enters the marine environment – plastic at the ocean's surface continually releases methane and other greenhouse gases, and these emissions only increase as the plastic breaks down further.<sup>103</sup> Plastic production are forecasted to increase as are plastic's effects on our climate – by 2030, plastic-related greenhouse gas emissions are expected to reach an emissions level roughly equivalent to 295 coal plants.<sup>104</sup>

Companies like Amazon can reduce plastic use and address climate change by finding alternative ways of delivering products without single-use packaging. Amazon is one of the most innovative companies on the planet and has already developed, as discussed later in this report, non-plastic lightweight materials. It must also create systems that discourage the use of plastic packaging.

Life cycle assessments (LCAs) that favor plastic often do not fully consider their full environmental impact.<sup>105</sup> Emissions caused by plastic after it has been thrown away are frequently left out of LCAs. A recent report found that CO<sub>2</sub> emissions from the disposal of plastic through the open burning of plastic waste from a leading consumer goods company was as high as three-quarters of its global transport and distribution emissions.<sup>106</sup> Burning, especially

open burning in low and middle-income countries is particularly concerning since plastic is made from fossil fuels.<sup>107</sup> Other reports have suggested that plastic left in the environment gradually breaks down into methane and ethylene, further increasing plastic's carbon emissions footprint.<sup>108</sup>

A life cycle assessment of protective mailers published by the University of Calgary analyzed the comparative strengths and weaknesses of plastic and paper packaging in terms of the climate and environment. It found that none of the plastic mailers could be recycled, which resulted in them being landfilled. Cardboard mailers, on the other hand, were recycled, landfilled, or composted. The study also found that paper mailers produced half the emissions of a plastic mailer on a per weight basis. According to the study, the key is to create lighter weight paper alternatives to plastic. In general, changing from plastic mailers to lightweight paper mailers has positive effects on the environment.





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Slide Tray Out, Push Out Edge, Lift using both hands  
  
LABEL  
OTHER  
END

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# Plastic waste from Amazon is not recycled despite the company's claims of "recyclability"

- **Amazon promotes "recyclability" of its packaging, but most plastic is not recycled**
- **Company's plastic packaging has little to no value on the recycling market**
- **Most municipal recycling programs in the U.S., Canada, and the UK do not accept plastic film, the type of plastic used in Amazon's packaging**

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An Amazon spokesperson was recently quoted as saying, "Amazon continues to innovate and find new ways to protect the environment by developing fully recyclable packaging that also helps minimize carbon emissions."<sup>110</sup>

Focusing on recyclability does nothing to reduce plastic packaging waste, because most of the plastic in Amazon packages does not get recycled.<sup>112</sup> In fact, only 9% of all plastic waste ever produced has been recycled. Much of Amazon's plastic packaging, such as plastic pillows, mailers, bubble wrap, inflatable plastic pillows, and more, is referred to as "plastic film" in recycling terms and has little to no value on the recycling market.<sup>113</sup> Only 4% of post-consumer PE plastic film, including bags and wraps, was recycled in the U.S., according to a 2017 industry report about film recycling.<sup>114</sup> Moreover, most municipal recycling programs in the U.S., Canada, and the UK do not accept plastic film.<sup>115</sup>

In 2019, Greenpeace performed a comprehensive survey of plastic product waste collection, sorting, and reprocessing in the U.S. to determine the legitimacy of "recyclable" claims and labels on consumer plastic products.<sup>116</sup> It found that plastic waste with codes 3, 4, 5, 6, and 7 – including the type of plastic that is used in Amazon packages – have negligible-to-negative value and are effectively a category of products that, even when collected by municipal recycling programs, are not actually recycled. Plastic waste with codes 3-7 that is being collected by municipal systems throughout the U.S. is usually being sent to landfills or incinerated.

Amazon's "Second Chance" websites in the U.S., the UK, and Canada (<https://www.amazon.com/amsc>) list types of Amazon packaging and offer customers advice about how to potentially recycle them. For the plastic items, like mailers and bubble wrap, it advises that "some cities offer curbside recycling. Where not available, use designated store drop off locations where plastic film is accepted" and then provides a link to find "your drop off location."<sup>117</sup>

### Air pillow ×



Some local authorities will collect this material as part of household recycling. Where not available, use designated store drop-off locations where plastic film is accepted. [Find your drop-off location.](#)

*Air pillows are among Amazon's most used types of plastic packaging and have a relatively short lifespan and cannot typically be placed in your curbside recycling bin. (source: Amazon Second Chance)*

When customers clicks on the link, they are sent to "plastic film recycling" (in the U.S. and Canada) or to "recycle now" (in the UK) where they are informed that plastic film "typically" does not get recycled in curbside bins. They are encouraged to instead find drop off locations for plastic packaging.



[Home](#) > [Recycling Bags and Wraps](#) > Find a Drop Off Location

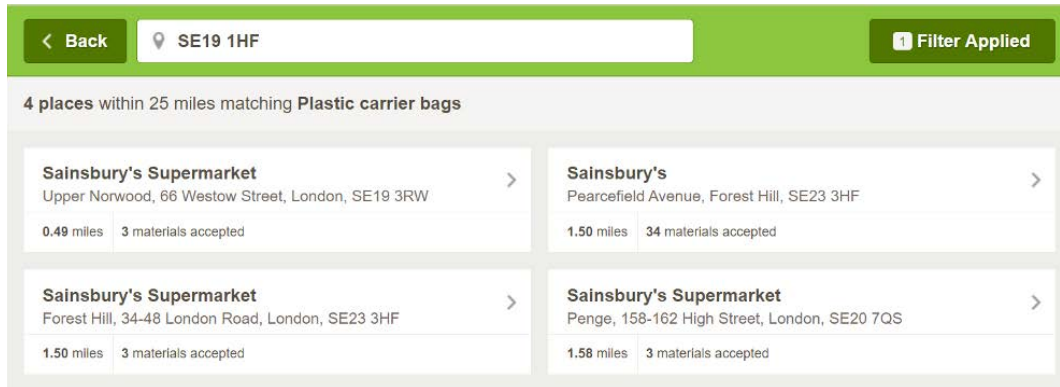
Enter your zip code below to find locations that accept plastic bags and film packaging.

#### COVID-19 and Plastic Film Recycling

*NOTE: Plastic bags/wraps typically do not get recycled in curbside bins. They must be returned to participating drop-off locations such as retail stores for recycling.*

*For environmentally conscious consumers, recycling plastic packaging can prove much more difficult than Amazon's "recyclability" claims imply. (source: [plasticfilmrecycling.org](http://plasticfilmrecycling.org))*

After entering a postal code, customers are provided with a list of grocery stores where they can leave plastic packaging waste for recycling.

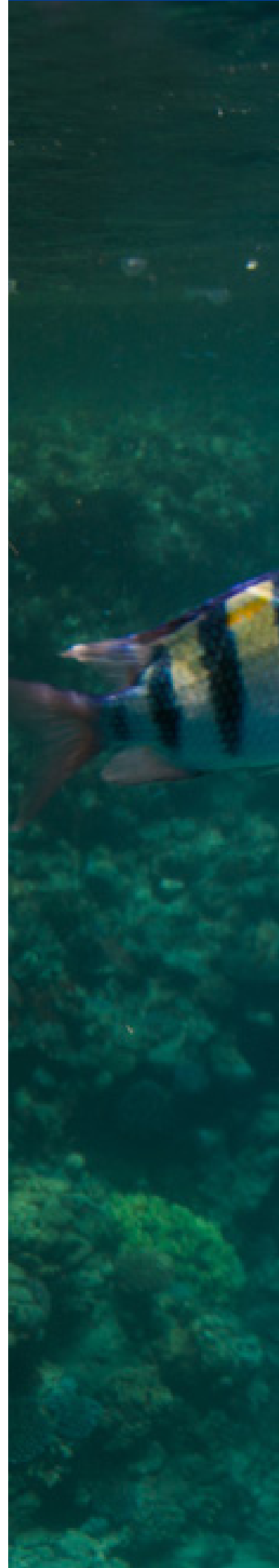


The screenshot shows a search interface with a green header. On the left is a '< Back' button. In the center is a search bar containing the postal code 'SE19 1HF'. On the right is a 'Filter Applied' button. Below the header, a grey bar indicates '4 places within 25 miles matching Plastic carrier bags'. The results are displayed in a grid of four cards, each for a Sainsbury's location. Each card lists the store name, address, distance, and the number of materials accepted.

| Store Name              | Address   | Distance   | Materials Accepted    |
|-------------------------|---|------------|-----------------------|
| Sainsbury's Supermarket | Upper Norwood, 66 Westow Street, London, SE19 3RW | 0.49 miles | 3 materials accepted  |
| Sainsbury's             | Pearcefield Avenue, Forest Hill, SE23 3HF         | 1.50 miles | 34 materials accepted |
| Sainsbury's Supermarket | Forest Hill, 34-48 London Road, London, SE23 3HF  | 1.50 miles | 3 materials accepted  |
| Sainsbury's Supermarket | Penge, 158-162 High Street, London, SE20 7QS      | 1.58 miles | 3 materials accepted  |

*While residents of London, England are presented with plastic drop-off locations within walking distance, residents of Calistoga, California, for example, must drive nearly 21 miles to offload their otherwise unrecyclable plastics. (source: plasticfilmrecycling.org)*

Oceana polled Amazon Prime customers in the U.S. and asked if they have followed Amazon's recommendations for finding stores that will take their plastic packaging waste and found that 98% said they had not done so and that less than 2% (1.67%) had made a special trip to bring their plastic packaging to the grocery stores for recycling.<sup>118</sup>





# Plastic and the oceans

- **15 million tons of plastic pollutes the ocean every year**
- **More than 900 marine life species have ingested or become entangled in plastic**
- **52% of all sea turtles have ingested plastic, which can prove deadly**

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Plastic packaging waste is blown into rivers or the sea from landfills, it floats in through storm drains, or is dumped or burned close to the shore in countries with poor or non-existent waste management systems.<sup>119</sup> In addition to needing to dispose of their own waste, some of these countries must also contend with imported plastic packaging waste shipped from countries like the UK, the U.S., and Canada.<sup>120</sup>

Of the polyethylene plastic waste exported from the European Union, for example, scientists estimate that 1% to 7% ends up in the oceans.<sup>121</sup>

Peer-reviewed scientific studies have estimated that 15 million tons of plastic washes into the ocean every year.<sup>122</sup> This is roughly equivalent to dumping two garbage trucks full of plastic into the oceans every minute.

Plastic is everywhere in our oceans: floating on the surface, scattered across beaches and coastlines, and most of it is hidden on the seafloor<sup>123</sup> where it accumulates in underwater structures like seamounts, canyons, and escarpments.<sup>124</sup> Plastic debris has been found washing up on the world's most remote coastlines, melting out of Arctic sea ice, and sitting at the deepest point of the ocean floor. As plastic continues to flood into our oceans, the list of marine species affected by plastic debris expands.

Studies have found that plastic pollution is dramatically impacting life in the oceans. A recent review found that more than 900 species have ingested or become entangled in plastic, from zooplankton at the bottom of the ocean food web, to seabirds at the top of it.<sup>125</sup> Scientists found that more than half of all sea turtle species studied — 52% — have ingested plastic.<sup>126</sup> Sea turtles and other animals can mistake plastic bags, like the ones used by Amazon, for jellyfish or algae — their typical food. Research shows that sea turtles can even mistake the smell of plastic for food, often leading to a deadly outcome.<sup>127</sup> In a new study, Oceana found evidence of nearly 1,800 animals from 40 different species swallowing or becoming entangled in plastic since 2009 in the U.S.. Of those, a staggering 88% were species listed as endangered or threatened with extinction under the Endangered Species Act.<sup>128</sup>



Studies have shown that when corals come into direct contact with plastic debris, their likelihood of contracting a disease increases from 4% to 89%. Seventeen percent of the coral species observed to be affected by marine plastic debris are listed as threatened or near threatened with extinction by the International Union for the Conservation of Nature.<sup>129</sup>

Plastic essentially never biodegrades. Instead, once it reaches the ocean, it breaks up into smaller and smaller pieces, ultimately becoming microplastics that attract and harbor harmful chemical pollutants. When eaten by fish and shellfish, some of the contaminants attached to microplastics work their way into our food supply.<sup>130,131,132</sup> Everything from salt to honey to beer has been found to contain microplastics.<sup>133</sup> Scientists are still studying how humans might be affected by the plastics that are making their way into our food, water, and air.<sup>134</sup>

Recycling is a false solution to the plastics crisis. According to a recent study, as of 2015 approximately 8.3 billion metric tons of plastic had been produced since it first emerged in the 1950s, and 6.3 billion metric tons has become waste.<sup>135</sup> Of this, a mere 9% was recycled. Twelve percent was incinerated and 79% accumulated in landfills, on the ground, or in the ocean.

Additionally, much of the plastic packaging waste that has been thrown into recycling bins has not been recycled. Recycling often means that plastic is downcycled into lower-value products. Plastic waste exports are an additional problem. In 2018, 157,000 shipping containers of U.S. plastic waste were exported to countries with poor waste management, meaning that plastic ends up in dumps, landfills, is burned (sometimes in the open air), or enters and pollutes the oceans and other waterways on the other side of the globe.<sup>136</sup>

Plastic production has far outpaced waste management's ability to keep up, and that trend is likely to get worse. Reports have projected that plastic production will quadruple by 2050.<sup>137</sup> A recent analysis, published in *Science* found that "emissions to lakes, rivers, and oceans may reach up to 53 million metric tons per year by 2030. To reduce emissions to a level well below this prediction, extraordinary efforts to transform the global plastics economy are needed."<sup>138</sup>



# Amazon's packaging programs and policies should prioritize the reduction of plastic

- Amazon does not disclose the amount of plastic it uses
- The company already has the infrastructure to reduce its plastic footprint
- 10 years after introduction, only 5% of packages are shipped "Frustration Free"

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Amazon has existing programs and policies that could be adapted and scaled to make its packaging plastic-free, without increasing its carbon footprint. Amazon needs to simply make reducing its plastic footprint a priority for these programs and for the company.

## Frustration-Free Packaging

Amazon's main packaging initiative is its 12-year-old "Frustration-Free Packaging" program. This effort is focused on reducing packaging waste by volume and weight. The company could reduce its plastic footprint if this program was improved and more widely implemented.

According to Amazon, its "Frustration-Free Packaging" program seeks to have packaging that is easy to open 100% recyclable, and designed to ship products in their original packaging, which eliminates the need for an additional shipping box.<sup>139</sup> Ten years after implementing the program, Amazon announced that 120 million packages had been "Frustration-Free Packaging-certified"<sup>140</sup> — 5% of the estimated total number of packages shipped.<sup>141</sup> In 2019, Amazon made "Frustration-Free Packaging" program certification mandatory for its vendors (for certain categories of packages) and announced a fine for those that did not comply of \$1.99 per package.<sup>142</sup>

As part of this program, Amazon has mandated the use of "curbside recyclable plastic" from vendors and sellers but uses and continues to allow the use of types of plastics that are not recyclable in any practical way like polyethylene film (PET film), polypropylene (PP) and Low density Polyethylene (LDPE).<sup>143</sup> Most importantly and



© Oceana/Enrique Talledo

problematically, Amazon does not disclose the amount of plastic it uses and whether the program has resulted in an increase or decrease of plastic use.<sup>144</sup>

Under Amazon's "Frustration-Free Packaging" program, vendors can choose to certify their packaging as "no [Amazon] overbox required," meaning the products ship only in their own original packaging or with an overbox directly from the vendor.<sup>145</sup> The other option for vendors is to certify their packaging "prep free," so that Amazon does not need to re-pack and only puts protective material inside such as bubble wrap and an overbox around it.<sup>146</sup>

According to a former Amazon manager Rachel Johnson Greer, an immediate opportunity for Amazon to quickly reduce plastic is to set ambitious goals to increase the use of the "no overbox required" option.

# Amazon has already innovated and created plastic-free and reusable packaging

- Amazon already created a 100% paper mailer to replace bubble wrapped envelopes
- The company reduced plastic packaging substantially in India, following new national regulations
- Amazon ships select goods in reusable crates or totes

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Amazon has already used its famed innovative ability to solve the single-use plastics problem. It has reduced its plastic use through advancements created by its packaging lab, through changes in its operations in India, and in response to pressure from the government and civil society. Amazon can and should apply these clear steps on a company-wide level to solve its plastic problem.

## Amazon's new lightweight padded paper mailer

Amazon's packaging and materials lab has created a lightweight paper mailer that has the potential to significantly reduce the company's plastic footprint, if used in place of plastic mailers. Amazon has reported that the paper mailer has been used 100 million times.<sup>147</sup> Typically, plastic-padded paper envelopes, called "padded mailers," are used to ship smaller items, creating an impossible to recycle envelope.<sup>148</sup>

Amazon's new padded mailer is made from 100% paper and is imprinted with a recycling logo that reads "paper bag." It employs a form of glue as a cushioning material that is made from the same material as the glue used in cardboard boxes and therefore it can be recycled as paper. Amazon states it is working with local recycling facilities



to communicate about the new mailer<sup>149</sup> to prevent it from being falsely categorized as composite mixed material.

### **Amazon's plastic-free packaging in India**

India's e-commerce market currently has sales of \$451.4 million, and market experts estimate this could more than double by 2025.<sup>150</sup> In June 2018, India's prime minister, Narendra Modi, and its central government pledged to ban single-use plastics by 2022.<sup>151</sup> But in October 2019, the ban was delayed.<sup>152</sup>

Taking matters into his own hands, 16-year-old Delhi resident Aditya Dubey started a petition to stop Amazon and fellow Indian e-commerce giant Flipkart from using what the petition described as "excessive" plastic packaging in India<sup>153</sup> and, through his legal guardian, pleaded to the country's National Green Tribunal. The Tribunal then requested that the Indian Central Pollution Control Board take action, who in consequence 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."<sup>154</sup>

Amazon innovated and quickly took steps to reduce its plastic use in India. Amazon India announced that it would use paper cushions to replace plastic dunnage like air pillows and bubble wraps in outer boxes across all its fulfillment centers.<sup>155</sup> The company also unveiled a plan to expand the Packaging-Free Shipping program and later reported that 40% of its orders were being shipped in their original boxes<sup>156</sup> and not repackaged by Amazon.

On June 29, 2020, Amazon India announced it had achieved a 100% successful transition away from single-use plastics less than a year after their declaration to act. Unfortunately, it qualified this claim by noting that it still uses some plastic in packaging material, which it claims are 100% recyclable through available collection, segregation, and recycling channels.<sup>157</sup>

Amazon's quick action in India to address its single-use plastics problem demonstrates that it can also take similar actions in other countries when it makes plastic reduction a priority.

### **Amazon's reusable packaging**

Amazon India is delivering food to customers in more than 300 cities and has announced that it delivers 60% of Amazon Pantry orders in reusable tote bags<sup>159</sup> to reduce secondary packaging as of 2019. And Amazon India is using reusable crates to deliver individual shipments instead of plastic or corrugate boxes for delivery in Bangalore.<sup>160</sup> Also, in the U.S., Amazon Fresh food orders have been delivered in reusable totes,<sup>161</sup> a solution that could be expanded to all other Amazon deliveries.

Amazon has more than 150 million Prime customers around the world, many of whom are visited by Amazon personnel delivering orders several times a month and who could accept and return reusable packages. Flipkart has recently started to collect the packaging boxes and other packaging materials from customers at a large scale.

### **Plans to make packaging for Amazon devices plastic-free**

In their 2020 Sustainability report, Amazon's announced plans to reduce plastic in packaging used for Amazon branded devices like Alexa, the famous virtual assistant based on AI technology. The company announced that "we're reducing single-use plastic, eliminating over 9 million bags from our device packaging in 2020 alone. Our goal is to make Amazon devices packaging 100% curbside recyclable and plastic-free by 2023."<sup>162</sup>

# Amazon customers want plastic-free packaging

- **87% of Amazon customers want Amazon, other e-commerce companies to act on plastic problem**
- **More than 660,000 people signed a petition asking Amazon for plastic-free packaging choices**
- **Company still does not allow customers to request packaging without plastic**

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Amazon and its founder and CEO Jeff Bezos' first leadership principle is customer obsession,<sup>163</sup> and top company executives are regularly quoted in the press about the company's relentless and guiding focus on pleasing those who buy from Amazon.<sup>164</sup> It should, based on this principle, take immediate action to offer customers plastic-free packaging as an option at checkout.

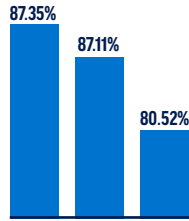
Public opinion research sponsored by Oceana<sup>165</sup> found that Amazon customers are overwhelmingly concerned about plastic pollution and its impact on the oceans and want Amazon (and other major online retailers) to give them plastic-free packaging choices.

Oceana, through the research companies YouGov and Abacus Data, polled 5,300 individuals in the U.S., the UK, and Canada in June 2020 and 80% reported shopping on Amazon. The polling found that:

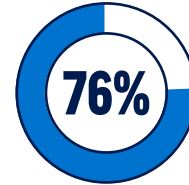
- 86% of Amazon customers surveyed are concerned about plastic pollution.
- 92% are upset, disappointed, and/or angry about the low rate of plastic being recycled.
- 87% feel that Amazon and other major online retailers need to do something about plastic packaging and
- 76% (of those who reported being Amazon Prime members) would use a plastic-free choice/alternative packaging.

Interestingly, Amazon's best customers — those who report shopping more than once a week — were the most concerned of those surveyed, with 90% reporting being concerned about plastic pollution.

**Amazon Prime members are the most concerned about plastic pollution, and almost all Prime shoppers want plastic-free choices.**



Amazon Prime members are even more concerned about plastic pollution and its impact on the oceans and the environment than Amazon customers in general.

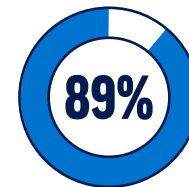


of Prime members would use a plastic-free choice of packaging at checkout if offered.

**Amazon's most valuable customers are highly concerned about plastic pollution.**

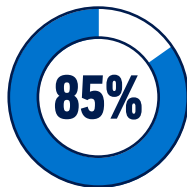


of Amazon customers who shop online more than once a week are concerned about plastic pollution and its impact on the oceans.

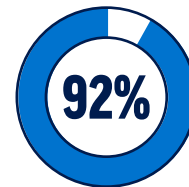


of Amazon customers with the highest reported income were concerned about plastic pollution of those surveyed.

**Younger (and wealthier) Amazon customers are very concerned about plastic pollution.**



of the youngest Amazon customers surveyed were concerned about plastic pollution (the highest out of three age groups). This includes respondents between 18 to 34 in the U.S. and UK and between 18 and 29 in Canada.



of the youngest Amazon customers surveyed and with the highest income levels (more than \$80k USD/£70k GBP/\$100k CAD) were concerned about plastic pollution. This includes respondents between 18 to 34 in the U.S. and UK and between 18 and 29 in Canada.

*Amazon customers want a plastic-free packaging choice at checkout. But despite statements from CEO Jeff Bezos that Amazon is "obsessed" with meeting the needs and wants of its customers, the company has made no public commitment to reduce its use of plastic packaging. (Credit: Oceana)*

Oceana supporter Nicole Delma created a [Change.org/PlasticFreeChoice](https://www.change.org/p/amazon-plastic-free-choice) petition to ask Amazon for plastic-free options at checkout. By the end of November 2020, more than 660,000 people have already added their names to the petition.<sup>166</sup>

According to multiple reports on consumer blogs and websites,<sup>167</sup> many customers have already called Amazon's customer service line and asked for a note to be placed on their file requesting plastic-free packaging, which, in some cases, the company has done. The results of these efforts are mixed. For example, one customer wrote, "My success rate isn't 100% with this, but I'd guess 3 out of my last 5 packages have been packaged without plastic." Oceana — with the help of Amazon customers — has tested calling the company to ask for plastic-free packaging and has been told that it cannot honor the request.

# Conclusion and recommendations

- **Amazon is a major plastic polluter**
- **Amazon should focus on plastic reduction and reuse and stop promoting false, unproven, and ineffective solutions like recyclability**
- **Amazon has already shown it can eliminate plastic packaging in India and elsewhere**

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Amazon has a plastics problem. Oceana estimates that up to 22.44 million pounds (10.18 million kg) of its plastic packaging have ended up in the world's freshwater and marine ecosystems as pollution in 2019: the equivalent of one delivery van's worth of plastic every 70 minutes and, given the projected rapid growth of Amazon and the e-commerce industry, this plastic pollution seems likely to increase dramatically in the future if steps are not taken to effectively address it.

To help stop inundating the world and the oceans with plastic, Amazon must focus on plastic reduction and reuse and stop promoting false, unproven, and ineffective solutions like "recyclability" or directing its customers to take on the responsibility of trying to find a way to recycle its plastic film that local municipalities won't accept and that recycling markets essentially don't want.

Plastic in the ocean is having a severe impact on marine life, biodiversity, and the functioning of ocean ecosystems. Unfortunately, recent analysts and scientific reports estimate an exponential increase in plastic packaging and a growth in plastic pollution. Large companies like Amazon must take immediate steps to reduce the use of plastic and support governments to enact meaningful reduction measures rather than simply talking about recycling. There is ample evidence showing that recycling, especially in the case of plastic film, is not happening at significant rates and will not help to meaningfully reduce marine plastic pollution.

Amazon's recent commitment to reduce its climate footprint is laudable and it should make a similar commitment to reduce its plastic footprint, rather than expand it under a misguided view that the issues are not intertwined. Because of its proven ability to innovate, Amazon has already shown that it can create plastic-free packaging that helps achieve both commitments, and that it can also quickly change its practices, as it has done in India, to offer plastic-free alternatives. By expanding programs like Ships in Own Container or Packaging Free Shipping, for example, which Amazon claims represents 40% of shipments in India, it can efficiently and quickly reduce plastic and save money in the process.

Amazon says it is a customer-obsessed company.<sup>168</sup> Simply searching for the phrase "Amazon plastic-free packaging" on an internet search engine will pull up multiple pages highlighting advice by customers calling on Amazon to offer plastic-free alternatives. Oceana has also confirmed Amazon customers' overwhelming desire for plastic-free packaging options — 76% of the company's most loyal and important customers (Amazon Prime members) reported that they would click on a "plastic-free packaging" option at checkout if offered. More than 660,000 individuals have also petitioned Amazon to offer plastic-free choices. These citizens want to continue to shop at Amazon, particularly in the wake of the COVID-19 pandemic. Amazon can take steps to meet this growing demand and owes it to the planet and the oceans to do so. As former Amazon manager Rachel Johnson Greer notes, "the company can do this, it is really a matter of will."



# Recommendations for Amazon

To tackle its growing plastic problem, Amazon must:



## Listen to its customers

- As an immediate measure, give customers what they want and offer a plastic-free packaging option at checkout.



## Innovate: reduce and reuse

- Aggressively scale up programs to minimize packaging, which has big potential to cut plastic packaging, without increasing other types of packaging or its carbon footprint.
- Increase the use of reusable containers for shipping purchases.
- Adapt “flexible” packaging standards to disincentivize plastic packaging.



## Be transparent and accountable

- Regularly report on the company's plastic footprint, including the amount and type of plastic Amazon, its vendors, and marketplace sellers use by country and company-wide, and independently verify this data.
- Consider the complete environmental impact of plastic use, and specifically its impact on the environment, the oceans, and climate, when undertaking company-wide environmental analyses, for sustainability reports and for high-level decisions.

# Appendix 1

## Amazon packages are awash in plastic. How much of it is actually recyclable?

<https://oceana.org/blog/amazon-packages-are-awash-plastic-how-much-it-actually-recyclable>

July 27, 2020

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*Amazon's plastic bags are not typically recycled. Photo Credit: Shutterstock/Hadrian*

If you've been clicking "add to cart" more than usual lately, you're not alone. COVID-19 has caused a surge in e-commerce because it's a convenient, low-risk way to shop. For some communities it's the only way to secure select goods, and online shopping doesn't get much easier than Amazon, the world's largest online retailer.

A [new survey](#) commissioned by Oceana found that 54% of polled Amazon customers in the United States, United Kingdom, and Canada have been doing more online shopping throughout the pandemic. But once those packages have been opened and the thrill of a new purchase subsides, a sobering question settles in: What will happen to all of the plastic left behind?

Plastic bags, bubble-lined mailers, and “air pillows” are just a few forms of plastic packaging that can be found in your average Amazon order. Though it is lightweight, this plastic practically never biodegrades and poses a threat to ocean ecosystems that bear the brunt of plastic pollution. It is also the type of trash that marine animals – like sea turtles – too often mistake for food.

Oceana believes that Amazon customers should be given a plastic-free option at checkout, and customers agree. Of the Amazon shoppers who responded to Oceana’s survey, 86% are concerned about plastic pollution and 87% think that major online retailers like Amazon should take action to curb the amount of plastic packaging they use.

Recycling is often posited as a “solution” to plastic pollution, but virtually none of Amazon’s plastic packaging is easily recyclable. Read on to learn about the most common types of plastic packaging that Amazon uses, and whether they should go in your trash can or recycling bin.



Photo Credit: Emily Petsko

### Bubble-lined plastic bags

**Can I put them in my curbside recycling bin?** No, with rare exceptions.

While some exceptions apply, most community recycling programs will not accept “flexible plastics” like Amazon’s ubiquitous bubble-lined bags. This is because these bags can – and do – [get entangled](#) in a recycling facility’s machinery, delaying the entire process. If customers want to keep these bags out of landfills and the ocean, the onus is on them to visit the website printed on the package – [how2recycle.info](#) – and find a participating store that will accept these materials. This is cumbersome for city dwellers, and near impossible for people in rural areas where the nearest drop-off location may be dozens of miles away. Residents of Calistoga, California, for example, must drive nearly 21 miles to offload their otherwise unrecyclable plastics. For these reasons, Amazon’s bubble-lined bags can’t be considered recyclable in practice, and all too often they become trash after a single use.



Photo Credit: Shutterstock/Hadrian

### Regular (non-bubble-lined) plastic bags

**Can I put them in my curbside recycling bin?** No, with rare exceptions.

Again, it’s highly uncommon for local recycling programs to accept flexible plastics because they’re difficult to process and there largely isn’t a market for them. These packages don’t need to be made of plastic, though. The scientists and engineers at Amazon’s lab have already created lightweight, plastic-free packaging, including a [new mailer](#) that has been used over 100 million times, according to the company. However, Amazon’s regular plastic bags are still widely used. To put things in perspective, Amazon shipped about 7 billion packages around the world last year, which equates to nearly one package for every person on Earth.



Photo Credit: Diane Hoskins

## Air Pillows

**Can I put them in my curbside recycling bin?** No, with rare exceptions.

Packing peanuts and bubble wrap both have their drawbacks, as do air pillows, which are essentially air encased in plastic. You can try to reuse them when you send packages to friends and family, but eventually they deflate, rendering their life span relatively short. Like Amazon's bubble-lined plastic bags, air pillows also carry the "how2recycle.info" label, indicating that they can be dropped off somewhere but cannot typically be placed in your curbside recycling bin. Even if accepted, the likelihood that such packaging is recycled remains in doubt. Innovative solutions are starting to emerge. Some of the [finalists](#) of the Sustainable Packaging Coalition's "Protective Packaging Design Challenge" included Flexi-Hex, a 100% recycled paper-based product, and ClimaCell, a recyclable foam made from paper and plant starch.



Photo Credit: Jonathan Frank

## Bubble-lined paper mailers

**Can I put them in my curbside recycling bin?** No

Here, you have a perfectly recyclable paper envelope – corrupted by a thin layer of bubble wrap. As soon as plastic is added to the mix, this envelope is given a one-way ticket to the landfill. This is because mixed materials are especially difficult to recycle. According to Amazon's [website](#), "Paper mailers with air bubble padding are not recyclable and should be put in your garbage bin."



Photo Credit: Flickr/Ajay\_Suresh

## Miscellaneous plastics shipped with Amazon grocery orders

**Can I put them in my curbside recycling bin?** No

It is virtually impossible to recycle any of the plastics that come with Amazon's grocery orders. Amazon's foil bubble insulation bags, gel packs, and dry ice plastic film are not recyclable. Its insulated pouches are the only product that can technically be recycled – if you have the time and resources to jump through multiple hoops. According to Amazon, customers must first separate the insulating pad from the plastic mailer, then cut the pad open and remove the plastic film. After that, they must find a place that will accept #4 plastic film – easier said than done – and then find a place that will recycle the #60 cotton pads. Recycling is already hard enough without adding extra layers to it.

# Appendix 2

## Amazon plastic packaging and recyclable claims



Bubble-Lined  
Plastic Bag



Plastic  
Bag



Air  
Pillow

### Amazon Statement

Some cities offer curbside recycling. Where not available, use designated store drop-off locations where plastic film is accepted.

### The Problem

As Amazon says on its own sustainability website, "Plastic film... is not accepted by most curbside recycling programs."

Only 4% of post-consumer PE plastic film, including bags and wraps, was recycled in the U.S., according to a 2017 industry report about film recycling.

Historically, only 9% of all plastic produced has been recycled.<sup>169</sup> Amazon makes claims about the recyclability of their packaging, but these claims fail to guarantee that packaging gets recycled. Furthermore, some of Amazon's packaging is not recyclable and adds to their pollutive footprint.



Prime Now Insulated Pouch

**Amazon Statement**

Remove Insulating Pad from Plastic Mailer  
2 - Cut Insulating Pad Open and Remove Plastic Film.  
3 - Recycle Plastic Film and Plastic Mailer Where #4 Plastic is Accepted  
4 - Recycle Natural Fiber Pad Where #60 Cotton is Accepted



Produce Bag

Some cities offer curbside recycling. Where not available, use designated store drop-off locations where plastic film is accepted.



Amazon Fresh Water Bottle

Water bottles included in your Prime delivery are recyclable in most curbside recycling programs. Frozen water bottles are used to keep items cool. The water is safe for consumption.

**The Problem**

As Amazon says on its own sustainability website, "Plastic film... is not accepted by most curbside recycling programs."

Only 4% of post-consumer PE plastic film, including bags and wraps, was recycled in the U.S., according to a 2017 industry report about film recycling.

**Amazon plastic packaging that cannot be recycled**



Bubble Lined Paper Mailer

**Amazon Statement**

Paper mailers with air bubble padding are not recyclable and should be put in your garbage bin. Check with your local recycling program for more details.



Gift Bag

These gift bags can be reused. Once the gift bag is no longer usable, place in your garbage bin. Amazon is currently transitioning to gift bags made of 100% recycled material that will replace this version.



Prime Now Gel Pack

Gel packs are not recyclable and should be put in your garbage bin. Check with your local recycling program for more details



Amazon Fresh Dry Ice Plastic Film

Plastic film covering dry ice blocks is not recyclable and should be put in your garbage bin. Do not directly handle dry ice packs until they have sublimated. Let them sublimate in a well-ventilated area or in the dry ice pouch before disposal. Please use gloves when handling dry ice.



Dry Ice Pouch

Dry Ice pouches are not recyclable and should be put in your garbage bin.

# Appendix 3

## Amazon statement to Oceana regarding the report

“Thank you for sharing your report on Amazon’s use of plastic packaging. As we have previously discussed, we share Oceana’s ambition to protect and restore the world’s oceans, and we support the reduced use of plastics. Unfortunately, Oceana has miscalculated Amazon’s use of plastic—we use about a quarter of the plastic packaging estimated by your report. You have also incorrectly applied a model to calculate plastic waste into fresh water and marine ecosystems. The model used in the Science paper mentioned in your report was not designed to focus on e-commerce packaging in the US and EU.

Amazon is committed to protecting the planet and continues to welcome an informed, constructive dialogue with Oceana and others on the issue of reducing plastic packaging. I look forward to remaining in touch.”

## Oceana response to Amazon

“We are glad to hear the company shares Oceana’s goals for protecting the world’s oceans and supports the reduced use of plastic.

However, until Amazon shares its plastic packaging data and offers specifics, we are confident that the estimate in Oceana’s report is based on the best available data for the amount of plastic packaging used in e-commerce per country and market shares for Amazon, including its marketplace vendors. Additionally, the data referenced about marine pollution comes from a peer-reviewed study published in Science about all plastic pollution (that includes plastic packaging waste).

The company continues to, in response to questions about plastic use, offer anecdotes about packaging weight rather than transparency or clear commitments related to reducing plastic. Even the low number claimed by the company for its plastic packaging footprint would still be an enormous amount of plastic waste – enough to circle the earth over a hundred times in the form of air pillows and to cause very large problems for the oceans. Amazon is one of the most innovative and data-driven companies in the world, they can and should be a leader in transparency and in reducing plastic use (and saving our seas).”

# Endnotes

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<sup>8</sup>Borrelle SB, Ringma J, Law KL et.al. (2020) Predicted growth in plastic waste exceeds efforts to mitigate plastic pollution. *Science* 369 (2020), 1515–8. DOI: 10.1126/science.aba3656

<sup>9</sup>The Methodology of our estimation is explained in detail in chapter 3

<sup>10</sup>This estimate is based on an assumed payload of 3,000 pounds based on a survey of different delivery vans (see: <https://bit.ly/367o4sH>, <https://bit.ly/3kYoyYH>, and <https://bit.ly/3p2dlTV>)



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