



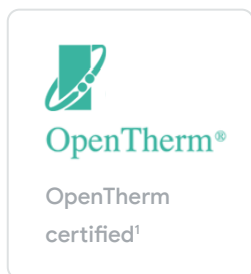
Google Nest Thermostat E - Europe  
Product environmental report



## 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 Thermostat E over its full life cycle, from design and manufacturing through usage and recycling.

## Product highlights



The Nest Thermostat E is designed with the following key features to help reduce its environmental impact:

- ♻️ Heatlink housing contains 45% post-consumer recycled plastic
- ♻️ 99% paper and fiber-based packaging
- ✓ PVC-free
- ⚡ 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 Thermostat E<sup>2</sup>

Total GHG emissions over ten-year life cycle: 30 kg CO<sub>2</sub>e



## Energy efficiency of Nest Thermostat E

Nest Thermostat E uses an energy efficient DOE Level VI power adapter.<sup>3</sup>

Mode 230 V, 50 Hz

Power adapter average efficiency<sup>4</sup> 81.4%

Power adapter no-load power<sup>5</sup> 0.01W

Annual energy use estimate<sup>6</sup> 2 kWh/y

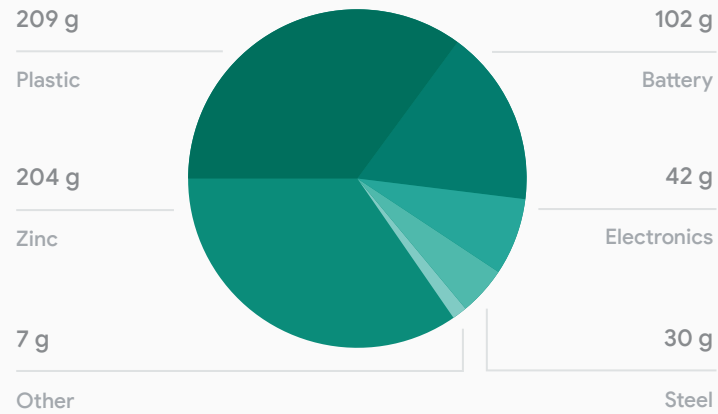
Annual cost of energy estimate €0.40<sup>7</sup>

## Material use

Nest Thermostat E is designed to be small. Minimizing the size and weight of the Nest Thermostat E 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 Thermostat E

Total materials: 594 g<sup>8</sup>



### Voluntary substance restrictions

Nest Thermostat E meets the following voluntary substance restrictions:

✓ PVC-free

### Batteries

⚡ Built-in rechargeable lithium-ion battery  
2 AA lithium iron disulfide batteries

### Packaging

Packaging for Nest Thermostat E uses 99% paper and fiber-based materials. We have designed the Nest Thermostat E 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 Thermostat E

Configuration	Total weight
UK retail	664 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 [2018 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 [2018 Environmental Report](#).

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

## Endnotes

1. This product is OpenTherm certified in Europe. OpenTherm is a language that compatible thermostats and heating systems can use to talk to each other, enabling thermostats to control heating and domestic hot water systems more efficiently. For more information on OpenTherm and Nest Thermostats, please see [this article](#).
2. 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.
3. 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](#).
4. 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](#).
5. 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. DOE Uniform Test Method for Measuring the Energy Consumption of External Power Supplies](#).
6. Estimated energy use is based on heatlink attached and thermostat plugged in 24 hours per day.
7. The average household cost of energy for consumers in the EU-28 was €0.20 per kWh in the first half of 2018 (source: [Eurostat Statistics Explained](#)).
8. Product material weights are for Nest Thermostat E only. For the U.K. configuration, an additional 133 g of electronic accessories can be included in-box.