iPad Pro
Environmental Report

Introduced September 9, 2015

Environmental Status Report

iPad Pro is designed with the following features to reduce environmental impact:

- Arsenic-free display glass
- Mercury-free LED-backlit display
- Brominated flame retardant–free
- PVC-free
- Beryllium-free
- Recyclable aluminum enclosure
- Speaker enclosures made with 35 percent post-consumer recycled plastic

Meets ENERGY STAR® Version 6.1 requirements
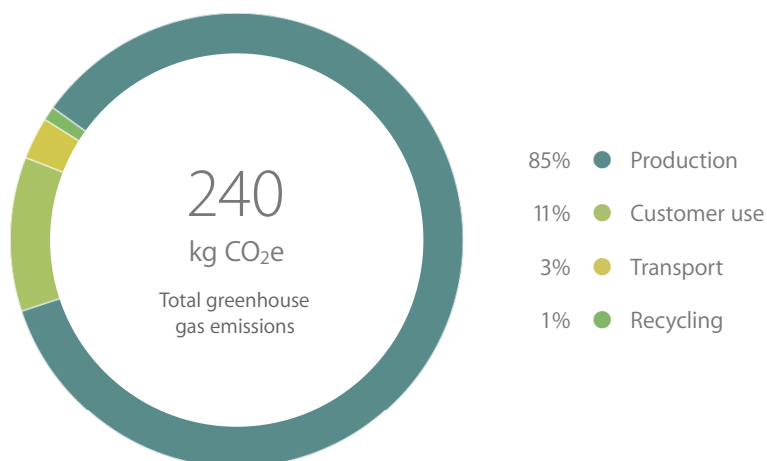
Achieves a Gold rating from EPEAT[2]

Apple and the Environment

Apple believes that improving the environmental performance of our business starts with our products. The careful environmental management of our products throughout their life cycles includes controlling the quantity and types of materials used in their manufacture, improving their energy efficiency, and designing them for better recyclability. The information below details the environmental performance of iPad Pro as it relates to climate change, energy efficiency, material efficiency, and restricted substances.[1]

Climate Change

Greenhouse gas emissions have an impact on the planet's balance of land, ocean, and air temperatures. Most of Apple's corporate greenhouse gas emissions come from the production, transport, use, and recycling of its products. Apple seeks to minimize greenhouse gas emissions by setting stringent design-related goals for material and energy efficiency. The chart below provides the estimated life-cycle greenhouse gas emissions for iPad Pro.

Greenhouse Gas Emissions for iPad Pro (Wi-Fi + Cellular)

240 kg CO_2e
Total greenhouse gas emissions

- 85% Production
- 11% Customer use
- 3% Transport
- 1% Recycling

Energy Efficiency

iPad Pro uses power-efficient components and software that intelligently manages power consumption. In addition, iPad Pro outperforms the stringent requirements of the ENERGY STAR Program Requirements for Computers Version 6.1. The following table details the power consumed by iPad Pro in different use modes.
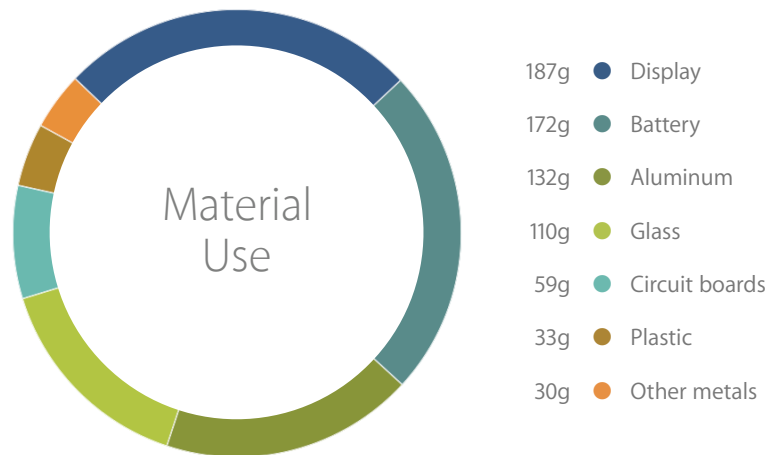
Power Consumption for iPad Pro (Wi-Fi + Cellular)

Mode	100V	115V	230V
Sleep	0.41W	0.41W	0.41W
Idle—Display on	4.43W	4.45W	4.78W
Power adapter, no-load	0.043W	0.042W	0.048W
Power adapter efficiency	84.0%	84.0%	80.0%

Material Efficiency

Apple's ultracompact product and packaging designs lead the industry in material efficiency. Reducing the material footprint of a product helps maximize shipping efficiency. It also helps reduce the energy consumed during production, and material waste generated at the end of the product's life. iPad Pro is made of aluminum and other materials highly desired by recyclers. The chart below details the materials used for iPad Pro.

Material Use for iPad Pro (Wi-Fi + Cellular)

Material Use

- 187g ● Display
- 172g ● Battery
- 132g ● Aluminum
- 110g ● Glass
- 59g ● Circuit boards
- 33g ● Plastic
- 30g ● Other metals

Battery chemistry
- Lithium-ion polymer, 38.8 Whr
- Free of lead, cadmium, and mercury

Retail packaging for iPad Pro uses a minimum of 38 percent post-consumer recycled content.

Packaging

The packaging for iPad Pro is highly recyclable. It uses corrugated cardboard made from a minimum of 38 percent post-consumer recycled content, and molded fiber made entirely from recycled content. The following table details the materials used in the packaging of iPad Pro.

Packaging Breakdown for iPad Pro (U.S. Configurations)

Material	Retail box	Retail and shipping box
Paper (corrugate, molded fiber)	255g	719g
High-impact polystyrene	105g	105g
Other plastics	9g	9g

Restricted Substances

Apple has long taken a leadership role in restricting harmful substances from its products and packaging. As part of this strategy, all Apple products comply with the strict European Directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment, also known as the RoHS Directive. Examples of materials restricted by RoHS include lead, mercury, cadmium, hexavalent chromium, and the brominated flame retardants (BFRs) PBB and PBDE. iPad Pro goes even further than the requirements of the RoHS Directive by incorporating the following more aggressive restrictions:

- Arsenic-free display glass
- Mercury-free LED-backlit display
- BFR-free
- PVC-free
- Beryllium-free

Recycling

Through ultra-efficient design and the use of highly recyclable materials, Apple has minimized material waste at the product's end of life. In addition, Apple offers and participates in various product take-back and recycling programs in 99 percent of the regions where Apple products are sold. All products are processed in the country or region in which they are collected. For more information on how to take advantage of these programs, visit www.apple.com/recycling.

Definitions

Greenhouse gas emissions: Estimated emissions are calculated in accordance with guidelines and requirements as specified by ISO 14040 and ISO 14044. Calculation includes emissions from the following life-cycle phases contributing to Global Warming Potential (GWP 100 years) in CO_2 equivalency factors (CO_2e):

- **Production:** Includes the extraction, production, and transportation of raw materials, as well as the manufacture, transport, and assembly of all parts and product packaging.

- **Transport:** Includes air and sea transportation of the finished product and its associated packaging from manufacturing site to regional distribution hubs. Transport of products from distribution hubs to end customer is modeled using average distances based on regional geography.

- **Use:** User power consumption assumes a three-year period. Product use scenarios are based on customer use scenarios. Geographic differences in the power grid mix have been accounted for at a regional level.

- **Recycling:** Includes transportation from collection hubs to recycling centers as well as the energy used in mechanical separation and shredding of parts.

Energy efficiency terms: The energy efficiency values in this report are based on the ENERGY STAR Program Requirements for Computers Version 6.1. For more information, visit www.energystar.gov.

- **Sleep:** Low power state that is entered automatically after 2 minutes of inactivity (default), or by pressing the Sleep/Wake button. Tested with a fully charged battery and powered by the 12.5W USB Power Adapter. Connected to Wi-Fi with Cellular Data off. All other settings were left in their default state.

- **Idle—Display on:** iPad Pro is on and at the Home screen. Tested with a fully charged battery and powered by the 12.5W USB Power Adapter. Display brightness was set as defined by ENERGY STAR Program Requirements for Computers Version 6.1, and Auto-Brightness was turned off. Connected to Wi-Fi with Cellular Data off. All other settings were left in their default state.

- **Power adapter, no-load:** Condition in which the 12.5W USB Power Adapter is connected to AC power, but not connected to iPad Pro.

- **Power adapter efficiency:** Average of the 12.5W USB Power Adapter's measured efficiency when tested at 100 percent, 75 percent, 50 percent, and 25 percent of the power adapter's rated output current.

Restricted substances: Apple defines a material as BFR-free and PVC-free if it contains less than 900 parts per million (ppm) of bromine and of chlorine. Apple defines a material as beryllium-free if it contains less than 1000 parts per million (ppm) of beryllium.

1. Product evaluations based on U.S. configurations of iPad Pro (Wi-Fi + Cellular) with 128GB capacity.

2. iPad Pro achieved a Gold rating from EPEAT in the United States and Canada.