

**prime**



Five years on,  
Amazon's Climate Pledge  
leaves a legacy of weak and  
broken promises in U.S.  
shipping and deliveries

**STAND**.earth

**polluter**



September 2024

## Acknowledgments

### Primary authors:

Joshua Archer

### Lead researcher:

Devyani Singh

### Contributors:

Gwen Dobbs

Kevynn Gomez

Greg Higgs

Phoebe Lam

Logan McIntosh

Michelle Piñon

Erika Thi Patterson

Jared Saylor

Aslihan Tumer

Kendra Ulrich

### Designer:

Justin Lu

The data in this report has been prepared using best practices and due diligence using information available at date of publication. All information is subject to change. All data is obtained from public sources including but not limited to company websites, annual reports and sustainability reports, as well as academic literature and third-party research institute reports, or from emissions factors or conversion formulas derived from said data. If you represent a company that appears in this report or associated documents that you believe is misrepresented, supplemental information can be sent to [SRG@Stand.earth](mailto:SRG@Stand.earth).

### About Clean Mobility Collective

Clean Mobility Collective (CMC) is a network working to address the growing emissions and public health crisis from the global transport sector. We are a worldwide movement of organizations united around a common vision to achieve fossil-free, healthy and safe cities for all.

### About Ship it Zero

Ship It Zero is a climate and public health campaign to move the world's largest retail companies to 100 percent zero-emission ocean shipping. We are pushing corporations to take responsibility for their ocean shipping pollution and lead the way to climate-friendly, clean-air shipping practices.

### About Stand.earth Research Group

Stand.earth Research Group (SRG) is the leading supply chain research firm in the world for advocacy organizations who want to track commodities from the point of negative environmental and/or social impact to branded companies. We trace environmental destruction and human rights violations to help hold corporate actors accountable and, ultimately, change corporate practices. SRG conducts global research, including providing research and analysis for Stand.earth's ongoing campaign focused on transportation emissions.

**STAND**.earth

**STAND**.earth  
RESEARCH GROUP



**SHIP IT  
ZERO**

# TABLE OF CONTENTS

<b>Executive Summary</b>	1
<b>Five Years Lost Under Amazon’s Climate Pledge</b>	2
<b>Air Freight</b>	3
<b>Last-Mile Delivery Vans</b>	4
<b>Heavy-Duty Trucks and Drayage</b>	6
<b>Maritime Shipping</b>	7
<b>Conclusion and Demands</b>	8
<b>Appendix</b>	10

# Executive Summary

Since 2019, Amazon has used the Climate Pledge to both distract from the growing dock-to-door emissions from its U.S. imports and deliveries, and to cheat its way to climate progress. While aiming to “meet the Paris Agreement 10 years early,”<sup>1</sup> Amazon has sought to weaken emissions reduction targets with ineffective accounting tricks like carbon offsets.<sup>2</sup> It has fought investors to avoid accounting transparency in an attempt to run down the clock. When confronted by climate leaders like the Clean Mobility Collective and the Ship It Zero campaign, Amazon has doubled down on its greenwashing and dismissed the concerns of community and civil society climate advocates.<sup>3</sup>

So what do the five years since the launch of the Climate Pledge actually show us?

## Key Findings

- **From 2019 to 2023, Amazon has increased its U.S. inbound and domestic air freight pollution by 67 percent** (average annual growth of 15 percent), reflecting a deliberate decision to bypass emissions-reduction initiatives with an increased aviation focus. Last year, air freight generated more than 42 percent of the carbon emissions of a package’s journey in the United States.
- **From 2019 to 2023, Amazon’s delivery van carbon dioxide emissions grew 190 percent, and its heavy-duty truck emissions grew by 51 percent.** Heavy-duty trucks comprise the second-largest share of U.S. dock-to-door emissions, with 37 percent of each package’s carbon output.
- **Amazon’s U.S. inbound and domestic marine shipping emissions increased 26 percent** in 2023 as compared to 2019. The company has not announced plans for the transition of this sector to zero emissions.
- **In 2023, Amazon Logistics U.S. dock-to-door delivery<sup>4</sup> pollution generated 5.8 million metric tons of carbon dioxide** (+18 percent average year-over-year since 2019). **Amazon’s emissions are projected to continue growing at a compound annual growth rate of 5.5 percent-11.5 percent through 2030.**

It’s time for Amazon to drop the pretenses and step into the climate leadership it has been claiming for years. In July 2024, our planet experienced its warmest day in recent history. This runaway warming is attributable to increasingly more severe weather events that disproportionately impact the lives and livelihoods of the most vulnerable.<sup>5</sup> There is a small and narrowing window of opportunity to avoid the worst consequences of climate change by limiting global warming below the important 1.5-degrees Celsius threshold.

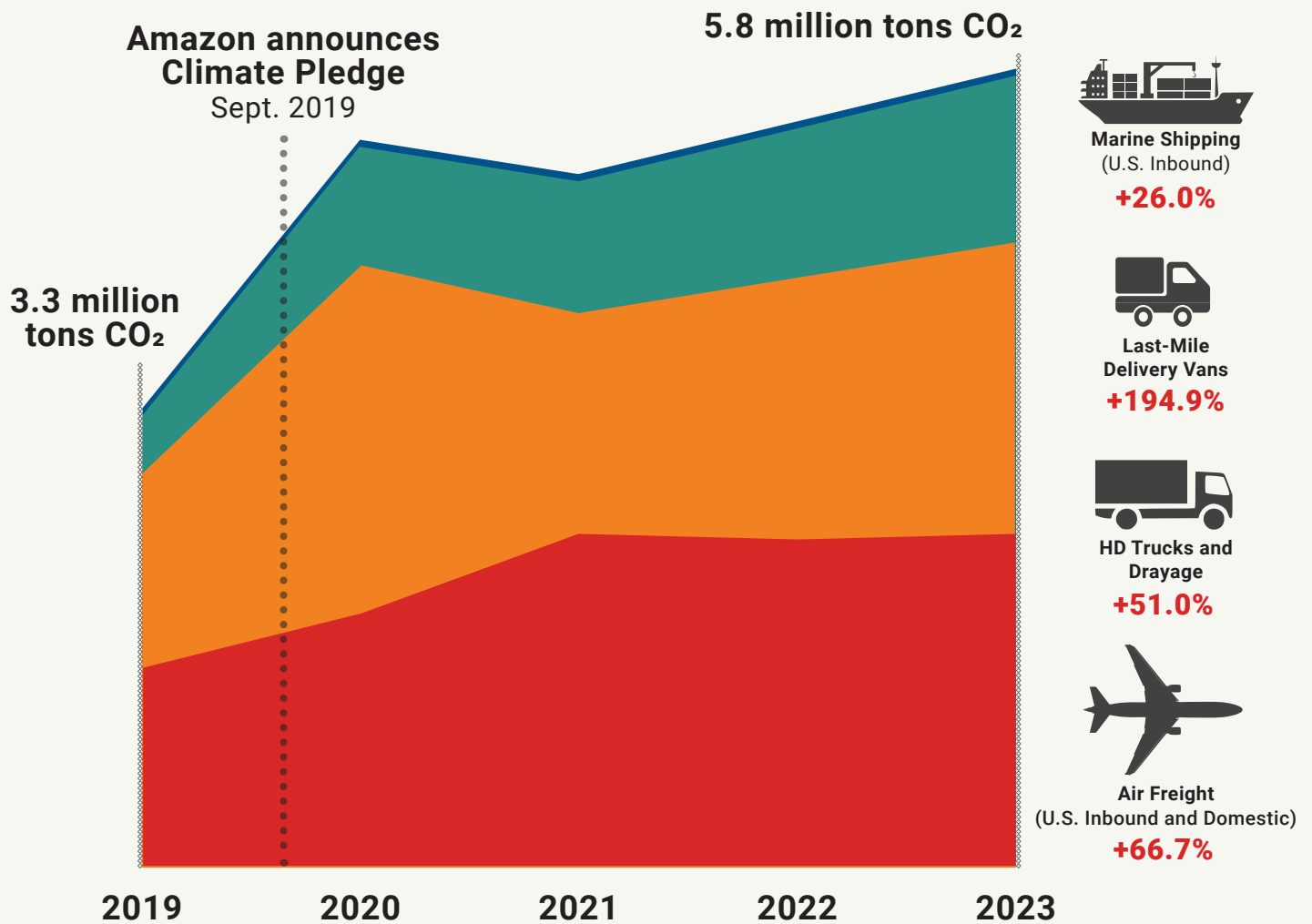
## Amazon must commit to zero-emission deliveries

Amazon has the market-shaping power and responsibility to innovate shipping and logistics consistent with the principles of climate and environmental justice. In the near-term, Amazon should commit to zero-emission deliveries in the last mile and maritime sectors. Amazon also must show a verifiable roadmap to zero-emission shipping in heavy-duty trucking by 2035 and aviation by 2040. If the company fails to take these steps, it will put our climate and communities in peril during the remaining years of this critical decade.



# Five Years Lost Under Amazon's Climate Pledge

Since 2019, Amazon has used the Climate Pledge to distract from its growing dock-to-door U.S. emissions and fake climate progress



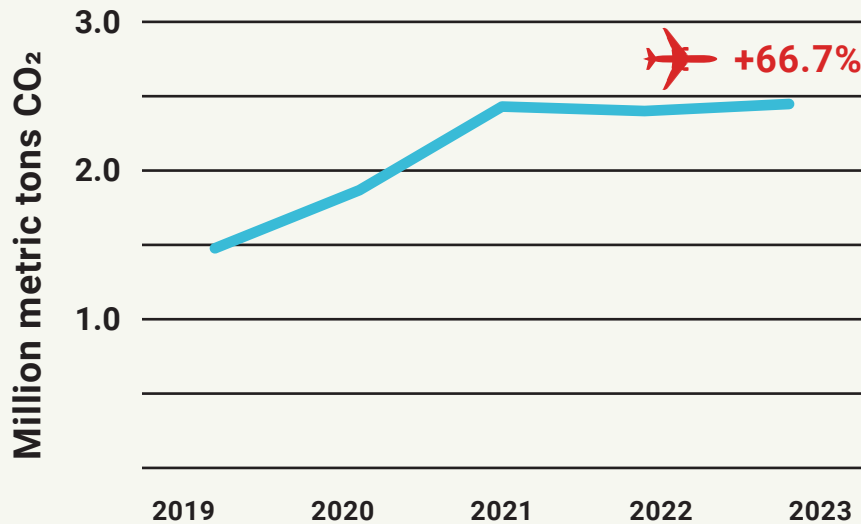
Transportation is the world's largest source of new greenhouse gas emissions that drive climate change.<sup>6</sup> The explosion of the e-commerce sector in recent years, driven by Amazon's ever-faster delivery, has made it much harder to align transportation emissions with critical near-term targets.

Amazon has been and continues to be a prime polluter in the transportation sector. It has a responsibility to be a part of the solution – for our planet and the lives and livelihoods of its customers, of course, but also to preserve the long-term operations of its business.

Sadly, five years since announcing the Climate Pledge, an assessment of Amazon's efforts to reduce emissions shows the company to be woefully failing this commitment. During this time, Amazon backtracked on existing promises and started moving in the wrong direction, growing the dock-to-door emissions from its U.S. imports at an average annual growth rate (AAGR) of 18 percent, from 3.33 million metric tons carbon dioxide in 2019 to 5.84 million metric tons carbon dioxide in 2023. This report assesses Amazon's growing emissions from U.S. shipping and deliveries.

# Air Freight

**Amazon has deliberately expanded fast and dirty air freight shipping, which is the largest source of Amazon Logistics U.S. emissions and significant contributor overall transportation emissions growth**



Carbon-intensive air freight cargo is the linchpin to Amazon’s one-day delivery offerings. Through its Amazon Air operations, the company has created the conditions for competition on delivery speed, which is terrible for the climate and suggests a lack of seriousness about tackling emissions.

In 2023, aviation accounted for 42 percent of each package’s dock-to-door emissions. Since 2019, the company has more than doubled its in-house aviation carbon dioxide emissions through its aviation subsidiary, Amazon Air. It expanded its U.S. inbound and domestic air freight emissions 67 percent during this time to nearly 2.5 million metric tons of carbon dioxide in 2023, representing an average annual growth rate of 15 percent. That is as much carbon pollution as is generated to power 500,000 U.S. households.<sup>7</sup>

Amazon’s lack of transparent GHG reporting makes a full accounting of its aviation emissions nearly impossible due to the paucity of the data the company discloses. In addition to its Amazon Air operations, the company also contracts other parcel companies, such as UPS and USPS, for delivery (see [Annex: Data and Methodology](#)).

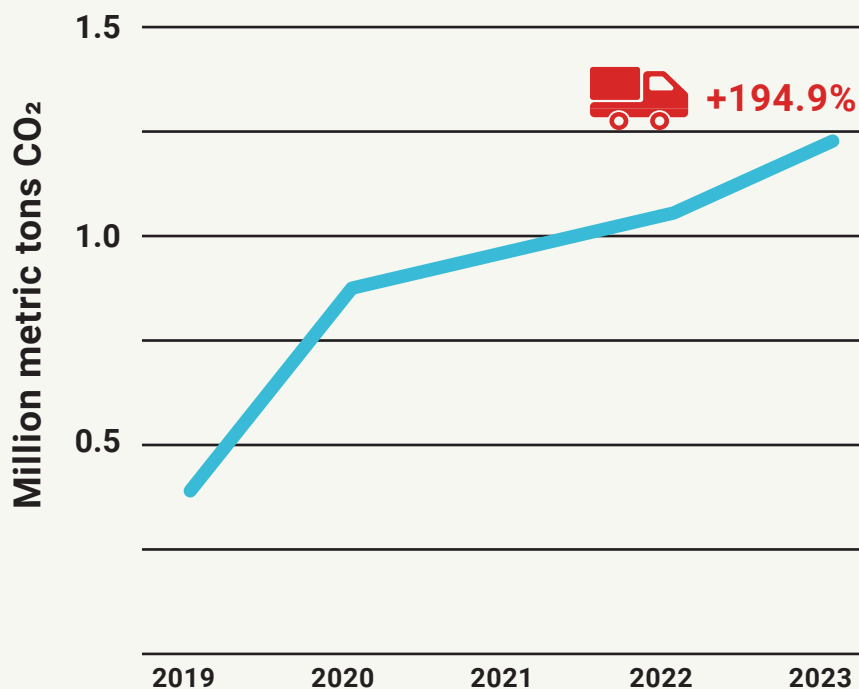
As of June 2024, Amazon operated 93 planes with eight airlines (Air Transport International, Atlas Air, Hawaiian Airlines, Sun Country Airlines, Cargojet Airways, ASL Airlines Ireland, ABX Air, and Quickjet).<sup>8</sup> In 2023, global “operated by” Amazon flights generated an additional estimated 2.5 million metric tons of carbon dioxide on top of Amazon Air’s similar carbon output.

Amazon knows its air freight is a problem. It has attempted to assuage concerns about its polluting air fleet through initiatives such as the Sustainable Aviation Buyers Alliance and by touting its electric loaders.<sup>9</sup> Amazon also boasts about its modest improvements to cargo space utilization, which the company claims will reduce daily flights. These greenwashing steps allow Amazon to claim progress while aviation emissions increase.

Amazon wants customers, regulators, investors, and employees believe its promises to procure questionable alternative fuels and buy carbon offsets will mean something for the climate. A real solution would require the company to transition to less carbon-intensive ground and maritime shipping, while making significant investments in rapidly scaling up fossil-free, zero-emission solutions for ocean and ground freight transportation.

## Last-Mile Delivery Vans

Amazon is using weak last-mile electric vehicle commitment to distract from over 190 percent increase in delivery van emissions since 2019

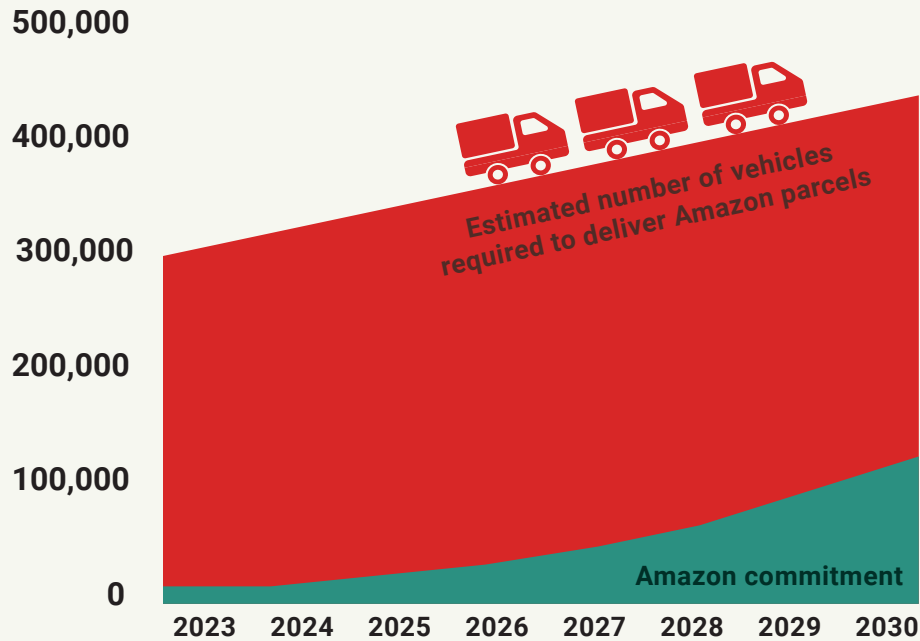


The Climate Pledge has failed to slow the company's meteoric rise in last-mile delivery emissions. Over the last five years, Amazon has expanded its carbon emissions in the last mile at an AAGR of 37 percent during the period 2019-2023, or 190 percent simple growth from 408,000 metric tons of carbon dioxide in 2019 to 1.2 million metric tons in 2023. Last year, the company quietly backed out of its Shipment Zero initiative to make 50 percent of its shipments net-zero by 2030, further demonstrating its lack of seriousness.<sup>10</sup>

Amazon's proposed solution to this disastrous climate problem is the adoption of 120,000 electric delivery vans globally by 2030. In 2023, the company claims that it accelerated fleet additions and reached almost 20,000 electric delivery vans.<sup>11</sup> Factoring 2022-2023 EV use into Amazon's last mile emissions only slightly reduces its 2019-2023 emissions AAGR to 35 percent, as compared to 36 percent without EV use. Additionally, Amazon's growing parcel delivery volumes far outpace its current goal of 120,000 EVs by 2030.

Even if Amazon reaches its stated goal, the company's last-mile emissions will continue to grow as more vehicles are added and kept in Amazon's fleet to accommodate parcel volume growth. In fact, 120,000 EVs will account for less than a third of the total number of delivery vans the company will need to deliver a projected 13 billion parcels.

## Amazon's EV commitment only covers one-third of the company's U.S. fleet need



Amazon will need an estimated 400,000 vehicles to meet its global package delivery needs in 2030. As of this year, Amazon has only committed to 120,000 electric vehicles – and only adopted 19,800.



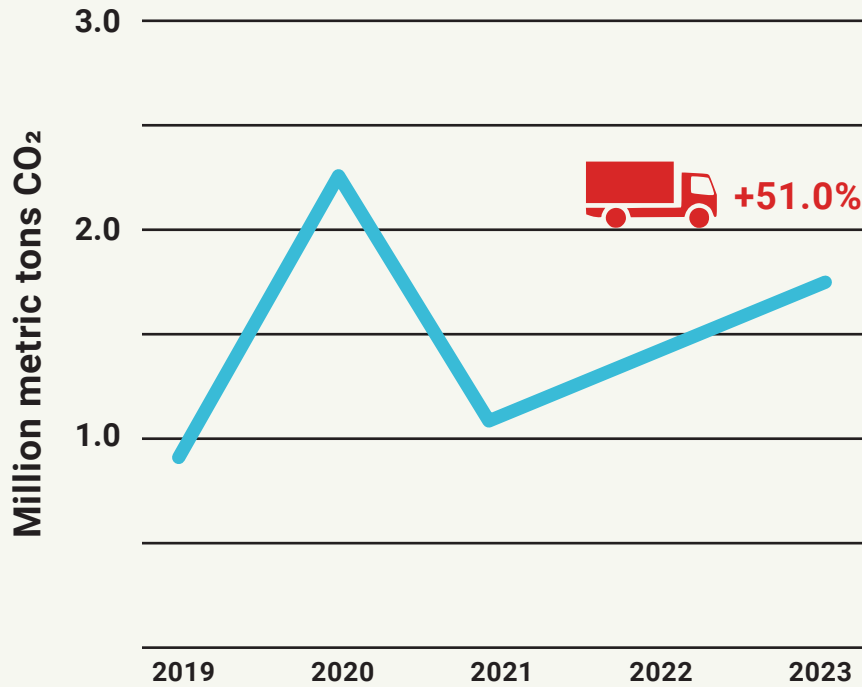
In 2023, Amazon's U.S. last-mile deliveries accounted for 21 percent of each parcel's dock-to-door emissions. Zero-emission vehicles (ZEV) and micro-mobility technologies made only 7.5 percent of last-mile deliveries in the United States.<sup>12</sup> In total, Amazon Logistics absolute emissions from last-mile logistics continue to rise.

Amazon's EV commitment allows the company to maintain the facade of progress while its last-mile emissions continue to grow. Between 2024-2030, cumulative carbon dioxide emissions from Amazon Logistics global ground shipping (both heavy-duty trucks and delivery vans) are estimated to emit 40-55 million metric tons of carbon dioxide. This is an especially conservative estimate of Amazon's impact on climate and communities. Missing from these estimates are the substantial volume of deliveries Amazon completes through third-party contracted delivery and its own Delivery Service Partner program, which Amazon fails to disclose.



# Heavy-Duty Trucks and Drayage

Amazon has no plan to curb growing heavy-duty trucking emissions, which comprise more than a third of a package’s carbon pollution



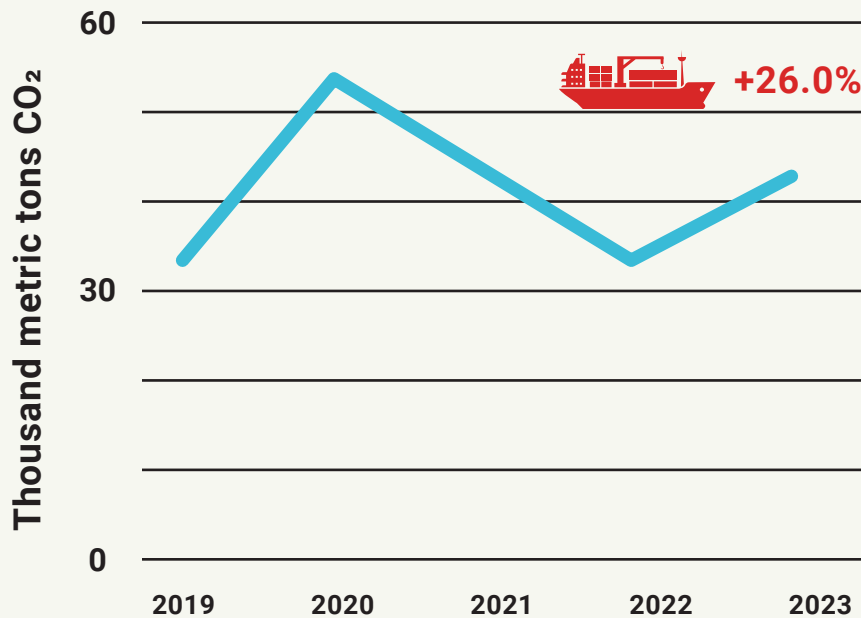
Beyond the last mile, Amazon has failed to offer a commitment to transition its more carbon-intensive heavy-duty trucks to EV and support the buildout of critical supporting infrastructure. Since 2019, the company’s U.S. heavy-duty and drayage trucking carbon dioxide emissions grew at an estimated average annual growth rate of 19 percent, or 51 percent total growth for the whole period. In 2023, these more carbon-intensive trucks are a close second to air freight as a top polluter, with a 37 percent share of a U.S. parcel’s dock-to-door emissions (2.1 million metric tons of carbon dioxide).

To date, Amazon has made no promises to reduce its dependence on fossil-fueled trucks. In its most recent Sustainability Report, the company claims Amazon and its delivery service providers (DSPs) “deployed more than 245 electric middle mile vehicles in 2023.” Without additional transparency on Amazon’s third-party DSPs along with an estimate of total vehicles in its fleet, it is not possible to trace this directly to emissions reduction.<sup>13</sup>

Amazon’s inaction on the electrification of its heavy-duty trucking fleet is a massive threat to real climate progress in the remaining years of this critical decade. The company has an opportunity to lead in this sector with a public commitment to zero-emissions heavy-duty trucking by 2035 and a verifiable roadmap for implementation.

# Maritime Shipping

Amazon's commitment to zero-emission maritime shipping by 2040 does not go far enough



Inbound maritime shipping holds the smallest share of Amazon emissions corresponding with U.S. shipping and deliveries. That does not mean the company can continue to ignore its contributions to this polluting industry. If ocean shipping were a country, it would be the sixth largest polluter. At current growth rates, maritime shipping could represent as much as 17 percent of global human-caused carbon emissions by 2050.<sup>14</sup> Without the rapid decarbonization of this sector, meeting a 1.5°C target will be impossible. As such, each company engaged in ocean shipping must take accountability for its maritime emissions in order to catalyze the necessary transition to zero emissions vessels (ZEVs).

During the period 2019-2023, Amazon expanded its U.S. inbound maritime shipping carbon dioxide emissions 26 percent (AAGR +11 percent). The company has committed to zero-emission maritime shipping by 2040, which allows it to kick the can down the road while continuing to expand its maritime shipping pollution.

Amazon has touted its efforts to reduce carbon intensity in the maritime sector, emphasizing its multi-year agreement with Dutch shipping company Maersk to use biofuel-driven vessels. Both companies claim this move would contribute to a reduction in 44,600 metric tons of CO<sub>2</sub>e when compared with standard bunker fuel.<sup>15</sup> That said, the agreement is vague and it is impossible to make any conjecture with regards to its real impact on maritime shipping emissions.

In addition to threatening progress on climate change, Amazon's inaction on maritime shipping emissions reduction is an environmental justice challenge. In 2019, sulfur oxide (SO<sub>x</sub>) and nitrous oxide (NO<sub>x</sub>) pollution from maritime shipping was linked to 6.4 million global childhood asthma cases and 260,000 premature deaths.<sup>16</sup> Port-adjacent communities bear the burden of this pollution, including communities of color near ports in Los Angeles on the West Coast, and Savannah in the East. Among North American port communities, Seattle-Tacoma has the highest rates of excess mortality due to ship exhaust exposure.<sup>17</sup> There, estimates have shown the life expectancy in communities of color near the Seattle-Tacoma port is up to 13 years shorter than in less diverse communities farther from the port.<sup>18</sup>

As a major retailer, Amazon has the opportunity and responsibility to lead the global shipping industry toward a zero-emission shipping future that protects our planet and portside communities disproportionately bearing the brunt of shipping pollution. Amazon can send a powerful market signal to the entire shipping sector and encourage other retailers to do the right thing and adopt clean energy technologies. Anything short of a commitment to zero-emission maritime shipping by 2030 is too little from this powerful retailer.



## Conclusion and Demands

Since launching the Climate Pledge, Amazon has failed to offer a viable pathway toward meaningful reduction in its transportation emissions. This investigation reveals Amazon has instead increased emissions during the first five years of Climate Pledge implementation. Given Amazon's position as the world's largest e-commerce company, and its claims of climate leadership, the company must correct course in the near term. If it continues on track toward further increased emissions, Amazon threatens to put current and future generations in peril – to say nothing of the cost to the company's reputation and long-term sustainability of operations. If the 500+ signatories to the Climate Pledge follow Amazon's example, it would be a disaster for the climate.

**To be a real climate leader, Amazon needs to drop the act and provide a comprehensive, multi-year plan toward reducing emissions.**

Amazon has an estimated 38 percent share of the U.S. e-commerce market.<sup>19</sup> As a shipping and logistics company, Amazon Logistics has overtaken FedEx and UPS to become the largest delivery company in the United States, with a 27 percent share of parcel volume.<sup>20</sup> In 2023, Amazon Logistics shipped an estimated 8.9 billion parcels globally. Amazon also contracts with third parties, such as Delivery Service Providers, USPS, and UPS, for last-mile delivery, delivering a conservative estimate of almost 15 billion parcels globally (see [Annex: Data and Methodology](#)).

This volume of parcels makes Amazon a unique threat to climate progress. At the same time, its overwhelming share of the e-commerce market presents the company with an opportunity to innovate shipping and logistics with principles of climate and environmental justice. To show true leadership, the company needs to outline a transparent roadmap to zero-emission deliveries in each sector of the dock-to-door journey.

The solution to Amazon's problem and its climate and community impacts will require the company to immediately reduce dependence on air freight cargo shipping, and transition toward land and sea zero-emission shipping for more products and product categories. At the same time, Amazon will have to increase the scale and scope of its emissions reductions efforts in those categories. This equates to much more ambitious goals for zero-emission heavy-duty trucks and delivery vans, a verifiable implementation roadmap, and improved transparency into carbon accounting.

Importantly, those in power who claim to be climate champions need to do more to hold Amazon accountable. Its aggressive lobbying is obvious and dangerous. Its Climate Pledge commitments are not a model to be emulated, but an absolute bare minimum to be built upon. In the five years since announcing the Climate Pledge, the company has hid behind it to deflect criticism while continuing to be a prime polluter.

# We call on Amazon to

## **Publicly commit to 100 percent zero-emission last-mile deliveries and maritime shipping by 2030:**

Amazon needs to go far beyond its current commitment with a view toward fully zero-emission last-mile deliveries by 2030. It should develop and release an implementation plan that includes:

- Phasing out of fossil fuel vehicles and transition to 100 percent zero-emission last-mile deliveries, including deliveries made by contractors and subcontractors.
- Publicly sharing information on their emissions and fleet sizes, including detailed reporting on the emissions and vehicles of contractors and subcontractors, and progress on zero-emission delivery on a country/regional basis.
- Ensuring the cost of transitioning from fossil fuel vehicles to electric vehicles, cargo bikes, and other zero-emission options is not passed on to contractors and subcontractors.
- Increasing the use of e-cargo bike deliveries, neighborhood delivery hubs, and other zero-emission options.
- Working with original equipment manufacturers and governments to track and source mined materials that have the least amount of environmental and health impacts for electric vehicle fleets.
- Prioritizing communities experiencing the highest levels of pollution and poor air quality first for the transition to electric vehicles and other zero-emission options.
- Invest in and publicly advocate for zero emission vessel port infrastructure, including shore power and fossil-free, zero emission vessel fuels.
- Demand emissions reductions operational measures from maritime carriers, such as slower ships speeds and efficient route planning, and these immediate emissions reduction options to Amazon Global Logistics clients.
- Increase financial support and advocacy for the rapid uptake of zero emission maritime fuels and propulsion technologies, such as green hydrogen-based fuels, battery power storage, and wind assisted propulsion.

## **Publicly commit to zero-emissions middle-mile deliveries by 2035**

Beyond the last-mile, Amazon needs to set itself on a verifiable pathway toward the phasing out of fossil-fueled heavy-duty trucks and drayage vehicles by 2035. The company needs to take further accountability for this transition by investing in the buildout of critical infrastructure, such as charging stations. The cost of this transition cannot be passed onto contractors and subcontractors.

## **Publicly commit to zero-emissions air freight by 2040**

Amazon must take immediate action to reverse its recent emphasis on air freight shipment. The company needs to show a pathway to reduced dependence on aviation for middle-mile transport in the near-term. It must also show a plan for zero-emission air freight shipment by 2040.

## **Immediately implement measures to ensure the cost of transition is not passed onto communities and workers**

The measures described here are a starting point for a company aspiring to climate leadership. That said, Amazon also has a responsibility to the communities most impacted by its operations, and to the workers through whose efforts the company has grown. It must ensure a just transition in which the costs of implementation are not passed onto these groups.



# Appendix

The data in this report has been prepared using best practices and due diligence using information available at date of publication. All information is subject to change. All data are obtained from public sources including but not limited to government data, company websites, academic literature and third-party research institute reports, or from emissions factors or conversion formulas derived from said data. If you represent an organization that appears in this report or associated documents that you believe is misrepresented, supplemental information can be sent to [SRG@Stand.earth](mailto:SRG@Stand.earth).

The research and analysis represented in this report was developed by Stand.earth Research Group with additional verification by Stand.earth, Pacific Environment, and partners in the Clean Mobility Collective. A full discussion of data and methodology is available in the [Data and Methodology Annex](#).

# Endnotes

1. [“Amazon Co-founds The Climate Pledge, Setting Goal to Meet the Paris Agreement 10 Years Early.”](#) *Amazon.com, Inc. Press Center*, 19 Sept. 2019.
2. [“Carbon offsets are a greenwashing scheme, new research shows, despite Amazon’s bullying campaign.”](#) *Stand.earth*, 30 July 2024.
3. Zhou, Amanda. [“Climate Protesters Paint Prime Day Message to Amazon on Seattle Street.”](#) *Seattle Times*, 16 July 2024.
4. Amazon Logistics U.S. includes Amazon’s in-house delivery arm, and potentially its delivery service providers (DSP). We are unable to confirm the shares of these two components as this information is not available from Pitney Bowes. For the purpose of this report, Amazon Logistics ground transport includes both in-house and DSP delivers, air freight covers Amazon Air shipment, and maritime shipping is all inbound U.S. Amazon.com shipment.
5. See, for example: Gaffney, Austyn. [“Heat Contributed to 47,000 Deaths in Europe Last Year, but Relief Programs Helped.”](#) *New York Times*, 12 Aug. 2024; Sengupta, Somini. [“How Extreme Heat Is Threatening Education Progress Worldwide.”](#) *New York Times*, 14 Aug. 2024; Vasconcelos, Francisco Das Chagas, Junior, et al. [“An Attribution Study of Very Intense Rainfall Events in Eastern Northeast Brazil.”](#) *Weather and Climate Extremes*, May 2024;
6. Ritchie, Hannah, et al. [“Breakdown of Carbon Dioxide, Methane and Nitrous Oxide Emissions by Sector.”](#) *Our World in Data*, 5 Jan. 2024
7. Stand.earth research and analysis; [“Greenhouse Gas Equivalencies Calculator | US EPA.”](#) *United States Environmental Protection Agency*, 12 Mar. 2024.
8. [“Amazon Prime Air Fleet Details and History.”](#) *Planespotters*, 2 July 2024.
9. [“Amazon Air Joins the Sustainable Aviation Buyers Alliance \(SABA\).”](#) *Amazon.com, Inc.* 10 Nov. 2021.
10. [“Amazon gives up a key part of its climate pledge and deletes the blog post that announced the Shipment Zero initiative. We dug up the details anyway.”](#) *Business Insider*, 25 May 2023.
11. [“2023 Amazon Sustainability Report 2023.”](#) *Amazon.com, Inc.* July 2024.
12. Ibid.
13. Ibid.
14. [“Decarbonizing the Maritime Shipping Industry.”](#) *U.S. Department of Transportation*, Sept. 2023.
15. Mazumder, Aparupa. [“Maersk to ship Amazon goods on vessels running on methanol and biofuels.”](#) *Engine*, 7 Sept. 2023.
16. Rose, Madeline. [“Shady Ships: Retail Giants Pollute Communities and Climate with Fossil-Fueled Ocean Shipping.”](#) *Ship It Zero*, July 2021.
17. [“Silent But Deadly: The case of shipping emissions.”](#) *The International Council on Clean Transportation*, 22 Mar. 2019.
18. [“Duwamish Valley Cumulative Health Impacts Analysis: Seattle, Washington.”](#) *Just Health Action*, Mar. 2013.
19. Taylor, Bradley. [“Amazon Statistics: Up-to-Date Numbers Relevant for 2024.”](#) *AMZScout Blog*, 28 July 2024.
20. [“Pitney Bowes Parcel Shipping Index.”](#) *Pitney Bowes*, 2023.

**STAND**.earth

**STAND**.earth  
RESEARCH GROUP



**SHIP IT  
ZERO**

A joint investigation by Stand.earth and Stand.earth Research Group, with additional support from the Clean Mobility Collective, the Ship it Zero campaign, and Pacific Environment