

# Product Sustainability Fact Sheet



## Carrera Smart Glasses with Alexa

2023 release  
Updated September 2023 - 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

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

## Materials

Charging stand is made from 35% recycled materials.  
100% recyclable packaging (shipping packaging not included).

## Energy

We invest in renewable energy that, by 2025, will be equivalent to this device's electricity usage.

## Trade-in and Recycle

Built to last. But when you're ready, you can trade-in or recycle your devices. Explore [Amazon Second Chance](#).



This device is a **Climate Pledge Friendly** product. We partner with trusted third-party certifications 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.

Carrera Smart Glasses with Alexa total life cycle carbon emissions: 18 kg CO<sub>2</sub>e  
**Carbon emissions of each life cycle stage:**

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01 Materials and Manufacturing

**68%**

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02 Transportation

**27%**

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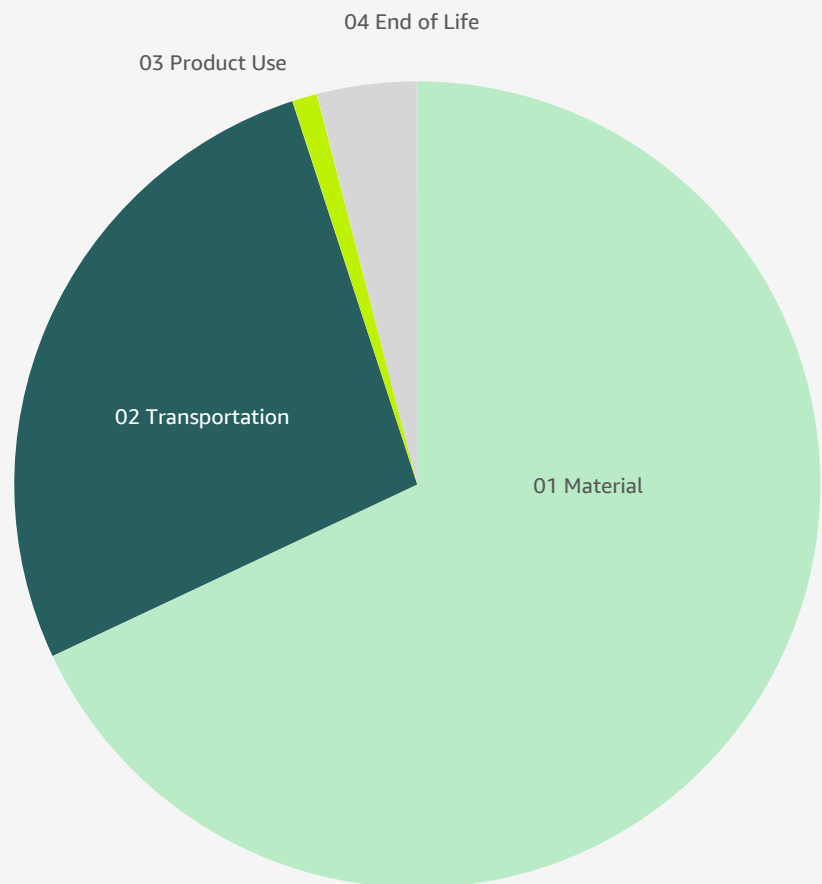
03 Product Use

**1%**

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04 End-of-Life

**4%**



**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 0.154 kg CO<sub>2</sub>e are included in the total footprint calculation. The total biogenic carbon content in this product is 0.107 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.

## Recycled Materials

Charging stand is made from **35% recycled materials**. The plastic is made from **49% of post-consumer recycled plastic**. We incorporate recycled fabrics, plastics, and metals into many new Amazon devices, giving new life to materials. Bundle accessories not included.

## Recyclable Packaging

This device has **100% recyclable packaging**. 99% 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 harmful chemicals and safer alternatives ahead of regulations.

## Suppliers

All of our assembly sites for this product have achieved UL Zero Waste to Landfill Gold certification. This means our suppliers handle waste in environmentally responsible ways, diverting more than 5% of their facility's waste from the landfill through methods other than waste to energy.

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. In 2022, we received commitments from 28 key suppliers to work with us on decarbonization, and helped six of them develop renewable energy implementation plans for Amazon Devices production. We are continuing to expand this program in 2023 and beyond.





# Transportation

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

## Amazon Commitment

Delivering for our global customers requires Amazon to rely on a variety of transportation solutions for long and short distances. Decarbonizing our transportation network is a key part of meeting The Climate Pledge by 2040. That's why we're actively transforming our fleet network and operations.



# 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.

## 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, FireTV, and Ring devices worldwide.

## Alexa

With the Alexa Energy Dashboard, customers can view estimated energy usage for their compatible thermostats and water heaters; plus, they can see a forecast of when cleaner energy is available, so customers can plan ahead for energy-intensive activities like running the dishwasher or dryer.

Customers can also manage the energy use of their compatible connected devices using Routines and Hunches. Routines are short cuts for Alexa, saving you time by grouping together a bunch of actions so you don't have to ask for each one individually. For example, you can set the "Alexa, good night" Routine to turn off all your porch lights at once. Hunches is a feature that can help you save energy without even thinking about it. Now, if Alexa has a hunch that you forgot to turn off a light and no one is home or everyone went to bed, Alexa can automatically turn it off for you.





# 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 design our devices with best-in-class reliability models, so they're more resilient and last longer. We also release over-the-air software updates for our customers' devices so they don't need to replace them as often.

## Trade-in & Recycling

We make it easy for you to retire your devices. Using Amazon Trade-In, you can trade-in your old devices for a gift card. Your retired devices will then be either refurbished and re-sold, or recycled.



# 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. 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. Product sustainability fact sheets are updated when we discover new information that changes the estimated carbon footprint of a device by more than 5% or if it materially changes our estimated reduction generation over generation.

[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>**Carbon Trust Certification Number:** CERT-13540; LCA data version August 2023 published by Carbon Trust. This device has a reduced carbon footprint compared to a baseline device.

<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



