



Nest Wifi router
Product environmental report



Environmental sustainability at Google

At Google, operating in an environmentally sustainable way has been a core value from the beginning. As our business has evolved to include the manufacturing of electronic products, we've continually expanded our efforts to improve each product's environmental performance and minimize Google's impact on the world around us.

This report details the environmental performance of Nest Wifi router over its full life cycle, from design and manufacturing through usage and recycling.

Product highlights

Google Nest Wifi router is designed with the following key features to help reduce its environmental impact:

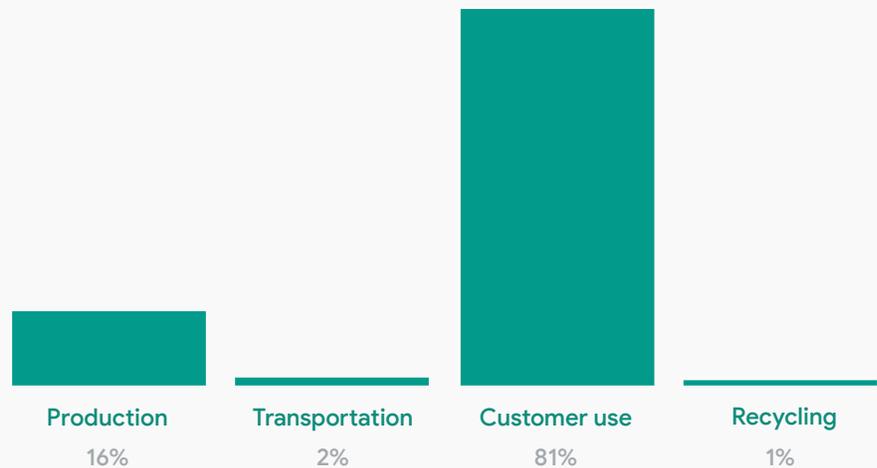
- ✓ PVC-free¹
- ✓ Brominated flame retardant-free¹
- ↻ External enclosure contains 47% post-consumer recycled plastic²
- ↻ 97% paper and fiber-based packaging
- ⚡ Power adapter with Level VI efficiency rating

Greenhouse Gas (GHG) emissions

The production, transportation, use, and recycling of electronic products generate GHG emissions that can contribute to rising global temperatures. Google conducts a life cycle assessment on products to identify materials and processes that contribute to GHG emissions, with the goal of minimizing these emissions.

Estimated GHG Emissions for Nest Wifi router³

Total GHG emissions assuming four years of use: 100 kg CO₂ e



Energy efficiency

Nest Wifi router uses an energy efficient DOE Level VI power adapter.⁴

Energy efficiency of Nest Wifi router

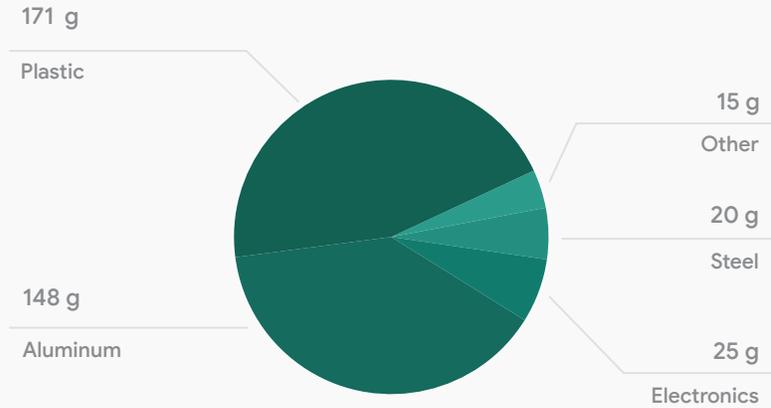
Mode	115 V, 60 Hz	230 V, 50 Hz
Power adapter average efficiency ⁵	84.7%	85.0%
Idle power	4.03 W	4.09 W
Active mode power	4.72 W	4.84 W
Annual energy use estimate ⁶	36 kWh	37 kWh
Annual cost of energy estimate	US\$4.68 ⁷	€8.14 ⁸

Material use

Nest Wifi router is designed to be small. Minimizing the size and weight of Nest Wifi router 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 Nest Wifi router

Total materials:
379 g⁹



Recycled materials

↻ External enclosure contains 47% post-consumer recycled plastic²

Restricted substances

Historically, many electronic devices contained materials such as lead, mercury, cadmium, and brominated flame retardants that pose environmental and health risks. We designed Nest Wifi router 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 restrictions

Nest Wifi router also meets the following voluntary substance restrictions:

- ✓ PVC-free¹
- ✓ Brominated flame retardant-free¹

Packaging

Packaging for Nest Wifi router uses 97% paper and fiber-based materials. We have designed Nest Wifi router packaging to minimize its weight and volume, which helps conserve natural resources and allows more devices to be transported in a single shipping container.

Packaging materials for Nest Wifi router (U.S. configuration retail packaging)

Material	Mass
Paper / fiber-based	285 g
Plastic	7 g
Total packaging	292 g

Ethical 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 manufacturing partners in the [Google Supplier Code of Conduct](#), our [2019 Responsible Supply Chain Report](#), and our [Conflict Minerals Policy](#).

Learn More

For more information about our environmental sustainability initiatives—including case studies, white papers, and blogs—please see our [Sustainability website](#) and our [2019 Environmental Report](#).

Learn how to recycle your used device in the [Google Store Help](#) section of our website.

Endnotes

1. Google defines its restrictions on harmful substances, including definitions for what Google considers to be “free of,” in the [Google Restricted Substances Specification](#).
2. External enclosure consists of top housing, bottom housing, and foot.
3. 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 recycling of the product, accessories, and packaging.
4. 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](#).
5. Average efficiency of power adapter when input and output power is measured at 25%, 50%, 75%, and 100% of rated output current and averaged. Tested in accordance with the [U.S. Department of Energy Uniform Test Method for Measuring the Energy Consumption of External Power Supplies](#).
6. Estimated energy use is based on 5 devices continuously and simultaneously connected, streaming 2 hours per day, with additional 175GB data transferred weekly.
7. The average residential cost of energy for U.S. households is \$0.13 per kWh (source: [U.S. Energy Information Agency Feb 2019 report](#)).
8. The average household cost of energy for consumers in the EU-28 was €0.22 per kWh in the first half of 2019 (source: [Eurostat Statistics Explained](#)).
9. Product material masses are for Nest Wifi router only. For the U.S. configuration, an additional 112 g of electronic accessories can be included in-box.