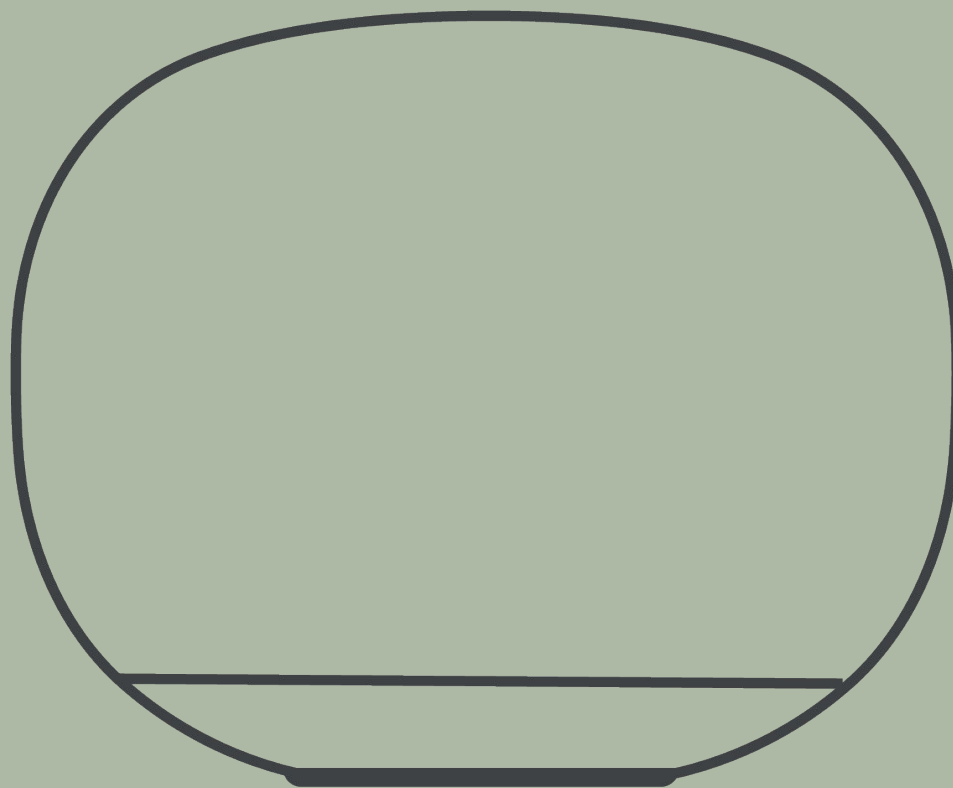


# Google Home Speaker





## INTRODUCTION

# At Google, operating in an environmentally sustainable way has been a core value from the beginning.

Please refer to our latest Environmental Report for our current approach to sustainability across Google.

[sustainability.google/stories](https://sustainability.google/stories)

We're building consumer hardware products for everyone and the planet. That's why we've developed energy-saving features, created longer-lasting devices, and promote the use of lower carbon and recycled materials.

There is always space to go further. Progress is a journey, not a destination.


The following pages detail the environmental performance of the Google Home Speaker including its full life cycle carbon footprint, from design and manufacturing through usage and end-of-life processing.



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# Google Home Speaker environmental report includes the following:

01. Introduction
02. Our approach
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  - a. Engineering our products to last
  - b. Designing intentionally with responsible materials
  - c. Advancing collective progress through sharing
04. Environmental reporting data
05. Endnotes



Progress is  
a journey,  
not a  
destination.



OUR APPROACH

# Art and science

Sustainable design is an iterative process guided by intention, craft, and consideration in every detail. To bring this to life across our Pixel, Google Home, and Fitbit portfolios, we focus on three key pillars to guide our steps forward.

PILLAR 01

Engineering  
our products  
to last

PILLAR 02

Designing  
intentionally  
with responsible  
materials

PILLAR 03

Advancing  
collective  
progress through  
sharing



01

# Engineering our products to last

The Google Home Speaker is carefully crafted and designed to fit anywhere in the home. The new fabric knit is designed to last, with improved yarn twisting and tension control allowing it to tightly wrap around the speaker enclosure.

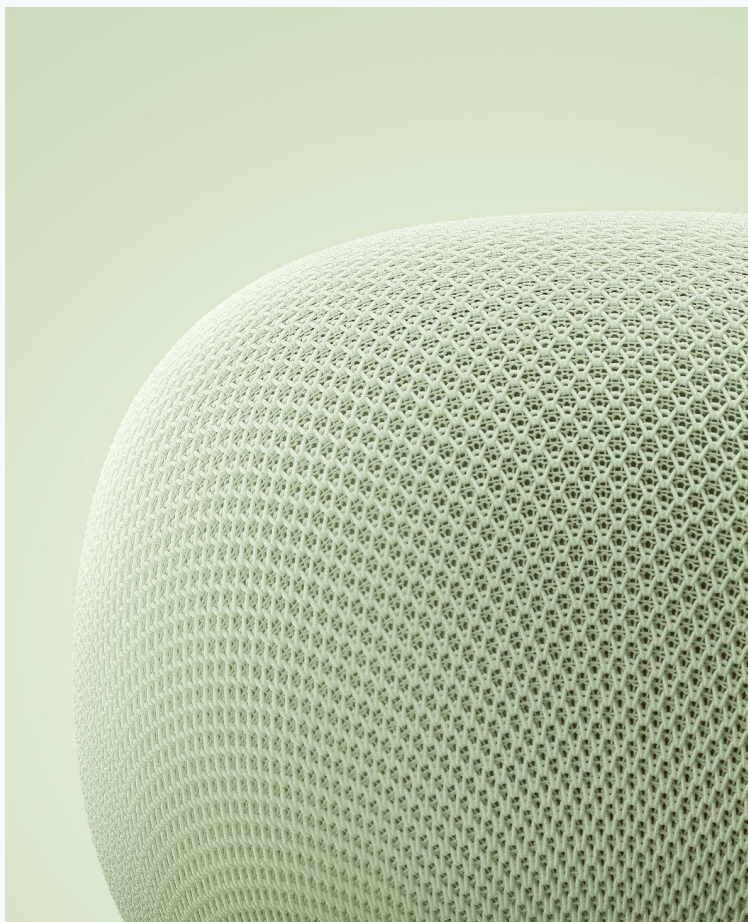
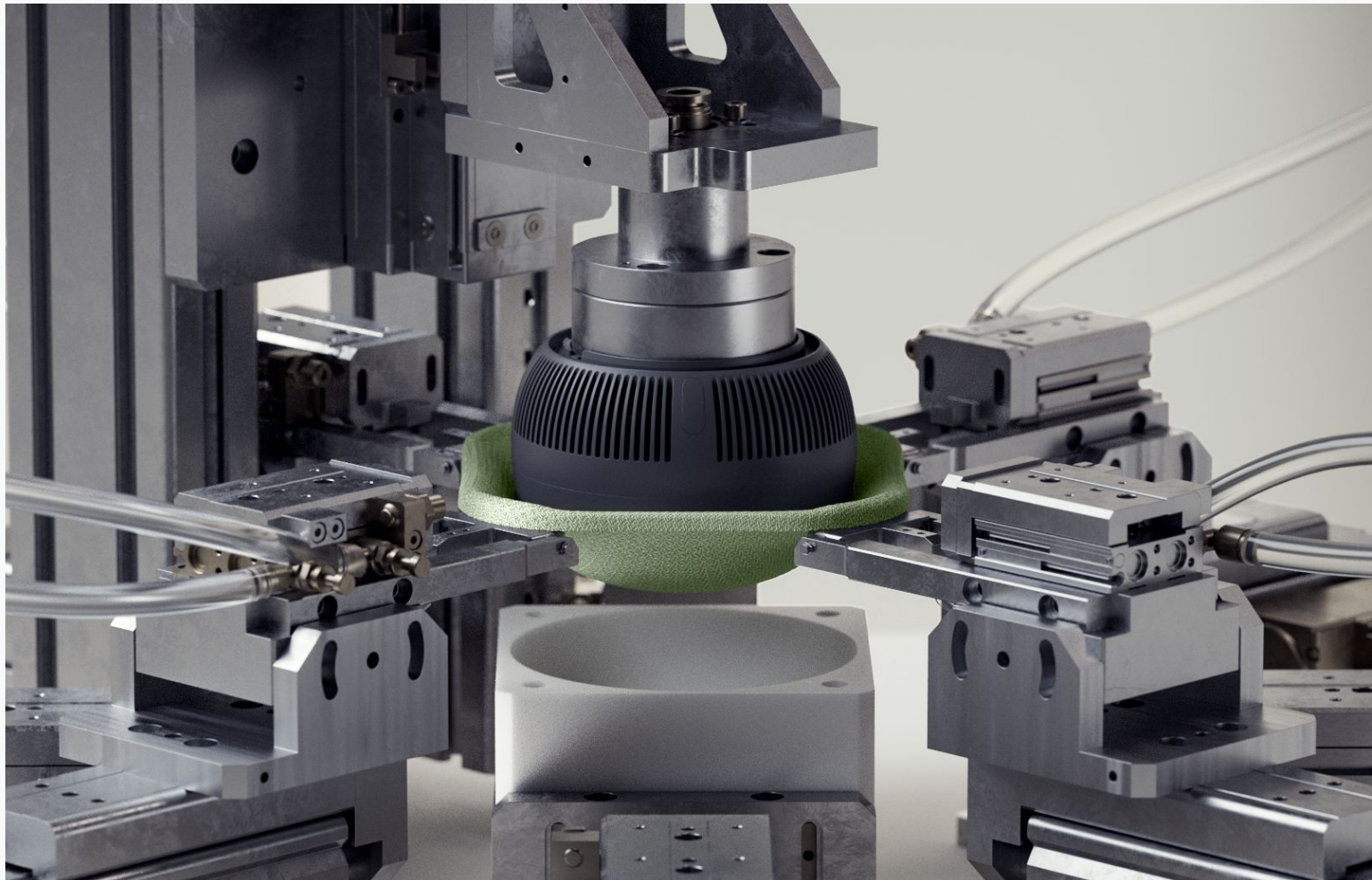
# Designing intentionally with responsible materials

Through innovative design and a commitment to expanding our recycled materials portfolio, we are driving carbon reduction and minimizing waste across our operations.

The Google Home Speaker is made with recycled plastic, metal, and rare earth elements, contributing to a total of at least 37% recycled materials.<sup>1</sup> The packaging is also 100% plastic-free.<sup>2</sup>



Recycled Yarn

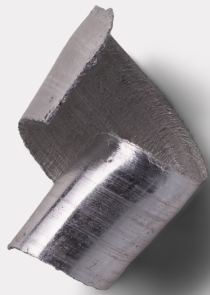


# Reimagined to reduce waste

Since introducing recycled yarn on our 2019 Google Nest Mini, our Google Home Speakers have pushed the boundaries of sustainable textile innovation.

Our latest Google Home Speaker's seamless fabric features an innovative 3D-knit enclosure<sup>3</sup> designed to significantly reduce material waste, using approximately 63% less material and 99% less adhesive than our first generation Nest Audio.<sup>4</sup>





**Recycled Metal**



**Molded Fiber**  
[Packaging]



**Recycled Rare Earth Elements**



**Bamboo**  
[Packaging]



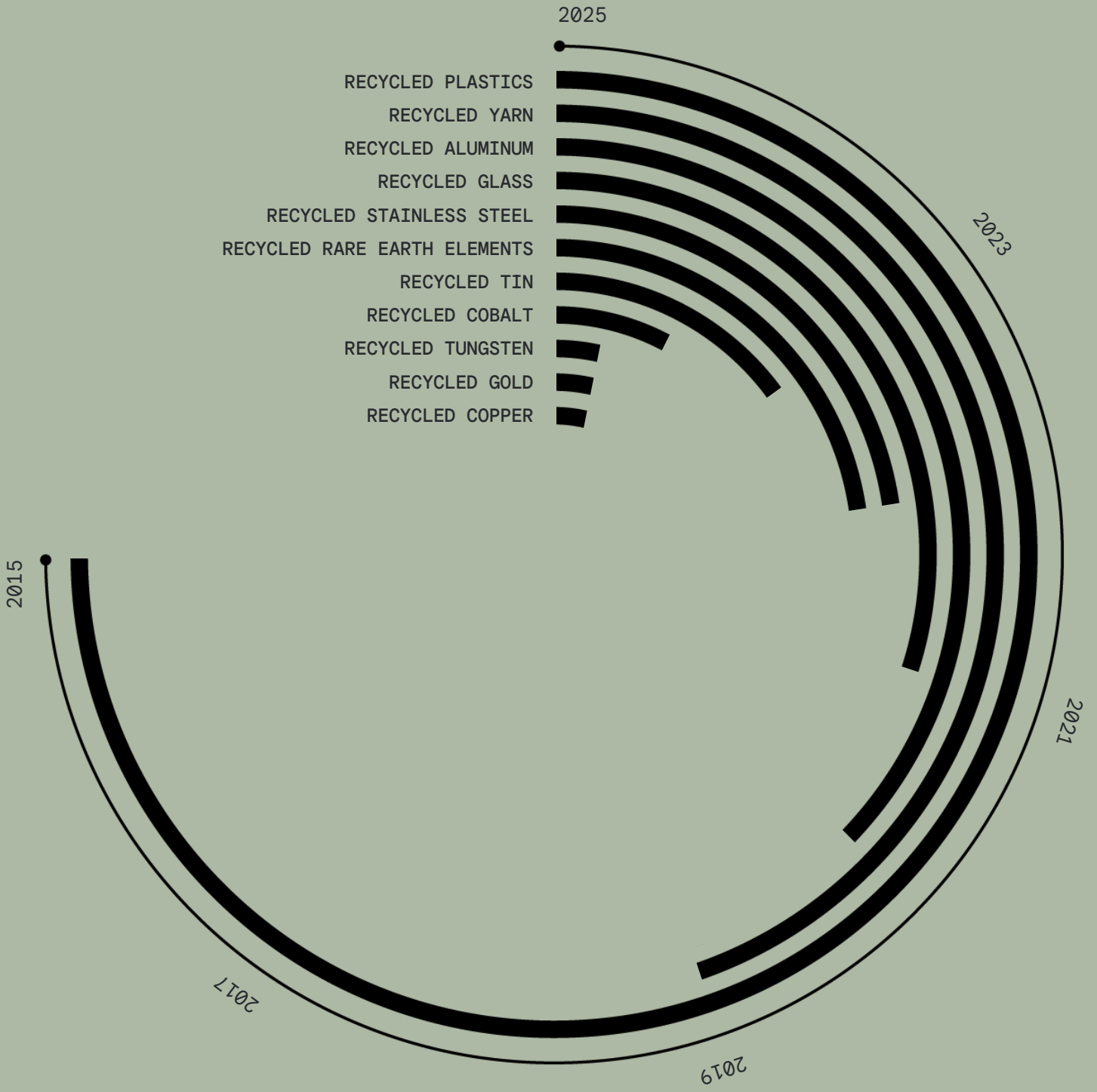
**Recycled Plastic**



**Recycled Newsprint**  
[Packaging]

# A decade of progress

Since 2015, we have been striving to expand our portfolio of recycled ingredients. While exact percentages and applications vary across products, our goal is to maximize recycled content everywhere possible.





# 100% Plastic-Free Packaging<sup>2</sup>

We've completely redesigned our packaging with our own recognizably recyclable materials—including a strong, versatile paper and reformulated molded fiber. We also reduced packaging material, and are always working to ensure we use only what is necessary for the packaging to be effective.

We are addressing waste throughout our supply chain and have reduced 150 tonnes of plastic from our manufacturing and logistics packaging to date.<sup>5</sup>



[01]

[01]  
Now - Recyclable and fiber-based bulk shipping boxes used for device components.

[02]  
Then - Non-recyclable foam bulk shipping dividers.

With this change we were able to eliminate 50 tonnes of plastic packaging<sup>6</sup> from our supply chain.

To scale this impact, we've developed packaging guidelines for all our vendors.

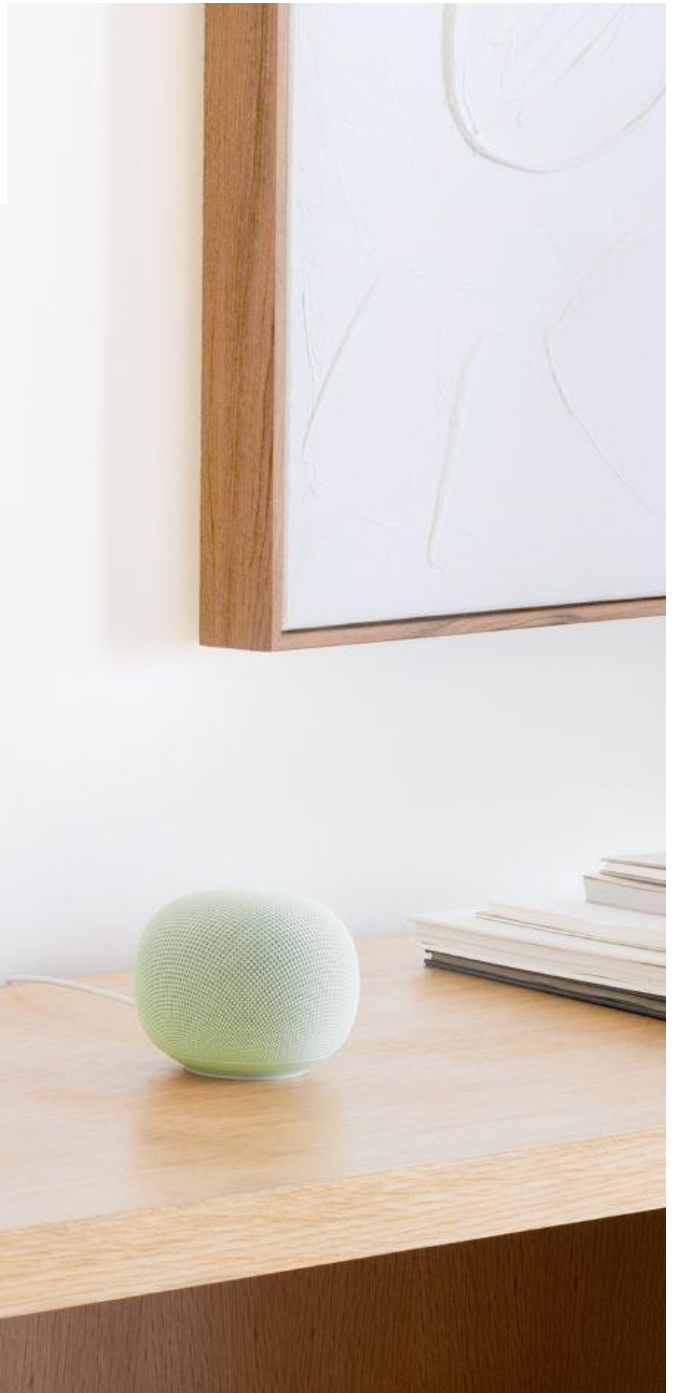


[02]

# Carbon conscious design

At Google, we have a moonshot to achieve net-zero emissions across all of our operations and value chain by 2030.

In addition to building our products with lower carbon materials, we continue efforts to reduce the power draw for devices that are always plugged in, such as our home-connected products.



# Advancing collective progress through sharing

Collaboration is key to advancing sustainability. We're committed to sharing our progress to help fuel industry-wide change. Learn more:

[Plastic-Free Packaging Design Guide](#)

[Consumer Hardware Carbon Reduction Guide](#)

[Recycled Materials Design Guide](#)



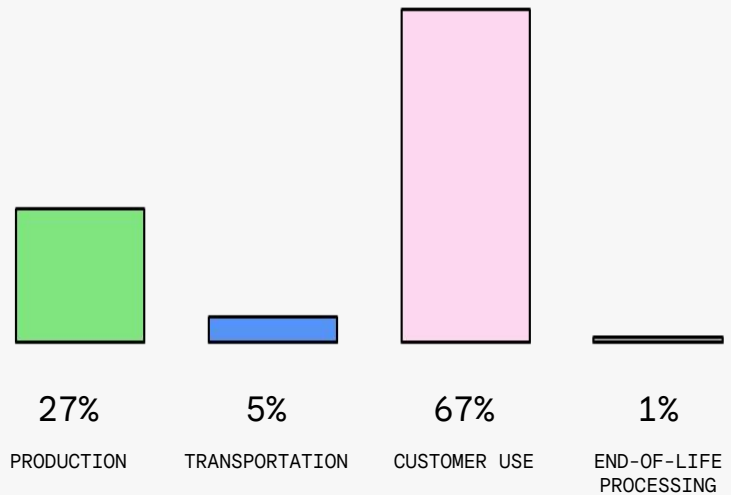
# Google Home Speaker Product Environmental Report

## GREENHOUSE GAS (GHG) EMISSIONS

The production, transportation, use, and end-of-life processing of electronic products generate GHG emissions that contribute to rising global temperatures. Google conducted a life cycle assessment on this product to identify materials and processes that contribute to GHG emissions, with the goal of minimizing these emissions. See our [Consumer Hardware Carbon Reduction Guide](#) to learn more.

## ESTIMATED GHG EMISSIONS FOR GOOGLE HOME SPEAKER ASSUMING FOUR YEARS OF USE:<sup>7</sup>

44 kg CO<sub>2</sub>e



## ENERGY EFFICIENCY

The Google Home Speaker uses an energy efficient DOE Level VI power adapter.<sup>8</sup>

# Google Home Speaker Product Environmental Report

## ENERGY EFFICIENCY OF GOOGLE HOME SPEAKER

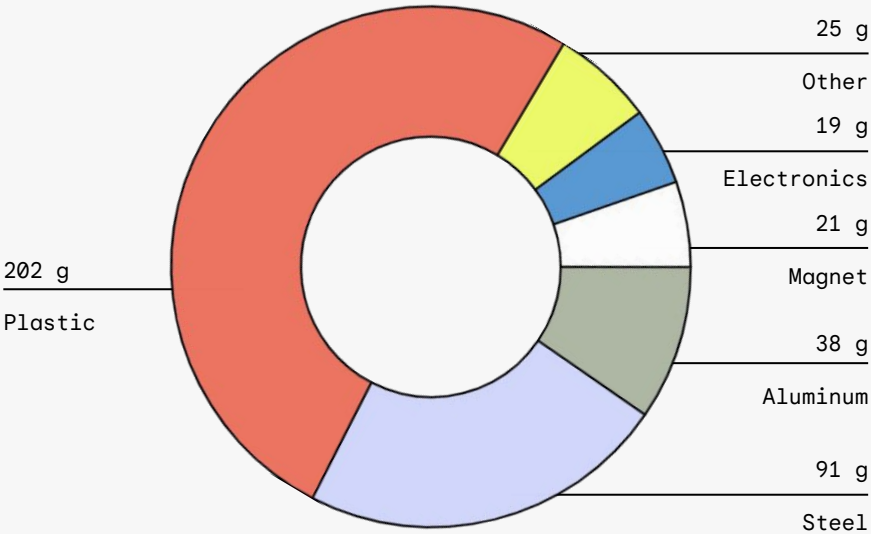
	115 V, 60 Hz	230 V, 50 Hz
Power adapter average efficiency <sup>9</sup>	86.2%	83.7%
Power adapter no-load power <sup>10</sup>	0.03 W	0.07 W
Active mode (music) <sup>11</sup>	2.18 W	2.35 W
Idle mode	1.71 W	1.89 W
Annual energy use estimate <sup>12</sup>	16 kWh	18 kWh
Annual cost of energy estimate	US\$2.79 <sup>13</sup>	€5.17 <sup>14</sup>

## MATERIAL USE

Google Home Speaker is designed to be light and compact. Minimizing the size and weight of the Google Home Speaker allows materials to be used more efficiently, thereby reducing the energy consumed during production and shipping as well as minimizing the amount of packaging.

## MATERIALS USED IN GOOGLE HOME SPEAKER

TOTAL MATERIALS:<sup>15</sup>  
396 g



# Google Home Speaker Product Environmental Report

## RECYCLED MATERIALS

- ♻️ Google Home Speaker is made with at least 37% recycled materials based on product weight.<sup>1</sup>
- ♻️ The 3D-knit enclosure fabric is made with 87% recycled polyester and spandex.<sup>3</sup>

## RESTRICTED SUBSTANCES<sup>16</sup>

Historically, many electronic devices contained materials such as lead, mercury, cadmium, and brominated flame retardants that pose environmental and health risks. We designed Google Home Speaker to meet global regulations that restrict harmful substances, including the following:

- ☑️ European RoHS Directive restrictions on lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB), polybrominated diphenyl ethers (PBDE), and four different phthalates (DEHP, BBP, DBP, DIBP)
- ☑️ European Packaging Directive restrictions on lead, mercury, cadmium, and hexavalent chromium in packaging

## VOLUNTARY SUBSTANCE RESTRICTION

Google Home Speaker also meets the following voluntary substance restrictions:<sup>17</sup>

- ☑️ PVC-free<sup>17</sup>
- ☑️ Brominated Flame Retardant (BFR)-free<sup>17</sup>

# Google Home Speaker Product Environmental Report

## PACKAGING

Google Home Speaker comes in consciously designed packaging. Our light and compact packaging is made with recycled and responsibly sourced fibers and continues to be 100% plastic-free, improving recyclability.<sup>18</sup> To learn more about our plastic-free packaging, please see our [Plastic-Free Packaging Design Guide](#).

## RESPONSIBLE SOURCING

Google and its subsidiaries are committed to ensuring that working conditions in our operations and in our supply chains are safe, that all workers are treated with respect and dignity, and that business operations are environmentally responsible and ethically conducted. Learn more about our expectations for supply chain partners in the [Google Supplier Code of Conduct](#), our [2025 Supplier Responsibility Report](#), and our [Conflict Minerals Policy](#).

# Google Home Speaker Product Environmental Report

## ENDNOTES

1. Based on product weight (includes in-box accessories).
2. Based on retail box packaging weight reduction and absence of plastic (excluding adhesive materials and required plastic stickers) as shipped by Google. To meet the request of some retail partners, stickers and/or security tags are applied to some packaging variations and may contain plastic.
3. Recycled polyester and spandex yarn is at least 87% of 3D-knit enclosure fabric based on weight, excluding dyes and additives.
4. Fabric usage measured by fabric utilization and adhesive usage measured by grams of adhesive used per product unit.
5. Based on a pilot program initiated in 2021 to reduce waste from packaging used to ship parts and components to manufacturing sites. This program informed the development of guiding principles and best practices for suppliers and contract manufacturers to minimize supply chain waste. The 150-tonne plastic reduction covers manufactured Google Home Products.
6. The 50-tonne reduction covers supply chain plastic packaging for Nest Wi-Fi Pro housings.
7. GHG emissions estimates are calculated in accordance with ISO 14040 and ISO 14044 requirements and guidelines for conducting life cycle assessments, and include the production, transportation, use, and end-of-life processing of the product, in-box accessories, and packaging.
8. Level VI is the highest available efficiency rating for power adapters as defined in the International Efficiency Marking Protocol for External Power Supplies Version 3.0.
9. Average efficiency of power adapter when input and output power is measured at 25%, 50%, 75%, and 100% of rated output current and averaged and tested at the highest rated output voltage of 5 V. Tested in accordance with the [U.S. Department of Energy Uniform Test Method for Measuring the Energy Consumption of External Power Supplies](#).
10. Power measured when the power adapter is plugged into an AC power source without being connected to the product. Tested in accordance with the [U.S. Department of Energy Uniform Test Method for Measuring the Energy Consumption of External Power Supplies](#).
11. Power is measured with device connected to a 5G Wifi router and associated with a Google Home account. Active mode based on Home Speaker playing music at 50% volume level.
12. Estimated energy use is based on historical data for previous generation devices. Actual energy consumption will vary by user.
13. The average residential cost of energy for U.S. households was \$0.17 per kWh in January 2026 (source: [U.S. Energy Information Agency](#)).
14. The average household cost of energy for consumers in the EU-27 was €0.29 per kWh in the first half of 2025 (source: [Eurostat Statistics Explained](#)).
15. Product material masses are for the Google Home Speaker only, excluding packaging and accessories. For the U.S. configuration, an additional 64 g of electronic accessories can be included in-box.

# Google Home Speaker Product Environmental Report

## ENDNOTES (Cont'd)

16. Google defines its restrictions on harmful substances in the [Google's Restricted Substances Specification](#).
17. Google continues to restrict arsenic content in glass, mercury in displays, and heavy metals (lead, cadmium, and mercury) in batteries as listed in [Google's Restricted Substances Specification](#).
18. Based on retail box packaging weight reduction and absence of plastic (excluding adhesive materials and required plastic stickers) as shipped by Google. To meet the request of some retail partners, stickers and/or security tags are applied to some packaging variations and may contain plastic. Google defines responsibly sourced fibers as those derived from recycled content, FSC-certified suppliers, or reclaimed industrial residues (such as bagasse). Recyclability improvement based on fiber yield recovered certified by the Fibre Box Association voluntary standard.