

# Product Sustainability Fact Sheet



## Amazon Ember Mini-LED Series 55"

Updated November 2024 - for US only

# Designed for Sustainability

We're working to make Amazon devices more sustainable - from how we build them to how customers use and eventually retire them.



## Carbon Footprint

1545 kg CO<sub>2</sub>e total carbon emissions

## Energy

Low Power Mode reduces energy consumption when idle, except in certain situations. We also invest in renewable energy that, by 2025, will be equivalent to this device's electricity usage. inbound

## Packaging

82% of this device's packaging is made of wood fiber-based materials from responsibly managed forests or recycled sources.

## Transportation

Over the lifetime of the device, Amazon will ship at least 60% of the global inbound volume of the Amazon Ember Mini-LED Series 55" via non-air modes of transportation.



Figures are for Amazon Ember Mini-LED Series 55", not including any other versions or any bundled accessories or devices. We update the carbon footprint when we discover new information that increases the estimated carbon footprint of a device by more than 10%.



This device is a Climate Pledge Friendly product. We partner with trusted third-party certifiers and create our own certifications like Compact by Design and Pre-owned Certified to highlight products that meet sustainability standards.

The product carbon footprint of this device has been certified by the Carbon Trust<sup>1</sup>.

# Life Cycle

We consider sustainability in every stage of a device's life cycle - from sourcing raw materials to end-of-life.

**Amazon Ember Mini-LED Series 55" total life cycle carbon emissions: 1545 kg CO<sub>2</sub>e**

01 Materials and Manufacturing

**31%**

02 Transportation

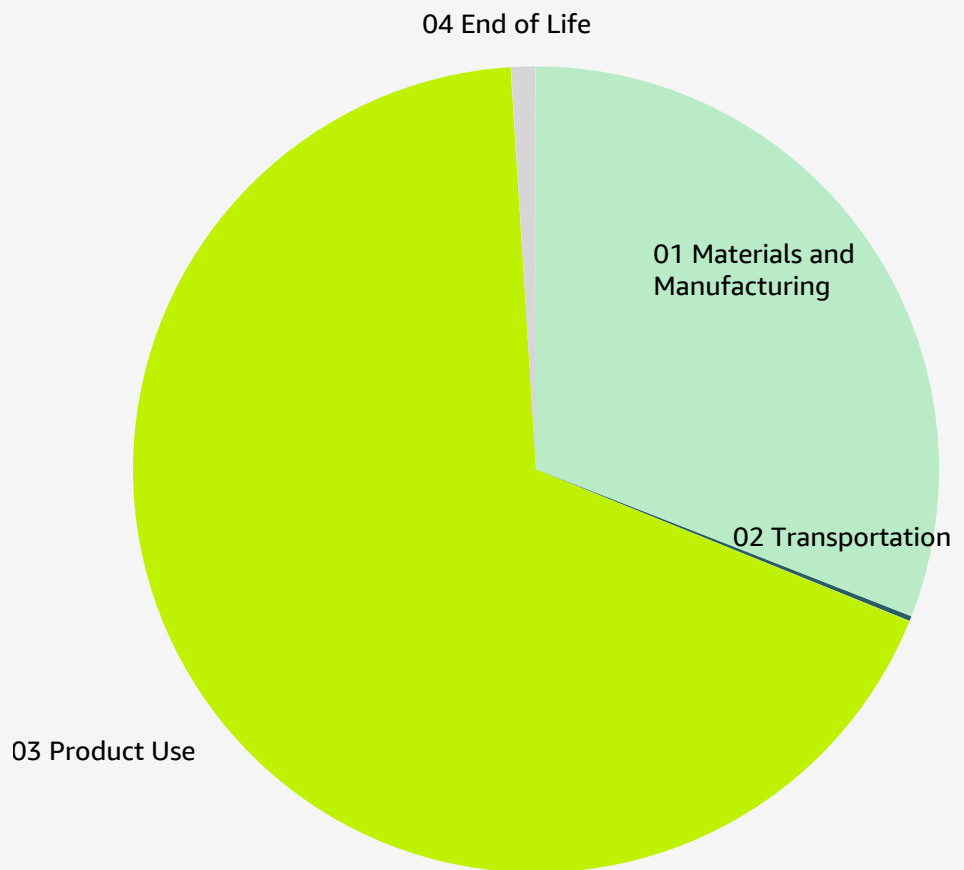
**<1%**

03 Product Use

**68%**

04 End-of-Life

**1%**



**Life Cycle Assessment:** A methodology to assess the environmental impact (e.g., carbon emissions) associated with life cycle stages of a product—from raw material extraction and processing, through production, use, and disposal.

This product's biogenic carbon emissions of -1.849 kg CO<sub>2</sub>e are included in the total footprint calculation. The total biogenic carbon content in this product is 2.488 kg C. Percentage values may not add up to 100% due to rounding.

# Materials and Manufacturing

We account for the extraction, production, and transportation of raw materials, as well as the manufacturing, transporting, and assembling of all parts.

## Packaging

82% of this device's packaging is made of wood fiber-based materials from responsibly managed forests or recycled sources.

## Chemical Safety

Through our partnership with ChemFORWARD, we're collaborating with industry peers to proactively identify chemicals of concern and safer alternatives ahead of regulations.

## Suppliers

We engage suppliers who manufacture our devices or their components—particularly final assembly sites, semiconductors, printed circuit boards, displays, batteries, and accessories—and encourage them to increase renewable energy use and reduce manufacturing emissions. To date, we have received commitments from 49 key suppliers to work with us on decarbonization, and helped 21 of them develop renewable energy implementation plans for Amazon Devices production. We are continuing to expand this program in 2024 and beyond.



# Transportation

We account for an average inbound and outbound trip that is representative of an average device or accessory. Inbound trip includes transporting the product from final assembly to Amazon warehouses while outbound trip includes transporting the product from warehouses to the customer.

## Amazon Commitment

Delivering for our global customers requires Amazon to rely on a variety of transportation solutions for long and short distances. Over the lifetime of the device, Amazon will ship **at least 60%\*** of the global inbound volume of the Amazon Ember Mini-LED Series 55" via non-air modes of transportation.

\*Estimated based on last 5 years average of a similar product; includes transportation from manufacturers and suppliers into Amazon warehouse only.

## Diversifying Transportation Modes

Decarbonizing our transportation network is a key part of meeting The Climate Pledge by 2040. According to our science model, on average, ocean shipping emissions are approximately 95% lower than air transport emissions.

Since 2020, we've reduced carbon emissions from transportation of our devices by 71%. We've done this by prioritizing transportation via ocean and modes that are less carbon intensive than air like rail and road.



# Product Use

We determine the expected energy consumption of a device over its lifetime and calculate the carbon emissions associated with the use of our devices.

## Low Power Mode

Low Power Mode reduces energy consumption when idle, except in [certain situations](#).

## Renewable Energy

In 2020, Amazon became the first consumer electronics company to commit to addressing the electricity used by our devices through renewable energy development, starting with Echo devices. We're making investments in additional wind and solar farm capacity that, by 2025, will be equal to the energy use of Echo, Fire TV, and Ring devices worldwide.



# End-of-Life

To model end-of-life emissions, we estimate the ratio of end products that are sent to each disposal pathway including recycling, combustion, and landfill. We also account for any emissions required to transport and/or treat the materials.

## Durability

We ensure that our devices are built to last by putting them through dozens of reliability tests to replicate everyday situations such as drops, tumbles, spills, power cycles and other wear and tear. We also release over-the-air software updates for our customers' devices so they don't need to replace them as often.



# Methodology

## Our approach to measuring a product's carbon footprint?

To meet [The Climate Pledge](#) goal to be net-zero carbon by 2040, we measure and estimate this product's carbon footprint, and identify opportunities to reduce its carbon emissions. Our life cycle assessment ("LCA") models align with internationally recognized standards, like the Greenhouse Gas ("GHG") Protocol Product Life Cycle Accounting and Reporting Standard<sup>2</sup> and International Standards Organization ("ISO") 14067<sup>3</sup>. Our methodology and product carbon footprint results are reviewed by the Carbon Trust with reasonable assurance. All carbon footprint numbers are estimates and we continuously improve our methodology as the science and data available to us evolve.

## What's in an Amazon device's product carbon footprint?

We calculate this product's carbon footprint throughout its life cycle stages, including materials and manufacturing, transportation, use, and end-of-life. The life-cycle impacts are estimated based on the Intergovernmental Panel on Climate Change ("IPCC") 2021 Global Warming Potential for a 100-year timeframe ("GWP100") in CO<sub>2</sub> equivalency factors ("CO<sub>2</sub>e"<sup>4</sup>). Two carbon footprint metrics are considered: 1) the total carbon emissions across all life cycle stages of one device or accessory (in kilograms of carbon dioxide equivalent, or kg CO<sub>2</sub>e), and 2) the average carbon emissions per year used of the estimated device lifetime, in kg CO<sub>2</sub>e/use-year.

**Materials and Manufacturing:** We calculate the carbon emissions from material and manufacturing based on the list of raw materials and components to manufacture a product, namely the bill of materials. We account for the emissions from the extraction, production, and transportation of raw materials, as well as the manufacturing, transporting, and assembling of all parts. For certain components and materials, we may collect primary data from our suppliers to supplement our industry average data, collected from a mix of commercially and publicly available LCA databases.

**Transportation:** We estimate the emissions of transporting the product from final assembly to our end customer using actual or best estimated average transportation distances and transportation modes for each device or accessory.

**Use:** We calculate the emissions associated with the use (i.e., electricity consumption) of this product by multiplying the total electricity consumption over a device's estimated lifetime with the carbon emissions from the generation of 1 kWh electricity (the grid emission factor). The total energy consumption of a device is based on the average customer's power consumption and estimated time spent in various modes of operation like playing music, playing video, idle, and low power mode. A specific customer may have a higher or lower use phase footprint associated with their device depending on their specific usage patterns.

We use country-specific grid emission factors to account for the regional variations in electricity grid mix. [Learn more](#) about how Amazon plans to decarbonize and neutralize the use phase of our connected devices by 2040.

**End-of-Life:** For end-of-life emissions, we account for any emissions required to transport and/or treat the materials destined to each disposal pathway (e.g., recycling, combustion, landfill).

## How do we use the product carbon footprint?

The footprint helps us identify carbon reduction opportunities across this product's various life cycle stages. In addition, we use it to communicate our carbon reduction progress over time—this is included in the calculation of Amazon's corporate carbon footprint. [Learn more](#) about Amazon corporate carbon footprint methodology.

## How often do we update a product's carbon footprint?

After we launch a new product, we track and audit the carbon emissions of all life cycle phases of our devices. We update our product sustainability fact sheets when the estimated carbon footprint of a device increases by more than 10% or due to new information that changes our model inputs. These changes that are within Amazon's control include adjustments to the product design, changes in product energy usage, and updates to transportation data. To make sure that we compare our new products fairly, we recalculate the footprint of their comparison products, incorporating updates in our methodology and emission factors. This report serves as an informational guide and should not be relied upon for product comparisons.

[Learn more](#) about our product carbon footprint methodology and limitations in our full methodology document.

## Definitions:

**Biogenic carbon emissions:** Carbon released as carbon dioxide or methane from combustion or decomposition of biomass or bio-based products.

**Life Cycle Assessment:** A methodology to assess the environmental impact (e.g., carbon emissions) associated with life cycle stages of a product—from raw material extraction and processing, through production, use, and disposal.

## Endnotes

<sup>1</sup>Certification Number: **13659**; LCA data version **19 January 2024** published by The Carbon Trust

<sup>2</sup>**Greenhouse Gas ("GHG") Protocol Product Life Cycle Accounting and Reporting Standard:** <https://ghgprotocol.org/product-standard> published by the Greenhouse Gas Protocol

<sup>3</sup>**International Standards Organization ("ISO") 14067:2018 Greenhouse gases—Carbon footprint of products—Requirements and guidelines for quantification:** <https://www.iso.org/standard/71206.html> published by International Standards Organization

<sup>4</sup>**Intergovernmental Panel on Climate Change ("IPCC") AR6:** Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change: [https://report.ipcc.ch/ar6/wg1/IPCC\\_AR6\\_WGI\\_FullReport.pdf](https://report.ipcc.ch/ar6/wg1/IPCC_AR6_WGI_FullReport.pdf) published by the Intergovernmental Panel on Climate Change

